

3RD INTERNATIONAL MEDICAL CONGRESS OF IZMIR DEMOCRACY UNIVERSITY

FULL-TEXT & ABSTRACT BOOK

**IMCIDU
2021**

2021 IZMIR

Dear Participants

The 3rd International Medical Congress of Izmir Democracy University (IMCIDU 2021) held between 10-12 December, 2021.

The theme of the congress was“Obesity”. During the congress program distinguished national and international speakers shared current knowledge and new developments in their fields, as well as their knowledge of future diagnostic and therapeutic approaches.

With its content covering different disciplines of medicine, our congress aimed to bring together the valuable knowledge and experiences of academicians working in different fields of expertise with other colleagues. We were pleased to host privileged scientists, health professionals and students to the congress to present their academic studies.

Abstracts of many oral and poster presentations including original research and studies from different disciplines of medical science were evaluated. We are happy to publish the valuable works in this booklet in electronic environment.

Hope to see you at the next international congress of our university – IMCIDU 2022.

Best regards,

Congress President

Prof. Dr. Bedriye Tunsiper

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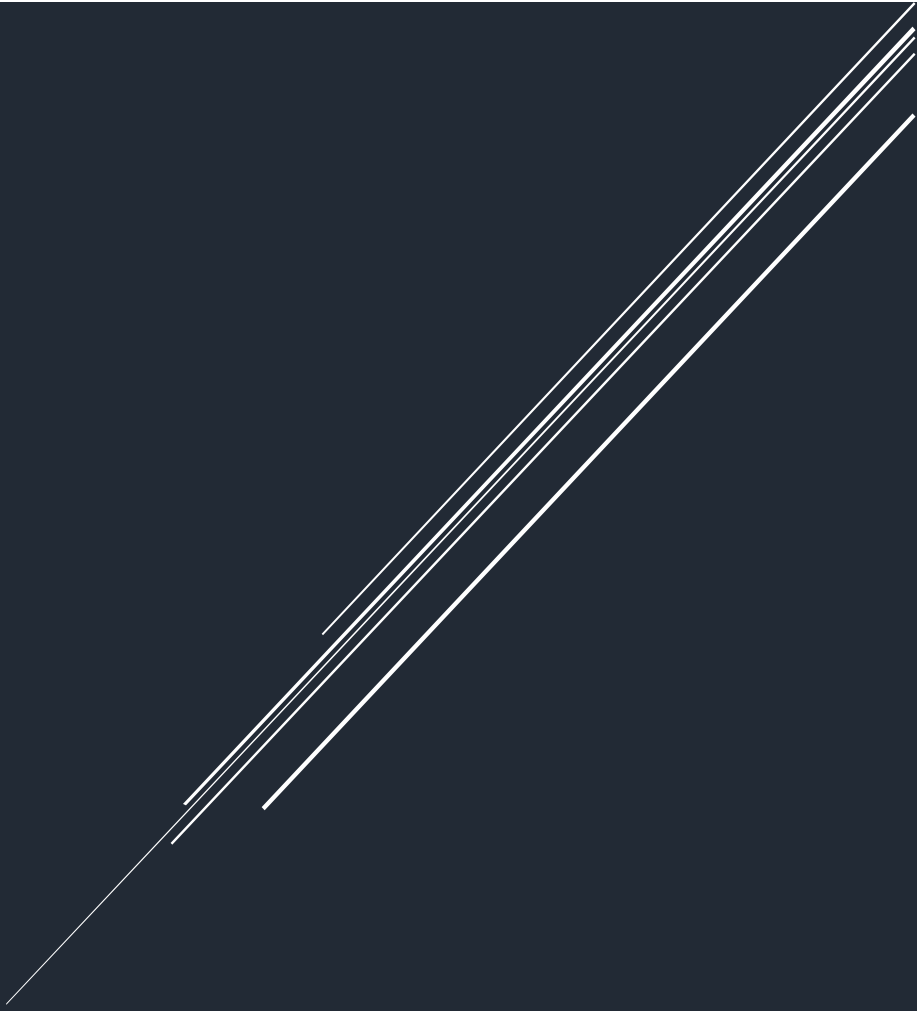


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**ID-15 / PP: “Recurrent Aneurysmal Bone Cyst of the T1 Vertebra in A 14-year-old Patient:
Case presentation”**

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Abstract (ID-15)

Introduction: Aneurysmal bone cysts are benign bone lesions that are relatively common in the pediatric age group (1). Here we present a case with a cervical involvement that made it difficult to excise completely and had to be operated on 6 times.

Case presentation: 14-year-old male patient had presented to a neurosurgery clinic with weakness in both lower extremities. Personal history was insignificant but he had a family history of two uncles with cancer. Imaging studies had revealed a benign looking mass lesion of the T1 vertebral body, and he was operated on immediately. Biopsy had revealed an aneurysmal bone cyst, but the localization of the tumor had made it difficult to excise the lesion completely. Pre-operative magnetic resonance images are presented in image 1. Fifteen days post operatively, patient again started to show symptoms related to compression of the spinal cord and he was operated on again for a recurrent lesion.

Ten days after the second operation, patient presented to our physical medicine and rehabilitation outpatient clinic with lower extremity weakness and walking difficulty. Patient was hospitalized and started on neurological rehabilitation. Physical examination on admission revealed hip flexor and knee extensor weakness. Hip flexor muscle strength was 3/5 and knee flexor strength was 4/5 according to manual muscle testing. Deep tendon reflexes were normoactive, and no pathological reflexes were present. On the fifth day after admission, patient developed sudden increase in both lower extremity deep tendon reflexes and bilateral clonus. He started having difficulty walking independently. A repeat MRI was ordered and revealed a recurrence of the same bone lesion that had started to compress the spinal cord. He was operated on and the lesion compressing the spinal cord was removed on the same day. His symptoms alleviated immediately, and rehabilitation was re-commenced. A similar increase in deep tendon reflexes and clonus in addition to difficulty in walking started 16 days after the 3rd operation that required still another operation and again for a 5th time 12 days after the 4th operation. Dcompletely, which made it difficult to kontrole the growth of the aneurysmal bone cyst. The patient was consulted with pediatric oncology, who after considering radiation therapy, started the patient on

denosumab 120 mg weekly, for four weeks. On the first day of denosumab treatment, patient again had increased spasticity and walking difficulty and was operated on for a 6th time.

After each surgical resection, biopsies came back as aneurysmal bone cyst. Magnetic resonance imaging slides after the 6th operation are presented in image 2. During this time, patient received neurological rehabilitation and was able to walk without physical assistance. After the 6th operation, his hip flexor, knee extensor, ankle extensor and flexor muscle strength measurements were 4/5, 4/5, 3/5 and 4/5 respectively. Thirty days after the first dose of denosumab injection, patient was stable and did not need another emergency surgery. Aneurysmal bone cysts are benign lesions of the bone that are fairly common in the pediatric age group and most commonly involve the vertebral column and long bones of the extremities (2). Aside from localized pain and swelling, vertebral lesions may present with neurological deficits. Local resection in most cases is enough to control the lesion but in cases such as this one, localization of the tumor may make it difficult to excise the lesion completely. Local aggressive lesions may in selected cases be treated with denosumab which inhibits bone turnover, in turn decreasing the regenerative capacity of the primary aneurysmal bone cyst. Denosumab is applied 120 mg weekly for 4 weeks and 4 weeks or 6 weeks apart thereafter (3,4). In patients with locally aggressive aneurysmal bone cysts that are difficult to excise completely, denosumab treatment has been reported to be effective in slowing down the turnover time of the tumor and allow for a recurrence free follow-up (5).

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ID-16 / OP: “The Short-term Effect of Consecutive Platelet-rich plasma (PRP) on Chronic Pain in Knee Osteoarthritis”

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Abstract (ID-16)

Introduction: Osteoarthritis is a serious degenerative joint disease resulting from the degradation of articular cartilage and a low degree of synovitis that leads to a reduced quality of life. The administration of platelet-rich plasma (PRP), which increases the release of growth factors targeting cartilage regeneration, is used in an effort to relieve pain in knee osteoarthritis (OA). This study measured the short-term efficacy of consecutive PRP on chronic pain in patients with OA of the knee.

Materials and Methods: Patients with chronic knee pain and grade 2-4 knee OA based on the Kellgren-Lawrence (K-L) classification were enrolled in the study. A total of 78 knee joints of 55 patients who completed 3 doses of intraarticular PRP injections administered at intervals of 2 weeks were analyzed. The patients' pain was evaluated using visual analog scale (VAS) on day 0, and at week 4 and 16. The functional status was measured by Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), which contains pain, stiffness and disability.

Results: Of the 55 patients, 45 were female. The mean age 59.4 ± 9.4 years. A total of 22 patients had bilateral knee involvement, and 51 of the 78 knee joints were classified as Kellgren-Lawrence (K-L) grade 3-4 OA and the other 27 knee joints were classified as K-L grade 2.

Conclusion: It was observed that PRP injections provided a meaningful improvement in chronic knee pain in patients with knee OA throughout a 16-week period. The pain reduction response to PRP was better in patients with early-stage knee OA.

Full-text (ID-16)

Introduction: Osteoarthritis (OA) is a serious degenerative joint disease resulting from the degradation of articular cartilage, degradation and proliferative reformation of subchondral bone that leads to a reduced quality of life. It is a major world public health problem and is predicted to increase rapidly with an ageing population and escalating rate of obesity.

Platelet rich plasma (PRP) has been shown to have both anti-inflammatory effects through growth factors such as transforming growth factor- β and insulin-like growth factor 1, and stimulatory effects on mesenchymal stem cells and fibroblasts. (1) PRP may induce a regenerative response by improving the metabolic functions of damaged structures (2,3) and has been shown to have a positive effect on chondrogenesis and mesenchymal stem cell proliferation (4).

Materials and Methods: The patients included individuals that applied to the Physical Therapy and Rehabilitation clinic of the Buca Seyfi Demirsoy Public Hospital with chronic knee pain persisting for longer than three months between 30 and 80 years of age who were diagnosed with osteoarthritis based on the American College of Rheumatology (ACR) criteria (5) and followed as outpatients. The study conducted between december 2019 and october 2020 enrolled patients with grade 2-4 knee osteoarthritis based on the KellgrenLawrence (K-L) classification (6) who provided voluntary informed consent.

Table 1: Inclusion Criteria

- Age between 30 and 80 years
- Pain that lasts more than 3 months
- Grade 2-4 radiographic OA as defined by the K- L classification

Exclusion Criteria

- Knee instability
- Severe trauma to the affected directory in the near future
- Active infection, inflammation or tumor presence around the knee
- Systemic disorders such as rheumatoid arthritis, hematological diseases (coagulopathies), severe cardiovascular/neurological diseases, infections, or immunodeficiencies
- Current use of anticoagulant medications or NSAIDs used in the 5 days before blood donation
- Hb values 11 g/dl or platelet counts 150.000 ml
- Pregnancy or lactation
- Recent intra-articular injection of corticosteroids, HA, ozon or PRP in past 6 months

Intervention: Although there is no clear data about the number of PRP injections in the treatment of OA, we performed a total of three intraartikuler PRP injections at intervals of two weeks. Approximately

10 mL of blood was taken from patients for each knee and was revolved at 3200 rpm for 10 minutes. By doing so, approximately 4 mL of leukocyte-poor PRP was obtained. The PRP prepared was injected into the knee involved within twenty minutes. During this treatment period, the patients performed resting or mild exercise activities and slowly returned to daily life activities as much as was tolerated.

Outcome Measures: The clinical and demographic characteristics age, gender, physical examination findings, duration of complaints, drug use, secondary diseases, and surgical history of patients were recorded. The patients were graded based on the K-L classification, and two groups were formed as the grade 2 and grade 3-4 groups. To measure the main objective of the study the patients' pain was assessed by a physiatrist not included in the study on day 0 (the day of the first PRP injection), week 4 (the day of the third PRP injection) and week 16 using the visual analog scale(VAS). WOMAC is widely used in the evaluation of knee osteoarthritis. It is a self-administered questionnaire consisting of 24 items divided into 3 subscales; pain, stiffness and physical function. The test questions are scored on a scale of 0-4, which correspond to: none (0), mild (1), moderate (2), severe (3), and extreme (4).

Statistical Analyses: All statistical analyses were performed using SPSS 27.0 (IBM Corporation, Armonk, New York, United States) and PAST 3 (Hammer, Ø., Harper, D.A.T., Ryan, P.D. 2001. Paleontological statistics). All data are presented as arithmetic mean $\pm$ standard deviation (SD).

Results: Sixty five patients with chronic knee pain were assessed for the study. Five patients were dropped because they did not accept to participate in the study. The study was launched with 87 knee joints of 60 patients. After the first PRP injection 3, and after the second PRP injection 2 patients were lost to follow-up; the third PRP injection was delivered to 78 knee joints of 55 patients. The study was completed with 78 knee joints in 55 patients who had received three PRP injections that attended the last follow-up at week 16, and the statistical analysis was performed.

The mean age of 55 patients of which 45 were female were 59.4 ± 9.4 respectively. A total of 22 patients had bilateral knees involved, and 78 of the 51 knee joints were K-L grade 3-4 osteoarthritis.

In the 78 knee joints of 55 patients the mean VAS scores (median) on day 0 before treatment and at 4, 16 weeks were 7, 5 and 4 respectively (table 2). In patients with all KL grades, there was a significant decrease in the VAS score at the 4th and 16th week compared to the baseline. However, it appears that the change between week 4 and 16 is not meaningful and that the VAS scores form a plateau ($p > 0.05$). In the comparison of the grade 2 and grade 3-4 patient groups the improvements in the VAS scores were shown at table 4 and a statistically significant improvement was also observed.

All of 55 patients the mean WOMAC scores (median) on day 0 before treatment and at 4, 16 weeks were 63.54, 45.83 and 38.54 (table-2). In patients with all KL stages, there was a significant decrease in the WOMAC scores at the 4th and 16th week compared to baseline. But, it appears that the WOMAC scores change between week 4 and 16 is not meaningful for one group who had grade 4 osteoarthritis. Compared

with grade 3 and 4, the WOMAC score decrease of grade 2 patients was statistically more significant($p<0.05$). When KL grade 3 and 4 patients were compared, it was observed that the change in the WOMAC score was not significant ($p>0.05$).

Discussion: The use of PRP in the treatment of degenerative knee OA has increased in recent years given its apparent high margin of safety and ease of production and administration (7). Today the prominent opinion is that PRP responses are better in low K-L grade patients with little joint and cartilage degeneration (8,9).

Gökay görmeli et al (10) showed that especially in the early OA subgroups, significantly better clinical results were achieved in the patients treated with three PRP injections, than HA, and placebo. Another study showed that Improved pain outcomes after 3 months with a greater effect in lower OA grades have been reported (11). Similarly, in our study, the decrease in VAS scores of early-stage patients was more significant than those of advanced-stage patients.

Conclusion: PRP use has been advocated as a treatment option in all stages of knee OA. It was observed that PRP injections provide a meaningful improvement in chronic knee pain in knee osteoarthritis throughout a 16-week period. Besides this, the pain reduction responses of K-L grade 3-4 knee osteoarthritis was found to be less meaningful when compared to grade 2 patients. Large RCTs are needed to further assess the efficacy and duration of PRP treatment for patients with knee OA.

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ID-17 / OP: “Evaluation of Histopathological Features in Cholecystectomy Materials with Demographic Data”

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Abstract (ID-17)

Introduction: Osteoarthritis is a serious degenerative joint disease resulting from the degradation of articular cartilage and a low degree of synovitis that leads to a reduced quality of life. The administration of platelet-rich plasma (PRP), which increases the release of growth factors targeting cartilage regeneration, is used in an effort to relieve pain in knee osteoarthritis (OA). This study measured the short-term efficacy of consecutive PRP on chronic pain in patients with OA of the knee.

Methods: Patients with chronic knee pain and grade 2-4 knee OA based on the Kellgren-Lawrence (K-L) classification were enrolled in the study. A total of 78 knee joints of 55 patients who completed 3 doses of intraarticular PRP injections administered at intervals of 2 weeks were analyzed. The patients' pain was evaluated using visual analog scale (VAS) on day 0, and at week 4 and 16. The functional status was measured by Western Ontario and McMaster universities osteoarthritis index (WOMAC) which contains pain, stiffness and disability.

Results: Of the 55 patients, 45 were female. The mean age 59.4 ± 9.4 years. A total of 22 patients had bilateral knee involvement, and 51 of the 78 knee joints were classified as Kellgren-Lawrence (K-L) grade 3-4 OA and the other 27 knee joints were classified as K-L grade 2.

Conclusion: It was observed that PRP injections provided a meaningful improvement in chronic knee pain in patients with knee OA throughout a 16-week period. The pain reduction response to PRP was better in patients with early-stage knee OA.

Keywords: Cholecystectomy, cholecystitis, cholelithiasis

ID-18 / OP: “Histological and Immunohistochemical Evaluation of The Effect of Xylazine on μ -Opioid Receptor Expression in Fentanyl Tolerance¹”

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Abstract (ID-18)

Introduction: Fentanyl (FEN) is a synthetic opiate used clinically for the treatment of pain and exerts its analgesic effect by binding to the μ -opioid receptor (MOR). It has been reported that MORs may have an important role in the development of tolerance to the antinociceptive effects of opiates. Some studies have shown that noradrenergic systems may play a role in opiate analgesia and tolerance. However, the mechanism underlying opiate tolerance has not yet been fully clarified. We aimed to investigate the effects of xylazine (XYL), an α -2 adrenoceptor agonist, on MOR expression in FEN-tolerant rats using immunohistochemistry.

Materials and Methods: 8-week-old Wistar albino male rats were randomly divided into four groups: Control, FEN (40 μ g/kg), XYL (1 mg/kg), and FEN+XYL. All groups received two injections per day. At the end of three days of drug administration, the rats were sacrificed and the brain and medulla spinalis (MS) were removed. Morphological evaluation was performed using routine histological processing techniques. Periaqueductal gray matter (PAG) and MS were labeled with primary antibody (anti-MOR) and examined immunohistochemically for protein expressions. Intensity of MOR expression was scored as none (0), weak (+1), moderate (+2) and strong (+3) according to the immune reactivity. Chi-square test was used to analyze the statistical difference between the scores of the groups.

Results: No histopathological changes were observed in the MS and PAG regions of the rats in the control and other study groups. MOR expression level in the PAG region was decreased in the FEN group while it was increased in the FEN+XYL group compared to the control group. However, these changes were not statistically significant ($p>0.05$). Comparisons between all remaining groups showed that there was no significant difference in MOR expression levels in PAG and MS ($p>0.05$).

Discussion and Conclusion: Our study is the first to draw attention to the possible effects of XYL on MOR expression levels in FEN-tolerant rats. According to our findings from the PAG region, although

not statistically significant, XYL can suppress the downregulation of MOR, which plays a role in opiate tolerance. Based on this, it is possible to think that XYL may have the potential to prevent FEN tolerance. Further studies are needed to clarify the effects of XYL on opiate tolerance.

Keywords: Fentanyl tolerance, xylazine, periaqueductal gray matter, medulla spinalis, μ -opioid receptor

ID-19 / OP: “The Effect of Insulin, Leptin, Adiponectin, Ghrelin Levels in Cord Blood on Growth in the First 2 Years

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Abstract (ID-19)

Introduction: The main hormones and adipokines that regulate growth, energy metabolism and adipogenesis in the intrauterine period are insulin, leptin, ghrelin, and adiponectin. Changes in these hormones and adipokines may affect weight gain, obesity and metabolic syndrome in advanced ages. In this study, it was aimed to investigate the relationship between insulin, leptin, ghrelin, adiponectin levels in the cord blood of term newborn babies and growth in the first 2 years of age.

Materials and methods: Term babies born in our hospital between May 2019 and October 2019 were included in the study. Insulin, glucose, ghrelin, leptin and adiponectin levels were studied in the umbilical cord blood of 80 babies born between these dates. The growth of 44 of the 80 babies included in the study was monitored until the age of 2 years.

Results: The relationship between insulin, ghrelin, leptin and adiponectin levels in the cord blood of 44 babies included in the study with growth up to 2 years of age was investigated. A positive correlation was found between the insulin level in the cord blood and birth weight, birth head circumference, and body weight at the 12th and 24th months of life. A negative correlation was found between the level of ghrelin in the cord blood and body weight at the 6th and 24th months of life. A positive correlation was found between the level of adiponectin in the cord blood and the body weight in the 6th month of life. There was no significant correlation between cord leptin level and anthropometric measurements in the first 2 years of age.

Conclusion: While the level of insulin and adiponectin in the cord blood was positively correlated with body weight in the first 2 years of life, it was negatively correlated with the ghrelin level in the cord blood. The level of leptin in cord blood did not correlate significantly with body weight in the first 2 years of life.

Keywords: Cord blood, insulin, ghrelin, adiponectin, leptin, body weight

ID-20 / OP: “The Effect of General Anesthesia During Transurethral Resection of Lateral Bladder Wall Tumors on The Recurrences of The Disease”
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Abstract (ID-20)

Introduction: The aim of this study was to compare the recurrence rates of patients with bladder tumors on the lateral wall undergoing transurethral resection of bladder tumor (TUR-BT) with general anesthesia with curare (GAC) or spinal anesthesia and to investigate the impact of GAC on the effective tumor resection on the lateral bladder wall.

Materials and Methods: All patients between 2010-2015 years underwent TUR-BT with spinal anesthesia or general anesthesia with curare within the five-year study period in the in our hospital were reviewed retrospectively. 165 patients who had been diagnosed with de novo lateral bladder wall tumor and included in low risk group accord with European Organization for Research and Treatment of Cancer (EORTC) classification (tumor size <3cm, single focus), undergone complete resection were enrolled into the study. Group 1 (86 patients who underwent TUR-BT with spinal anesthesia) and group 2 (79 patients who underwent TUR-BT with GAC) were evaluated with respect to tumor recurrence rates and disease-free time to recurrence.

Results: Follow-up periods (range, 60 to 121 months for group 1 and 59 to 119 months for group 2) and overall recurrence rates (group 1, 28.2% and group 2, 19.7%) were also found to be similar. Mean time to recurrence was significantly higher in group 2 (14 ± 5.8 months) than in group 1 (7.6 ± 4.8 months) ($P = 0.009$)

Conclusion: GAC employed in TUR-BT involving the lateral wall can prolong time to recurrence and increase the chance to lengthen disease-free survival in low-risk superficial bladder tumors.

Keywords: Cord blood, insulin, ghrelin, adiponectin, leptin, body weight

ID-21 / OP: “Evaluation of The Characteristics of Refugee Children in Pediatric Palliative Care Service”

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Abstract (ID-21)

Introduction: As a result of the Syrian civil war, which has been called the biggest humanitarian crisis after the second world war and has been going on for seven years, one out of every two people in the country has had to leave their home. Turkey, the country that hosts the highest number of Syrian refugees, hosts 3.5 million asylum seekers/refugees, and almost half of this population (44%) is children under the age of 18. It is known that refugees and asylum seekers are more susceptible to medical diseases. The aim of this study is to emphasize the importance of pediatric palliative care support in the treatment of foreign national children who are hospitalized in the pediatric palliative care service.

Materials and Methods: The study is a retrospective study evaluating Syrian patients hospitalized in SBU Dr. Behçet Uz Pediatrics and Surgery Training and Research Hospital, Pediatric Palliative Care Center between November 2018 and June 2021. Demographic data of the cases, length of stay and indications for hospitalization, medical devices and materials used were evaluated. Data were saved in SPSS for Windows 16. Descriptive analyzes were shown as frequency (%), mean value, and standard deviation (SD). Pearson Chi-Square and Fisher Exact tests were used to compare groups. A p value of <0.05 was considered statistically significant (2021/9074).

Results: A total of 208 patients were followed up during the study period, of which 14.9% (n=31) were foreign nationals. One patient is of Afghan origin and 30 patients are Syrian refugees. The mean age was 3,0±0,5 years. The male/female ratio was found to be 74.2% in Syrian patients (p≤ 0.020). When the primary diagnoses and diagnostic groups of the cases were examined, no difference was found. There was no difference in terms of reason for hospitalization, number of hospitalizations and length of stay. When the medical technology and devices used were examined, it was found that Syrian patients used more Oxygen and less Home type mechanical ventilators (p≤ 0.006, p≤0.004, respectively).

Discussion and Conclusion: The results of this study showed that pediatric palliative care plays an important role for Syrian children with life-limiting illness. Considering that 1.86% of Syrian refugees live in İzmir, it is seen that there are 4 times more Syrian patients than children coming from Turkey. It is known that disasters such as war, flood and earthquake reduce male live births. The fact that the Syrian children in our study are predominantly male may be related to the cultural importance given to boys.

The fact that Syrian patients receive more oxygen support and do not receive tracheostomy and mechanical ventilator support may be due to the difficulty of accessing the medical device rather than the disease feature. As a matter of fact, many Syrian children are hospitalized in intensive care units because there is no home type mechanical ventilator. Pediatric palliative care centers are important centers where foreign patients are supported. However, sustainable resources, international support and cooperation are required for the supply of medical technological devices.

Keywords: Refugee, syria, pediatrics, pediatric palliative care

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ID-22 / OP: “Expression of Cereblon Protein in Multiple Myeloma: Does It Have Any Prognostic Significance?”

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Abstract (ID-22)

Introduction and Objective: Considerable progress has been made in the treatment of multiple myeloma (MM) patients with the development of various new agents that increased survival rates over the past fifteen years. Cereblon (CRBN) plays an important role in mediating the antitumor effects of immunomodulatory drugs (IMiDs) among these new agents. The aim of our study is to investigate immunohistochemically (IHC) CRBN protein expression status in MM.

Materials and Methods: Immunohistochemically, CRBN expression and its relationship with various prognostic factors were evaluated in bone marrow biopsies of 96 patients with MM.

Results: Although mild cytoplasmic and nuclear CRBN expression was detected in all neoplastic cells, in only 23 patients (24%) strong nuclear CRBN expression was detected. While a complete or partial response to treatment was obtained in 45 patients, the disease was stable in 13 and progressive in 17 patients. Survival was longer in those treated with IMiD-containing regimens ($p = 0.044$). Both the survival rate ($p = 0.013$) and the survival time were significantly increased ($p = 0.023$) in those who received the treatment protocol containing protease inhibitors. A significant relationship was found between the treatment protocol and treatment response in the chi-square analysis ($p = 0.008$). Although the longest survival time-though not statistically significant - was detected in the group treated with protease inhibitors (Log Rank $p = 0.217$). Kaplan- Meier survival analysis revealed the presence of a relationship between IgG ($p = 0.008$) and IgA ($p = 0.010$) positivity and survival.

Discussion: In this study, the survival time of the patients who received treatment regimens containing protease inhibitors and IMiD was longer, independent of the presence of strong nuclear CRBN expression. The survival rate was significantly higher in those who used IMiD and protease inhibitors in combination. Since the survival rate was found to be increased in IgG positive and decreased in IgA positive cases, we thought that evaluation of immunoglobulin tissue expression in MM cases can provide prognostic prediction.

ID -27 / OP: “The Relationship Between Varicocele and Saphenofemoral Reflux: A Prospective Controlled Study”

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Abstract (ID-27)

Introduction and Purpose: Varicocele is the abnormal dilatation of pampiniform plexus veins. It is the most frequent cause of infertility in male patients (1). Lower extremity varicose veins are common and affect daily life. Venous valvular insufficiency, mostly at the saphenofemoral junction, is the most accepted cause of varicose veins. Although clinical examination is the main diagnostic method for both varicocele and varicose veins, color Doppler ultrasonography (CDUS) is widely used as a basic imaging modality especially in subclinical cases. The aim of this study is to evaluate whether there is a relationship between varicocele and saphenofemoral reflux with CDUS.

Materials and Methods: This prospective controlled study was approved by the institutional review board. A total of 58 patients with varicocele and 58 control subjects were included. Patients with a previous history of varicocele, present or previous cryptorchidism, infection, hydrocele, pyocele and abnormal testicular parenchymal echotexture on US were excluded. The pampiniform plexus veins and saphenofemoral junction were evaluated in both supine and standing positions before and during a Valsalva maneuver. The presence of retrograde flow and a diameter greater than 2 mm in the pampiniform plexus veins was considered as varicocele. Retrograde venous flow during Valsalva maneuver for longer than 0.5 s was considered as saphenofemoral insufficiency. Presence and side of saphenofemoral insufficiency and varicocele were noted. Chi-square test was used for the comparison of these parameters.

Results: The mean age of the varicocele group was 33.46 ± 10.26 , and the mean age of the control group was 33.70 ± 12.12 . The mean diameter of the pampiniform plexus veins in the varicocele group was 3.19 ± 0.74 mm. Eight patients (13.79%) had bilateral varicocele. There was reflux flow with Valsalva maneuver at the saphenofemoral junction 11 patients (18.96%) in the varicocele group and in 6 patients (10.34%) in the control group ($p=0.294$).

Discussion and Conclusion: Varicocele can affect testicular functions and reduce fertility. Early diagnosis and treatment of varicocele is important in preserving testicular functions. The association of lower extremity venous insufficiency and varicocele was found to be significantly higher in some studies (2-6). However, there are also studies that do not find a difference in this regard (7). Similarly, in our

study, we did not find a significant difference between varicocele and saphenofemoral insufficiency between the groups. Further comprehensive studies are needed in this regard, but it would be appropriate to evaluate patients with varicocele in terms of saphenofemoral insufficiency.

Keywords: Saphenofemoral, reflux, varicocele, varicose, vein

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Full-text (ID-27): "The Relationship Between Varicocele and Saphenofemoral Reflux: A Prospective Controlled Study"

Introduction and Purpose: Varicocele is the abnormal dilatation of pampiniform plexus veins. Clinical findings are usually palpable soft scrotal mass and pain. It is the most frequent cause of infertility in male patients (1). The prevalence is approximately 15% to 20% in the general population (1). The prevalence increases up to 35-44% of cases with primary infertility and 45-81% of cases with secondary infertility (2). Dilation of the veins to a diameter of larger than 2 mm and increased width during the Valsalva maneuver are the diagnostic criteria (3). Also, color Doppler ultrasonography (CDUS) can be used to determine retrograde venous flow (3). US and CDUS consider only the degree of dilated plexus veins and flow direction. Lower extremity varicose veins are common and affect daily life. Venous valvular insufficiency, mostly at the saphenofemoral junction, is the most accepted cause of varicose

veins. Although clinical examination is the main diagnostic method for both varicocele and varicose veins, CDUS is widely used as a basic imaging modality especially in subclinical cases. The aim of this study is to evaluate whether there is a relationship between varicocele and saphenofemoral reflux with CDUS.

Materials and Methods: This prospective controlled study was approved by the institutional review board and written informed consent was acquired from each patient. A total of 58 patients with varicocele and 58 control subjects were included. Patients with a previous history of varicocelectomy, present or previous cryptorchidism, infection, hydrocele, pyocele and abnormal testicular parenchymal echotexture on US were excluded. The pampiniform plexus veins and saphenofemoral junction were evaluated in both supine and standing positions before and during a Valsalva maneuver. The presence of retrograde flow and a diameter greater than 2 mm in the pampiniform plexus veins was considered as varicocele. Retrograde venous flow during Valsalva maneuver for longer than 0.5 s was considered as saphenofemoral insufficiency. Presence and side of saphenofemoral insufficiency and varicocele were noted. Chi-square test was used for the comparison of these parameters. Statistical significance value of this study was accepted as $p < 0.05$.

Results: The mean age of the varicocele group was 33.46 ± 10.26 , and the mean age of the control group was 33.70 ± 12.12 . There was not a statistically significant difference between these groups in terms of age ($p = 0.817$). The mean diameter of the pampiniform plexus veins in the varicocele group was 3.19 ± 0.74 mm. Eight patients (13.79%) had bilateral varicocele. There was reflux flow with Valsalva maneuver at the saphenofemoral junction 11 patients (18.96%) in the varicocele group and in 6 patients (10.34%) in the control group ($p = 0.294$).

Discussion and Conclusion: This study aimed to explore whether there is a relationship between varicocele and saphenofemoral junction reflux, and we did not find any significant relationship. Several theories have been proposed for the etiology of varicocele, such as valvular insufficiency and increased intravascular pressure. Varicocele can affect testicular functions and reduce fertility. The relationship between testicular volume and varicocele was examined and it was determined that varicocele is a predisposing factor for testicular atrophy (4). Early diagnosis and treatment of varicocele is important in preserving testicular functions. The association of lower extremity venous insufficiency and varicocele was found to be significantly higher in some studies (4-8). However, there are also studies that do not find a difference in this regard (9). Similarly, in our study, we did not find a significant difference between varicocele and saphenofemoral insufficiency between the groups. Vascular insufficiency was found to be more common in varicose than nonvaricose veins. Since the etiology of lower extremity varices and varicocele are similar, they are also considered as different spectrum of the same disease (5). Further comprehensive studies are needed in this regard, but it would be appropriate to evaluate patients with varicocele in terms of saphenofemoral insufficiency.

Keywords: Saphenofemoral, reflux, varicocele, varicose, vein

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Figures

Figure 1: Dilatation (up to 4.5mm) in the pampiniform plexus veins (a) and reflux flow with the Valsalva maneuver (b) on color Doppler ultrasonography.

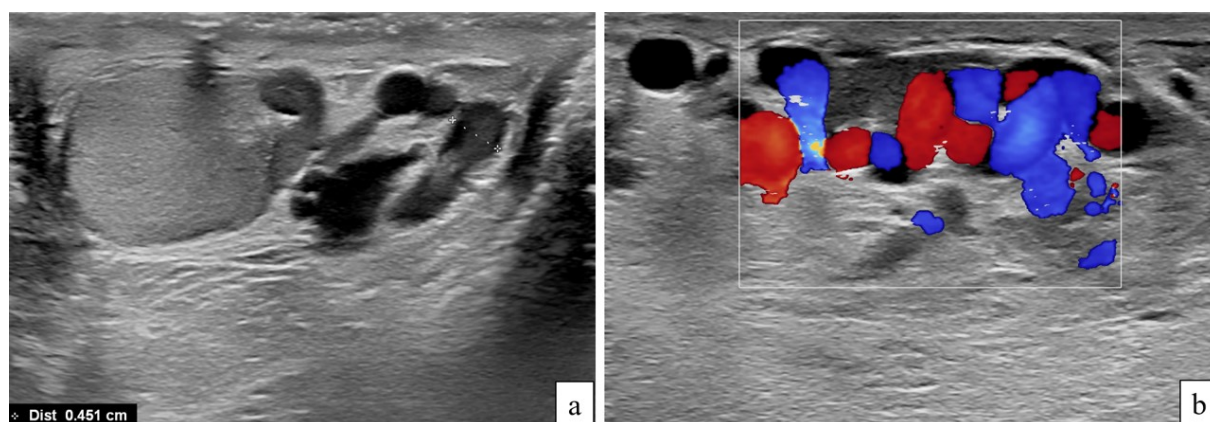
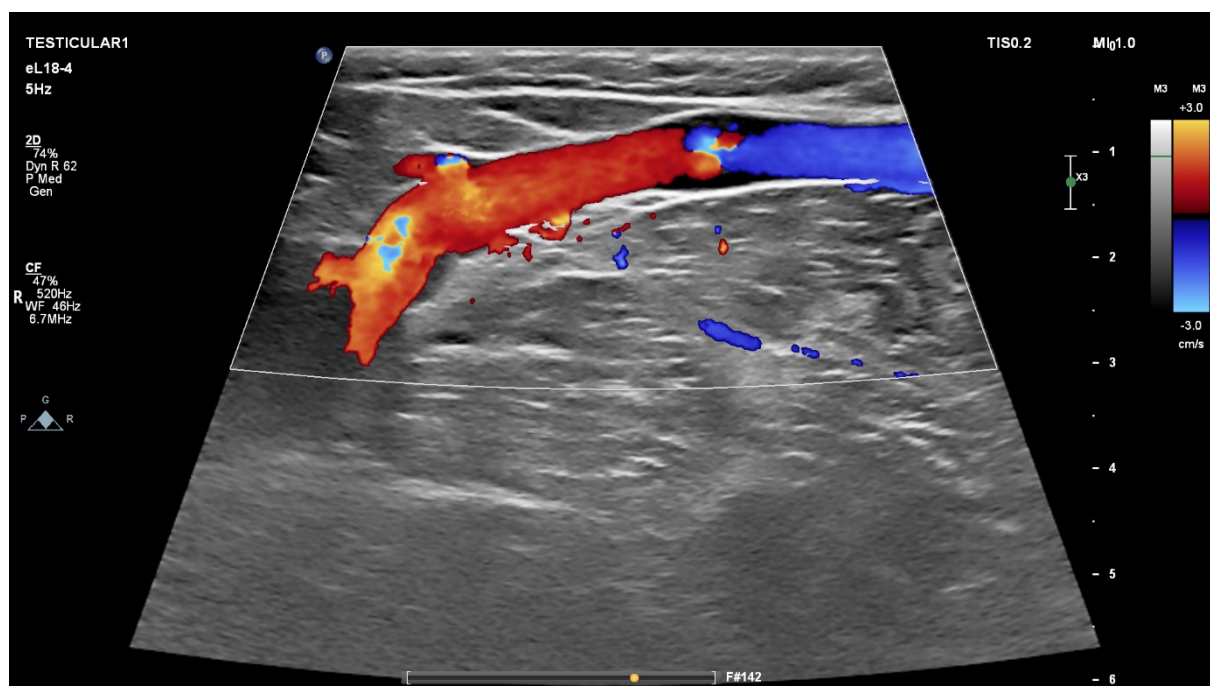


Figure 2: Reflux flow at the saphenofemoral junction with Valsalva maneuver on color Doppler ultrasonography.



ID-28 / OP: “Detection and Vascular Territorial Classification of Stroke on DWI by Deep Learning”

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Abstract (ID-28)

Introduction and Purpose: Rapid detection and vascular territorial classification of stroke enable the determination of the most appropriate treatment. In this study, we aimed to investigate the performance of convolutional neural network (CNN) models in the detection and vascular territorial classification of stroke on diffusion-weighted images (DWI).

Materials and Methods: DWI of 421 cases (271 acute ischemic stroke patients and 150 cases without any ischemia findings on DWI) obtained between January 2017 to April 2020 were reviewed. We created two custom datasets. A stroke detection dataset was created with 1800 slices (900 stroke and 900 normal) consisting of 1400 for training, 200 for validation, 200 for test. A vascular territorial type dataset was created with 1717 slices (883 middle cerebral artery stroke, 416 posterior circulatory stroke, and 418 watershed stroke) consisting of 1117 slices for training, 300 for validation, 300 for test. A transfer learning approach based on MobileNetV2 and EfficientNet-B0 CNN architecture was used. The performance of the models was evaluated.

Results: Modified MobileNetV2 and EfficientNet-B0 models achieved 96% (κ : 0.92) and 93% (κ : 0.86) accuracy in stroke detection, respectively. In vascular territorial classification of stroke as middle cerebral artery, posterior circulation, or watershed infarction, an accuracy of 93% (κ : 0.895) was achieved with modified MobileNetV2 model and 87% (κ : 0.805) with modified EfficientNet-B0 CNN model.

Conclusion: Transfer learning approach with custom top CNN models achieve sufficiently high performance for both the detection of ischemic stroke and the classification of its vascular territorial type on DWI.

Keywords: Ischemic Stroke, Vascular Territory, Classification, Diffusion-weighted imaging, Convolutional Neural Networks, Transfer Learning

Full-text (ID-28): “Detection and Vascular Territorial Classification of Stroke on Diffusion-weighted MRI by Deep Learning”

Introduction: Stroke is the second most common cause of death worldwide after ischemic heart disease and the third most common cause of disability after neonatal conditions and ischemic heart disease [1]. According to the World Health Organization, 15 million people worldwide have a stroke every year; 5 million of them die, and 5 million are permanently disabled [2].

Convolutional neural networks (CNN), one of the subheadings of deep learning, have been specialized and increasingly used for image recognition in neuroradiology imaging [3-7]. Deep learning models and the use of CNN are considered a method that can be used in the imaging of acute ischemic strokes. However, to date, there is no system or research paper that classifies major arterial territorial types of stroke from diffusion-weighted images (DWI).

In this study, we aimed to detect ischemic stroke and classify its vascular territorial type on DWI by CNN models.

Materials and Methods: *Patient Selection:* Trace DWIs of 291 patients with acute ischemia between January 2017 and April 2020 were reviewed. Eleven DWIs were excluded due to severe artifacts affecting overall image quality. We included DWIs of 129 patients with middle cerebral artery infarction, 77 patients with posterior circulation infarction, 65 patients with watershed infarction, and 9 patients with anterior cerebral artery (ACA) infarction on reviewed DWIs. ACA infarcts were excluded from the study because the small sample size causes a massive imbalance between vascular territorial infarct classes. Besides, 150 cases studied within the same time interval without any signs of ischemia on DWI were also included in the study. Age and gender of cases were recorded. MRI images were obtained using a 1.5 Tesla MRI machine. The technical parameters of each protocol and the distribution of the acquisition protocols of the DWIs included in the study are shown in Table 1.

Patient Datasets: Two datasets were created, one to detect the presence of stroke and the other to classify its vascular territorial type. The target classes for stroke detection were normal and stroke. Target classes in vascular classification were determined as middle cerebral artery strokes, posterior circulation strokes, and watershed strokes.

An open-source software, 3D Slicer, was used to evaluate DWIs. The binary maps were obtained. Since every stroke patient had both unaffected and affected slices, segmentation maps were used to filter infarct-positive slices.

A radiologist with 5 years of neuroradiology experience segmented the images for ground truth labeling in the aforementioned target classes. A senior neuroradiologist with 27 years of neuroradiology experience performed the second evaluation.

A stroke detection dataset of 1800 slices was created using 900 random slices from the DWIs of normal cases and 900 random positive slices from the DWIs of stroke cases regardless of the stroke class. Of the 200 slices randomly determined from both groups, 100 were used for the test and the other 100 for the validation set. Finally, the stroke detection dataset consisted of 1400 slices for training, 200 for validation, and 200 for the test.

In the vascular territorial type dataset, a total of 1717 positive slices were obtained, including 883 middle cerebral artery stroke slices, 416 posterior circulatory stroke slices, and 418 watershed stroke slices. Two-hundred slices were randomly determined for each class, similar to the one applied to the stroke detection dataset; 100 were used for testing, and the other 100 were used for validation. Finally, the vascular territorial type dataset consisted of 1117 slices for training, 300 for validation, and 300 for the test (Figure 1).

Training and Validation: Transfer learning approach was used in the training of the dataset prepared for stroke detection. MobileNetV2 and EfficientNet-B0 CNN architectures pretrained with ImageNet dataset were used for transfer learning [8-9]. Both pretrained architectures were fine-tuned. The last classifier layers of the CNN models were replaced with two fully-connected layers of 512 and 256 nodes, respectively. A dropout layer with a value of 0.5 was added to both fully-connected layers to prevent overfitting. Batch number was selected as 16. Epoch was determined as 100. The models were retrained with stroke detection dataset (Figure 2).

The transfer learning approach with the same pretrained CNN models was used for training the vascular territorial type dataset. Two pretrained CNN were fine-tuned. The last classifier layers of the CNN models were removed, and two fully-connected layers of 512 and 256 nodes were added, respectively. A dropout layer with a value of 0.5 was added to both fully-connected layers to prevent overfitting. Batch number was selected as 16. Epoch was set to 100 for EfficientNet-B0 and 150 for MobileNetV2. The models were retrained with vascular territorial type datasets (Figure 3).

Google Colaboratory was used for the training [10].

Results: Of the 271 stroke patients, 151 (55.7%) were male and 120 (44.3%) were female. Of the 150 cases in the normal group, 70 (46.7%) were male and 80 (53.3%) were female. The mean age of 421 cases was 66.95 (Table 2).

The accuracy of the fine-tuned MobileNetV2 and EfficientNet-B0 CNN models in the detection of stroke was 96% and 83%, respectively. The confusion matrices and calculated metrics of both models in detecting the presence of stroke are shown in Figure 4 and Table 3. The accuracy of the fine-tuned

MobileNetV2 and EfficientNet-B0 CNN models in classifying stroke by its vascular territory was 93% and 87%, respectively. The confusion matrix and calculated metrics of both models in classifying vascular territory of stroke, are shown in Figure 5 and Table 4. Examples of successful classification and misclassification by the models are shown in Figure 6.

Discussion: In this study, the success of CNN models in the detection of stroke and classification of its vascular territorial type were evaluated. MobileNetV2 CNN model achieved 96% accuracy in detecting the presence of stroke and 93% accuracy in classifying its vascular territory. Previous studies have evaluated the success of machine learning methods in the detection of stroke. Nazari-Farsani et al. achieved an accuracy of 73% in stroke detection with a dataset consisting of DWI and ADC images of 192 patients, including 106 those who had stroke and 86 healthy individuals. They set up a support vector machine classifier with a linear kernel in their study [11]. Pereira et al. obtained the most successful result in detecting stroke in non-contrast CT with CNN, and the researchers evaluated the accuracy of a CNN model using a dataset of 300 slices (100 ischemic strokes, 100 hemorrhagic strokes, and 100 normal) and achieved an accuracy of approximately 99% [12].

Stroke has different subtypes that require different clinical management. Therefore, classification of the stroke subtype is necessary for its early treatment and prevention [13]. To the best of our knowledge, there is no study that classified the vascular territorial type of stroke with a CNN model. According to the results of our study, the accuracy of the fine-tuned MobileNetV2 CNN model in classifying stroke according to the vascular territory was 93%. Considering that MCA is responsible for 50% of all ischemic strokes, posterior circulation strokes for 20%, and watershed strokes for 5%–10%, it can be said that subtypes that cover 75%–80% of ischemic strokes were evaluated in this study, which excluded ACA infarcts [14-16].

Our study has several limitations. First, a classification according to the Trial of ORG 10172 in Acute Stroke Treatment (TOAST) was not conducted due to limited available labeled data. Another limitation regarding the classification is that ACA strokes, which were only nine, were not included among the targets as they would have caused a massive imbalance between classes. However, approximately 75%–80% of all stroke types can be classified by vascular territories with the proposed transfer learning model. Further deep learning studies should be carried out to classify stroke according to both TOAST and all major vascular territories, including ACA infarcts, using larger datasets. Another limitation is that the different images from the same patients are included in the datasets. Although this may compromise the validation, each slice could be assumed independent as it represents different anatomy and harbored pathology. Finally, this study had a limited diversity of data. The variety of MR images is slightly increased using two different acquisition parameters. However, obtaining the images with a single MR device is an important drawback. Therefore, further external validation with large and multi-institutional data is warranted.

Conclusion: Detection and vascular territorial classification of stroke in DWIs are essential in taking the most appropriate action and achieving timely management of patients. In this study, we showed that transfer learning with custom top CNN models achieve sufficiently high performance for the detection of ischemic stroke and classification of its vascular territorial type on DWI.

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Table 1: DWI sequences and imaging parameters

	MCA Strokes	Posterior Circulation Strokes	Watershed Strokes	Normal Group	TOTAL
Gender (n, %)					
<i>Male</i>	68 (52.7%)	43 (55.8%)	40 (61.5%)	70 (46.7%)	221 (52.5%)
<i>Female</i>	61 (47.3%)	34 (44.2%)	25 (38.5%)	80 (53.3%)	200 (47.5%)
<i>Total</i>	129 (100%)	77 (100%)	65 (100%)	150 (100%)	421 (100%)
Age (mean, interval)	67.66 (32-94)	69.7 (42-89)	68.35 (37-92)	64.33 (32-95)	66.95 (32-95)

Parameters	DWI sequence name	
	*ep_b1000t	*re_b1000t
TR (ms)	6600	5880
TE (ms)	89	61
b value (s/mm ²)	1000	1000
FOV (mm x mm)	230 x 230	221x 221
Matrix	192 x 192	168 x 168
Slice thickness (mm)	5	5
NEX	3	1
Stroke patients n (%)	104 (38.4%)	167 (61.6%)
Normal cases n (%)	32 (21.3%)	118 (78.7%)

TR: Repetition time, TE: Echo time, FOV: Field of view, NEX: Number of excitations

Table 2. Gender and age distribution of the cases

MCA:

Table 3. Evaluation of CNN models in detection of stroke

	MobileNetV2	EfficientNet-B0
Metrics		
Sensitivity	96%	93%
Specifity	96%	93%
Accuracy	96%	93%
F1-score	0.96	0.93
kappa	0.92	0.86

Table 4. Evaluation of CNN models in classifying vascular territory of stroke

	MobileNetV2			EfficientNet-B0		
Metrics	MCA Strokes	Posterior Circulation Strokes	Watershed Strokes	MCA Strokes	Posterior Circulation Strokes	Watershed Strokes
Sensitivity	98%	92%	89%	91%	91%	79%
Specifity	93.5%	98.5%	97.5%	90.5%	96.5%	93.5%
PPV	88.29%	96.84%	94.68%	82.73%	92.86%	85.87%
NPV	98.94%	96.09%	94.66%	95.26%	95.54%	89.9%
Accuracy	95%	96.33%	94.67%	90.67%	94.67%	88.67%
F1-score	0.929	0.944	0.918	0.867	0.919	0.823
Total accuracy	93%			87%		
kappa	0.895			0.805		

MCA: Middle cerebral artery, PPV: Positive predictive value, NPV: Negative predictive value

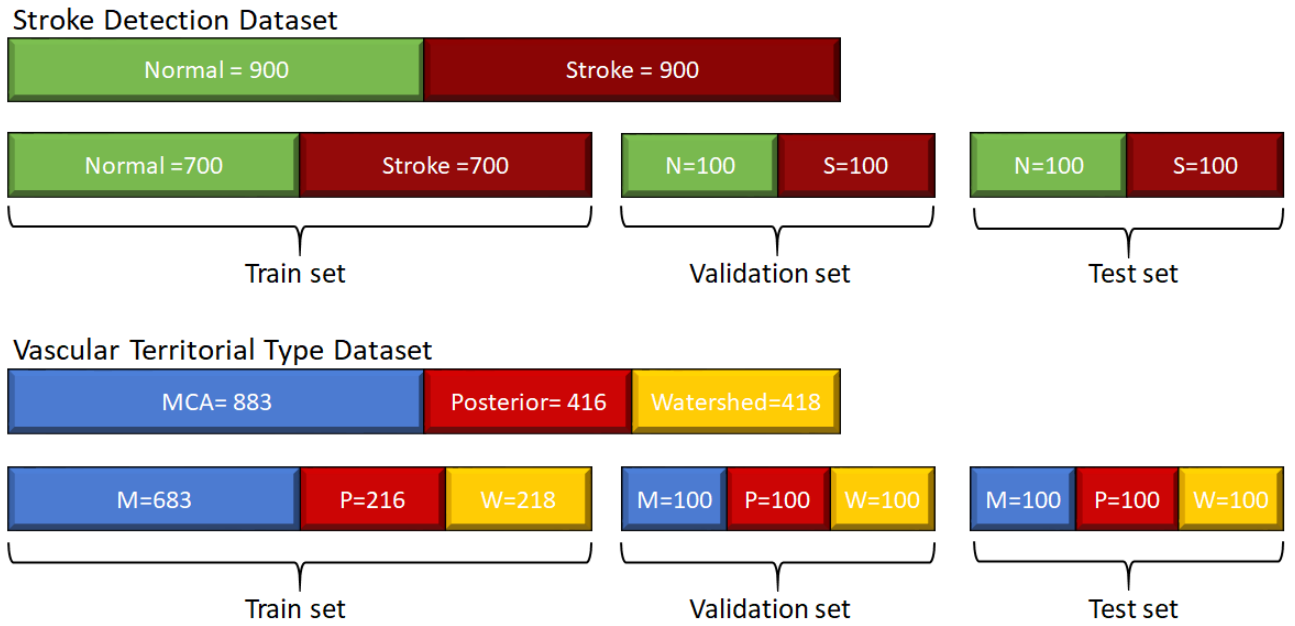


Figure 1: Dataset distribution (N: Normal, S: Stroke, M: Middle cerebral artery, P: Posterior circulation, W: Watershed)

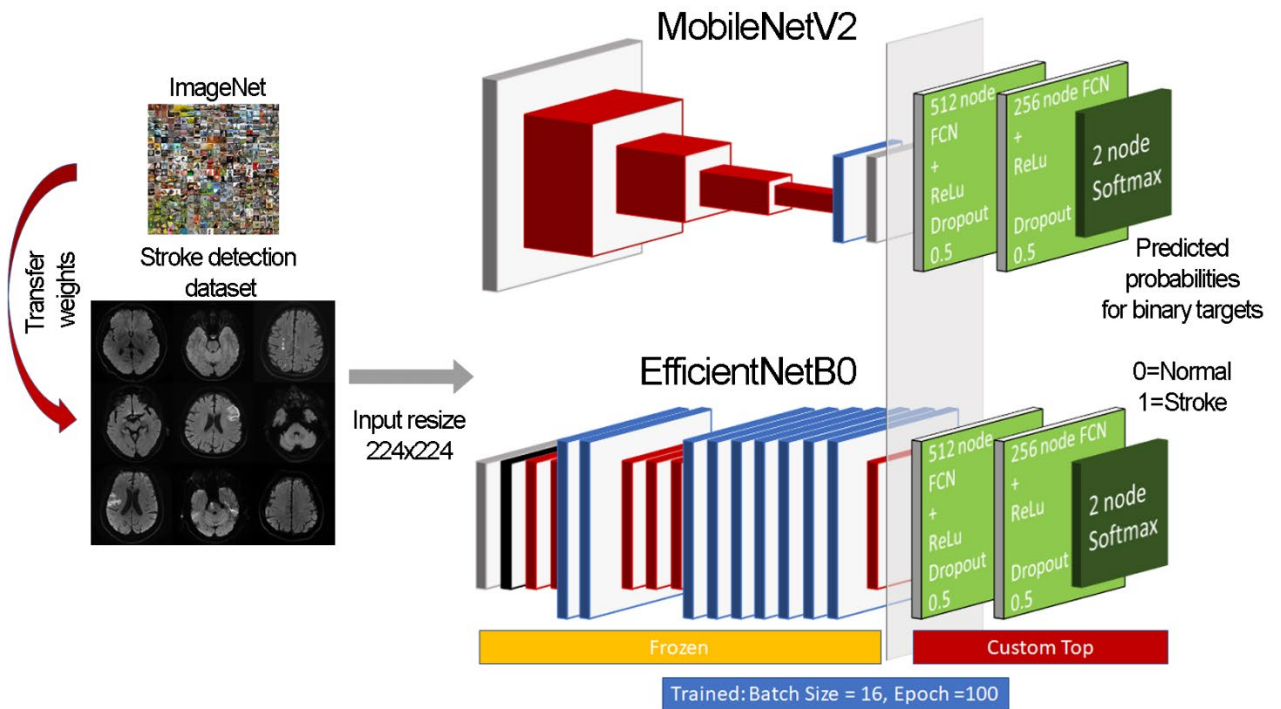


Figure 2: Ensemble transfer learning models by using the modified MobileNetV2 and EfficientNet-B0 models initialized with weights trained on ImageNet for binary classification of stroke presence

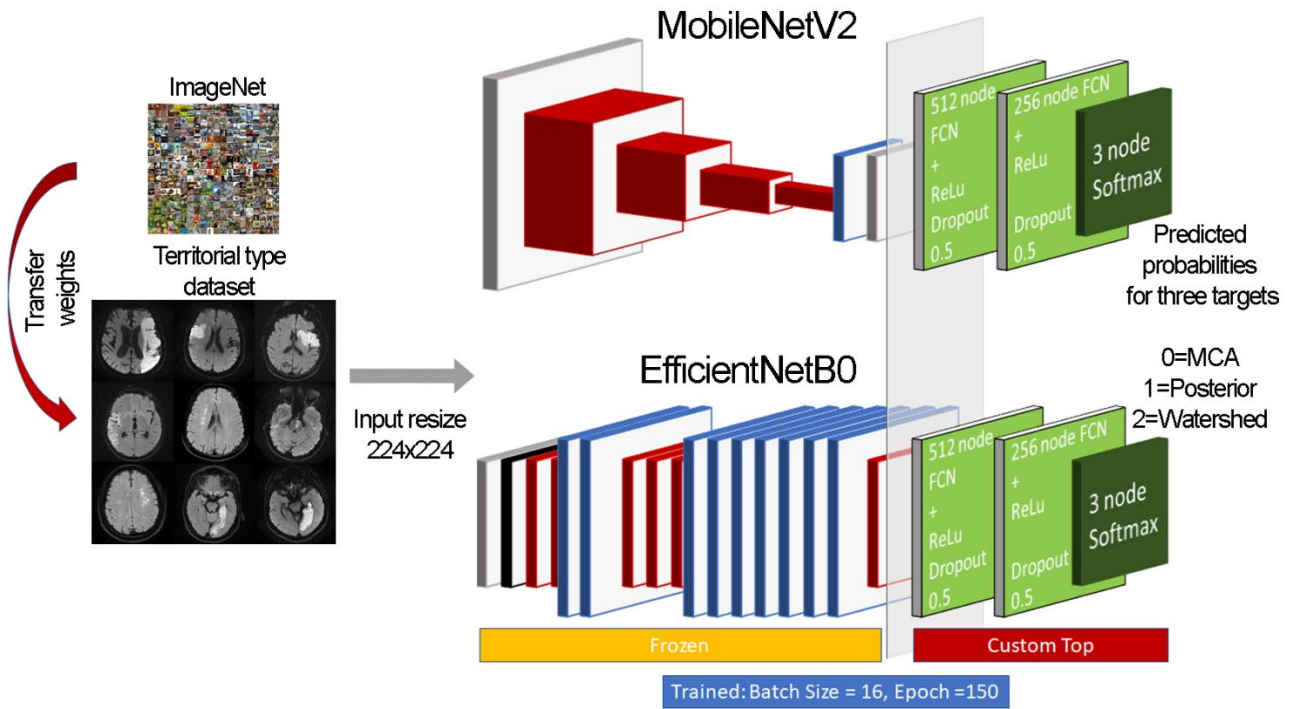


Figure 3: Ensemble transfer learning models by using the modified MobileNetV2 and EfficientNet-B0 models initialized with weights trained on ImageNet for multi-classification of vascular territorial type

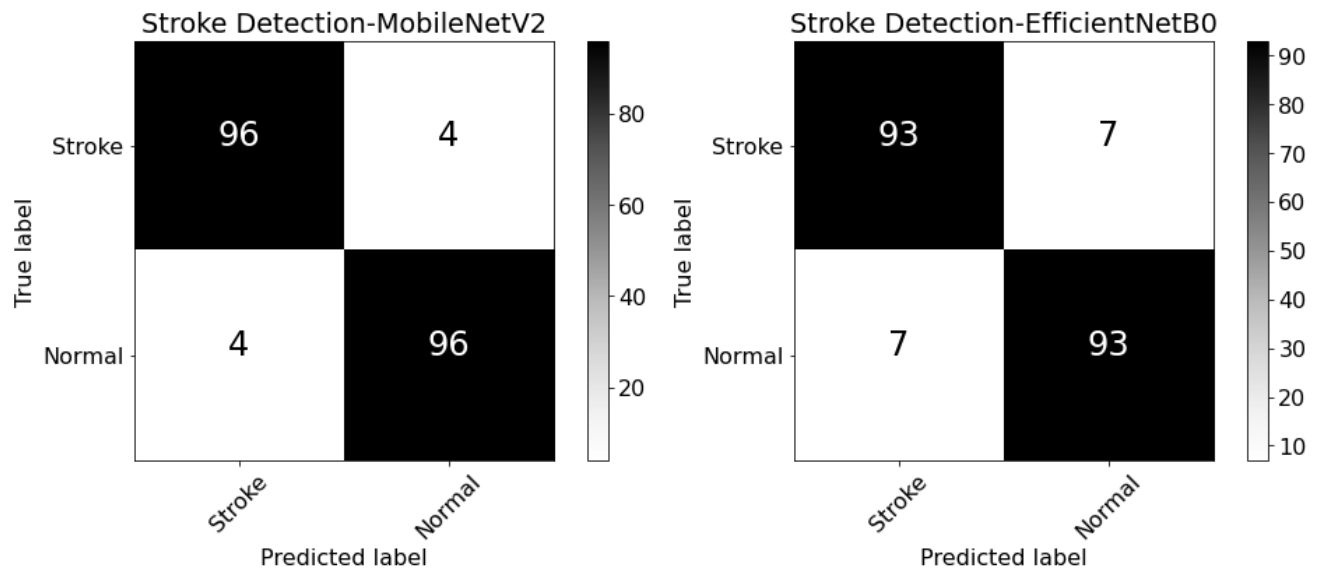


Figure 4: The confusion matrices in detecting the presence of stroke

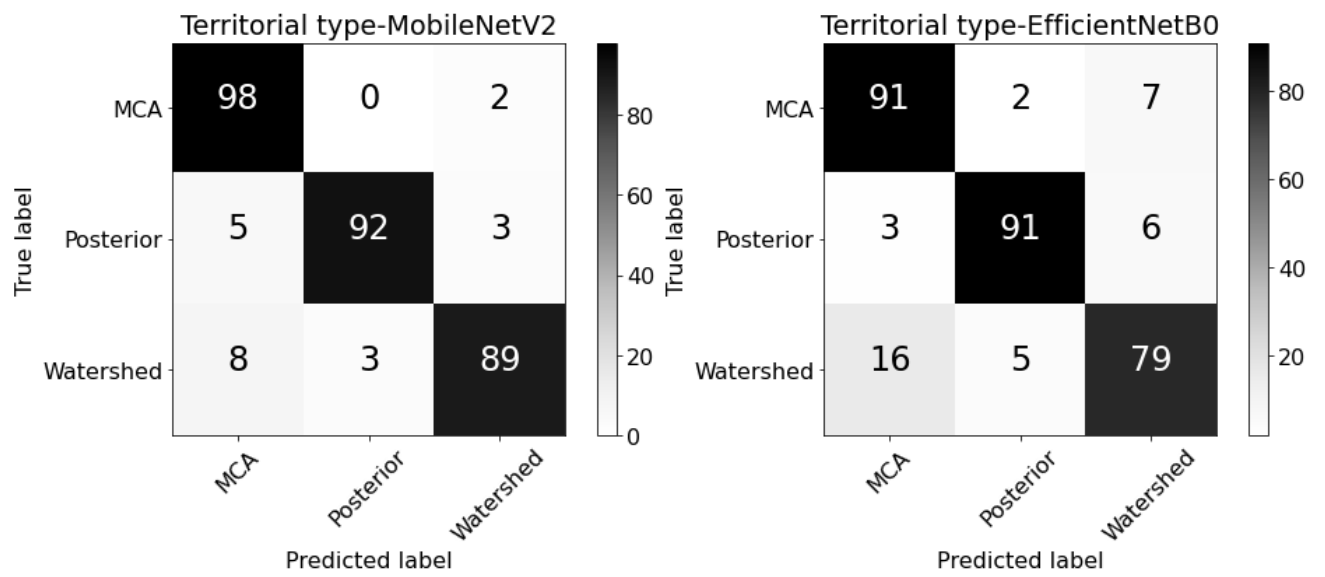


Figure 5: Confusion matrices of the models in classification of vascular territorial type

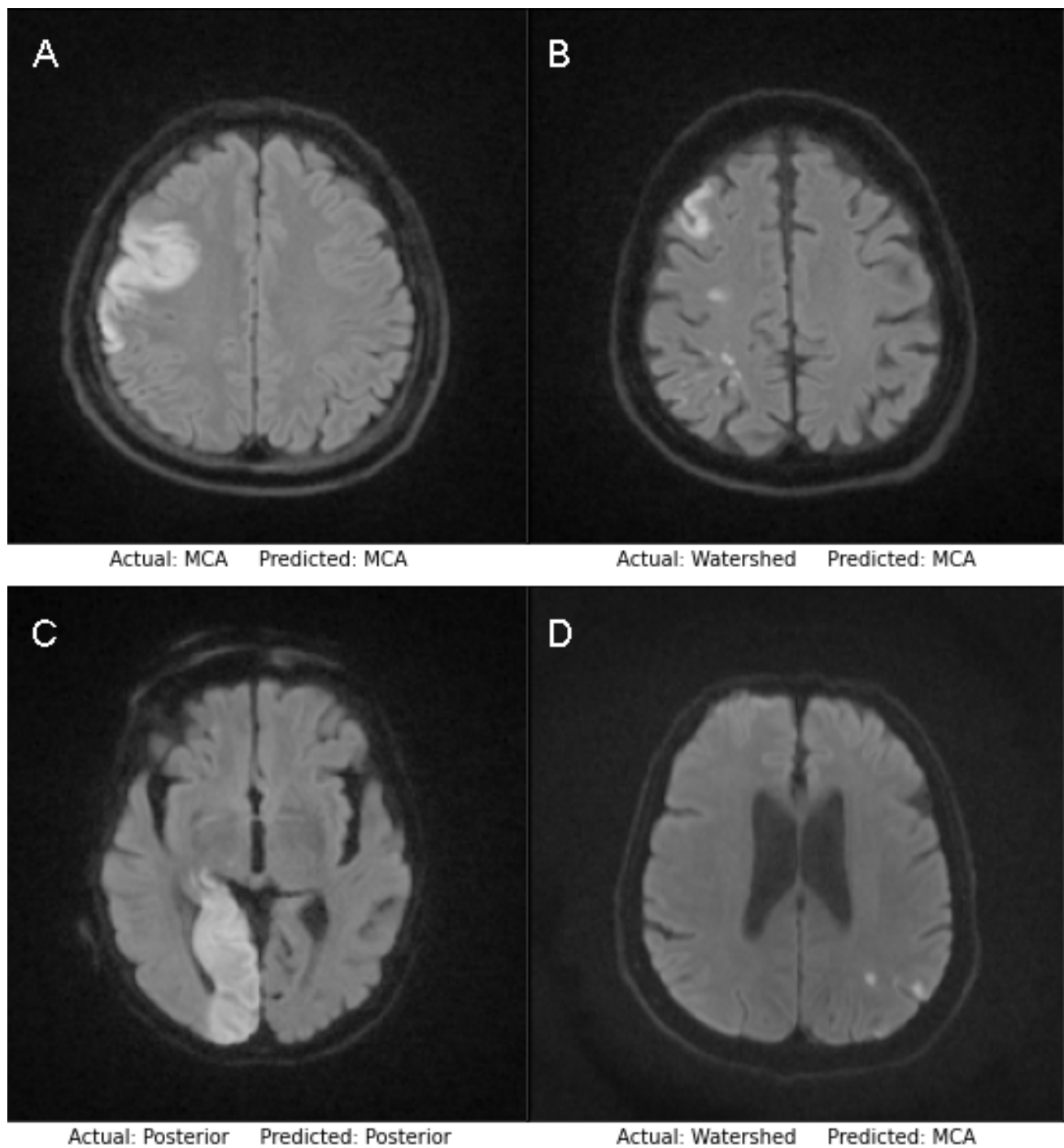


Figure 6: Examples of successful classification (A, C) and misclassification (B, D) by MobileNetV2 model (top row) and EfficientNetB0 model (bottom row)

ID-29 / OP: “Evaluation of the Effects of Insulin Resistance on ECG Parameters in Obese Children”

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Abstract (ID-29)

Introduction and Objective: As it is the case all over the world, in our country as well, the increasing trend of obesity prevalence in childhood causes obesity-related complications to be seen at an early age. Obesity alone is a risk factor for cardiovascular disease. Dyslipidemia, glucose metabolism disorder and insulin rezistansça, accompanying obesity, further increase this risk. Cases with obesity have an increased risk of arrhythmia and sudden death, even in the absence of cardiac dysfunction. Increased insulin resistance, neurohumoral and autonomic changes in obesity; can cause atrial and ventricular repolarization abnormalities.

In this study, it was aimed to investigate the effect of insulin resistance on ventricular repolarization parameters and to demonstrate that the risk of ventricular arrhythmia increases in obese children.

Materials and Methods: Between October and December 2020, when children between the ages of 2 and 18 apply to the Children's Endocrine outpatient clinic of the Izmir Tepecik Training and Research Hospital with complaints about being overweight, height and weight parameters were measured, and those children whose body weight according to age and gender was 99 percentile or +2 SDS, body mass index according to age and gender was 95 percentile or +2 SDS, were considered as obese. Pubertal / Pre-pubertal distinction was made According to the tenar stage. Total cholesterol-Triglyceride-HDL-LDL was measured in the blood samples. The insulin resistance index homeostasis assessment model (HOMA-IR) was applied using the following equation. A value of 2.5 and above in pre-pubertal patients and a value of 4 and above in pubertal patients was considered to have insulin resistance. Oral glucose tolerance test (OGTT) was performed on these patients by measuring blood glucose and insulin concentrations. Insulin resistance was calculated according to peak insulin, 2nd hour insulin and total insulin values obtained by OGTT. The patients were divided into two groups as “Insulin resistant and non-insulin resistant”. 12-lead ECGs were taken with the "Cardiovit AT-102 plus" brand ECG device.

Heart rate, Pmax, Pmin, P dispersion, QTmax, QTmin, QT dispersion, QTcmax, QTcmin, QTc dispersion, Tp-e intervals, Tp-e / QT, Tp-e /

QTc ratios were calculated electronically. The data were evaluated in the IBM SPSS Statistics Standard Concurrent User V 26 (IBM Corp., Armonk, New York, USA) statistical package program. For Triglyceride, HDL and LDL variables that did not show normal distribution, the patient groups with and without insulin resistance were compared using the Mann-Whitney U test. Comparisons between groups for variables with normal distribution were made using an independent two-sample t test. The relationship between OGTT peak insulin, OGTT 2nd hour insulin, OGTT total insulin, VA SDS and BMI SDS variables of ECG variables were evaluated with Pearson correlation analysis. A p value of <0.05 was considered statistically significant.

Results: A total of 50 patients (25 (50%) with insulin resistance and 25 (50%) without insulin resistance) were included in the study. The average age was calculated to be 13.0 (4.0-17.0) in the group with insulin resistance and 10.0 (5.0-16.0) in the group without insulin resistance ($p = 0.087$). Body weight SDS was calculated to be higher in patients with insulin resistance (3.18 ± 0.81) than without insulin resistance (2.69 ± 0.69) and likewise, body mass index SDS (2.91 ± 0.46 and 2.57 ± 0.42) ($p = 0.027$, $P = 0.010$), respectively. Triglyceride and HDL were calculated as high as 151.0 (113.5-21.0) and 38.0 (36.5-42.5) in insulin-resistant patients, 107.0 (79.0-154.5) and 49.0 (39.0-55.5) ($p = 0.256$, $P = 0.248$) in patients without insulin resistance, respectively. Systolic blood pressure values were significantly higher in the group with insulin resistance ($t = 2.611$, $P = 0.012$). The difference between diastolic blood pressure values is not statistically significant ($p = 0.088$). There was no significant difference in other parameters. In ECG parameters between obese children without insulin resistance and obese children with insulin resistance, Pmin (0.116 ± 0.028 / 0.129 ± 0.023 / $p=0.089$), Tp-e intervalence (0.041 ± 0.004 / 0.049 ± 0.015 / $p = 0.018$) Tp -e / QT ratio could be determined high (0.125 ± 0.012 / 0.148 ± 0.050 / $p = 0.035$). There was no statistically significant difference in other ECG parameters in the two groups. There couldn't be determined statistically a significant relationship between the ECG values and peak insulin, 2nd hour insulin and total insulin values of patients with insulin resistance. There couldn't be determined statistically a significant correlation between BMI SDS and VA SDS values and ECG parameters of 50 patients in the study. There is a negative correlation between BMI SDS and QTc max in patients with insulin resistance ($r = -0.409$; $p = 0.042$). There is a negative correlation between VA SDS values and QTc max and QTc min values in patients with insulin resistance ($r = -0.576$; $p = 0.003$ & $r = -0.482$; $p = 0.015$). There was not found a statistically significant correlation between BMI SDS and VA SDS values and ECG variables in patients without insulin resistance.

Conclusion: In our study, ECG parameters showing susceptibility to ventricular arrhythmias among the groups; Although there was no significant difference in terms of QT, QTc duration and QT and QTc dispersions, Tp-e interval and Tp-e / QT ratios could be determined higher in obese individuals with

insulin resistance compared to those without insulin resistance. Therefore, considering that atrial and ventricular arrhythmias are the leading causes of morbidity and mortality in obese individuals and patients with insulin resistance, long-term follow-up of these cases is required in terms of developing arrhythmias. Obese individuals should be carefully evaluated in terms of atrial and ventricular depolarization and repolarization parameters with 12-derivation ECG during outpatient clinic visits with or without insulin resistance, and annual 24-hour Holter control should be performed to detect arrhythmias.

ID- 31 / OP: “The Role of CHA2DS2-VASc Score in Predicting the Patency of Saphenous Vein Grafts in Patients with Coronary Artery Bypass Graft Surgery”

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Abstract (ID-31)

Introduction: Coronary artery bypass graft surgery (CABG) is a common treatment method in which saphenous vein grafts (SVG) and arterial grafts are used together in severe coronary artery disease. However, SVG have lower patency rates than arterial grafts.

Percutaneous coronary intervention (PCI) to saphenous grafts is risky due to rupture, distal embolization, and no-reflow phenomenon. The CHA2DS2-VASc score is used to predict thromboembolic events in nonvalvular atrial fibrillation as well as to predict prognosis in cardiovascular events. In this study, we planned to research the relation between CHA2DS2-VASc score and postoperative SVG patency rates in patients undergoing CABG.

Materials and Methods: Eighty-nine patients with angina after CABG surgery who underwent coronary angiography were analyzed retrospectively. Stenosis of 50% or more in at least one saphenous vein graft was accepted as saphenous vein graft disease (SVGD). We compared these patients in two groups concerning the presence of 50% or more stenosis in the SVG.

Results: CHA2DS2-VASc score, systemic inflammation index (SII), neutrophil to lymphocyte ratio (NLR) were higher in SVGD group. Lymphocyte to monocyte ratio (LMR) was also lower in this group. We observed in multivariate logistic regression analysis, SII and CHA2DS2-VASc score as independent predictors of SVGD. [SII; odds ratio(OR)= 1.003, 95% confidence interval(CI) 1.001-1.005; P<0.001, CHA2DS2-VASc score ≥ 3.5 ; (OR)= 5.263, 95% CI 2.176-12.728; P<0.001, respectively].

Conclusion: In the light of the results we have found, the CHA2DS2-VASc score and SII, which are easy to calculate in daily practice, can help us in predicting SVGD.

Keywords: CHA2DS2-VASc score, saphenous vein graft patency, systemic inflammation index

ID-32 / OP: “Ancillary Findings in Distinguishing Between Anterior Cruciate Ligament Muroid Degeneretaion and Sprain on MRI”

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Abstract (ID-32)

Introduction and Purpose: The anterior cruciate ligament (ACL) is one of the most important anatomical stabilizers of the knee joint. ACL mucoid degeneration (MD) is characterized by structural disruption of collagen fibrils and accumulation of glycosaminoglycans between them. In daily magnetic resonance imaging (MRI) practice, ACL sprain cannot be differentiated from MD in some cases. Our aim in this study is to determine the ancillary parameters in the distinction between ACL sprain and MD.

Materials and Methods: This study was approved by the institutional review board. Knee MRIs taken between January 2018 and June 2020 were reviewed retrospectively. Cases with MD in the ACL were included. ACLs with high signal on T1-weighted and proton density images, with normal course of fibrils on proton density images, and without tear were considered as MD. 21 cases with early posttraumatic period, inflammatory arthritis, poor image quality and imaging position, ACL ganglion cyst, connective tissue disease, surgery and tumor history were excluded. There were 77 MD cases meeting the study criteria. As the control group, a total of 77 patients with ACL sprain, from MRIs taken in the same date range, were randomly selected. Age, gender, and joint side were noted. The condition of the posterior cruciate ligament, medial and lateral collateral ligaments were evaluated. The presence of bone marrow edema, subchondral cysts and sclerosis, chondromalacia in the femoral/tibial/retropatellar/trochlear cartilage, medial and lateral meniscus tear, effusion, and osteochondral body were noted.

Results: A total of 154 patients were included, 77 patients in each group. The mean age was 42.3 ± 13.7 in the sprain group and 54.3 ± 11.7 in the MD group ($p < 0.001$). Male gender (n:44, 66.7%) was more common in the sprain group, female gender (n:55, 62.5%) was more common in the MD group ($p < 0.001$). Tibial and femoral subchondral cysts were more common in the MD group ($p < 0.001$ and $p = 0.016$, respectively). Subchondral sclerosis was more common in the MD group ($p = 0.003$). Chondromalacia was more common in the MD group on both the tibial and femoral surfaces ($p < 0.001$). Patients with both medial and lateral meniscal tears were more common in the MD group ($p < 0.001$). There was no statistically significant difference between the two groups in terms of other parameters. Presence of a subchondral cyst in the tibia (OR:41.240; 95%CI:5.296–321.132) and patient age (OR:1.045; 95%CI:1.010–1.080) were found to be significant risk factors for MD.

Discussion and Conclusion: ACL sprain and MD are frequently encountered with the increasing prevalence of MRI. ACL sprain is the primary differential diagnosis of ACL MD. In the literature, various criteria and findings have been defined their diagnosis (1-6). In this distinction, especially age and the presence of tibial subchondral cyst, and also gender, subchondral sclerosis, chondromalacia, and meniscal tear are important for the diagnosis of MD.

Full-text (ID-32): “Ancillary Findings in Distinguishing Between Anterior Cruciate Ligament Muroid Degeneration and Sprain On MRI”

Introduction: The anterior cruciate ligament (ACL) is one of the most important anatomical stabilizers of the knee joint. Traumatic or non-traumatic ACL injuries can cause joint instability and pain. ACL sprain and muroid degeneration (MD) are encountered with increasing frequency with the increase in life expectancy and the use of magnetic resonance imaging (MRI).

ACL MD is characterized by accumulation of glycosaminoglycans between collagen fibrils and structural deterioration (1). On MRI, it appears as a thick, blurred, and high-signal ligament in fluid-sensitive sequences. The distinction of ACL sprain and MD may lead to diagnostic difficulties both in imaging and in clinical practice (2). It has been stated that findings such as medial tibiofemoral compartmental osteoarthritis and medial meniscus pathologies can be seen in both conditions (3). However, there is no detailed study and sufficient information about distinguishing between ACL sprain and ACL MD on MRI. Our aim is to determine the ancillary parameters in the differentiation between ACL sprain and MD.

Materials and Methods: Institutional review board approval and a waiver of informed consent were obtained for this retrospective study. Knee MRIs taken between January 2018 and June 2020 were reviewed retrospectively. Cases with MD in the ACL were included. ACLs with high signal on T1-weighted and proton density images, with normal course of fibrils on proton density images, and without tear were considered as MD. Cases with early posttraumatic period, inflammatory arthritis, poor image quality and imaging position, ACL ganglion cyst, connective tissue disease, surgery and tumor history

were excluded. There were 77 MD cases meeting the study criteria. As the control group, a total of 77 patients with ACL sprain, from MRIs taken in the same date range, were randomly selected.

Age, gender, and joint side were noted. The condition of the posterior cruciate ligament, medial and lateral collateral ligaments were evaluated. The presence of bone marrow edema, subchondral cysts and sclerosis, chondromalacia in the femoral/tibial/retropatellar/trochlear cartilage, medial and lateral meniscus tear, effusion, and osteochondral body were noted.

Descriptive statistics were presented as mean, standard deviation, frequency distribution, and percentage. Student's t-test was used for the comparison of two independent groups with normal distribution. Pearson's chi-square test was used to compare categorical variables in independent groups. Logistic regression analysis was performed with variables that were statistically significant. Statistical significance value of this study was accepted as $p < 0.05$.

Results: A total of 154 patients were included, 77 patients in each group. The mean age was 42.3 ± 13.7 in the sprain group and 54.3 ± 11.7 in the MD group ($p < 0.001$). Male gender (n:44, 66.7%) was more common in the sprain group, female gender (n:55, 62.5%) was more common in the MD group ($p < 0.001$).

Intraosseous cyst formation was detected more in the MD group at both tibial (n:36, 97.3% in MD group, n:1, 2.7% in sprain group) and femoral (n:26, 66.7% in MD group, n:13, 33.3% in sprain group) articular surface ($p < 0.001$ and $p = 0.016$, respectively). Subchondral sclerosis was more common in the MD group (n:13, 86.7%) than in the sprain group (n:2, 13.3%) ($p = 0.003$). Chondromalacia was more common in the MD group for both tibial (n:57, 66.3% in MD group; n:29, 33.7% in sprain group) and femoral (n:60, 62.5% in MD group; n:36, 37.5% in sprain group) articular cartilages ($p < 0.001$ for both). Both patients with medial meniscus (MM) tear (n:53, 63.9%) and patients with lateral meniscus tear (n:24, 82.8%) were more common in the MD group ($p < 0.001$ for both). There was no statistically significant difference between the two groups in terms of other parameters.

The probability of being MD increased 41.2 times (95% Confidence Interval: 5.296-321.132) in cases with tibia cysts, and the probability of MD increased 1.05 times (95% Confidence Interval: 1.010-1.080) with each 1-year increase in age ($p < 0.001$ and $p = 0.011$, respectively).

Discussion: ACL sprain is the primary differential diagnosis of ACL MD, and our findings aim to help in this differentiation. There are studies evaluating the relationship between ACL pathologies and patient age and the mean age of ACL MD cases was reported as 52 and 55.5 (4, 5). In a study comparing normal, MD and tear groups, no significant difference was found between the groups for age and gender (6). In our study, the mean age of ACL MD was 54.3, and it was in a similar range with the literature. Compared to the ACL sprain group, it was found to be significantly higher. We also found that increasing age is

an independent risk factor for ACL MD and that each 1-year increase in age increases the risk of developing ACL MD 1.05 times.

We found female gender to be more frequent in the ACL MD group. This may be related to anatomical factors. Kwee et al. found no significant gender difference between normal, MD and tear groups (5). Lintz et al. showed that ACL MD was equally distributed between the genders (7). The reason why it was detected more frequently in females in our study may be that the female patients in our study group were more advanced in age or had other causes that increase degeneration, such as body mass index. Subchondral sclerosis, intraosseous cysts in femur and tibia, femoral and tibial chondromalacia, which can be considered as degeneration markers, were found more frequent in the ACL MD group in our study. Kim et al. showed that 96% of ACL MD cases were accompanied by osteoarthritic changes (8). ACL MD was found to be associated with chondral lesion, meniscal tear, intraosseous cyst, and bony erosion (1, 9). We did not find a relationship between patellar/trochlear chondromalacia and ACL MD. If we only had looked at high-grade chondromalacia, it could have been more in MD group. Because early-stage patellar and trochlear chondromalacia is known to be a problem that can also be seen in young people. Tibial plateau bone marrow lesion has been previously associated with ACL MD (9). In our study, although no significant difference was found in bone marrow edema, intraosseous cyst formation in the tibial plateau was found to be an independent risk factor for ACL MD by increasing the probability of ACL MD 41.2 times.

ACL pathologies have been associated with meniscal tears (5, 8). We found both medial and lateral meniscal tears statistically more frequent in the ACL MD group. The higher incidence of meniscal tears in the ACL MD group may be related to joint degeneration, but more MM tears were expected in the sprain group. Because in the presence of ACL damage, both anterior forces on the MM and medial tibiofemoral compression forces increase, which predisposes to MM tears.

As a result, MRI findings of ACL MD and sprain may be confused with each other. In case of suspicious findings in ACL regarding sprain or MD, patients with advanced age, female gender, intraosseous cyst, subchondral sclerosis, meniscal tear, femoral and tibial chondromalacia are more likely to have ACL MD.

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Figure 1: Anterior cruciate ligament mucoid degeneration. Fat-suppressed proton density sagittal image shows thickened and hyperintense anterior cruciate ligament (arrowheads) with preserved normal fibrillary course. There is also a small amount of effusion, and osteoarthritic changes and chondromalacia in the patellofemoral joint.



Figure 2: Femoral and tibial chondromalacia. There is a full-thickness cartilage defect (arrows) in the medial compartment on the fat-suppressed proton density coronal plan image. Note the anterior cruciate ligament with mucoid degeneration at the intercondylar notch and the extruded medial meniscus with a complex tear.



Figure 3: Intraosseous cysts. On the fat-suppressed proton density sagittal image of a patient with anterior cruciate ligament mucoid degeneration, intraosseous cyst formation (arrows) is observed on both the femoral and tibial faces.

ID-33 / OP: “The Relationship Between Thrombus Burden in Patients with Acute ST Segment Elevation Myocardial Infarction and Obesity”

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Abstract (ID-33)

Introduction and Purpose: Large thrombus burden (LTB) lesions in the context of primary percutaneous coronary intervention (p-PCI) have been related to unsuccessful angiographic reperfusion and unfavorable clinical outcomes. In our study, we aimed to investigate the relationship between thrombus burden in acute myocardial infarction with ST elevation (STEMI) and obesity

Materials and Methods: Patients who underwent p-PCI due to acute STEMI between January 2019 and January 2021, body mass index over 30 and normal weight patients were included in the study. The patients were divided into two groups as those obese patient and control group.

Results: The average age of 160 patients included in the study was 63 ± 9 . 58% (94) had male gender and 56% had HT. There was no statistically significant difference in thrombus burden obesity patients (n=80) and control group (n=80) ($p=0.42$) In the univariate and multivariate logistic regression analysis, a significant relation was found between obesity (odds ratio [OR]:4,1, 95% confidence interval [CI]: 2.9-6,5, $p<0.001$), female gender (OR: 0.11, 95% CI: 0.02-0.5, $p=0.005$), hyperlipidemia (OR: 11,2, 95% CI: 4.9-34,2, $p=0.002$), and low EF (OR: 0.078, 95% CI: 0.65-0.94, $p<0.001$).

Discussion and Conclusion: In our study, a significant relationship was found between obesity and thrombus burden in acute STEMI. Obesity and co-morbid conditions increase the thrombus burden in STEMI.

ID-35 / OP: “Investigation of the Relationship Between Angiotensin II and TLR4 on Umbilical Arteries isolated from Pregnants Of Normal and Gestational Diabetes”

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Abstract (ID-35)

Introduction and Purpose: It has been investigated the relationship of Angiotensin II and Toll-Like Receptor 4 (TLR4) in umbilical arteries of pregnant with normal and gestational diabetes mellitus (GDM) in this in vitro study. Vasoconstrictor effects of AII, the changes of these effects with the TLR4 agonist and antagonists, and mRNA expression levels of normal and GDM umbilical arteries have been determined.

Materials and Methods: Prepared arteries from normal and GDM umbilical cords have been inserted in an isolated organ bath filled with Krebs-Henseleit solution (KHS) and aired with a mixture of 95% O₂ -5% CO₂ under fixed temperature at 37°C and responses after agent applications have been recorded isometrically. Arteries have been incubated with N^ω-Nitro-L-arginine methyl ester hydrochloride (L-NAME) (10⁻⁴ M, 20 minutes (min.)), lipopolysaccharide (LPS) (0.3 µg/ml, 90 min.), TAK-242 (10⁻⁶ M, 20 min.), Berberine (BBR) (10⁻⁵ M, 30 min.), and AII (10⁻⁹-10⁻⁴ M) cumulatively. The findings have presented as maximum contraction response and pD₂ values of AII. mRNA expression levels of TLR4 and Angiotensin II type 1 receptor gene AGTR1 have been measured via qRT-PCR analysis in normal and GDM arteries as well.

Results: No statistical significance has been observed in maximum contraction responses of AII in normal and GDM umbilical arteries. As for the comparison of pD₂ values, increased sensitivity to AII has been shown in the GDM group. There is no increased sensitivity to AII has been seen in the GDM group umbilical arteries with the incubation of L-NAME and LPS contrary to normal arteries. As distinct from the normal group, the tissue incubation with TAK-242 has not changed the maximum contraction response in the GDM arteries. However, sensitivity to AII has been reduced. BBR incubation has shown a significant decrease in the maximum response of AII in normal arteries. However, it has failed in the GDM group. Unexpectedly, BBR has increased the sensitivity of AII in the normal group and showed no difference in the GDM group. No statistical difference has been noted between the measured groups in the qRT-PCR analysis.

Discussion and Conclusion: It has been shown TLR4 partially modulates the vasoconstrictive effect of AII between the normal and GDM umbilical arteries. This study complies with literature findings on the affiliation of AII and TLR4. However, more comprehensive studies with high subject numbers are needed.

Keywords: Angiotensin II, gestational diabetes mellitus, LPS, TAK-242, TLR4

Full-text (ID-35)

Introduction: Pregnancy is characterized by several physiological changes such as hyperplasia of pancreatic beta-cells to supply glucose for the development of a fetus. Thus, insulin sensitivity has increased in early pregnancy. However, diabetogenic hormones (human placental lactogen, growth hormone, progesterone, cortisol, and prolactin) turn the glucose balance into insulin resistance during pregnancy (1). GDM is known to have high blood glucose during pregnancy due to lack of insulin secretion of pancreatic beta cells basically (2).

GDM has resulted in some local changes occurring in the placenta and especially in the umbilical cord (3). Thus, it emphasizes vasomotor agent-dependent pathophysiologies. AII is a potent vasoconstrictor agent that affects the umbilical cord (4). TLR4 is a receptor that has been related to the pathology of diabetes (5). One of the studies has shown an interaction between AII and TLR4 (6). This study aims to investigate the relation between AII and TLR4 in normal and GDM umbilical arteries experimentally.

Materials and Methods: This study was carried with umbilical cord samples of 7 normal and 7 GDM pregnant women taken from Meram Faculty of Medicine Gynecology and Obstetrics Clinic, Necmettin Erbakan University between 01/02/2021-30/04/2021 and approved by Meram Faculty of Medicine Institutional Review Board for Research, Necmettin Erbakan University numbered as 2020/2400.

Umbilical arteries were isolated from the cords and prepared for isolated organ baths (Commat, Ankara, Turkey). Prepared arteries were studied under optimum settings and responses after agent applications were recorded via a transducer (BIOPAC MP36, California USA).

Chemicals: Lipopolysaccharide (LPS) L3129 (0,3 µg/ml dissolved in distilled water) (TLR4 agonist), TAK-242 614316 (10⁻² M stock solution prepared with dimethyl sulfoxide (DMSO) and further diluted with distilled water) (TLR4 antagonist), Berberine hydrochloride (BBR) B3251 (DMSO-distilled water (1:1) 10⁻⁵ M) (TLR4 antagonist), Nω -Nitro-L-arginine methyl ester hydrochloride (L-NAME) N5751 (dissolved in distilled water) were purchased from Sigma-Aldrich, Angiotensin II (human) (AII) 17150 (dissolved in distilled water) was purchased from Cayman Chemical.

Isolated organ bath studies: Arteries were incubated with L-NAME (10⁻⁴ M, 20 minutes (min.)) (7), LPS (0.3 µg/ml, 90 min.) (8), TAK-242 (10⁻⁶ M, 20 min.) (9), BBR (10⁻⁵ M, 30 min.) (10), and AII (10⁻⁹-10⁻⁴ M) cumulatively. The contraction responses of AII were calculated as a ratio to KCl.

qRT-PCR analysis: mRNA expression levels of TLR4 and AGTR1 were measured normalized to GAPDH housekeeping gene via qRT-PCR analysis in all defined groups in the study. Samples were run in duplicate and data was analyzed using the $2^{-\Delta\Delta C_t}$ method.

Statistical analysis: Compatibility of the data was tested with the Shapiro-Wilk test and it was showed normal distribution. Maximum contraction (Emax) and the negative logarithm of the EC50 of an agonist (pD2) values were analyzed with the one-way analysis of variance and posthoc Dunnett's test for further analysis. qRT-PCR analysis was assessed with the Mann-Whitney method. GraphPad Prism version 5.0 program was used for all analysis. Significance was accepted as below 0.05.

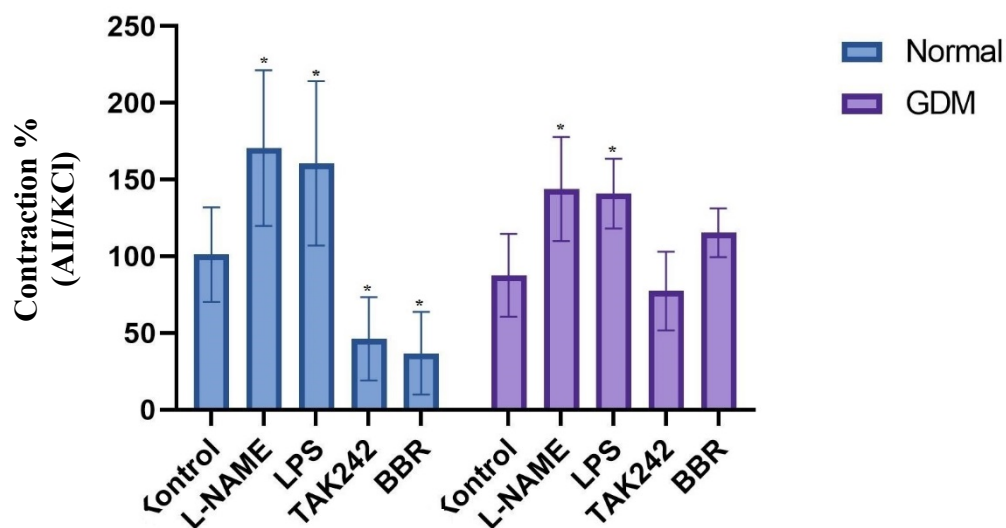
Results: Maximum contraction responses of AII were not different between normal and GDM umbilical arteries ($p>0.05$), as for pD2 values, increased sensitivity was observed in the GDM group ($p<0.05$, Graph 1 and 2).

L-NAME incubation increased Emax and pD2 values in normal arteries ($p<0.05$) Emax showed increment ($p<0.05$) in the normal group but, not for the pD2 value in the GDM group ($p>0.05$). Values of the LPS group were similar to the L-NAME group (Graph 1 and 2).

TAK-242 incubation decreased Emax of AII ($p<0.05$) however, showed no effect on pD2 in the normal group ($p>0.05$). The Emax value was similar to the control group ($p>0.05$) while the pD2 value was decreased in the GDM group ($p<0.05$), and the sensitivity to AII decreased (Graph 1 and 2).

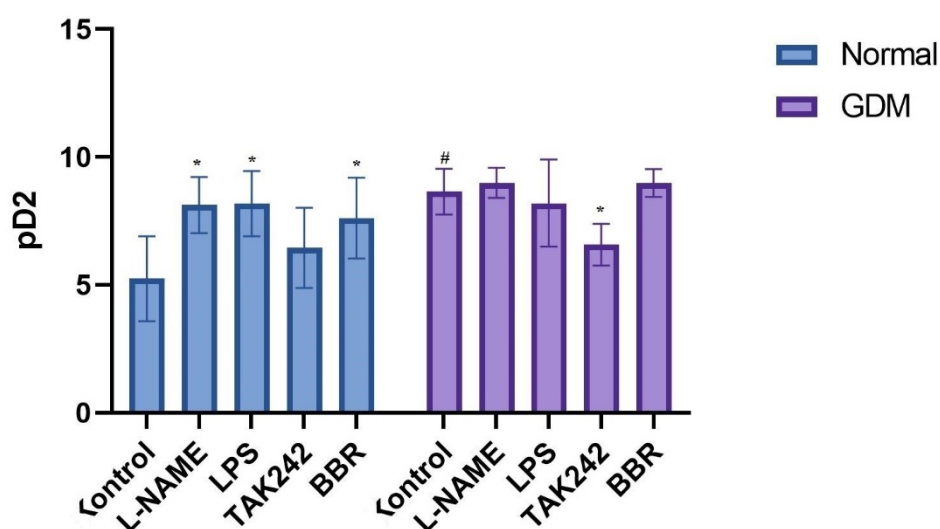
BBR incubation decreased Emax of AII tremendously ($p<0.05$), the pD2 value also increased unexpectedly ($p<0.05$). Sensitivity to AII was increased by BBR in the normal group. There was no significant difference in Emax and pD2 values of the GDM group ($p>0.05$, Graph 1 and 2).

Expression levels of TLR4 and AGTR1 were measured in the qRT-PCR analysis. The analysis was failed to show any statistically significant difference between the normal and the GDM group ($p>0.05$, Graph 3).



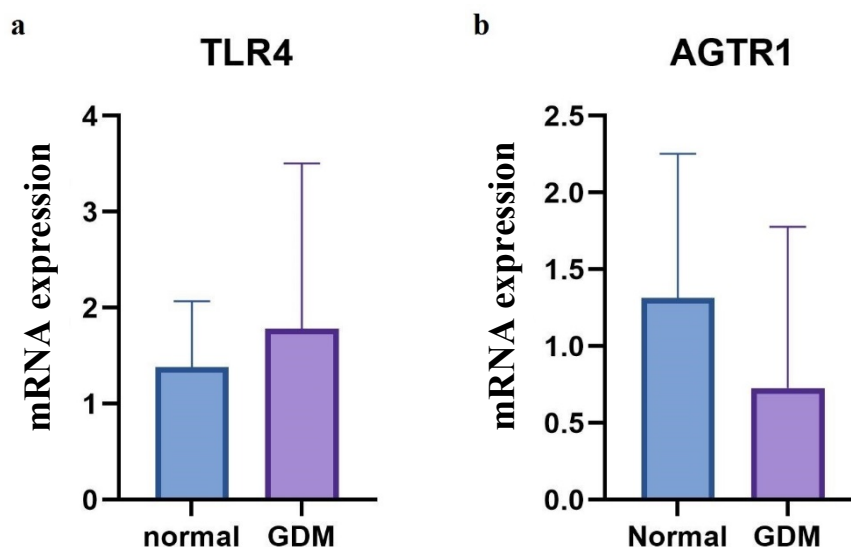
Graph 1. Maximum contraction response values (Emax) of AII by groups

* Compared to the control group $p < 0.05$



Graph 2. Maximum contraction response of AII as pD2 values by groups.

* Compared to the control group $p < 0.05$, # Compared to the normal control group $p < 0.05$



Graph 3. mRNA expression levels of TLR4 (a) and AGTR1 (b) in the normal and the GDM arteries. Analysis was run in duplicate (n=7) ($p>0,05$).

Discussion: This study demonstrated the sensitivity to AII increased in the GDM group compared to the normal one. A study conducted with the normal and GDM groups showed that potassium channel expression was less in the GDM group than normal (11).

L-NAME is a nitric oxide synthase inhibitor that is used in experimental pharmacology to discover nitric oxide mediated effects (12). In compliance with this fact, L-NAME incubation increased Emax and pD2 values in the normal group also, Emax in the GDM group. But, failed to improve sensitivity to AII in the GDM group.

LPS showed a similar effect trend with L-NAME. Literature findings were supportive of this finding as showed that effects of AII and TLR4 activation had similar outcomes. Also, AII stimulated TLR4 as its agonist LPS did (13)(14).

As predicted, TAK-242 and BBR decreased Emax values in the normal group. However, failed to accomplish in the GDM group arteries. The antagonists resulted in different effect patterns for the sensitivity to AII. TAK-242 didn't affect the sensitivity to AII in the normal group on the other hand it was hypothesized to decrease the sensitivity as well Emax. The assumption was confirmed as TAK-242 decreased the sensitivity for the GDM group. The partial increase of TLR4 expression might have a role in the failure of Emax in the GDM group. It was depicted that other vasodilatation mechanisms of BBR except TLR4 might have affected negatively since TAK-242 decreased the sensitivity to AII while BBR didn't (15)(16).

Conclusion: It has shown TLR4 partially modulates the vasoconstrictive effect of AII between the normal and GDM umbilical arteries. This study complies with literature findings on the affiliation of AII and TLR4. However, more comprehensive studies with high subject numbers are needed.

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ID-36 / OP: “Anesthesia Management in Adolescent Bariatric Surgery”

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Abstract (ID-36)

Introduction and Purpose: The problem of obesity has started to increase in children and adolescents, similar to adults, due to irregular and unhealthy diet, limitation of physical activity and genetic factors. It is considered a complex disease characterized by behavioral, endocrine and metabolic changes. It can also cause systemic complications. Various difficulties and complications may be encountered in the anesthesia management of obese patients. Difficult airway, difficulty in intravenous and intra-arterial intervention, difficulty in positioning the patient, difficulty in finding suitable equipment for the patient, intraoperative and postoperative pulmonary complications, prolonged recovery and difficulty in patient transport are important stages in perioperative management. In our presentation, we wanted to discuss perioperative anesthesia management in adolescent bariatric surgery, which is not performed frequently, with a case study.

Case Presentation: A 16-year-old girl with a height of 136 kg and 175 cm (BMI: 44.4) was evaluated for bariatric surgery due to obesity. She had a history of hypertension, sleep apnea and insulin resistance. In her physical examination, her mouth opening was normal, her mallampati score was 3, and her neck circumference was 43 cm. System examination and laboratory values were normal. After the preoperative difficult intubation preparations were completed, the patient was monitored. The vein was placed without any problems. The head and neck of the patient in the supine position were supported and the external auditory canal and sternal notch were brought to the same plane. The table is given a ramp position. The patient was preoxygenated with 100% oxygen for 3 minutes. The patient with comfortable mask ventilation was intubated with an appropriately sized endotracheal tube (Cormack-lahen score 2). Hemodynamics and oxygen saturation remained stable throughout the surgery. No increase in peak pressures was detected. IV PCA was prepared with 2mg/ml tramadol for postoperative analgesia. At the end of the surgery, she was extubated without any problem and transferred to the pediatric surgical intensive care unit. The patient was taken to the ward on the 2nd postoperative day and discharged on the 6th day.

Discussion and Conclusion: The problem of obesity in adolescents is increasing today, and it is possible to struggle obesity by making lifestyle changes, teaching children and parents about healthy nutrition,

encouraging more physical activity and creating weight control programs. Sometimes, weight control is achieved successfully with lifestyle changes in overweight children, while weight gain is observed in the long-term results. At this point, metabolic and bariatric surgery emerges as a preferred method in overweight, obese and adolescents with obesity-related diseases.

The anesthesia risks of these surgeries are significantly higher. The risk of difficult mask and difficult intubation is high. Pharmacokinetic changes are present. Postoperative pulmonary complications are common in obese patients. These complications include atelectasis, pneumonia, laryngospasm, respiratory distress, ventilation/perfusion mismatch, and increased need for reintubation. Therefore, postoperative aggressive pain management and respiratory physiotherapy should be performed in obese patients.

Although prevention of obesity is the mainstay of obesity treatment, bariatric surgery is also a safe and effective treatment method in adolescents.

Keywords: anesthesia, bariatric surgery, obesity

Full-text (ID-36): “Adölesan Bariyatrik Cerrahide Anestezi Yönetimi”

Giriş: Obezite; alınan enerjinin, harcanan enerjiden fazla olmasından kaynaklanan ve vücuttaki yağ dokusunun artmasıyla oluşan kronik bir hastalıktır (1). Prevelansı son yıllarda tüm dünyada ve tüm yaş gruplarında artmakta olup önemli bir halk sağlığı sorunu halini almıştır. Obezite sıklığı erişkinlerde olduğu gibi düzensiz ve sağlıklı beslenme, fiziksel aktivite kısıtlılığı ve genetik faktörlerden kaynaklı olarak çocuk ve adölesanlarda da giderek artmaktadır. Dünya Sağlık Örgütü (DSÖ) 2016 verilerine göre sadece 40 yılda okul çağındaki obez çocuk ve adölesanların sayısı 10 kattan fazla artarak, 5-19 yaş arası 340 milyondan fazla çocuk ve adölesanın aşırı kilolu veya obez olduğu tespit edilmiştir. 2020 de 5 yaş altı obez çocuk sayısının 39 milyona çıktığı görülmüştür (2). Türkiye Çocukluk Çağı Obezite Araştırma Girişimi Çalışması (COSI-TUR)-2016 verilerine göre 2013-2016 yılları arasında Türkiye’ de 2. Sınıfa giden 7-8 yaş grubundaki çocuklarda obezitenin %19.3 oranında arttığı ve özellikle kız çocuklarındaki artışın alarm boyutlarda olduğu saptanmıştır (3). DSÖ çocuklarda obezite artışının önüne geçme amaçlı 2030 yılını hedefleyen “2018-2030 fiziksel aktivite küresel eylem planı: daha sağlıklı bir dünya için daha aktif insanlar” sloganıyla bir politika oluşturmuştur, bu politika DSÖ’ ne üye ülkeler tarafından uygulanmaya başlanmıştır (2). Aynı şekilde T.C. Sağlık Bakanlığı Halk Sağlığı Genel Müdürlüğü tarafından hazırlanan 2019-2023 yılları arasında “Çocukluk Çağı Obezitesinin Engellenmesi ile İlgili Eylem Planı” uygulanmaya başlamıştır (4).

Obeziteyi tanımlamak için genellikle vücut kitle indeksi (VKİ) kullanılır. Vücut kitle indeksi kilonun boyun karesine oranlanması (kg/m^2) dır (5). Çocuk ve adölesanlarda persentil eğrilerinden de yararlanılır. İki yaş üzeri çocuklarda 85. persentilin üzerinde ise aşırı kilolu, 95. persentilin üzerinde ise obez, 99. persentilin üzerinde ise morbid obez olarak kabul edilir. İki yaş altı çocuklarda ayına göre

olması gereken kilonun %85'i fazla kilolu olarak adlandırılmakta, obez denilmemektedir (6). Etiyolojisi tam olarak açıklığa kavuşturulamamış olsa da davranış, endokrin ve metabolik değişikliklerle karakterize kompleks, multifaktöryel bir hastalıktır (7). Beslenme öyküsü, yaşam tarzı ve fiziksel aktivite, psikososyal durum, ilaç kullanımı, uyku problemleri, mevcut hastalıklar, geçirilmiş operasyonlar ve aile öyküsü obezitenin önemli risk faktörleri arasındadır (6).

Obez hastaların anestezi yönetiminde de çeşitli zorluklar ve komplikasyonlarla karşılaşılabilir. Zor havayolu, intravenöz ve intraarteryal girişim güçlüğü, hastaya pozisyon verilmesinde güçlük ve hastaya göre uygun ekipmanların bulunması zorluğu, intraoperatif ve postoperatif pulmoner komplikasyonlar, uzamış derlenme, hasta transportunun zor oluşu obez hastaların anestezi yönetiminde en çok rastlanan sorunlardır.

Olgu: Laparoskopik sleeve gastrektomi cerrahisi planlanan, 16 yaşında 136 kg 175 cm boyunda kız hasta VKİ:44.4, hipertansiyon (HT), uyku apnesi ve insülin direnci mevcut. 5 yıl önce hızlı kilo alma nedeni diyet ve takip yapılmış, başarılı olunamamış. 3 yıl önce insülin direncinin yüksek olması nedeniyle metformin oral tablet, hipertansiyon tanısı ile de enapril tablet başlanmış. Obezite nedeniyle bariyatrik cerrahi planlanan hasta, hastanemizin çocuk cerrahi kliniğine başvurmuş.

Hasta ameliyat masasına geldiğinde genel durumu iyi bilinç açık oryante koopere spontan solunumu rahat, sistemik fizik muayenesi doğaldı. Hastanın ağız açıklığı normal olup Mallampatisi 3, boyun çevresi 43cm idi. Ameliyattan 1 gün önce enapril ve metformin kesilmiş. Preoperatif laboratuvar değerleri normal idi.

Ameliyat masasında hastanın EKG, oksijen saturasyonu, noninvaziv kan basıncı monitorizasyonu sağlandı. Zor entübasyon açısından hazırlıklar yapıldı. Odada video laringoskop hazırlandı (karl storz-endoscope c-mac 8403 zx). Çeşitli boylarda maske, airway, lma ve entübasyon tüpleri hazırlandı. Supin pozisyonunda olan hastanın baş ve boyun altı desteklenerek dış kulak yolu ile sternal çentik aynı düzleme getirildi. Masaya rampa pozisyonu verildi. 3 dk %100 oksijen ile hasta preoksijenize edildi. İndüksiyonda aritmal 60mg, propofol 200mg, fentanyl 100mcg, rokuronyum 80 mg iv yapıldı. Maske ventilasyonu rahattı. Tam gevşeme sağlanınca hasta direkt laringoskopi yapılarak machintosh 3 numara blade ile ve 7.0 numara kaflı tüple tek seferde entübe edildi. Cormack-lahen skoru 2 olup zor entübasyon olarak değerlendirilmedi. Sol el dorsumundan 18 gauge, sağ el bileğinin iç kısmından 16 gauge damar yolu açıldı. Cerrahi işleme başlandı. Anestezi idamesinde %2 sevofluran ve remifentanyl infüzyonu kullanıldı. Cerrahi tarafından basınç 12mmhg olacak şekilde CO2 ile batın şişirildi. Volum kontrollü modda ideal kiloya göre 7 ml/kg tidal volüm ve fio2:0.5 olacak şekilde ventilasyonu sağlandı. Peak basınçları normal seyretti herhangi bir yükselme olmadı. Cerrahi boyunca hemodinamisi ve saturasyonu stabil seyretti. Cerrahi işlemin bitmesinden 30 dakika önce 100 mg tramadol 4 mg ondansetron iv yapıldı. Cerrahi işlem 4 saat 15 dakika sürdü. Postoperatif analjezi için 2mg/ml tramadol ile iv PCA (Patient Controlled Analgesia) hazırlandı ve cerrahi bitiminde hastaya takıldı. Ameliyat bitiminde 200

mg sugammadex 1v yoldan yapıldı. Yeterli tidal hacime ulaşıncaya hasta ekstübe edildi ve ardından bilinci açık koopere olarak derlenme salonuna götürüldü. Vitalleri stabil ve oksijensiz spo2 98 idi. Hasta postoperatif çocuk cerrahi yoğun bakıma çıkarıldı. Postoperatif ilk 24 saat 1v pca ile ağrı kontrolü sağlandı. Postoperatif 2. Gününde servise çıkarılan hasta, 6. Gününde taburcu edildi.

Tartışma: Adölesanlarda obezite sorunu günümüzde artmakta olup yaşam tarzı değişiklikleri yapılarak, daha fazla fiziksel aktiviteye teşvik edilerek ve kilo kontrol programları oluşturularak obezite ile mücadele etmek mümkün olabilmektedir (5). Kimi zaman aşırı kilolu çocuklarda yaşam tarzı değişiklikleri ile kilo kontrolü başarıyla gerçekleşirken, uzun vadede sonuçlarda tekrar kilo alımları gözlemlenmektedir. Bu noktada aşırı kilolu ve obeziteden kaynaklanan hastalıkları varolan adölesanlarda metabolik ve bariyatrik cerrahi tercih edilebilen bir yöntem olarak karşımıza çıkmaktadır. Obeziteyi önleme obezite tedavisinin temel dayanağı olmakla beraber adölesanlarda bariyatrik cerrahi de güvenli ve etkili bir tedavi yolu olmaktadır (5).

Adölesan bariyatrik cerrahide preoperatif değerlendirmede VKİ, kalp hızı, tansiyon, kan şekeri, oksijen saturasyonu, OSAS (obstruktif uyku apnesi sendromu) risk faktörleri, kullanılan ilaçlar, preoperatif anksiyetenin değerlendirilmesi ve yönetilmesi, aileye bilgi verilmesi, venöz erişimin ve riskin değerlendirmesi önem taşır.

Risk değerlendirmesinde American Society of Anesthesiologist (ASA) sınıflamasına göre yandaş başka bir hastalığı olmasa da VKİ si yüksek hastalar ASA II risk grubunda kabul edilir. Morbid obez olan hastalar ise direk olarak ASA III olarak değerlendirilir.

Adölesanlarda obeziteye bağlı birçok komorbidite görülmektedir. Kardiyovasküler hastalıklar, tip 2 diabetes, OSAS, non alkolik yağlı karaciğer, ortopedik problemler, gastroözofageal reflü adölesanlarda obezite ile birlikte seyreden en sık karşılaşılan hastalıklardır. Obeziteye eşlik eden genetik sendromlar da bulunmaktadır. Bu hastalıklara bağlı olarak perioperatif anestezi riskleri de artmıştır.

Özellikle zor havayolu riski değerlendirilmesi açısından detaylı fizik muayene yapılmalı; ağız açıklığı, baş boyun ve çene hareketleri, mallampati skoru değerlendirilmelidir. Premedikasyonda solunum depresyonu yapabilecek ilaçlar ve dozlardan kaçınılmalıdır. Midazolam premedikasyonda en sık kullanılan ilaçlardandır. Solunum depresyonu etkilerinden kaçınmak için ideal kilo üzerinden hesaplanması önerilmektedir. Obez hastalarda yağ dokusu fazlalığı nedeniyle monitorizasyonda da sıkıntılar yaşanabilir. İnvasiv olmayan kan basıncı ölçümü için uygun boyutta tansiyon manşonu bulmak zor olabilir.

Obez adölesanlarda daha kalın deri altı yağ dokusu intraarterial ve intravenöz girişimi zorlaştırmaktadır. Elin volar yüzünde tendonlarda adipoz doku daha az olması nedeniyle venlerin görülmesi ve kanülasyonu daha kolay olabilir. Ultrason ve damarları görünür hale getiren cihazlardan yararlanılabilir.

Anestezi indüksiyonunda inhalasyon ve intravenöz yöntemler kullanılabilir. Daha az hava yolu irritasyonu yaptığından inhalasyon ile anestezide sevofluran tercih edilir. Genel olarak intravenöz anestezi ajanlarından lipofilik ilaçların dağılım hacmi artar hidrofilik ajanlarınkı değişmez.

Zor havayolu açısından önlemler alınmalı çeşitli boyutlarda airway, maske, lma, entübasyon tüpü, laringoskop bladeleri, video laringoskop, fiberooskop hazır bulundurulmalıdır. Başa uygun pozisyon verilerek dış kulak yolu ile sternal çentik aynı düzleme getirilmeli, masa rampa pozisyonuna alınmalıdır. %100 oksijenle en az 3 dakika ya da 30 saniye 4 derin nefes solutularak preoksijenasyon yapılmalıdır. Zor ventilasyon ve zor entübasyonla karşılaşabileceği düşünülmeli fiberoptik ile uyanık entübasyon akla gelmelidir. Havalandıramama durumuna önlem olarak sugammadeks hazır bulundurulmalı kısa etkili genel anesteziplerle indüksiyon tercih edilmelidir.

İntraoperatif mekanik ventilatör kullanımı sırasında volüm ve basınç kontrollü kullanımı sırasında farklılık tespit edilmemiştir. Ancak belirli bir peak basınçta basınç kontrollü ventilasyonun volüm kontrollü ventilasyona göre daha yüksek tidal volümler sağladığı görülmüştür. Pozitif son ekspiratuar basınç (PEEP) ile kontrollü havalandırma, atelettaziyi önlemek için yararlıdır ancak hipotansiyon gelişebilir, dikkat edilmelidir. Rezorbsiyon atelettazisi gelişmemesi açısından preekstübasyon dönemi de dahil olmak üzere fio2 0.4-0.8 arasında tutulmalıdır.

İntraoperatif sıvı yönetiminde verilecek sıvı miktarı ideal vücut ağırlığına göre hesaplanır. Cerrahi sıvı kayıplarına dikkat edilmeli, idrar çıkışı takip edilmeli ve hipo-hiper glisemiden kaçınılmalıdır. Obez hastalarda laparoskopik cerrahi girişimlerde rabdomiyoliz riskinin arttığı göz önünde bulundurularak sıvı takviyesi yapılmalıdır.

Ameliyat sırasında verilen pozisyonlara özellikle dikkat edilmelidir. Yağ dokusu avaskülerdir bu nedenle bası ülserleri oluşabilir. Kemik çıkıntılar yumuşak pedlerle desteklenmelidir. İntraabdominal basınç artışına bağlı akciğer dinamikleri değişebilir. Bunun sonucu olarak diyafram yukarı itilir ve tidal volüm, fonksiyonel reziduel kapasite, total akciğer kapasitesi, kompliyans azalır ve ventilasyon/perfüzyon bozukluğu gelişir. Lateral dekübit ve prone pozisyon daha rahat tolere edilebilir. Ekstübasyon entübasyondan daha riskli olabilir. Hasta 30-45 derece oturur pozisyona getirildikten sonra nöromuskuler blokerlerin etkisi tamamen tersine çevrilene ve hasta tam olarak uyanıncaya kadar beklenmeli, yeterli tidal volümün ve güvenli havayolunun sağlandığından emin olduktan sonra ekstübe edilmelidir. Reentübasyon açısından hazırlıklı olunmalıdır.

Obez hastalarda postoperatif pulmoner komplikasyonlara sık rastlanır. Atelettazi, pnömoni, laringospazm, solunum sıkıntısı, ventilasyon/perfüzyon uyumsuzluğu, artmış reentübasyon ihtiyacı bu komplikasyonlar arasındadır. Bu nedenle obez hastalarda postoperatif agresif ağrı tedavisi ve solunum fizyoterapisi yapılmalıdır. Postoperatif ağrıda torasik epidural analjezi güvenli ve etkilidir. İntravenöz PCA, lokal anestezi infiltrasyonu, parasetamol, nonsteroid antiinflatuar ilaçlar ve deksmedetomidin kullanılabilir.

Sonuç: Obezite adölesanlarda psikolojik, sosyal ve sağlık açısından büyük sıkıntılar oluşturmaktadır. Birçok yandaş hastalığı da beraberinde getirir, bu nedenlerden dolayı tedavisi önem kazanmıştır. Erişkinlerde obezite tedavisinde uygulanan bariyatrik cerrahi yöntemleri artık çocuk hastalarda da sıklıkla ve güvenli bir şekilde kullanılmaya başlanmıştır.

Bu ameliyatların anestezi riskleri belirgin olarak yüksektir. Zor maske ve zor entübasyon riski yüksektir. Farmakokinetik değişiklikler mevcuttur. Postoperatif atelektazi ve tromboemboli riski yüksektir. Bizim olgumuzda bunların hiçbirine rastlanmamıştır. Fakat bu riskler ve komplikasyonlar göz önünde bulundurulmalıdır.

Kaynaklar

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ID-37 / OP: “The Impact of Obesity on QRS Fragmentation in Patients with Prior Myocardial Infarction”

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Abstract (ID-37)

Introduction and Purpose: A narrow fragmented QRS complex (fQRS) is a sign of myocardial scar and fibrosis in patients with prior myocardial infarction. Also, increased body mass index (BMI) is associated with presence of fQRS on electrocardiography (ECG) independent of underlying cardiovascular status. However, little is known regarding the association of BMI with fQRS in patients with prior myocardial infarction. Therefore, the present study aimed to investigate the impact of BMI on presence of fQRS in patients with prior myocardial infarction.

Materials and Methods: A total of 309 patients with prior ST-segment elevation myocardial infarction were included into the study. Patients were divided into three groups according to BMI (normal, overweight, and obese), and groups were compared regarding the frequency of fQRS on ECG. Additionally, the association of BMI with fQRS was examined.

Results: Among study population, 114 (36.9%) patients had normal BMI, 134 (43.3%) patients were overweight, and 61 (19.8%) patients were obese. The frequency of fQRS was significantly higher in obese patients compared to non-obese patients ($p<0.001$, for obese patients vs. both comparisons). Additionally, patients with fQRS had significantly higher BMI compared to those without fQRS ($p<0.001$). Moreover, there was a significant moderate positive correlation between BMI and presence of fQRS on ECG ($r:0.481$, $p<0.001$). Furthermore, BMI was found to be an independent predictor of fQRS in patients with prior myocardial infarction (OR:1.288, 95% CI:1.1117-1.543, $p<0.001$).

Discussion and Conclusion: The present study demonstrated that obesity is significantly associated with presence of fQRS on ECG in patients with prior myocardial infarction. Therefore, obesity may be associated with increased myocardial damage in patients with prior myocardial infarction, and fQRS may be useful in the further risk assessment of obese patients with prior myocardial infarction.

Keywords: Fragmented QRS; electrocardiography; myocardial infarction; body mass index; obesity

ID-38 / OP: “ The Clinical Characteristics of COVID-19 Related Multisystem Inflammatory Syndrome in Children: Case Series in Pediatric Intensive Care Unit from Eastern of Turkey

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Abstract (ID-38)

Introduction and Aim: During the pandemic, a new entity is emerged associated with COVID-19 called multisystem inflammatory syndrome in children. The aim of the present study is to determine the clinical presentation and outcomes of children diagnosed with this hyperinflammatory condition.

Materials and Methods: Children (aged <18 years) diagnosed with multisystem inflammatory syndrome in children who admitted to hospital between March 2020 and March 2021 were enrolled in the study.

Results: A total of 20 patients were enrolled in this study, where 11 were female and 9 were male. The mean age of the patients was 8.58±4.65. Mitral insufficiency (45%) was the most common ECHO finding among patients (Table 2). Of the patients with depressed left ventricular ejection fraction, one (5%) had an ejection fraction below 30% and three (15%) had an ejection fraction between 30% and 50%. One patient had pericardial effusion. Oxygenation was mainly supported by HFNC (35%).

Conclusion: The present study revealed that MIS-C is a newly defined disorder with severe progression leading to life-threatening conditions.

Keywords: Pandemics, coronavirus, inflammation.

Full-text (ID-38)

Introduction: Coronavirus 2019 pandemic hit the world and led to approximately 130 million confirmed cases and 3 million deaths (1). Coronavirus 2019 infection usually caused a mild upper respiratory illness among children (2). Various studies determined that evident difference in the prevalence of COVID-19 in children than in adults is the close relationship of their exposure intensity with the population in public areas (3-5). Despite the reports indicating a lower incidence among children, the number of pediatric patients might be increased as they are not resistant to the infection.

Initially, a tertiary hospital in Turkey reported a rate of 2.7% of the cases as severe where 66% of them were asymptomatic or mild (6). Several centers have been reported a new condition in children contracted with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus those presenting high fever, conjunctivitis, rash, gastrointestinal symptoms and peripheral edema (2, 7-9). Despite the mild nature of clinical course of coronavirus 2019 infection (COVID-19) in children than adults, this phenomenon often causes multiorgan failure and shock requiring ICU admission. Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) referred to this acute condition as multisystem inflammatory syndrome in children (MIS-C) where the definition includes six major elements as pediatric age, persistence of fever, presence of laboratory markers of inflammation, signs or symptoms of organ dysfunction, absence of alternative diagnosis, and a previous association with COVID-19 (10-12). The diagnosis of MIS-C leads to a dilemma for clinicians where the condition mimics Kawasaki disease or toxic shock syndrome. A recent study in Turkey revealed that severe COVID-19 cases with intense hyperinflammation those had higher cytokine/chemokine response observed at the same frequency during the pandemic have matched with the MIS-C clinical features.

Therefore, the aim of this study is to assess the demographic characteristics, clinical features and the outcomes of children with MIS-C related to SARS-CoV-2 infection.

Materials and Methods: After obtaining Cumhuriyet University local ethics committee approval (Grant number: 2020/-10/04), this prospective, cross-sectional study was enrolled patients aged between one month and 18 years those diagnosed with MIS-C related to COVID-19 between March 2020 and March 2021. Written informed consents of all participants were provided from their legal guardians. The inclusion criteria are the children whose met with the CDC (11) and/or WHO definitions (12) for MIS-C. Those definitions are briefly indicated as follows: (a) pediatric age, (b) persistent fever, (c) presence of inflammatory biomarkers, (d) findings of organ dysfunction, (e) absence of any other diagnosis, and (e) temporal association with COVID-19. In addition, all patients in our study group required proof of SARS-CoV-2 infection via PCR analysis, serology, antigen test or SARS-CoV-2 exposure four weeks before the beginning of the symptoms. Patients those do not meet with the CDC (11) and/or WHO definitions (12) for MIS-C mentioned above, and suspected SARS-CoV-2 infection/exposure cases without any confirmation are excluded from the study.

Age, gender, underlying conditions, symptoms, treatment, the timing of symptoms, duration of fever, presence of rash and cardiac involvement were recorded. The laboratory findings including complete blood count (CBC), glucose, urea, creatin, aspartate aminotransferase (AST), alanine aminotransferase (ALT), sodium, potassium, c-reactive protein, sedimentation, procalcitonin, culture, ferritin, lipid profile, homeostasis profile, cardiac panel, PCR test for COVID-19 and COVID-19 antibody test were also recorded. Additionally, the radiological imaging tests such as posteroanterior chest X-ray, abdominal x-ray, abdominal ultrasound (US) and echocardiography were recorded. The treatment of the

patients were applied using the guideline of the Ministry of Health in September 2020 for the patients with MIS-C related to COVID-19.

Sample size were obtained using the data of Kaushik et al. (13) and calculated by G-Power analysis program as 20 patients where the alpha was 0.05 with a beta value of 0.80.

The distribution of the data was analyzed by Kolmogorov-Smirnov test. Quantitative variables were displayed as mean and standard deviation where qualitative variables as median (interquartile range [IQR] 25%-75%) values with numbers and percentage. The analysis of the demographic characteristics was performed by Chi-square test or Fisher's exact test. The association of the laboratory findings were analyzed by Pearson correlation analysis (r) test. All data was analyzed using Statistical Package for Social Sciences (SPSS) version 20 program. The significance level for analysis was set at $p < 0.05$.

Results: A total of 20 patients were enrolled in this study, where 11 were female and 9 were male (Table 1). The mean age of the patients was 8.58 ± 4.65 . The most observed symptom was fever (80%) in which gastrointestinal symptoms (75%), myalgia (65%) and headache (50%) were the following ones (Table 1). Focal and bilateral opacities were found in 3 (20%) patients. Echocardiograms were performed in 7 (35%) patients, of those 4 (20%) had a depressed left ventricular ejection fraction ($< 50\%$). Mitral insufficiency (45%) was the most common ECHO finding among patients (Table 2). Of the patients with depressed left ventricular ejection fraction, one (5%) had an ejection fraction below 30% and three (15%) had an ejection fraction between 30% and 50%. One patient had pericardial effusion. Oxygenation was mainly supported by HFNC (35%). All patients received intravenous immunoglobulin and systemic glucocorticoids. Vasoactive agents were administered 15 patients (75%), where dopamine were given 14 cases and dobutamine to 4 cases. Anticoagulant therapy was applied to 19 patients (95%). One patient merely requires ECMO therapy (Table 2). The mean WBC was $9580/\text{mm}^3$. Inflammation markers were elevated with mean C-reactive protein was 146.26 mg/L, procalcitonin of 31.96 ng/mL, ESR of 43.9 mm/h and ferritin of 1241.09 ng/mL. The mean fibrinogen was 452.22 mg/dL and D-dimer was 7.15 $\mu\text{g/mL}$. Markers of abnormal cardiac function were increased with mean B-type natriuretic peptide (BNP) levels of 3975.13 pg/mL, troponin of 23.01 ng/mL and creatinine kinase of 152.05. The laboratory findings were displayed on Table 3.

Discussion: The clinical course of the patients included in this study has shown a wide variety in illness severity between clinically stable patients with normal or mildly depressed myocardial function and impaired circulatory shock requiring inotropic agents and invasive mechanical ventilation.

Despite the presence of myocardial biopsy, it is hardly to show the precise mechanism of myocardial injury. However, elevated inflammatory markers, no data existed on the cardiotropic nature of coronaviruses, and most of the patients with shock developed myocardial dysfunction supported the idea that myocardial damage and circulatory shock in patients with COVID-19 is caused by the inflammatory mediators (14). There are possible mechanisms on the myocardial involvement of COVID-19 including

viral replication in myocytes and myocardial ischemia due to systemic inflammatory response (15). Associated with the increased IL-6 levels, it can be speculated that COVID-19 MIS-C is predominantly immune cell-mediated cytokine storm with a possible involvement of direct myocardial damage (16). These outcomes are suggested that both antiviral agents and immunomodulatory therapies might have a beneficial role in the treatment of MIS-C. Due to increased inflammatory markers and IL-6 levels, current findings supported the immunomodulatory therapy has been the cornerstone of the treatment. Immunoglobulin and corticosteroids were administered to all patients for anti-inflammatory and antibody effects.

Furthermore, the mechanism behind the exaggerated inflammatory response in patients with MIS-C is still unclear (10.). Cytokine-mediated storm could already be developed during other viral infections with a lower intensity (10, 17). At the beginning of the COVID-19 pandemic, SARS-CoV-2 closely related to Kawasaki disease, where consecutive researches showed MIS-C is a new entity differentiated from Kawasaki disease by developing in older ages (18). Mean age of this study is 8.5 years which is consistent with the previous studies reported MIS-C. It has observed that the progression of COVID-19 in children is infrequently severe, hence younger age and comorbidities are the risk factors for severe disease.

In contrast to the several reports found in the literature those observed the respiratory support ratios in a wide range, the present study showed that patients requiring vasopressor support was 75%, 40% required HFNC and non-invasive mechanical ventilation. Belhadj et al. reported that approximately 30% of children with COVID-19 had a left ventricular ejection fraction below 30% means severely depressed. (17). In this study, 15% of the patients had left ventricular ejection fraction between 30-50% defined as moderate malfunction, where 5% of them below 30% as severe. The use of inotropic agents (75%), IVIG therapy (100%) and corticosteroid use (100%) were all higher in the study of Belhadj et al. than in this study. Gladly, all of the patients with severe left ventricular function discharged with full recovery compared to the rate of 71% in the report of Belhadj et al. (17). Mitral insufficiency was the main cardiac disorder in this study without any development of coronary artery dilation, hence heart is appeared to be the focus point of the inflammatory response in which could be confirmed by the elevated biomarkers of coronary artery disease. Intravenous immunoglobulin therapy that applied all of the cases in the present study, may alleviate the auto-antibody related disease progression in which has a possible mechanism by activating the inhibitory Fc-receptors and preventing the excretion of membrane complexes from complement system (19).

Several reports have indicated MIS-C as a separate entity from COVID-19 as hemodynamic impairment and shock in MIS-C may develop in the absence of laboratory findings of myocardial inflammation, stable cardiac function and rapid recovery (20). Dopamine was the most frequently used inotropic agent for the management of inflammatory response induced vasodilatory shock. A mean PICU length of stay

of 7.15 days and a hospital stay of 16.75 days which was approximately two-fold of the hospital stay in PICU and 40% of the patients required respiratory support suggested that close monitoring is crucial for these patients. Based on the hospital stay findings, it seems that inflammatory markers and cardiac function could began to recover from days 4 to 7 in PICU.

Moreover, besides the whole information given above, COVID-19 and MIS-C are novel disorders those might have been at the focus of many researchers' interest far more than expected.

This study has several limitations. First, a molecular analysis of the cases with MIS-C might give detailed information about the disease and its possible mechanisms. Second, it was a retrospective analysis in a restricted time with a small number of cases where it restricts the generalizability of the findings. A long-term follow-up of the patients could obtain us to define any complications after MIS-C on myocardial functions.

In conclusion, the present study revealed that MIS-C is a newly defined disorder with severe progression leading to life-threatening conditions. Early diagnosis and treatment holds the cornerstone of the recovery from this disease.

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Table 1. Patient characteristics

	Mean±SD	Min-max	CI	n	%
Age (years)	8.58±4.65	2.5 – 17.5	6.4 – 10.76	–	–
Gender	Female	–	–	11	55
	Male	–	–	9	45
Contact	–	–	–	11	55
Fever	–	–	–	16	80
Bilateral conjunctivitis	–	–	–	9	45
Oral mucosal changes	–	–	–	6	30
Peripheral extremity changes	–	–	–	5	25
Rash	–	–	–	8	40
Hypotension	–	–	–	7	35
Gastrointestinal symptoms	–	–	–	15	75
Myalgia	–	–	–	13	65
Headache	–	–	–	10	50

SD, standard deviation; CI, confidence interval; min-max, minimum-maximum.

Table 2. Clinical features and the applied treatment strategies of the patients

		n	%
Cervical lymphadenopathy		3	15
Neurologic involvement (encephalitis)		6	30
Organ involvement	Two or more systems	6	30
	Three or more systems	10	50
	Four or more systems	4	20
Intravenous immunoglobulin		20	100
Systemic glucocorticoids		20	100
Immunomodulation		4	20
Anticoagulant therapy		19	95
Vasopressin		8	40
Diuretic administration		10	50
ECMO		1	5
Plasmapheresis		3	15
Inotrope requirement		15	75
Inotropic agent	Norepinephrine	1	6.6
	Dopamine	14	93.3
	Epinephrine	1	6.6
	Dobutamine	4	26.6
	Milrinone	2	13.3
Respiratory support type	None	12	60
	Non-invasive	1	5
	HFNC	7	35
ECHO	None	4	20
	Pericardial effusion	1	5
	LV EF<30%	1	5
	LV EF between 30%-50%	3	15
	LV EF>50%	2	10
	Valvular regurgitation	–	–
	Coronary artery dilation or aneurysms	–	–
	Mitral insufficiency	9	45
PA Lung X-ray	Normal	16	80
	Cardiomegaly	–	–
	Focal opacity	1	5
	Bilateral opacities	3	15

ECMO, extracorporeal membrane oxygenation; HFNC, High-flow nasal cannula, ECHO, echocardiography; LV EF, left ventricular ejection fraction; PA, posteroanterior.

Table 3. Laboratory findings

	Mean±SD	Min-max	CI	Normal range
WBC (1000/mm³)	9.58±5.05	2.3 – 19.7	7.21 – 11.94	4 – 11/mm ³
Hb (gr/dL)	11.36±1.32	8.7 – 13.4	10.73 – 11.98	10.5 – 14 gr/dL
Plt (1000/mm³)	168.05±78.91	72 – 352	131.11 – 163.16	150 – 300/mm ³
ESR	43.9±33.84	2 – 125	28.05 – 59.74	0 – 10 mm/h
CRP	146.26±97.06	2.81 - 333	100.83 – 191.69	0 – 5 mg/dL
Procalcitonin	31.96±59.91	0.13 – 201	3.92 – 60	<0.1 ng/mL
Sodium	132.55±4.6	125 – 140	130.39 – 134.7	135 – 145 mEq/L
Albumin	3.53±0.64	2.1 – 4.9	3.23 – 3.83	3.5 – 4.9 gr/dL
BUN	11.26±5.49	5 – 24.3	8.68 – 13.83	6 – 23 mg/dL
Creatinine	0.52±0.19	0.26 – 1.04	0.43 – 0.61	0.7 – 1.3 mg/dL
AST	44±24.08	14 - 98	32.72 – 55.27	1 – 35 U/L
ALT	30.55±23.03	10 – 100	19.76 – 41.33	1 – 35 U/L
Total Bilirubin	0.61±0.82	0.13 – 4	0.22 – 1	0.1 – 1.2 mg/L
HDL	19.15±9.78	7 - 38	14.57 – 23.72	>60 mg/dL
Triglyceride	168.95±85.44	58 – 419	128.95 – 208.94	<150 mg/dL
Ferritin	1241.09±1570.85	54.9 – 4959	505.91 – 1976.27	80 – 500 ng/mL
Fibrinogen	452.22±128.4	239 – 695.8	392.13 – 512.31	162 – 378 mg/dL
D-Dimer	7.15±9.14	0.68 – 40.91	2.87 – 11.43	<0.5 µgr/mL
BNP	3975.13±4488.06	107.2 - 15800	1874.64 – 6075.61	0 – 450 pg/mL
CK	152.05±188.64	21 - 851	63.75 – 240.34	30 – 135 U/L
Troponin	23.01±43.59	2.9 – 204.8	2.61 – 43.41	<0.1 ng/mL
Lactate	2.13±0.85	1.2 – 4.3	1.72 – 2.53	0.5 – 1.99 mmol/L
D-Vitamin	11.13±5.08	3.16 – 24	8.75 – 13.51	20 – 40 ng/mL
IL-6	1084.09±1381.97	16.6 – 3678	437.3 – 1730.87	0 – 5 pg/mL
PICU-LOS	7.15±5.99	2 – 24	4.34 – 9.95	–
Hospital-LOS	16.75±11.85	2 – 50	11.2 – 22.29	–
PRISM	17.78±23.58	0.4 – 73	6.74 – 28.82	–
PELOD	19.3±13.51	3 – 48	12.97 – 25.62	–

ID-40 / OP: “Evaluation of Mortality Prediction of Early Warning and Sepsis Scores Among Patients with Suspected Infection Admitted to Medical Intensive Care Units”

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Abstract (ID-40)

Introduction and Purpose: Sepsis is a common health problem causing high morbidity and mortality rates. It is crucial to recognize sepsis early and prevent further complications. Early warning and sepsis scores were employed, however there is no consensus in which scoring system should be used in clinical practice. The aim of the study was to evaluate and compare mortality prediction efficacy of Modified Early Warning Score (MEWS), Systemic Inflammatory Response Syndrome (SIRS), Sepsis Related Organ Failure Assessment (SOFA) and Quick Sepsis Related Organ Failure Assessment (qSOFA) scores which were calculated 48, 24 and 8 hours before ICU admission.

Materials and Methods: The presented study is a prospective, observational, cohort study conducted in a academic, tertiary-care medical center. Adult patients admitted to medical intensive care units (ICU) from the emergency department or medical wards with the suspected infection for the last 48 hours period before admission.

Results: A total of 120 patients were included. The mean (SD) age was 66.3 (17.1) years and 44.2% of patients were male. Of the study population, 75.8% were admitted to medical ICUs from the emergency department. Considering scores observed 48 hours before ICU admission, $SIRS \geq 2$ and $SOFA \geq 2$ showed 7.6 (%95 CI: 1.5–38.0) and 13.2 (%95 CI: 2.3–74.3) fold hospital mortality risk increment respectively, while no risk increment was observed with MEWS and qSOFA score. Receiver operating characteristics (ROC) analysis performed with highest scores observed any time before ICU admission according to hospital mortality showed area under the curve (AUC) values (95% CI) of 0.80 (0.72-0.89) for SOFA, 0.66 (0.54-0.76) for MEWS, 0.63 (0.51-0.74) for qSOFA and 0.61 (0.49-0.73) for SIRS. SOFA had the highest sensitivity with 92.6% (82.7-100.0); whereas qSOFA owned the highest specificity with 63.0 (49.1-77.0), 48 hours before ICU admission.

Conclusions: SOFA score is the most sensitive scoring system to predict hospital mortality in patients admitted to medical ICU with suspected infection from the emergency department or medical wards.

Keywords: MEWS, Qsofa, Intensive care, Sepsis, SOFA, Systemic Inflammatory Response Syndrome

Full-text (ID-40)

Introduction: Sepsis is a common health problem causing high morbidity and mortality(1-3). It is crucial to recognize sepsis early and prevent further complications. Clinical scoring systems were employed for this purpose such as Systemic Inflammatory Response Syndrome(SIRS), Sepsis-Related Organ Failure Assessment(SOFA), Quick Sepsis-Related Organ Failure Assessment(qSOFA) and Modified Early Warning System(MEWS)(4-10). Several studies evaluated and compared the ability of early diagnostic value and prognostic power of these scores and different results were obtained(5,9,11-20). In our study, we aimed to compare mortality prediction of MEWS, SIRS, SOFA, and qSOFA scores calculated before medical ICU admissions of patients with suspected infection.

Materials and Methods: This study was approved by Hacettepe University Scientific Research Assessment Ethics Committee (Approval No:GO17/948-11, December 19th, 2017). Informed consent was taken from patients or legal guardians.

Study Population: A prospective observational cohort study was performed among patients with suspected infection admitted to medical ICUs at Hacettepe University Hospitals from January 1st, 2018 to May 31st, 2018. Admission to medical ICUs from medical wards or emergency department(ED) were accepted. Patients who met the suspected infection criteria defined below in 48 hours period before ICU admission were recruited. Patients under 18 years of age, patients directly admitted to medical ICUs from another medical center, postoperative patients, patients transferred to another medical center while their stay in medical ICUs of the study center, patients who refused to involve the study, patients previously hospitalized in ICU within 28-days of ICU acceptance, patients on prophylactic antimicrobials and patients without suspected infection were excluded.

Data collection: Patients' demographic data such as age, sex, body mass index (BMI), length of hospital stay before ICU admission, length of ICU stay, length of hospital stay (LOS), unit from which patients admitted to ICU, comorbidities were collected from patient charts. Charlson Comorbidity Index (CCI) was calculated for each patient. APACHE-II scores, date of discharge, clinical scores, and mortality were collected prospectively at corresponding time periods as defined.

Definitions, Outcomes: Suspected infection is defined as ordering body fluid culture or radiological examination or preemptive antimicrobial treatment for a clinical infection(13). Cut-off values for scoring systems were accepted as MEWS $\geq$ 3 or one parameter of MEWS $\geq$ 2, SIRS $\geq$ 2, SOFA $\geq$ 2, qSOFA $\geq$ 2. MEWS, SIRS, SOFA, and qSOFA scores were calculated at 4 different time periods named as 48 hours(-48h), 24 hours(-24h), and 8 hours(-8h) before ICU admission and on ICU admission(0h). 0 hour(0h) period constituted the first 2 hours of ICU follow-up. Accordingly, -48h period consisted of time between 50th and 46th hours; -24h period consisted of time between 26th and 22nd hours; -8h period consisted of time between 10th and 6th hours before ICU admission. Our primary endpoint was hospital mortality.

Statistical Analysis: Statistical analysis was performed with the v.25 of Statistical Package for the Social Sciences (SPSS, IBM, Armonk, NY). Number and percentage were given for categorical data. Mean and standard deviation was used for normally scattered continuous variables. Median and interquartile range were used otherwise. The pairwise comparison was performed with the Ki-square test for categorical variables, student t-test for normally distributed continuous, and Mann-Whitney U test for non-normally distributed continuous variables. $p\text{-value} < 0,05$ was accepted for statistical significance. Score efficacy was evaluated with logistic and COX regression in addition to Receiver Operating Characteristics (ROC) analysis. Age, sex, BMI, and unit from which patients were admitted were determined as confounders.

Results: A total of 149 patients were enrolled in which 29 patients were excluded. Statistical analysis was carried out with 120 patients (Figure-1). Baseline characteristics and LOS are presented in Table-1. Survivor and non-survivor groups according to hospital mortality had similar age, gender proportions, and BMI values. Although the length of ICU stay was the same, median time before ICU admission and LOS were longer in non-survivors. 91(75.8%) of patients were admitted from ED, while 29(24.2%) from medical wards. CCI was the same in both groups and hypertension was the most seen comorbidity. APACHE-II values were higher in non-survivors($p < 0.001$). The highest values of MEWS, SIRS, SOFA and qSOFA scores were higher in non-survivors ($p < 0.001$, $p = 0.007$, $p < 0.001$ and $p < 0.001$, respectively).

Hospital mortality was observed in 33(%27.5) patients, of which 19(%65.5) admitted from medical wards, whereas 14(%15.4) from ED. Patients admitted from medical wards had a high mortality rate compared to ED($p < 0.001$). Moreover, the hospital mortality rate was higher in patients with steroid usage (%83.3), chronic liver disease (%75.0), cancer (%53.1), and non-steroidal anti-inflammatory drug usage (%50.0).

Multivariate logistic regression analysis of score cut-off values observed in different time periods were performed in respect to hospital mortality (Table-2). At -48h period, values greater than SOFA and SIRS cut-off were found to be associated with increased mortality (OR:13.2 and 7.6, respectively). However, SOFA and qSOFA scores were associated with increased mortality at -24h period (OR:14,2 and 2.9 respectively), -8h period (OR:18.3 and 3.9 respectively), and 0h period (OR:10,2 and 4.8 respectively). COX regression analysis was performed with the highest score values calculated before ICU admission (0h omitted) in respect to hospital mortality. Odds ratios corrected in respect to confounders for MEWS, SIRS, SOFA and qSOFA were 1.1($p = 0.34$), 1.3($p = 0.16$), 1.1($p = 0.04$) and 1.3($p = 0.23$).

Sensitivity(%95CI) of MEWS, SIRS, SOFA and qSOFA calculated in -48h period in respect to hospital mortality were 77.8(62.1–93.5), 85.2(71.8–98.6), 92.6(82.7–100.0) and 44.4(25.7–63.1) respectively, whereas specificity(%95CI) were 13.0(3.3–22.7), 32.6(19.1–46.2), 43.5(20.2–57.8) and 63.0(49.1 – 77.0) respectively. Sensitivity(%95CI) of MEWS, SIRS, SOFA and qSOFA in -24h were 93.5(84.8–

100.0), 80.6(66.7–94.5), 93.5(84.8–100.0) and 48.4(30.8–66.0) respectively, whereas specificity(%95CI) were 6.0(0.3–11.7), 25.4(15.0–35.8), 38.8(27.1–50.5) and 64.2(52.7–75.7) respectively. Sensitivity(%95CI) of MEWS, SIRS, SOFA and qSOFA in -8h were 90.9(81.1–100.0), 78.8(64.9–92.8), 97.0(91.2–100.0) and 57.6(40.7–74.5) respectively, whereas specificity(%95CI) were 11.9(5.0–18.8), 29.8(20.0–39.6), 38.1(27.7–48.5) and 64.3(54.1–74.6) respectively.

ROC analysis with highest score values calculated before ICU admission (0h omitted) is given in Figure-2. AUROC values were 0.80(%95CI:0.72-0.89; $p<0.001$) for SOFA, 0.65(%95CI:0.54-0.76; $p=0.01$) for MEWS, 0.63(%95CI:0.51-0.74; $p=0.04$) for qSOFA and 0.61(%95CI:0.49-0.73; $p=0.07$) for SIRS.

Discussion: In this study, frequently used clinical scores were compared in a head-to-head fashion in respect to hospital mortality prediction among ED and ward patients that required ICU admission with suspected infection. SOFA score was found to be more significant than other scores in predicting hospital mortality even 48 hours before ICU admission. Power of highest score values observed before ICU admission in predicting mortality determined as SOFA, MEWS, qSOFA, and SIRS respectively, with SOFA being the highest.

SOFA score was employed to demonstrate organ dysfunction and placed in sepsis definition with Sepsis-3 criteria(5). In our study, SOFA score had better prediction capacity compared to other scores. This superiority of SOFA over MEWS, SIRS, and qSOFA was observed concurred with the literature in which AUROC values regarding hospital mortality was reported up to 0.91, 0.70, 0.72, and 0.77, respectively(11-26).

In the presented study, qSOFA score cut-off specificity was highest while sensitivity was lowest in mortality prediction for all time periods. These findings were similar to previous studies and were contrary to the usage of qSOFA score as a bedside screening tool to detect patients with suspected sepsis(15,17,25,27-30). Our results demonstrating that qSOFA outperforms SIRS were compatible with the literature(11,18,21,24,25,31-34). Moreover, SIRS had significantly higher sensitivity than qSOFA, similar to previous studies that reported up to 60% and 24% sensitivity respectively(17,30), even 48 hours before ICU admission. With this regard, it seems that qSOFA and SIRS are not sufficient for screening patients with suspected infection who may have a poor prognosis as argued by other authors(27,29,35). Liu et al. recommended the combined use of SIRS and qSOFA to increase screening power(27). When compared to MEWS, AUROC values with highest score values observed before ICU admission were similar that in line with most studies in the literature(16,33,36,37). There are other studies in which qSOFA had higher AUROC values(38) or vice versa(24). Although qSOFA was associated with increased mortality while MEWS was not in logistic regression analysis, sensitivity was higher in MEWS. Due to higher sensitivity, MEWS seems to be more useful in detecting deteriorating patients with infection. However, as recent Surviving Sepsis Campaign-2021 guidelines stated,

combined use of the prognostic scores could lead the clinicians to more appropriate prediction for deterioration(39).

The presented study has some limitations. First, this study had a low patient capacity and was conducted in a single center. All-cause mortality was accepted as an outcome rather than sepsis-related mortality as in qSOFA validating study(5). This situation limits comparability to studies conducted with sepsis-related scores. Our study population included selective patients since medical ICUs had limited capacity and patients with worse prognosis accepted ICU preferably. Finally, not all patients had hospital admissions at least 48 hours before ICU admission. Therefore, analysis except the 0h period was performed with fewer patients than the total cohort number.

In conclusion, SOFA score is a good predictive tool besides its diagnostic capacity to identify patients with suspected infection who may have worse prognosis. The effectiveness of qSOFA score as a screening tool for sepsis suspicion remains controversial as a result of this study. SIRS score can predict hospital mortality 48 hours early from ICU admission and its abandonment with sepsis-3 criteria remains controversial. Thus, the combination of the scoring systems seems to be wise.

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Table 1. Patient Characteristics Evaluated in Respect to Hospital Mortality

	All Patients N=120	Non-survivors n=33	Survivors n=87	p
Age, mean (SD), years	66.3 (17.1)	67.2 (15.2)	66.0 (17.8)	0.94
Male sex, No. (%)	53 (44.2)	15 (45.5)	38 (43.7)	1.00
BMI, mean (SD), kg/cm ²	27.4 (6.3)	26.7 (5.9)	27.7 (6.5)	0.26
Time before ICU admission, median	2.0 (1.0 – 5.0)	7.0 (2.0 – 18.5)	2.0 (1.0 – 3.0)	<0.001
Length of ICU stay, median (IQR),	10.0 (6.0 – 168)	11.0 (6.5 – 23.5)	10.0 (6.0 – 14.0)	0.44
Length of hospital stay, median	17.0 (11.0 – 28.0)	25.0 (15.0 –	16 (10.0 – 23.0)	0.003
ICU acceptance unit				<0.001
Emergency	91 (75.8)	14 (42.4)	77 (88.5)	
Ward	29 (24.2)	19 (57.6)	10 (11.5)	
Charlson comorbidity index, mean	5.6 (2.8)	6.0 (3.0)	5.5 (2.8)	0.67
Comorbidity, No. (%)				
Hypertension	69 (57.5)	17 (51.5)	52 (59.8)	
COPD	47 (39.2)	5 (15.2)	42 (48.3)	
Diabetes Mellitus	42 (35.0)	9 (27.3)	33 (37.9)	
Coronary Artery Disease	38 (31.7)	5 (15.2)	33 (37.9)	
Malignancy	32 (26.7)	17 (51.5)	15 (17.2)	
Heart Failure	29 (24.2)	3 (9.1)	26 (29.9)	
CKD	24 (20.0)	3 (9.1)	21 (24.1)	
CVA	11 (9.2)	1 (3.0)	10 (11.5)	
Chronic Liver Disease	8 (6.7)	6 (18.2)	2 (2.3)	
Rheumatologic Disease	6 (5.0)	1 (3.0)	5 (5.7)	
Steroid Usage	6 (5.0)	5 (15.2)	1 (1.1)	
NSAID Usage	6 (5.0)	3 (9.1)	3 (3.4)	
APACHE II score, mean (SD)	19.1 (8.0)	26.8 (8.1)	16.2 (5.7)	<0.001
Highest score (-48h, -24h, -8h or 0h),				
MEWS	5.0 (2.3)	6.6 (2.5)	4.5 (1.9)	<0.001
SIRS	2.6 (0.8)	2.9 (0.8)	2.4 (0.8)	0.007
SOFA	4.8 (3.7)	8.0 (3.8)	3.6 (2.9)	<0.001
qSOFA	1.9 (0.7)	2.3 (0.6)	1.8 (0.7)	<0.001

SD: Standard Deviation, IQR: Interquartile Range, No.: Number, COPD: Chronic Obstructive Pulmonary

Table 2. Multivariate Logistic Regression Analysis of MEWS, SIRS, SOFA and qSOFA Score Cut-Off Positivity Observed in Different Time Periods in Respect to Hospital Mortality.

	Non-Survivors	Survivors	OR	p
-48. Hour, mean (SD)	n=27	n=46		
MEWS	21 (77.8)	40 (87.0)		0.61
SIRS	23 (85.2)	31 (67.4)	7.6 (1.5 – 38.0)	0.01
SOFA	25 (92.6)	26 (56.5)	13.2 (2.3 – 74.3)	0.004
qSOFA	15 (55.6)	29 (63.0)		0.19
-24. Hour, mean (SD)	n=31	n=67		
MEWS	29 (93.5)	63 (94.0)		0.27
SIRS	25 (80.6)	50 (74.6)		0.20
SOFA	29 (93.5)	41 (61.2)	14.2 (2.5 – 80.6)	0.003
qSOFA	15 (48.4)	24 (35.8)	2.9 (1.0 – 8.4)	0.05
-8. Hour, mean (SD)	n=33	n=84		
MEWS	30 (90.9)	74 (88.1)		0.08
SIRS	26 (78.8)	59 (70.2)		0.41
SOFA	32 (97.0)	52 (61.9)	18.3 (2.2 – 151.1)	0.01
qSOFA	19 (57.6)	30 (35.7)	3.9 (1.4 – 11.0)	0.01
0. Hour, mean (SD)	n=33	n=87		
MEWS	33 (100.0)	85 (97.7)		NA
SIRS	30 (90.9)	60 (69.0)		0.09
SOFA	32 (97.0)	60 (69.0)	10.2 (1.3 – 83.5)	0.03
qSOFA	25 (75.8)	27 (31.0)	4.8 (1.8 – 12.8)	0.002

Multivariate analysis was performed in respect to age, sex, BMI and admission unit.

Figures

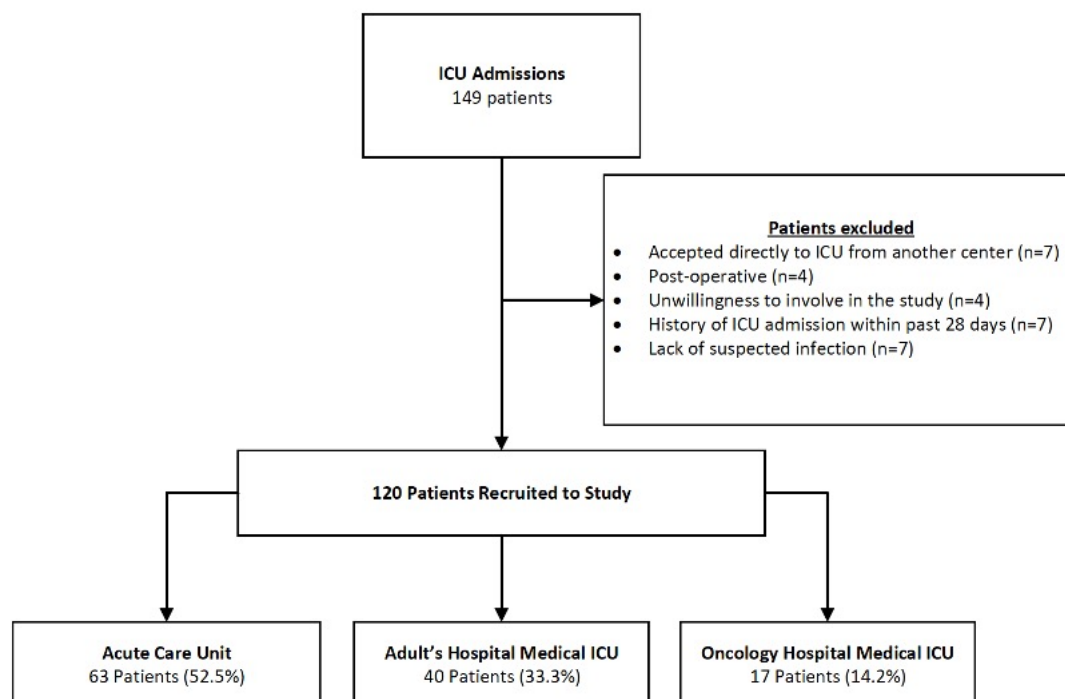


Figure 1: Flowchart of enrollment in the presented study

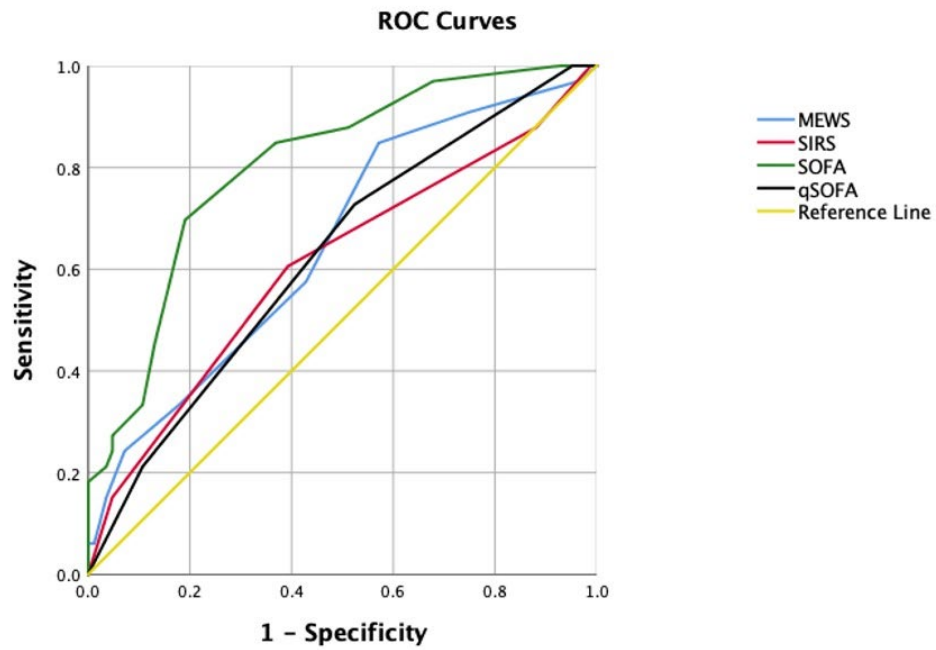


Figure 2: ROC Analysis of Highest MEWS, SIRS, SOFA and qSOFA Score Values Calculated Before ICU Admission in Respect to Hospital Mortality. Observed AUROC values are 0.80 (%95 CI: 0.72-0.89; $p<0.001$) for SOFA, 0.65 (%95 CI: 0.54-0.76; $p=0.01$) for MEWS, 0.63 (%95 CI: 0.51-0.74; $p=0.04$) for qSOFA and 0.61 (%95 CI: 0.49-0.73; $p=0.07$) for SIRS.

ID-41 / PP: “Aronia Melanocarpa Effect on Leptin Expression in Epicardial Adipose Tissue”

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Abstract (ID-41)

Introduction: Aronia melanocarpa is valued as a great source of antioxidants, especially polyphenols. Previous research has demonstrated that these berries may provide cardiovascular health benefits in high-risk populations. Leptin is a hormone secreted by adipocytes and enterocytes that inhibits hunger and helps the regulation of energy balance.

The aim of this study was to investigate the effects of Aronia melanocarpa on the immunohistochemical expression of leptin in epicardial adipose tissue.

Materials and Methods: Male Wistar rats (n=18) were separated into 3 groups: young controls (2-months old); old controls (24-months old); Aronia group 24-months old supplemented orally with 100% juice from Aronia melanocarpa (10 ml/kg) for 12 weeks. Immunohistochemical reaction was fulfilled on epicardial adipose tissue of the three groups of animals with antileptin antibody by ABC method.

Results: Our results showed that there was weak immunohistochemical reaction in the epicardial adipose tissue of the young healthy rats. In comparison with them the leptin reaction was increased in the same tissue of old rats. Aronia juice oral supplementation for 12 weeks led to a significant decrease in the leptin immunohistochemical expression in the epicardial adipose tissue of the old rats compared to the same age non-treated old animals.

Conclusions: Consumption of aronia berry polyphenols demonstrates benefit effect of adipose tissue leptin expression, indicating that regular aronia consumption has the potential to exhibit strong antioxidant activity, potential anti-inflammatory activities and promote healthy aging.

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ID-42 / Oral Presentation: “Relationship Between PET/CT Parameter and Degrees of Differentiation in Patients with Gastric Adenocarcinoma; Single Center Experience”

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Abstract (ID-42)

Introduction and Aim: Gastric cancer, which accounts for approximately 8% of newly diagnosed cancer cases, is one of the most common cancers all over the world and is the second leading cause of cancer-related death after lung cancer. 18F-FDG PET is a non-invasive functional imaging method that shows tissue perfusion, metabolic activity and vitality and allows for quantitative calculations.

Among the tumors formed in the stomach, adenocarcinoma is the most important and most common (90-95%). Adenocarcinomas are divided into 4 groups according to the degree of glandular differentiation:

Grade 1: well differentiated (more than 95% of the tumor consists of glandular tissue)

Grade 2: moderately differentiated (50-95% of the tumor consists of glandular tissue)

Grade 3: poorly differentiated (less than 49% of the tumor consists of glandular tissue)

Grade 4: undifferentiated.

Tubular carcinomas are generally not graded for differentiation and are considered well differentiated (Grade 1). Signet ring cell carcinomas are usually not graded for differentiation, but they correspond to high grade, or Grade 3. Small cell carcinomas and undifferentiated tumors are not graded for differentiation but correspond to Grade 4. The aim of this study is to investigate the role of 18F-FDG PET-CT in the pre-surgical staging of patients diagnosed with gastric adenocarcinoma by endoscopic biopsy and to evaluate its relationship with the degrees of differentiation and SUVmax parameter.

Materials and Methods: The study included 29 patients (mean age 63.2 ± 11 years) who were diagnosed with histopathologically proven gastric adenocarcinoma between January 2020 and February 2021 and underwent 18F-FDG PET/CT in our department for pre-treatment staging. SUVmax values calculated on 18F-FDG PET/CT were compared with pathology results.

Results: When the patients were evaluated according to the histopathology results and the angle of

differentiation, it was determined that 5 patients were Grade 1 (17%), 6 patients were Grade 2 (21%), 17 patients were Grade 3 (59%), 1 patient was Grade 4 (3%).

When the ¹⁸F-FDG uptake in the primary tumor was examined according to the histopathological grades of the patients, the mean SUVmax was 11.5 (6.3–18.3) in grade 1 adenocarcinoma, 9.1 (6.3–15) in grade 2 adenocarcinoma, 7.6 (3.6–11.6) in grade 3 adenocarcinoma, and 7.2 in grade 4 adenocarcinoma calculated.

Conclusion: When the SUVmax values were compared with the tumor differentiation degree in the preoperative ¹⁸F-FDG PET/CT study of patients who were endoscopically diagnosed with gastric adenocarcinoma, SUVmax values increased as the tumor differentiation increased.

Keywords: Gastric Cancer, adenocarcinoma, FDG PET/CT, SUVmax, differentiation

ID-43 / OP: “Hypophosphatemia in A Critically Ill Children”

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Abstract (ID-43)

Introduction and Purpose: The aim of this study was to determine the prevalence of hypophosphatemia in critically ill children and to discuss the clinical effects of hypophosphatemia.

Materials and Methods: This study was designed as a single-center retrospective study. between 01.10.2020 and 01.10.2021, the files of the patients who were followed up at the Evliya Celebi Educational and Research Hospital Children's Intensive care unit of Kütahya Health Sciences University were scanned retrospectively and the data were recorded in the data form. Hypophosphatemia was determined based on the reference values in the results of our hospital laboratory. Patients are divided into two groups: normophosphatemic and hypophosphatemic.

Results: 60 children were included in the study. Of these patients, 27 (45%) were girls and 33 (55%) were boys. The median serum phosphorus level was 3.8 ± 1.7 (0.6-10.4) mg/dl at admission. serum phosphorus of less than 1.0 mg / dl was found in 2 patients. Sepsis was present in 30% (n = 18) of the children participating in the study and was associated with hypophosphatemia (p = .03). A significant relationship was found between hypophosphatemia and the duration of mechanical ventilation and between hypophosphatemia and PICU LOS. (p = .03, and P = .001, respectively)

Discussion and Conclusion: Hypophosphatemia can contribute to respiratory failure, increased duration of mechanical ventilation and increased duration of stay of the ICU. Therefore, in view of the potential complications and the increased susceptibility of critically ill children to developing this ailment, it should be recommended to follow the protocols for monitoring phosphorus levels.

Full-text (ID-43)

Giriş: Fosfor tüm dokuların en bol bulunan yapısal öğelerinden birisidir. Major intrasellüler anyon olması nedeniyle birçok açıdan hücre fonksiyonunda hayati rol oynar (1). Bu fonksiyonları: hücre membranlarında bulunan fosfolipitin esansiyel elementi olması, adenozin trifosfattaki yüksek enerji fosfatının kaynağı olması ve glikoliz ve 2,3 difosfoglisarat sentezi gibi birçok enzimatik reaksiyon aracılığıyla hemoglobinin oksijen dissosiasyon eğrisini etkilemesi olarak sayılabilir. (2,3) Bu yüzden normal serum fosfat seviyelerinin korunması, solunum, kardiovasküler, immünolojik, hematolojik ve

nöromusküler sistemler gibi, birçok organ sistemi üzerinde olumsuz sonuçlar doğurabileceğinden özellikle kritik hastaların takibinde son derece önemlidir (4,5).

Hipofosfatemi çoğunlukla asemptomatik seyrettiğinden genellikle teşhis edilemez. Erişkin çalışmalarında hipofosfatemik hastaların daha yüksek mortalite oranına, daha uzun yoğunbakım ve hastane kalış süresine sahip olduğu bildirilmektedir. Ancak bu konuda kritik çocuk hastalarla ilgili deneyimlerin aktarıldığı çalışma sayısı sınırlıdır.

Bu çalışmanın amacı, kritik hasta çocuklarda hipofosfatemi prevalansını belirlemek ve hipofosfateminin klinik etkilerini tartışmaktır.

Materyal ve Metot: Bu çalışma tek merkezli, retrospektif bir çalışma şeklinde tasarlanmıştır. 01.10.2020-01.10.2021 tarihleri arasında Kütahya Salık Bilimleri Üniversitesi Evliya Çelebi Eğitim ve Araştırma Hastanesi Çocuk Yoğunbakım ünitesinde takip edilmiş hastaların dosyaları geriye dönük taranarak yapılmış ve veriler veri formuna kayıt edilmiştir. Veri formu hastaların yaşı, cinsiyeti, boyu, kilosu, PRISM skoru, komorbid hastalık olup olmadığı, başvuru nedeni (sepsis, septik şok, hipovolemik şok, solunum yetmezliği, kardiyovasküler hastalık, serebral hastalık, travma, diğer) başvuru anında bakılan biyokimyasal parametreleri (Kalsiyum, fosfor, magnezyum, potasyum, albumin), mekanik ventilasyon ihtiyacı olup olmadığı, mekanik ventilasyon gün sayısı, ekstübasyon başarısızlığı olup olmadığı, yoğunbakım yatış gün sayısı, hastane yatış gün sayısı, 28 gün takip sonucunda yaşayıp yaşamadığı ile ilgili bilgileri içermektedir. Hipofosfatemi hastanemiz laboratuvarı sonuçlarında ki referans değerler baz alınarak belirlenmiştir. Hastalar normofosfatemik ve hipofosfatemik olmak üzere iki gruba ayrılmıştır.

İstatistiksel değerlendirmede IBM SPSS Statistics 22.0 (SPSS Inc., Chicago, IL, ABD) programı kullanılmıştır. Verilere uygun istatistiksel analizler yapılmıştır. Kategorik veriler ki-kare testi ile karşılaştırılmış ve sürekli değişkenler Mann-Whitney U testi ile karşılaştırılmıştır. Sonuçlarla ilişkilendirmek için tüm faktörlerin iki değişkenli analizinden sonra, iki değişkenli analizde p değeri <0.1 olan tüm faktörlerin çok değişkenli lojistik regresyonu yapılmıştır. $P < 0.05$ değeri anlamlı kabul edildi.

Bulgular: Çalışmaya 60 çocuk dahil edildi. Bu hastaların 27'si (%45) kız iken, 3'ü (%55) erkek idi. Ortanca serum fosfor düzeyi yatışta 3.8 ± 1.7 (0.6-10.4) mg/dL idi. 2 hastada 1.0 mg / dL'den az serum fosforu bulundu.

Çalışmaya katılan çocukların %30'unda ($n = 18$) sepsis mevcuttu ve hipofosfatemi ile ilişkili bulundu ($p = .03$). Çalışmadaki çocukların %30'unda ($n = 18$) malnütrisyon mevcuttu ve malnütrisyon ile hipofosfatemi arasında anlamlı bir ilişki yoktu.

Hastaların hipofosfatemi varlığına göre özellikleri ve hipofosfateminin klinik etkileri Tablo 2'de gösterilmiştir. Hipofosfatemi ile mekanik ventilasyon süresi arasında ve hipofosfatemi ile PICU LOS arasında anlamlı ilişki bulunmuştur. ($p = .03$ ve $P = .001$, sırasıyla)

Tartışma: Meneses ve ark.'larının yaptığı çalışmada hipofosfatemi prevalansı kritik hasta çocuklarda yetişkinlere göre daha yüksektir. (6) Bizim çalışmamızda da bu çalışmaya benzer sonuçlar bulunmuştur.

Bazı faktörler, hastaları hipofosfatemiye yatkın hale getirdiği için klinik uygulamada daha fazla dikkate alınmalıdır. Sepsisli kritik erişkin hastalarda hipofosfatemi prevalansı %80 kadar yüksek bildirilmiştir [7,8]. Barak ve arkadaşları [7] hipofosfatemi ile erken sepsis arasında ve hipofosfatemi ile yüksek kan sitokin seviyeleri arasında ilişki bulmuşlardır. Bizim çalışmamızda hipofosfatemik hastaların %62.5 sepsis bulunmaktaydı.

Bu çalışma aynı zamanda hipofosfateminin 2 önemli klinik etkisini göstermektedir: mekanik ventilasyon süresinin ve yoğun bakım yatış süresinin artması. Hipofosfatemi solunum yetmezliğine neden olabilir [9]. Maksimal inspiratuar basınçtaki azalma ile hipofosfateminin şiddeti arasında bir korelasyon vardı [10]. Hipofosfatemi ayrıca akut solunum yetmezliği sırasında diyaframın kontraktıl özelliklerini de bozar.

Sonuç: Çocuk yoğun bakım ünitesindeki (ÇYBÜ) hastalar, özellikle enteral yolla erken beslenemiyorlarsa, hipofosfatemiye eğilimlidirler. Hipofosfatemi solunum yetmezliğine, artmış mekanik ventilasyon süresine ve artmış ÇYBÜ kalış süresine katkıda bulunabilir. Bu nedenle, potansiyel komplikasyonlar ve kritik hasta çocukların bu rahatsızlığı geliştirmeye daha fazla duyarlılığı göz önüne alındığında, fosfor seviyelerini izlemek için protokollerin uygulanması önerilmelidir.

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ID- 44 / OP: “Effects of Covid-19 Pandemic Process on Vitreoretinal Surgery Process”

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Abstract (ID-44)

Introduction and Purpose: To investigate the effects of the Covid-19 pandemic process, which caused very serious changes in our daily ophthalmology practice, on vitreoretinal surgeries, which we consider as ophthalmological emergencies.

Materials and Methods: Our study was based on March 2020, which is the start date of the pandemic process in our country, and the 2-month April and May months that we spent as the full closure process. In terms of parallelism, a comparison was made between 3 groups, considering 2019 as the normal period and 2021 as a partial closure, covering the same months. Patient data were scanned retrospectively. Data were obtained from first vision levels, third month vision levels, duration of detachment, use of C3F8 or silicone in surgery.

Results: During the non-pandemic 2019 process, 21 patients were operated in the same period, 18 patients were operated at the beginning of the pandemic process in 2020, and 14 patients were operated in the period of partial closure in 2021. The mean age is 56.11 ± 10.5 . Considering how many days after the symptoms the patients applied, this period was 7 days on average in 2019, 13 days in 2020 and 14 days in 2021. ($p=0.021$) there is no difference. ($p>0.05$) No statistical difference was observed in the use of silicon or C3F8.

Discussion and Conclusion: Although the Covid-19 pandemic process does not lead to significant changes in number, especially in sight-threatening ophthalmological emergencies such as detachment surgery, there is a tolerable delay in admission times based on the pandemic and compared to other countries. Statistically, the difference between the pandemic and non-pandemic periods was significant for these periods. Although there is no statistical difference in the use of silicone or C3F8, silicone tamponade was required for only 28% of the patients in the non-pandemic period, while this rate increased to 50% during the pandemic period. This situation may show that the prognosis is badly affected due to the pandemic, even with minimal delays for our country, relative to the world. Covid-19 has caused disruptions in vitreoretinal surgeries as in every other field.

Keywords: Covid-19, retina, vitreoretinal surgery.

ID-45 / OP: ‘‘Pregabalin Inhibits Pro-inflammatory Cytokine Release in Patients with Fibromyalgia Syndrome’’

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Abstract (ID-45)

Introduction: Pregabalin (PGB) is a new generation therapeutic agent used in the treatment of epilepsy, anxiety and chronic pain conditions. However, there is not much information about immunomodulatory effects of PGB on cytokine secretion. This study was aimed to identify the effect of PGB on pro inflammatory cytokine releasing in Fibromyalgia Syndrome (FMS) patients.

Material and Method: 30 female FMS patients using PGB 150 mg/day dose for at least 3 months, 30 female FMS patients not using PGB and 25 female healthy individuals were included in the study. Diagnosis of FMS was made according to 2010 American College of Rheumatology (ACR) diagnostic criteria. Levels of pro-inflammatory (IL-2, IL-6, IL-12, IL-17, IFN- γ , TNF- α) cytokines were measured by enzyme linked immunosorbant assay (ELISA).

Result: Serum levels of pro inflammatory cytokines were significantly lower in patients with FMS using PGB ($p < 0.001$) and it was observed to be higher in FMS patients who not using PGB compared to healthy controls ($p < 0,001$). The highest values of pro-inflammatory cytokines were found in the group of FMS patients not using PGB ($p < 0,001$).

Conclusion: In this study, it was reported that PGB inhibited the release of pro-inflammatory cytokines, and this provides a different perspective that it can be used as an anti-inflammatory agent in inflammatory cases.

Keywords: Cytokines, fibromyalgia, pregabalin, pro inflammatory

Full-text (ID-45)

Introduction: Fibromyalgia is a frequently encountered syndrome that is characterised by chronic widespread pain, fatigue, sleep disturbances, and many other symptoms that impair the quality of life (1). Prevalence of fibromyalgia syndrome (FMS) is approximately 2-3% and peaks around 55–65 years of age. It shows a strong female predominance with 80–90% of cases being women (2). There are no objective tests to diagnose FMS which is why the diagnosis traditionally has been based on history and clinical examination of tender points (3). In 2010, new criteria, purely based on history, were proposed (4). These criteria were originally regarded as provisional, but have since then been modified and are now recommended for clinical use by the American College of Rheumatology (ACR) (5). FM etiopathogenesis is still unclear hypothesized with multifactorial mechanisms which are grouped under subtitles as genetic and immunological causes or central and peripheral neuropathic pain theories (6). In recent studies on FMS, the importance of immune mediators are highlighted and show that immune system plays an essential role in developing neuropathic pain (7). Cytokines are the major mediators of the immune system and have anti-inflammatory or pro-inflammatory effects in the body. Pro-inflammatory cytokines are produced predominantly by activated macrophages and are involved in the up-regulation of inflammatory reactions. There is abundant evidence that certain pro-inflammatory cytokines such as IL-6, IFN- γ , TNF- α etc. are involved in the process of pathological pain (8). Several studies showed that pro-inflammatory cytokine levels were higher in FMS patients than in the healthy individuals (9,10). Additionally, the cytokines TNF- α , IL-6, and IL-17 were also enhanced in serum and could contribute to the inflammatory response in the central nervous system (11). In plasma, the increased IL-17 levels correlated with the levels of TNF α , and IL-17 in cerebrospinal fluid and serum was found to correlate with pain and anxiety (12,13,14). In addition, the serum level of IL-6 in patients was correlated with the pain score and, in animal models, the injection of IL-6, and TNF- α was shown to induce behavioral changes (15). In another study investigating the effect of IL-2 on chronic neuropathic pain, it was found that IL-2 had an antinociceptive effect on the central and peripheral nervous system (16). Sturgill et al. also reported that IFN- γ levels of FMS patients were higher than healthy controls (17). Besides, different studies have also suggested that IL-12, a pro-inflammatory cytokine, plays a key role in inflammatory conditions (18,19). On the other hand, the cause of FMS is not very clear and its treatment varies so different medications are used recently. One of the most known is pregabalin (PGB). The pharmacologic actions of PGB appear to be restricted to neurons; for example, pregabalin has no effect on blood pressure or heart rate even at high dosages in animal models, unlike the vascular calcium channel blockers (20). Potent binding of PGB at the α_2 - δ site reduces calcium influx at nerve terminals and, therefore, reduces the release of several neuro-chemicals, including glutamate, noradrenaline, and substance P (20–23). Additionally, PGB is an anti epileptic drug (AED) used for the management of chronic pain conditions such epilepsy and anxiety disorder (24). AEDs can directly affect immune system, modifying the expression and the synthesis of some molecules, mainly cytokines

(25). However, there is not enough information about the immunomodulator effect on cytokine release of PGB. The aim of this study is to investigate the effect of PGB on serum pro inflammatory cytokine levels in FMS patients.

Materials and Methods: 2.1. Patients and clinical assessment: In this research, 30 female patients with FMS using PGB 150 mg/day dose for at least 3 months, 30 female FMS patients not using PGB and 25 female healthy individuals were recruited from the University outpatient clinic. The patients included in the study were screened and identified on the basis of 2010 ACR criteria (26). ACR 2010 criteria consist of 2 items; the widespread pain index (WPI), a 0-19 count of the number of body regions reported as painful by the patient, a 0-3 severity scale of symptoms (SS) totally 0-31 points that are characteristic of FMS: fatigue, non-refreshed sleep and cognitive problems (26). FIQ is an instrument advanced to check the actual health status of women with the FMS in research perspectives. It gives information about the functional and clinical status of the patient; job, depression, anxiety, morning tiredness, pain, stiffness, fatigue, and well-being over the past week. FIQ seems to be the most convenient method that can be used to measure disease impact in FMS patients. In short, FIQ featured to have better responsiveness in clinical researches and a good correlation with similar questionnaires, containing the health assessment questionnaire (HAQ), arthritis impact measurement scale (AIMS) and 36-item short form survey (SF-36) (27). Patients who had infectious or autoimmune diseases were excluded from the study. The healthy controls had no clinical results indicative of FMS or any other inflammatory disease. The study protocol was accepted by the Ethical Committee of the University and was supported by Scientific Investigation Unit of the Faculty with the project number KUAP(T)-2020/2.

2.2. Blood Sampling: The venous blood taken from FMS patients and healthy individuals was centrifuged for 10 minutes at $3.000 \times g$. and serum samples were transferred into eppendorf tubes and stored frozen (-80°C) to analysing date.

2.3. Enzyme-linked immunosorbent assay (ELISA): The concentrations of proinflammatory cytokines (IL-2, IL-6, IL-12, IL-17, IFN- γ , TNF- α) were measured using commercial ELISA kit (BT-LAB, Shanghai, China) following the manufacturer's instructions. Tests were performed in duplicate for each sample and cytokine concentrations were calculated using standard curves. The sensitivity of the cytokine detection system of the assays was 2.51 ng/L for IL-2, 1.03 ng/L for IL-6, 0.13 ng/L for IL-12, 1.06 ng/L for IL-17, 0.49 ng/L for IFN- γ and 1.52 ng/L for TNF- α , respectively.

3. Statistical Analysis: Shapiro Wilk test was used for assessing whether the variables follow normal distribution or not. Continuous variables were presented as median (minimum:maximum) and mean $\pm$ standard deviation values. According to the normality test results, ANOVA test or Kruskal Wallis test was used if the number of groups were more than two. Multiple comparison procedures were performed using the Dunn-Bonferroni approach to identify different group or groups after the Kruskal Wallis test. SPSS (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, Version 21.0, Armonk,

NY: IBM Corp.) was used for statistical analysis and a p value <0.05 was considered statistically significant.

Results: The study included 30 female FMS patients using PGB (50.93±9.92 years old), 30 female FMS patients not using PGB (49.80±11.94 years old) and 25 female healthy controls (48.60±10.59 years old). There was no difference among the groups in terms of mean age (p = 0,731).

IL-2 concentration was remarkably increased in FMS patients not using PGB (0.36 ng/L) compared with FMS patients using PGB and healthy controls (respectively, 0.17 ng/L, 0.24 ng/L). In addition, levels of FMS patients not using PGB were highest (0.36 ng/L). There was a significant difference between FMS patients using / not using PGB and healthy controls (respectively, p<0.001, p<0.002) (Table1, Figure 1).

Table 1. IL-2 levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
IL-2 (ng/L)	0.24 (0.11:1.04)	0.17 (0.08:1.20)	0.36 (0.21:1.89)	<0.001

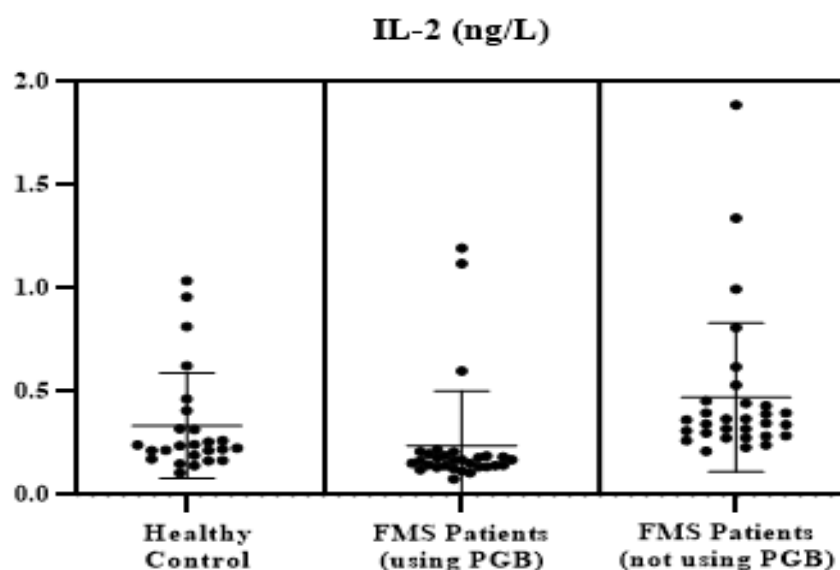


Figure 1. IL-2 levels in healthy control and FMS patients, p<0.05

There was a significant difference between the patients using and not using PGB in terms of IL-6 levels (p<0.001). IL-6 levels of not using PGB group (0.41ng/L) were higher than using group (0.23 ng/L) and IL-6 levels of healthy controls (0.31 ng/L) were lower than FMS patients (Table 2, Figure 2).

Table 2. IL-6 levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
IL-6 (ng/L)	0.31 (0.15:1.53)	0.23 (0.06:1.45)	0.41 (0.22:1.98)	<0.001

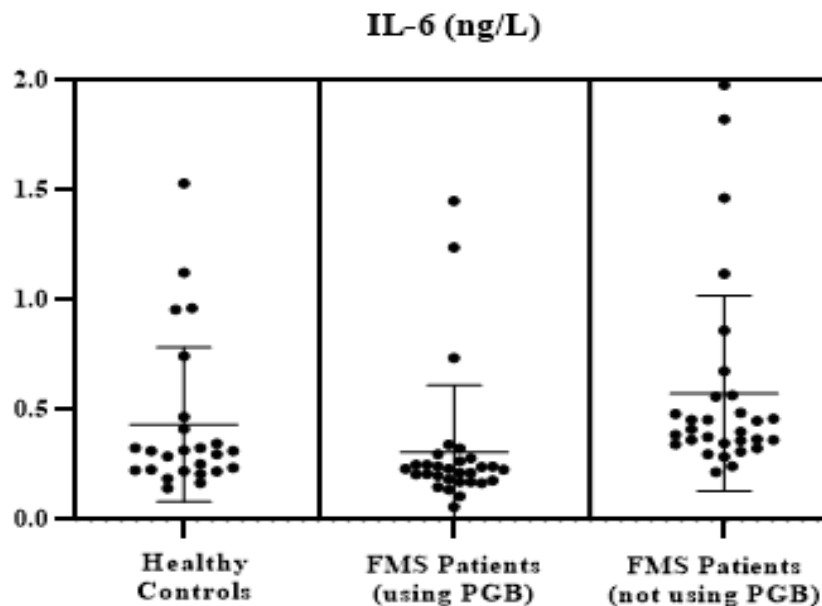


Figure 2. IL-6 levels in healthy control and FMS patients, $p < 0.05$

IL-12 levels of the healthy control group (0.20 ng/L) were lower than the FMS patient groups, whereas the not using PGB group (0.31 ng/L) IL-12 levels were higher than the using PGB group (0.14 ng/L). However, there was a significant difference between the patient groups ($p < 0.001$).

Table 3. IL-12 levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
IL-12 (ng/L)	0.20 (0.11:0.91)	0.14 (0.10:1.45)	0.31 (0.21:1.64)	<0.001

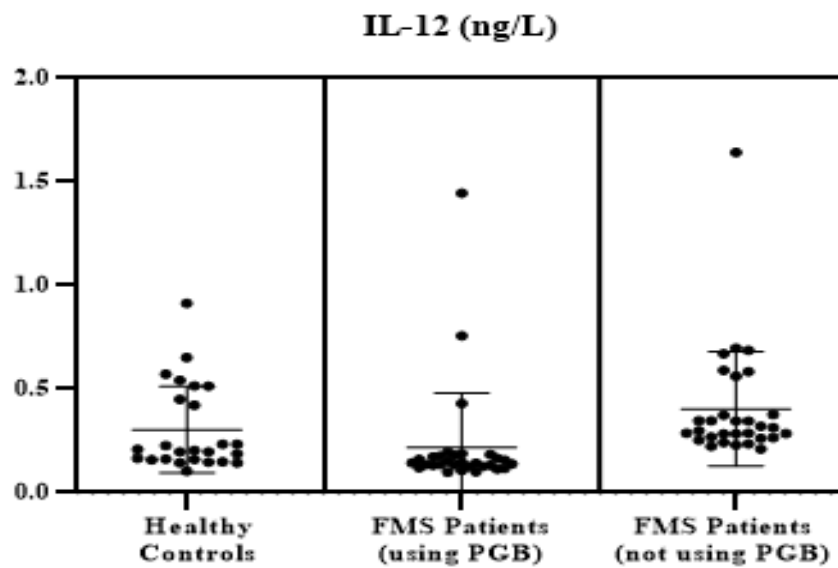


Figure 3. IL-12 levels in healthy control and FMS patients, $p < 0.05$

There was a statistically significant difference between the groups in terms of IL-17 value ($p < 0.001$). The IL-17 level of the FMS patients not using PGB (0.36 ng/L) is higher than the healthy controls (0.24 ng/L) and patients using PGB (0.17 ng/L).

Table 4. IL-17 levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
IL-17 (ng/L)	0.24 (0.13:0.95)	0.17 (0.09:1.02)	0.36 (0.28:1.23)	<0.001

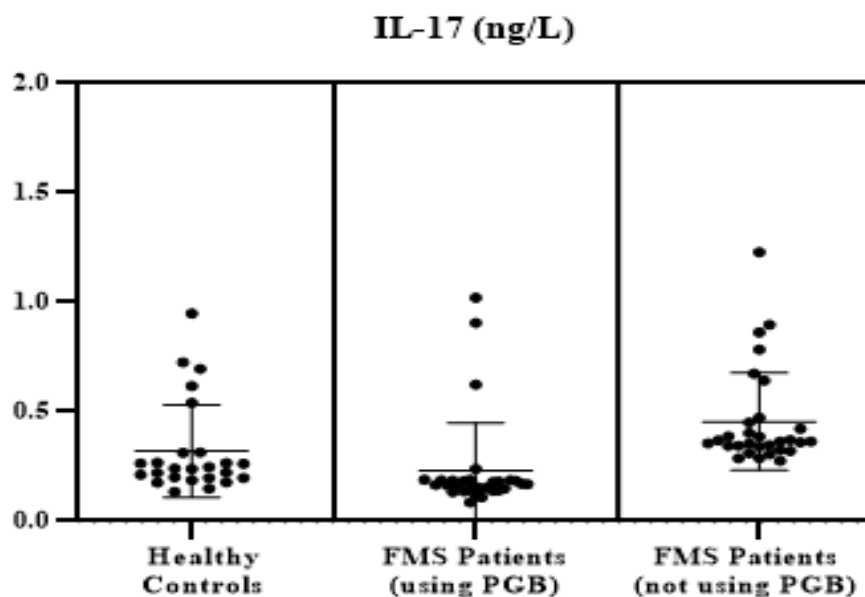


Figure 4. IL-17 levels in healthy control and FMS patients, $p < 0.05$

IFN- γ levels of FMS patients not using PGB (0.43 ng/L) have the highest value and statistically significant difference was found in between the healthy and patient groups ($p < 0.001$). Additionally, variation between the FMS groups was remarkable, levels of FMS patients using PGB (0.16 ng/L) were lower than not using patients ($p < 0.001$).

Table 5. IFN- γ levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
IFN- γ (ng/L)	0.19 (0.12:0.88)	0.16 (0.09:1.59)	0.43 (0.10:0.88)	<0.001

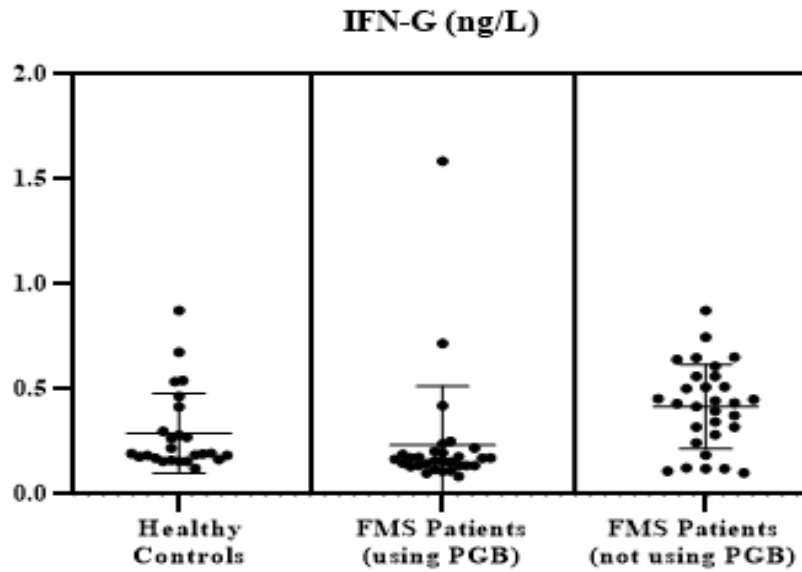


Figure 5. IFN- γ levels in healthy control and FMS patients, $p < 0.05$

A statistically significant difference was found between the groups in terms of TNF- α value ($p < 0.001$). TNF- α levels of the healthy group (0.23 ng/L) and FMS patients using PGB (0.14 ng/L) were lower than the patient group not using PGB (0.93 ng/L). In addition there was a noticeable different between the FMS patients using PGB and not using ($p < 0.001$)

Table 6. TNF- α levels in healthy controls and FMS patients

	Healthy Controls	FMS Patients (using PGB)	FMS Patients (not using PGB)	P value ^b
TNF-α (ng/L)	0.23 (0.14:1.10)	0.14 (0.08:1.18)	0.93 (0.35:2.94)	<0.001

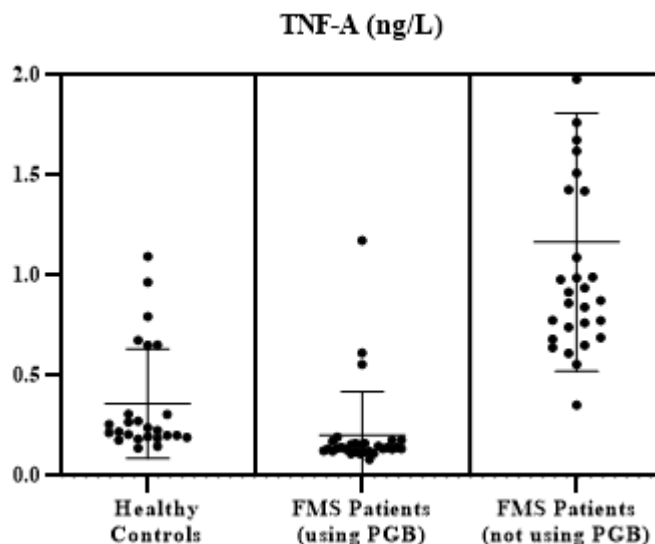


Figure 6. TNF- α levels in healthy control and FMS patients, $p < 0.05$

Discussion: In this study, we investigated the PGB effect on pro-inflammatory cytokine release in FMS patients. We observed that serum levels of pro-inflammatory cytokines (IL-2, IL-6, IL-12, IL-17, IFN- γ , TNF- α) were higher in patients with FMS than healthy controls and there was a significant difference between the cytokine levels of patients using and not using PGB. ($p < 0.001$).

FMS is a chronic pain disorder whose underlying causes are still not fully identified, but it has diminishing effects in the quality of life of whom suffers. In several studies on FMS, it has been suggested that many factors play a role in the development of the disease (28,29). The most recent of these factors is that immunological markers may affect the etiopathogenesis of the disease (30). In one of the studies, it has been suggested that as a result of the interaction of inflammatory cytokines with immune cells of the nervous system, various pathways are activated and neuro-inflammation may occur (31). Cytokines are mediators released from immune system cells and participating in inflammatory responses in both innate and adaptive immunity. In addition, cytokines may show pro-inflammatory (IL-17, TNF- α), anti-inflammatory, or both pro- and anti-inflammatory activity in inflammation where pain is present (32). It is suggested that there is a disturbance in the balance between the cytokines in FMS patients with chronic widespread pain and hypersensitivity, and this situation supports the persistence of pain (33). However, there are many studies showing that pro-inflammatory cytokines may play an important role in the pathogenesis of FMS. Emberg et al. determined that the levels of IL-2 were higher in FMS patients compared to the controls (34). However, an elevation in the level of serum IL-2 in patients with fibromyalgia has been recently reported by Peter and Wallace (35). In our study, IL-2 levels of FMS patients were also found higher than healthy controls. There is not enough information about IL-2 action in FMS but it is suggested that it may be use for clinical therapies on FMS-like

symptoms (36). On the other pro-inflammatory cytokine IL-6 has various key functions in the immune response and it is highly expressed in the central nervous system (37). IL-6 contributes to the generation of pain by central sensitization and nociceptive neuron sensitization. Moreover, it has been tightly linked to nociceptive plasticity through the improvement of translation in sensory neurons (38). Previous studies on pathological pain found high expression levels of gp130, IL-6 and IL-6R in the dorsal root ganglion and in the spinal cord (38). Elevated synthesis of IL-6 and dysregulation in the IL-6 receptor signaling are associated with disease pathology, especially those manifested with pathological pain (39). However, the levels of IL-6 in FMS patients were also higher than healthy controls in our study and this increase was statistically significant. Like many other cytokines, IL-6 is thought to be an essential part in the pathophysiology of FMS. However, the precise mechanism and role of this cytokine in widespread pain associated with FMS are still a subject of study. Although IL-12, another proinflammatory cytokine, is mostly researched in autoimmune diseases, there are also studies showing that it may be associated with pain. Recently, it has been demonstrated that IL-12 also induce inflammatory hypernociception (40). Its pronociceptive effect was demonstrated in rats. IL-12 injection induces mechanical hypernociception, which is mediated by endothelin-1 (ET-1) action on endothelin-B (ET_B) receptors, and is not dependent of prostanoids, sympathetic amines or leukotrienes in rats (41). This effect is important because pain at the IL-12 injection site has been reported during treatment in humans (41). Besides IL-12 is also an important cytokine for arthritis development. Kim et al. obtained that IL-12 levels reflect RA disease activity and that IL-12 was involved in the production of proinflammatory cytokines so IL-12 blockade could be useful for the treatment of RA (42). In our study, IL-12 level was found to be higher in FMS patients compared to healthy controls. On the other hand, IL-17 is the principal cytokine released from Th17 cells and has been found to be upregulated in various inflammatory diseases such as rheumatoid arthritis (43,44). Moreover, it has been shown, in several clinical conditions, that IL-17A positively correlates with indices of pain, depression and anxiety, which are symptoms reported by FMS patients (43). Although there are a limited number of studies on the efficacy of Th17 cells in FMS, most of the researches reported that IL-17 levels increased in FMS patients (45,46). In our study, IL-17 level was found to be lower in FMS patients compared to healthy controls and this result was consistent with the other studies performed. Another cytokine TNF- α is a pro-inflammatory mediator produced by various immune cells but mainly secreted by macrophages in the periphery and microglia in the central nervous system, where it can influence neuronal networks in order to modulate pain signaling (47). TNF- α is a critical cytokine in both acute and chronic inflammation. Furthermore, it has the potential to modulate pain signaling when TNF- α binds specifically to its TNF receptor 1 (TNFR1) (47). During emotional and physical stress, high levels of substance P and corticotropin-releasing hormone are released. Both substances are tightly implicated in the induction of inflammation and they also have the potential to stimulate mast cells to secrete TNF- α . It is worth mentioning that one study found elevated plasma levels of TNF- α , substance P and corticotropin-releasing hormone in FMS patients when compared with controls (48). However, regarding to the role

of TNF- α on FMS the results are conflictive since studies found no differences in plasma concentrations between FMS patients and healthy people (49,50), those which reported an increase in TNF- α plasma level on patients with FMS (51,52), having also published works in which a drop is detected in TNF- α concentration on FMS patients compared to the healthy control group (53,54). Similarly, we found TNF- α levels were higher in FMS patients than healthy controls in our study. IFN- γ is another pro-inflammatory cytokine that we recently investigated. Studies on IFN- γ , no significant difference was found between FMS patients and healthy individuals in terms of IFN- γ levels and values of IFN- γ were close to each group. (34,55) On the contrary, we determined a significant increase in the concentration of this pro-inflammatory cytokine in serum of people with FMS compared to the healthy control group. In addition to all these, FMS patients using and not using PGB were also compared in our study and the effect of PGB on pro-inflammatory cytokines was investigated. Although there are a limited number of studies on PGB effectiveness, the results of our study were consistent with the results of previous studies. We found the levels of FMS patients using PGB were lower than not using patients and healthy controls. However, Kilic et al. reported that all doses of PGB had anti-inflammatory effects supported by cytokine levels in adult female rats. Though PGB acts by binding to voltage gated calcium channels and is indicated for the treatment of neuropathic pain, it is thought to have effect on inflammation (56). PGB may have effects on immune system alterations. PGB is an anti-epileptic agent but has significant inhibition on IL-6 secretion *in vitro*. PGB also inhibited IL-6 and TNF- α *in vivo* (57). This adjunctive therapy may be responsible for the unexpected levels of cytokines in FMS. FMS is still a disease of unknown etiopathogenesis and difficult to understand. This is partly due to the lack of reliable and appropriate diagnostic methods. It is known that differentiation in the immune system can affect the severity of the main symptoms of FMS. Accordingly, there are insights that cytokine levels may explain the development and persistence of disease symptoms in FMS. On the other hand, the information on the methods used in the treatment of FMS and how the drugs work has not been fully clarified so this study may be help to understand this subject and can give an idea about the therapeutic usage of PGB-like drugs

Conclusion: In conclusion, in this study the effect of treatment with PGB on immune mediators in FMS patients was evaluated for the first time. Significant differences were obtained in cytokine levels of patients with PGB treatment. These differences in the immune profile reveal that the immune system's role in the pathogenesis of neuropathic pain is much more vital than previously thought. However, our findings may extend the current state of knowledge regarding the role of PGB in modulating the immune system in neuroinflammatory conditions such as neuropathic pain conditions, FMS and anxiety disorders. This anti-inflammatory effect might be adjunctive to the documented mechanism of action of PGB in treating these conditions. Further studies are necessary to investigate the effects of PGB on cytokine levels within the several pain related disorders and to investigate these effects on different immune mediators.

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ID-46 / OP: ‘Evaluation of Etiological Factors in Women with Breast Cancer’

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Abstract ID-46

Introduction and Purpose: Female breast cancer has surpassed lung cancer as the most frequently diagnosed cancer worldwide. Although there are many factors that are effective in the formation of breast cancer, contradictory information may emerge in studies investigating these. The aim of this study is to question some sociodemographic, reproductive background, lifestyle and environmental risks that may be the cause of breast cancer, which is the most common cancer in women in the world and in our country.

Materials and Methods: Our research was planned between 17.05.2021 and 17.07.2021 as a case-control study and was carried out with the approval of the ethics committee. A total of 420 patients, 210 women with breast cancer aged between 18-70 years, who are being treated/followed up in SBU İzmir Tepecik SUAM Oncology Center, and 210 healthy women who were not related to the patients in the control group, were included in the study. With the prepared questionnaires, apart from some known risk factors, base station, deodorant use, mobile phone use, sleep and stress variables were investigated.

Results: The mean age of the patients was 49.1 ± 8.1 years in the breast cancer group and 47.4 ± 10.8 years in the control group. When the demographic characteristics were examined, it was seen that the rate of married, higher education status and living in the city were significantly higher in the control group compared to the case group. It was determined that high BMI, hair dye use, less sleep time, radiation exposure, use of cleaning products, passive smoking and daily stress level were positively correlated with breast cancer ($p < 0.001$). The duration of activity with mobile phone was found to be statistically significantly higher in the case group than in the control group ($p = 0.020$). When the sleeping positions were evaluated, it was seen that the rate of those who preferred to sleep on the "right side" was statistically significantly higher in the case group (64.3%) ($p < 0.001$). Looking at their reproductive stories; Early menarche, menstrual irregularity, nulliparity, infertility, abortion, curettage, and less breastfeeding duration were statistically significantly higher in the breast cancer group. The family history of breast cancer was significantly higher in the case group ($p < 0.001$).

Discussion and Conclusion: In our study, besides the factors known to be effective in breast cancer; It has been determined that the use of hair dye, less sleep time, use of cleaning products, passive smoking,

“right side” sleeping position, mobile phone activity time, infertility treatment, abortion and curettage increase the risk of breast cancer and some known factors are supported.

Keywords: Breast cancer, risk factors, environmental exposure

ID-48 / OP: “A Rare But Major Complication Secondary to Obesity Surgery: Gastrobronchial Fistula”

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Abstract (ID-48)

Introduction: Obezite; sıklığı son 50 yılda üç kat artan, önemli bir halk sağlığı sorunu haline gelen ciddi bir hastalıktır. Beden kitle indeksinin 30 kg/m² üzerinde olması olarak tanımlanır. Hayatı zorlaştırmasının yanı sıra farklı komorbiditelere de sebep olduğu için tedavi edilmelidir. Yaşam tarzı değişikliği, diyet, egzersiz ve dirençli olgularda cerrahi ile tedavi edilebilmektedir. Yazımızda günümüzde sık uygulanan laparoskopik sleeve gastrektominin göğüs cerrahisi branşını da ilgilendiren majör bir komplikasyonu olan gastrobronşial fistül hakkında farkındalık yaratmayı ve takip tedavi aşamaları hakkında bilgi sunmayı amaçladık.

Günümüzde dirençli obezite tedavisinde sıklıkla tercih edilen ve yüz güldürücü sonuçları olan pek çok farklı cerrahi teknik mevcuttur ve bu teknikler bariatrik cerrahi adı altında toplanmıştır. Bu tekniklerden bir tanesi de laparoskopik sleeve gastrektomidir ve literatürde sıklıkla konservatif yöntemlerle karşılaştırılmıştır. İlk iki yılda ortalama 28 kilogram gibi ciddi bir kilo kaybı sağlayabilmektedir. Uzun dönem takipte ise kabul edilebilir bir kilo artışı olabilmektedir. Bu tedavi metodu başta diyabet olmak üzere obezitenin sebep olduğu komorbiditelerin engellenmesine ve insidansının azalmasına katkıda bulunmaktadır. Ancak her cerrahi teknikte olduğu gibi bu yöntemin de komplikasyonları mevcuttur. Karşılaşılma ihtimali çok düşük olsa da majör bir komplikasyon olan gastrobronşial fistül, hastaların postoperatif dönemde lobektomi ve splenektomiye varabilecek majör ek operasyonlar geçirmesine sebep olabilecek bir sorundur.

Results: Sonuç olarak laparoskopik sleeve gastrektomi uygulanan ve nonspesifik solunum yolu semptomlarından yakınan hastalarda gastrobronşial fistülün akılda tutulması gereken bir durum olduğunu düşünüyoruz. Erken tedavi ve iyi bir multidisipliner yönetim sayesinde bariatrik cerrahinin yüz güldürücü sonuçlarına gölge düşüremeyeceği kanısındayız.

Anahtar Kelimeler: Bariatrik cerrahi, bronşial fistül, gastrektomi, obezite

Abstract (ID-48): “A Rare But Major Complication Secondary to Obesity Surgery: Gastrobronchial Fistula”

Introduction: Obesity; is a serious disease, which the incidence of it has increased threefold in the last 50 years and has become an important public health problem. It is defined as having a body mass index over 30 kg/m². It should be treated because it causes comorbidities as well as making life difficult. It can be treated with lifestyle changes, diet, exercise and in especially resistant cases with surgery. In our article, we aimed to raise awareness about gastrobronchial fistula, which is a major complication of laparoscopic sleeve gastrectomy frequently applied in last years and also concerns the thoracic surgery, and to provide information about the follow-up and treatment stages.

Today, there are many different surgical techniques that are frequently preferred in the treatment of resistant obesity and have satisfactory results, and these techniques are gathered under the name of bariatric surgery. One of these techniques is laparoscopic sleeve gastrectomy and it has often been compared with conservative methods in the literature. In the first two years, it can provide a serious weight loss of 28 kilograms on average. In long-term follow-up, there may be an acceptable weight gain. This treatment method contributes to the prevention of many comorbidities caused by obesity, especially diabetes and to reduction in its incidence. However, as with any surgical technique, this method also has complications. Although it is very unlikely to be encountered, gastrobronchial fistula, which is a major complication, is a problem that may cause patients to undergo major additional operations, including lobectomy and splenectomy, in the postoperative period.

Results: In conclusion, we think that gastrobronchial fistula should be kept in mind in patients who underwent laparoscopic sleeve gastrectomy and suffer from nonspecific respiratory symptoms. We believe that if it is treated early and managed multidisciplinary, it cannot adversely affect the satisfactory results of bariatric surgery.

Keywords: bariatric surgery, bronchial fistula, gastrectomy, obesity

Full Text (ID-48)

Giriş: Obezite 1970’ li yıllardan günümüze sıklığı neredeyse üç kat artan ve günümüz dünyasının en önemli problemlerinden bir haline gelen ciddi bir sağlık sorunudur. Beden kitle indeksinin 30 kg/m² üzerinde olması obezite olarak tanımlanmaktadır. Sadece yaşam kalitesini bozmakla kalmamakta; kanser, tip 2 diyabet, kardiyovasküler hastalıklar ve osteoartrit gibi komorbiditeler için predispozisyon oluşturmaktadır (Blüher, 2020).

Obezite tedavisinde yaşam tarzı değişiklikleri, diyet ve egzersiz programları uygulanmaktadır. Fakat farklı sebeplerle bu yöntemlerin başarılı olamadığı durumlarda obezitenin cerrahi tedavisi de mümkündür. Bariatrik cerrahi adı altına toplanabilecek pek çok yöntem mevcuttur. Bu yöntemlerden biri olan laparoskopik sleeve gastrektomi son zamanlarda sıklıkla uygulanan bir yöntem halini almıştır (Ersu, Ersu, Balci, Öngel, 2020).

Yazımızda günümüzün en büyük problemlerinden biri olan obezitenin cerrahi tedavisinde nadir görülebilecek ancak majör bir komplikasyon olan gastrobronşial fistüller (GBF) olgu örnekleri ile derlenmiş, göğüs cerrahı gözünden bu durumun takibi ve tedavisi hakkında bilgi sunulması amaçlanmıştır.

Derleme: Obezite, yaşam tarzı değişikliği, diyet ve egzersiz ile tedavi edilebilecek bir hastalık olsa da dirençli olgularda çeşitli cerrahi teknikler tercih edilerek bu hastalığın ve komplikasyonlarının önüne geçmek mümkündür. Baritrik cerrahi adı altında toplanabilecek obezite cerrahisinde temelde üç mekanizma ile tedavi sağlanabilmektedir. Bunlar malarbsorbsiyon, restriksiyon ve bu ikisinin kombinasyonudur. Restriktif yöntemler; intragastrik balon, gastrik pacing, vertikal band gastropласти, laparoskopik ayarlanabilir gastrik band, laparoskopik sleeve gastrektomi (LSG) (Tüp mide), malabsorbif yöntemler; biliopankreatik diversiyon, jejunoileal bypass, kombine yöntemler ise biliopankreatik diversiyon-duedonal switch, Roux en Y gastrik bypass ve mini gastrik bypass olarak sıralanabilir (Güngör, 2019).

Bariatric cerrahi üzerine yapılan kapsamlı bir çalışmada cerrahi sonrası verilen kilo ikinci yılda ortalama 28 ± 15 kg, sekiz yıl sonunda ise ortalama 20 ± 16 olarak bildirilmiştir. Diyabet insidansında cerrahi dışı yöntemlerle tedavi olanlara göre iki yıl sonunda 32 kat azalma, sekiz yıllık takipte ise 5 kat azalma raporlanmıştır (Torgerson, Sjöström, 2001).

Obezite cerrahisinin kardiyovasküler hastalıklar üzerindeki etkisini konu alan, 14 çalışmanın verilerinden oluşan bir meta-analizde cerrahi uygulanan hastalarda miyokard infarktüsü, serebrovasküler olay ve diğer kardiyovasküler olayların riskinde kontrol grubuna göre ciddi azalma raporlanmıştır. Mortalite oranının ise %50' den fazla azaldığı belirtilmiştir (Kwok ve ark., 2014).

Literatürde bariatric cerrahinin olumlu sonuçlarını ortaya koyan pek çok çalışma mevcuttur. Ancak her cerrahi işlemde olduğu gibi obezite cerrahisinde de komplikasyonlar gelişebilmektedir.

LSG komplikasyonları akut ve kronik komplikasyonlar olarak sınıflandırılabilir. Akut komplikasyonlar postoperatif hemoraji, stapler hattı kaçaqları ve apse iken kronik komplikasyonlar ise striktürler, beslenme bozuklukları ve gastro-özefageal reflü hastalığıdır (Lalor, Tucker, Szomstein, Rosenthal, 2008). Geç komplikasyonlardan biri olan GBF ise stapler hattı kaçaqlarının diafragmaya komşu olması ve kronikleşmesi sebebi ile oluşur. Sık karşılaşılmadığı için geniş bilgi sahibi olunamayan ancak nadir bir komplikasyondur (Guillaud, ve ark., 2015). Literatürdeki GBF bilgileri genellikle olgu sunumu düzeyinde olup bu konudaki araştırma makalesi sayısı oldukça azdır.

GBF batın ve akciğer arasında anormal bir bağlantı olarak tanımlanabilir. Gerçek insidansı henüz bu konudaki çalışmaların vaka sunumu düzeyinde olması sebebi ile net belirlenememektedir. Genellikle LSG komplikasyonu olarak bilinse de etiolojide 5 farklı durum sorumlu tutulabilir: maligniteler, gastrik ve özefageal operasyonlar, travma, subfrenik apse ve gastrik ülserler. Gastrik kaçaqlar sonucu gelişen subfrenik mide içeriği birikimi zamanla diafragmayı erode ederek akciğere ulaşıp fistüle sebep olabilir. Bu gecikmiş etkinin farkedilmemesindeki ana sebep ise gastrik içeriğin omentum tarafından sınırlanması ve duvar etkisi ile peritonda iritasyonun engellenmesidir (Fernando, ve ark., 2020).

GBF de en yaygın semptomlar sekretuar öksürük ve ateştir. İlerlemiş vakalarda tekrarlayan pnömomi ve akciğer apsesi görülebilir. Bu hastalarda tanı koymak zahmetli bir süreçtir ve iyotlu radyolojik görüntülemeler gerektirebilir. Baryumlu incelemeler ciddi bronşial reaksiyonlara sebep olabileceği için mümkün olduğunca tercih edilmemelidir (Campos, ve ark., 2011).

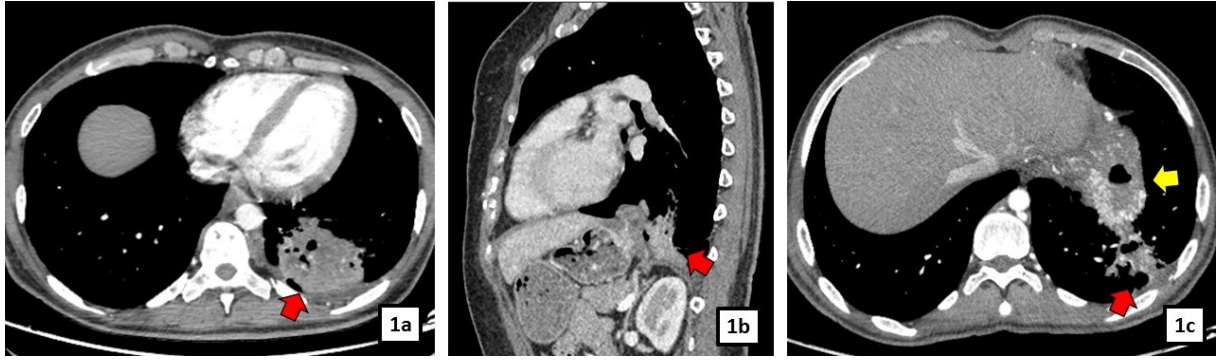
Biz kliniğimizde son 4 yılda bariatric cerrahi sonrası GBF tanısı koyduğumuz üç olgu takip ettik ve tedavi etmeye çalıştık. Olguların üçü de aynı şekilde LSG operasyonu sonrası yaklaşık birinci yılda tarafımıza başvurdu. Elli yaşındaki kadın hasta operasyondan yaklaşık altı ay sonra başlayan inatçı öksürükten yakınırken, 41 yaşındaki kadın hasta ve 20 yaşındaki erkek hasta operasyondan yaklaşık altı ay sonra başlayan hemoptiziden yakınmaktaydı. Her üç hastanın da pnömomi benzeri semptomlar sebebi ile tekrarlayan antibiyotik kullanımı öyküleri mevcuttu. Hastalar kontrastlı toraks tomografisi ile değerlendirildi (Şekil 1). Her üç hastada da sol akciğer alt lobda diafragma komşuluğunda akciğer apsesi mevcuttu. Sadece bir hastada subfrenik apse tomografi ile net bir şekilde değerlendirilebilmişti. Ancak diğer hastalarda da mide çevresindeki heterojen görünüm apse formasyonu düşündürmüştü. Klinik öykü, radyolojik görünüm ve semptomlar eşliğinde değerlendirilen hastalarda LSG' ye bağlı GBF tanısı kondu. Literatür tarandığında yayınlanan olgu sunumlarında hastaların tanı amaçlı ön planda kontrastlı tomografi ile değerlendirildiği görülmektedir (Sobhani, ve ark.,2020) (Sakran, Assalia, Keidar, ve Goitein, 2012).

LSG sonrası GBF tedavisi oldukça uzun ve zorlu bir sürece dönüşebilmektedir. Antibiyotik tedavisi ile başlayan süreçte tedavi olarak endoskopik girişimler denenebileceği gibi tedavi skalası laparotomi ve torakotomiye uzanacak kadar geniş olabilmektedir. Antibiyotik tedavisi sonrası endoskopik olarak fibrin yapıştırıcılar ile fistülün kapatılması, kliplene veya stent yerleştirilmesi denenebilmektedir (Campos, ve ark., 2011). Ancak tedavi bunlarla sınırlı kalamayabilir. Literatürde 13 hasta üzerinden yapılmış bir çalışmada tedavi metodları arasında laparotomi ile apse drenajı, gastrektomi, gastrojejunal anastomoz, jejunostomi, splenektomi (6 olgu), ve bu operasyonlarla kombine olarak tüp torakostomi, torakotomi ile sol alt lobektomi (9 olgu), diafragma rekonstrüksiyonu gibi çok çeşitli uygulamaların kullanıldığı görülmektedir. Tüm hastaların sonuçta iyileştiği bu çalışmada ortalama iyileşme süresi 160 gün olarak belirtilmiştir (Guillaud, ve ark., 2015). Dirençli olgularda sürecin uzunluğuna bağlı olarak hasar bölgesinin değişkenlik gösterebilmesi sebebi ile fikir birliği oluşmuş bir tedavi metodu gelişmediğini düşünmekteyiz. Bu durumda olgu sayısının yeterli olmamasına bağlı olarak literatür bilgilerinin de kısıtlı olması bir faktör olarak düşünülebilir.

Kliniğimizde tedavi ettiğimiz olguların hepsinde ortak nokta sol akciğer alt lobunun diafragmatik yüze kuvvetli adheze olması, pnömoliz sonucu ise diafragmada belirgin bir fistül alanı saptanamamış olmasıydı. İlk olguya sol alt lobektomi, ikinci ve üçüncü olguya ise geniş wedge rezeksiyon uygulanarak akciğerdeki apse ve destrükte alanlar rezeke edildi. Her üç olgunun diafragması da primer sütüre edilmek suretiyle desteklendi. İlk iki olgu genel cerrahi ekibi tarafından değerlendirilerek takip kararı alındı. İlk olguda tekrarlayan stent uygulamaları ile kaçağın sonlanması sağlandı. Üçüncü olgu genel cerrahi ekibi tarafından operasyona alınarak laparotomi ile apse drenajı, jejunostomi ve

splenektomi uygulandı. Hastaların hemoptizi gibi zorlu semptomları postoperatif erken dönemde sonlansa da öksürük ve göğüs ağrısı gibi nonspesifik solunum yolu semptomlarının ve yaşadıkları psikolojik travmanın iyileşme süresine dair net bir veri paylaşamamaktayız. Ancak tüm olgular GBF tanısı ile tedavi edildikten sonra birinci yıl poliklinik kontrolüne şifa ile başvurmuştur ve hastaların takiplerine devam edilmektedir.

Sonuç: Obezite tedavisinde bariatrik cerrahi oldukça etkili ve tercih edilebilir bir yöntemdir. Her cerrahi işlemde olduğu gibi bu işleminde komplikasyonları mevcuttur. Gastrobronşial fistül bu komplikasyonlardan biridir ve doku ya da organ kaybına sebep olabilecek kadar majör bir durumdur. Ancak hastalar postoperatif dönemde sadece nonspesifik solunum yolu semptomları ile hastaneye başvurabilmektedir. Gerek acil servis gerekse polikliniklerde bu hastalar ile karşılaşıldığında detaylı anamnez alınması gerektiğini, bariatrik cerrahi öyküsü bulunan hastalarda gastrobronşial fistülün akılda tutulması gereken bir durum olduğunu düşünmekteyiz. Erken dönemde tanı konduğunda gastrobronşial fistülün bariatrik cerrahinin yüz güldürücü sonuçlarına gölge düşüremeyeceği kanısındayız.



Şekil 1a. Elli yaşında kadın hastanın toraks tomografisinin horizontal kesitinde sol akciğer alt lobda diafragma komşuluğunda akciğer apsesi (ok)

Şekil 1b. Kırk bir yaşında kadın hastanın saggital tomografi kesitinde diafragmanın mideye komşu bölümünün üstünde sol akciğer alt lobda akciğer apsesi görünümü (ok)

Şekil 1c. Yirmi yaşındaki erkek hastanın tomografi horizontal kesitinde subdiafragmatik apse (sarı ok) ve sol akciğer alt lobda apse (kırmızı ok) formasyonları

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ID-49 / OP: “Is there a relationship between the *Helicobacter pylori* morphology observed in sleeve gastrectomy and lymphoid follicle and aggregate formation?”

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Abstract ID-49

Introduction and Objective: Obesity, which is a global health problem with its increasing incidence, is defined by the World Health Organization (WHO) as abnormal or excessive fat accumulation that poses a risk to health together with overweight. Among the methods in the treatment of obesity, there are medical and surgical treatment methods. The surgical methods applied are called bariatric surgery and sleeve gastrectomy is among the most commonly used bariatric surgery methods.

The gastric tissue resected as a result of sleeve gastrectomy is routinely examined histopathologically. The presence of *Helicobacter pylori* is also indicated in the pathology report. The association of *Helicobacter pylori* with lymphoid follicles and lymphoid aggregates in the stomach is known, but there is not much data considering the effect of bacterial morphology on lymphoid formations. Therefore, in this study, the relationship between the morphology of *Helicobacter pylori* and lymphoid formations in biopsy materials obtained from obese cases operated with sleeve gastrectomy is investigated.

Materials and Methods: 89 sleeve gastrectomy cases were included in the study. Cases that did not have archival material in the pathology laboratory were not included in the study. In the evaluation of the cases, the presence of gastritis, the type of gastritis, the severity of gastritis, the presence and severity of lymphoid follicles and aggregates, and the presence, severity and morphology of *Helicobacter pylori* were evaluated.

Results: The mean age of the subjects included in the study was 35.5±10.0; 61 of the cases were female (68.5%) and 28 (31.5%) were male. The presence of gastritis was noted in all cases. Active chronic gastritis was observed in 28 cases (31.5%), while chronic gastritis was observed in 61 cases (68.5%). *Helicobacter pylori* was detected in 70 (78.7%) of the cases. Morphologically, bacilli in 43 (61.4%) cases, cocci in 8 (11.4%) cases, and cocci and bacilli in 19 (27.1%) cases were observed together. The presence of lymphoid follicles was observed in 41 (46.1%) cases, while the presence of lymphoid aggregates was observed in 62 (69.7%) cases. It was noted in the analyzes that the presence of *Helicobacter pylori* was statistically significantly correlated with the presence of lymphoid follicles (p=0.000) and lymphoid aggregates (p=0.000). When *Helicobacter pylori* morphology was evaluated, there were no statistically significant relationship between *Helicobacter pylori* morphology and gastritis

($p=0.856$), severity of gastritis ($p=0.298$), presence of lymphoid follicles ($p=0.139$) and severity of lymphoid follicles ($p=0.366$), presence of lymphoid aggregates ($p=0.054$) and severity of lymphoid aggregates ($p=0.073$). On the other hand, the severity of *Helicobacter pylori* was found to be statistically significantly higher in cases with bacillus form ($p=0.000$).

Discussion and Conclusion: As a result of the current study, although the relationship between lymphoid follicles and aggregates in the literature and helicobacter pylori was proven once again, the relationship between helicobacter pylori morphology and lymphoid follicles and/or aggregates could not be demonstrated. A value close to significant in the analyzes performed with lymphoid aggregates suggests that a statistically significant relationship can be detected in a larger case series.

Keywords: Obesity, Lymphoid follicle, Lymphoid aggregate, *Helicobacter pylori*, Sleeve gastrectomy

Full Text ID-49: “Sleeve gastrektomilerde gözlenen *Helicobacter pylori* morfolojisinin lenfoid follikül ve agregat oluşumu ile ilişkisi var mı?”

Giriş ve Amaç: Artan insidansı ile küresel bir sağlık sorunu olan obezite; Dünya Sağlık Örgütü (DSÖ) tarafından aşırı kilo ile birlikte sağlık açısından risk oluşturan anormal veya aşırı yağ birikimi olarak tanımlanmaktadır. Obezite tedavisinde yer alan yöntemler arasında medikal ve cerrahi tedavi yöntemleri bulunmaktadır. Uygulanan cerrahi yöntemler bariatrik cerrahi olarak adlandırılmakta ve sleeve gastrektomi en sık kullanılan bariatrik cerrahi yöntemleri arasında yer almaktadır.

Sleeve gastrektomi sonucunda rezeke edilen mide dokusu histopatolojik olarak rutin olarak incelenir. Bu incelemelerde helicobacter pylori varlığı da raporda belirtilir. Helicobacter pylorinin midedeki lenfoid follikül ve lenfoid agregatlar ile ilişkisi bilinmektedir ancak bakteri morfolojisinin lenfoid formasyonlara etkisi hakkında çok veri yoktur. Bu nedenle bu çalışmada sleeve gastrektomi ile opere edilen obez olgularda helicobacter pylorinin şeklinin biyopsi materyallerindeki lenfoid follikül ve agregatlar ile ilişkisi incelenmektedir.

Gereç ve Yöntem: Çalışmaya 89 sleeve gastrektomi olgusu dahil edildi. Patoloji laboratuvarında arşiv materyali bulunmayan olgular çalışmaya alınmadı. Olguların değerlendirilmesinde gastrit varlığı, gastrit türü, gastrit şiddeti; lenfoid follikül ve agregat varlığı ve şiddetleri ile Helicobacter pylori varlığı, şiddeti ve morfolojisi incelendi.

Bulgular: Çalışmaya dahil edilen olguların yaş ortalaması 35.5 ± 10.0 , olguların 61’i kadın (%68.5), 28’i erkekti (%31.5). Olguların tümünde gastrit varlığı dikkati çekti. Aktif kronik gastrit 28 olguda (%31.5) izlenirken kronik gastrit 61 olguda (%68.5) izlendi. Olguların 70’inde (%78.7) helicobacter pylori varlığı saptandı. Morfolojik olarak 43 (%61.4) olguda basil, 8 (%11.4) olguda kok ve 19 (%27.1) olguda kok ve basil varlığı bir arada gözlemlendi. Lenfoid follikül varlığı 41 (%46.1) olguda izlenirken lenfoid agregat varlığı 62 (%69.7) olguda izlendi. Yapılan analizlerde helicobacter pylori varlığı ile lenfoid follikül ($p=0.000$) ve lenfoid agregat ($p=0.000$) varlığının istatistiksel olarak anlamlı düzeyde ilişkili olduğu dikkati çekti. Helicobacter pylori morfolojisi incelendiğinde gastrit tipi ($p=0.856$), gastrit şiddeti ($p=0.298$), lenfoid follikül varlığı ($p=0.139$) ve şiddeti ($p=0.366$), lenfoid agregat varlığı ($p=0.054$) ve

şiddeti ($p=0.073$) ile *helicobacter pylori* morfolojisi arasında ilişki saptanmazken *helicobakter pylori* şiddetinin basil formundaki olgularda istatistiksel olarak anlamlı düzeyde fazla olduğu saptandı ($p=0.000$).

Tartışma ve Sonuç: Mevcut çalışma sonucunda literatürde yer alan lenfoid follikül ve agregatlar ile *helicobakter pylori*nin ilişkisi bir kez daha kanıtlanmış olmakla birlikte; *helicobakter pylori* morfolojisinin lenfoid follikül ve / veya agregatlarla ilişkisi gösterilememiştir. Lenfoid agregat ile yapılan analizlerde anlamlıya yakın bir değer olması daha geniş olgu serisinde istatistiksel anlamlı bir ilişki saptanabileceğini düşündürmektedir.

Anahtar sözcükler: Obezite, Lenfoid follikül, Lenfoid agregat, *Helicobacter pylori*, Sleeve gastrektomi

Giriş ve Amaç: Artan insidansı ile küresel bir sağlık sorunu olan aşırı kilo ve obezite Dünya Sağlık Örgütü (DSÖ) tarafından sağlık açısından risk oluşturan anormal veya aşırı yağ birikimi olarak tanımlamakta; “vücut kitle indeksi ($BMI \geq 25 \text{ kg/m}^2$) olan kişileri “aşırı kilolu” ($BMI \geq 30 \text{ kg/m}^2$) olan kişileri ise “obez” kategorisi altında sınıflandırmaktadır(1,2). Amerika ve Avrupa, aşırı kilolu ve obezite prevalansının en yüksek olduğu iki bölge olarak tanımlanmaktadır. Amerika’da 2015 yılında bu oran obezite için %28.3 olarak, Avrupa’da ise %22.9 olarak belirlenmiştir(2). Yine 2015 yılında Türkiye ve Amerika’daki yüksek kilolu ve obezite prevalansının diğer ülkelere kıyasla en yüksek değerlerde bulunduğu, Fransa ve Kolombiya’da ise değerlerin en düşük seviyelerde olduğu tespit edilmiştir(2).

Metabolik sendromun bir komponenti olan obezite tedavisinde yer alan yöntemlerden biri olan yaşam tarzı değişikliği kilo kaybının gerçekleşmesi ve kilo kaybının sürdürülebilmesi için gerekli olmakla birlikte çoğu zaman hedefine tam olarak ulaşamamaktadır. Bu nedenle medikal ve cerrahi tedavi yöntemleri de kullanılmaktadır(3-10). Uygulanan cerrahi yöntemler genel olarak hacim kısıtlayıcı operasyonlar niteliğindedir ve bariatrik cerrahi olarak adlandırılırlar. Sleeve gastrektomi ve Roux-y-gastrik by-pass en sık kullanılan bariatrik cerrahi yöntemleri arasında yer almaktadır.

Sleeve gastrektomide operasyon midenin antrumdan Latarjet sinirinin karşısından başlayıp His açısına kadar pilor korunarak büyük kurvaturda uzunlamasına rezeksiyonunu içerir. Sleeve gastrektomi, midenin boyutunu küçülten ve ameliyat öncesine göre daha az miktarda yiyecek ile tokluğu tetikleyen kısıtlayıcı bir tekniktir(10-13). Roux-y-gastrik by-pass (RYGB) da ise kısaca mide, küçük bir gastrik poş oluşturacak şekilde bölünür ve orta jejunum ile anastomozlanarak Roux'u yani besleyici uzvu oluşturur. Alınan besinler böylece mide, duodenum ve proksimal jejunumun çoğunu atlar(14). Bu yöntem kısıtlama ve malabsorbsiyon yöntemlerini birleştiren karma bir tekniktir(5).

Yöntemler birbirinden farklılık gösterse de her iki operasyon sonucunda da rezeke edilen mide dokusu histopatolojik olarak rutin olarak incelenir ve raporlanır. Raporda enflamasyon, atrofi, intestinal metaplazi, *helicobacter pylori*, displazi varlıkları standart olarak değerlendirilirken bunların dışında yer alan diğer bulgular da rapora eklenir. Bu diğer bulguların arasında lenfoid follikül formasyonu, lenfoid agregat formasyonu, nöroendokrin hücre hiperplazisi ve benign nitelikteki diğer hiperplaziler sayılabilir.

Helicobacter pylori (H.pylori) gastrik mukozayı etkileyen gram negatif, mikroaerofilik bir bakteri olup (15),bulaşma yolları tam olarak anlaşılamamıştır. Bununla birlikte net bilinen rezervuar ise mide dokusudur (1). Doğrudan insandan insana bulaşma veya çevresel kontaminasyonun bir sonucu olarak yeni enfeksiyonların meydana geldiği düşünülmektedir. İnsandan insana bulaş yollarında ise gastro-oral, oral-oral ve fekal-oral yollar tanımlanmaktadır(16).H.pylori'nin midede aktif kronik gastrit,gastrik ve duodenal ülser, MALToma ve kronik enflamasyon zemininde gelişen mide karsinomları ile ilişkisi bilinmektedir(4,12,15).Klasik sınıflamada H.pylori;morfolojik olarak canlı&kültürde üretilen olan spiral formlar ile canlı&kültürde üretilmeyen olan kokkoid form olmak üzere başlıca 2'ye ayrılmaktadır(16).Spiral formları konak kolonizasyonu ile ilişkili iken,kok formları bakterinin istenmeyen ortamlarda canlılığını koruyabilmesi yani direnci ile ilişkilidir.Mide biyopsilerinde bu morfolojik değişiklikler; rutin hematoksilin&eozen (H&E) kesitlerde zor olsa da warthin starry ve giemsa histokimyasal boyalı kesitlerde demonstre edilebilmektedir. H.pylori'nin midedeki lenfoid follikül ve lenfoid agregatlar ile ilişkisini gösteren çok sayıda çalışma bulunmaktadır(1,4,6,10-12).Ancak lenfoid follikül ve agregat formasyonu ile H.pylori'nin morfolojik yapısının ilişkisini gösteren çalışma dikkati çekmemektedir.Bu nedenle bu çalışmada sleeve gastrektomi ile opere edilen obez olgularda H.pylori'nin morfolojik yapısının biyopsi materyallerindeki lenfoid follikül ve agregatlar ile ilişkisi incelenmektedir.

Gereç ve Yöntem: Çalışmaya 89 sleeve gastrektomi olgusu dahil edildi.Patoloji laboratuvarında arşiv materyali bulunmayan olgular çalışmaya alınmadı.Olguların yaş ve cinsiyet bilgileri hastane bilgi yönetim sisteminden elde edildi.Olgulara ait raporlar retrospektif olarak tarandı.Eksik verisi olan olgulara ait kesitler arşivden çıkartılarak tekrar incelendi.Olguların değerlendirilmesinde gastrit var/yok olarak gastrit türü aktif kronik gastrit/ kronik gastrit olarak kategorize edildi.Türünden bağımsız olarak gastrit şiddeti hafif,orta ve şiddetli olarak gruplandırıldı. Lenfoid folliküller var/yok şeklinde, lenfoid folliküllerin yoğunluğu hafif,orta,şiddetli şeklinde kategorize edildi.Lenfoid agregatlarda lenfoid folliküller ile aynı gruplandırma şekli kullanıldı.H. pylori var/yok, şiddeti; hafif, orta, şiddetli ve morfolojisi; spiral,kok,kok ve spiral birlikteliği şeklinde kategorize edildi.

İstatistiksel analizler için SPSS 15.0 paket program kullanıldı (SPSS Inc. Released 2006. SPSS for Windows, Version 15.0. Chicago, SPSS Inc.).%95 güven aralığında yapılan analizlerde Mann whitney U ve Kruskal Wallis testleri kullanıldı.

Bulgular: Çalışmaya dahil edilen olguların yaş ortalaması 35.5 ± 10.0 arasında değişirken en genç olgunun 20 en yaşlı olgunun 60 yaşında olduğu gözlemlendi.Olguların 61'i kadın (%68.5),28'i erkekti (%31.5).Kadın olguların yaş ortalaması 35.9 ± 9.9 ,erkek olguların yaş ortalaması 35.2 ± 10.6 olarak hesaplandı.Olguların tümünde gastrit varlığı dikkati çekti.Aktif kronik gastrit 28 olguda (%31.5) izlenirken kronik gastrit 61 olguda (%68.5) izlendi.Tüm olgulardaki gastrit şiddeti dağılımında 48 olguda hafif (%53.9),37 olguda orta (%51.6),4 olguda (%4.5) şiddetli gastrit saptandı.Aktif kronik gastriti olan 28 (%100) olgunun gastrit şiddeti incelendiğinde 23 olguda hafif (%65.7),11 olguda orta (%31.4),1 olguda (%2.9) şiddetli gastrit dikkati çekti.Kronik gastriti olan 61 (%100) olgunun gastrit

şiddeti değerlendirildiğinde 31 olguda hafif (%50.8),27 olguda orta (%44.3),3 olguda (%4.9) şiddetli gastrit gözlemlendi.Olguların 70'inde (%78.7) H.pylori varlığı saptandı.H.pylori saptanan 70 (%100) olgunun 34'ünde hafif (%48.6),29'unda orta (%41.4) ve 7'sinde (%10.0) şiddetli H.pylori gözlemlendi.Morfolojik olarak incelendiğinde 43 (%61.4) olguda spiral,8 (%11.4) olguda kok ve 19 (%27.1) olguda kok ve spiral formların birlikteliği dikkati çekti.

Lenfoid follikül varlığı 41 (%46.1) olguda izlenirken lenfoid agregat varlığı 62 (%69.7) olguda saptandı.Lenfoid follikül izlenen 41 (%100) olgunun 17'sinde (%41.5) hafif,21'inde (%51.2) orta ve 3'ünde (%7.3) şiddetli follikül oluşumu gözlenirken;lenfoid agregat izlenen 62 (%100) olgunun 37'sinde (%59.7) hafif,22'sinde (%35.5) orta ve 3'ünde (%4.8) şiddetli lenfoid agregat oluşumu izlendi.Yapılan analizlerde H.pylori varlığı ile lenfoid follikül ($p=0.000$) ve lenfoid agregat ($p=0.000$) varlığının istatistiksel olarak anlamlı düzeyde ilişkili olduğu dikkati çekti.Benzer şekilde tüm olgulardaki lenfoid follikül şiddet artışının ($p=0.002$) ve lenfoid agregat şiddet artışının ($p=0.000$) da H.pylori varlığı ile istatistiksel anlamlılık gösterdiği gözlemlendi.Yine tüm olgularda H.pylori'nin şiddeti arttıkça lenfoid follikül ($p=0.018$) ve lenfoid agregat ($p=0.001$) formasyonlarının da şiddetinin istatistiksel olarak anlamlı düzeyde artış gösterdiği saptandı.

H.pylori morfolojisi incelendiğinde H.pylori pozitif olan 70 olguda yapılan analizlerde gastrit tipi ($p=0.856$), gastrit şiddeti ($p=0.298$),lenfoid follikül varlığı ($p=0.139$) ve şiddeti ($p=0.366$),lenfoid agregat varlığı ($p=0.054$) ve şiddeti ($p=0.073$) ile H.pylori morfolojisi arasında ilişki saptanmazken H.pylori şiddetinin spiral formundaki olgularda istatistiksel olarak anlamlı düzeyde fazla olduğu saptandı ($p=0.000$).

Tartışma: Literatürde farklı çalışmalarda Helicobacter Pylori varlığının histopatolojik incelemelerde foliküler gastrit, intestinal metaplazi, gastrointestinal stromal tümör (GIST), MALToma gibi durumların yanı sıra lenfoid agregat ve lenfoid folikül oluşumu ile de birliktelik gösterdiği kanıtlanmıştır(1,6,17).Safaan T. ve ark. 1555 olgu üzerinde yaptıkları retrospektif çalışmada %2.7 olguda foliküler gastrit, %2.2 olguda ise lenfoid agregat tespit etmişlerdir.Aynı zamanda foliküler gastrit ve lenfoid agregat varlığının H.pylori varlığı ile ilişkisi değerlendirilmiş olup bu olgular ve normal spesimenlerle karşılaştırılmıştır.Sonuçta;foliküler gastrit ve lenfoid agregat varlığının H.pylori saptanmış olgularla daha yakından ilişkili olduğu saptanmıştır.Bu çalışmaya göre;foliküler gastrit ve lenfoid agregat saptanan 78 olgunun 63'ünde (%80.8) H.pylori varlığı saptanmıştır.Foliküler gastrit ve lenfoid agregat varlığı da kendi aralarında karşılaştırıldıklarında foliküler gastrit pozitif olan 43 olgunun 37'sinde (%86), lenfoid agregat saptanan 35 olgunun ise 26'sında (%74.3) H.pylori saptanmıştır.Bu oranların birbirleriyle benzerlik gösterdiği görülmüştür(6).Anvar E. ve arkadaşları; sleeve gastrektomi yapılmış 109 hastaya ait spesmenlerin değerlendirilmesine yönelik retrospektif çalışmada H.pylori varlığının yanı sıra ek histopatolojik bulgular olan epitelyal reaktif nükleer anormallite, nöroendokrin hücre hiperplazisi, mezenkimal neoplaziler, mukozal ülserasyon ve lenfoid agregat varlığı da değerlendirilmiştir.Lamina propria da yer alan lenfoid foliküler hiperplazi varlığı da ayrıca not edilmiştir.Lenfoid agregat varlığı ile H.pylori ilişkisi değerlendirildiğinde 34 olguda(%31.2) ilişki

saptandığı belirtilmiştir(1).Chen XY ve ark.'nın 488 olguluk gastrik antral biyopsileri değerlendiren çalışmasında 438 olguda H.pylori saptanmış 50 olgu ise H.pylori negatif sağlıklı kontroller olarak değerlendirilmiştir.Bu çalışmada; lenfoid folikül ve agregat varlığı değerlendirilmiş ve o zamanda kronik gastritler için kullanılan güncel Sydney kalsifikasyonuna skorlanmıştır.Lenfoid folikül ve agregat prevalansı %79.9 olarak bulunmuştur. En yüksek prevalans ve yoğunluk ise gastrik ülser olgularında ve gastrik antral mukozal inflamasyonun aktivitesi ve ciddiyeti ile korele olduğu görülmüştür.H.pylori tedavisi sonrası değerlendirmelerde ise H.pylori eradikasyonunun lenfoid folikül ve agregatlarının hem prevalansında hem de yoğunluğunda düşüşe yol açtığı ve bu bağlamda ilişkili olduğu görülmüştür(17). Çalışmamızda yapılan analizlerde ise H.pylori varlığı ile lenfoid folikül ve lenfoid agregat varlığının istatistiksel olarak anlamlı düzeyde ilişkili olduğu dikkati çekmektedir(p değerleri 0.000 ve 0.000).Bununla birlikte H.pylori ile lenfoid folikül ve lenfoid agregat varlığı arasındaki morfolojik ilişki ile ilgili yapılan değerlendirmelerde tespit edilen kok ve spiral formlarının bu lenfoid folikül ve lenfoid agregat oluşumlarıyla ilişkisi istatistiksel olarak anlamlı bulunmamıştır.

Ancak H.pylori pozitif olan 70 olguda yapılan analizlerde lenfoid folikül varlığı (p=0.139) ve şiddeti (p=0.366) ile istatistiksel anlamlı ilişki saptanmasa da,lenfoid agregat varlığı (p=0.054) ve H.pylori morfolojisi arasında istatistiksel olarak anlamlıya yakın bir ilişki gözlenmiştir.Bu bağlamda olgu sayısının arttırıldığı geniş bir seride bu ilişkinin ortaya koyulabileceğini düşünmekteyiz.

Yapılan deneysel çalışmalarda kok formunun daha aktif,daha dirençli olduğu ve istenmeyen ortamlarda canlılığını koruyabildiği gösterilmiştir(15).Bu sebeple semptomatik hastalarda kok formunun hastalıkla ilişkisinin daha yüksek olduğu düşünülmüş olup bu hastalarda tedavi değerlendirilmiştir.Bu hastaların her ne kadar H.pylori eradikasyonu veya uzun süreli proton pompa inhibitörü tedavisi almamış oldukları saptanmış olsa da semptomlarının olduğu dönemlerde ilaç kullanma öyküleri net değildir.Olası medikal tedavinin net olmadığı bu durum hastanın semptomatik olması ile H.pylori morfolojisi arasındaki ilişkiyi belirlemeyi zorlaştırmaktadır.Olgu sayısının arttırılması ve hasta öyküsünün netleşmesi sayesinde çalışmanın bu kısıtlılığının ortadan kaldırılabilceğine inanılmaktadır.

Çalışmaya alınan olgulardan H.pylori varlığı saptanan 70 olgunun morfolojik incelemesinde 43 olguda spiral,19 olguda kok ve spiral ve sadece 8 olguda kok varlığı gözlemlenmiş olup bu 8 olgu,H.pylori pozitif olguların yaklaşık sadece %11.4 'ünü oluşturmaktadır.Homojenizasyonun sağlanamaması ve spiral form oranının düşük olması istatistiksel analizlerde anlamlı sonuç olasılığını etkilemekte; bu sebeple daha yüksek sayılı ve bakteri morfolojisi daha homojen olgu serilerinde çalışmayı gerektirmektedir.

Sonuç: Mevcut çalışma sonucunda literatürde yer alan lenfoid folikül ve agregatlar ile H.pylorinin ilişkisi bir kez daha kanıtlanmış olmakla birlikte H.pylori morfolojisinin lenfoid folikül ve/veya agregatlarla ilişkisi gösterilememiştir.Lenfoid agregat ile yapılan analizlerde anlamlıya yakın bir değer olması daha geniş olgu serilerinde istatistiksel anlamlı bir ilişki saptanabileceğini düşündürmektedir.

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ID-50 / OP: “Obez Hastaların Endokrin Bozukluklar Açısından Değerlendirilmesi”

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Abstract (ID-50)

Introduction: Aneurysmal bone cysts are benign bone lesions that are relatively common in the pediatric age group (1). Here we present a case with a cervical involvement that made it difficult to excise completely and had to be operated on 6 times.

Materials and Methods: After patients completed the questionnaires in obesity polyclinic of Izmir Tepecik Training and Research Hospital, their body sizes were measured, their laboratory tests scanned and endocrine obesity and morbid-obesity findings were evaluated. All analyses were performed with SPSS package program version 17. Categorical variables, frequency and percentage were described. The relationship between variables was scrutinized through Chi-square and Fisher’s Precision Test. This research was a simple, cross-sectional and descriptive survey study and started on December 2014 and completed within six months.

Results: Findings: In study a total of 139 subjects enrolled. Of these subjects 24 (17,3%) were younger than 30 years of age, 61 (43,8%) were between 31 to 50 years of age and 54 (38,9%) were over 50 years of age. In obesity group 17 (25%) subjects were younger than 30 years of age, 33 (48,5%) were between 31 to 50 years of age and 18 (26,5%) were over 50 years of age. In morbid-obese group there were 7 subjects (9,9 %) under 30 years of age, 28 subjects (43,8%) between 31 to 50 years of age and 28 subjects (50,7%) over 50 years of age. Obesity and morbid-obese groups were found heterogeneous in terms of age ($p=0,005$). There was a significant difference between obesity and morbid-obese groups in terms of education status ($p=0,027$). There were 3 (16,7%) diabetic and 15 (83,3%) non-diabetic patients in > 50-age obesity group; whereas there were 19 (52,8%) diabetic and 17 (47,2%) non-diabetic patients in morbid-obese group. A significant difference was found between groups in terms of diabetes ($p=0,011$). In obesity group between 31-50 years of age 13 subjects (39,9%) had insulin resistance of < 2,5 and 20 (60,6%) of $\geq 2,5$. In morbid-obese group there 4 patients (14,3%) with insulin resistance of < 2,5 and 24 (85,7 %) with $\geq 2,5$. There was a significant difference between groups in terms of insulin resistance ($p=0,029$). While there were 33 (100%) patients with TSH $\leq 4,20$ uIU/mL in obesity group, there was no body with TSH $> 4,20$ uIU/mL. In morbid-obese group there were 22 (78,6%) patients 77 with TSH $\leq 4,20$ uIU/mL and 6 (21.4%) patients with TSH $> 4,20$ uIU/mL. A significant difference was found between groups in terms of TSH ($p=0,007$).

Conclusion: The incidence of endocrine problems increases as the degree of obesity increases and advanced age increases the problems seen in obesity. Training at early ages will decrease the incidence, degree and complications of obesity in advanced ages.

Keywords: Obezite, endokrin bozukluklar, bki, TOHTA, TURDEP

Full-text (ID 50): “Obez Hastaların Endokrin Bozukluklar Açısından Değerlendirilmesi”

Giriş: Bu çalışmada obez ve morbid obez hastalarda obezite ile beraber görülebilecek endokrin hastalıklar, bunların semptomları, laboratuvar bulguları ve hastaların demografik verileri karşılaştırılmıştır.

Obezite, DSÖ tarafından "Sağlığı bozacak ölçüde vücutta anormal veya aşırı yağ birikmesi" olarak tanımlanmaktadır (1). Obezite; genel olarak vücuttaki yağ oranının anormal artışı olarak tanımlanabilir. Bu nedenle sadece vücut ağırlığının artışı, obezite ile aynı anlama gelmez. Yağ dokusunda sağlığı bozacak boyutta ve aşırı düzeyde yağ birikimi obezite olarak değerlendirilmelidir (2). Önceleri ancak bir hastalığa yol açması durumunda tedavi gereksinimi duyulan obezitenin artık henüz hiçbir hastalığa yol açmasa da tanınması ve tedavi edilmesi, bu yolla gelişebilecek kronik birçok hastalığın önüne geçilmesi, koruyucu sağlık politikalarının ilk sıralarında yer almaktadır (3).

Obezitenin oluşmasında bazı riskler ve riskleri etkileyen faktörler Tablo 2.1’de sunulmuştur.

Tablo 2.1

• Yaş • Cinsiyet • Eğitim düzeyi • Sosyo - kültürel etmenler • Gelir durumu • Aşırı ve yanlış beslenme alışkanlıkları • Yetersiz fiziksel aktivite	• Hormonal ve metabolik etmenler • Genetik etmenler • Psikolojik problemler • Sık aralıklarla çok düşük enerjili diyetler • Sigara- alkol kullanma durumu • İlaçlar (antidepresanlar, glukokortikoidler vb.) • Doğum sayısı ve doğumlar arası süre

Tablo 2. 2. Obezitenin komplikasyonları

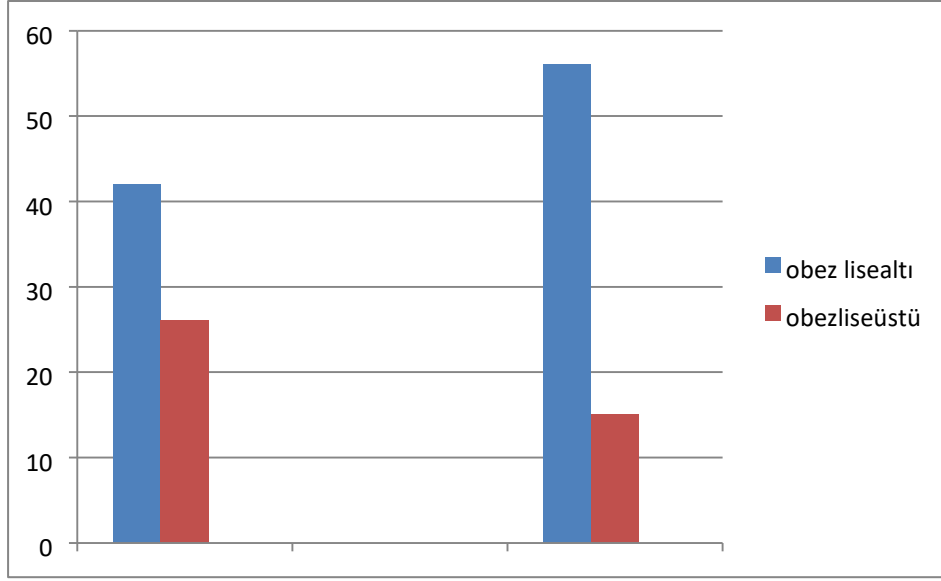
1. Metabolik-hormonal komplikasyonlar A- Metabolik sendrom • Tip 2 diyabet • İnsülin direnci, hiperinsülinemi • Dislipidemi • Hipertansiyon • Gut • Uyku bozukları B- Hormon ve diğer dolaşım faktörü anomalileri: • Sitokinler • Ghrelin • Büyüme hormonu (GH) • Hipotalamik-hipofizer-adrenal (HPA) aks • Leptin • Renin-anjiotensin sistemi 2. Kardiyovasküler sistem hastalıkları • Serebrovasküler hastalık • Konjestif kalp yetersizliği • Koroner kalp hastalığı • Hipertansiyon • Tromboembolik hastalık 3. Solunum sistemi hastalıkları • Obezite-hipoventilasyon sendromu • Uyku apne 4. Sindirim Sistemi Hastalıkları • Safra kesesi hastalığı • Karaciğer Hastalığı	5. Üreme sistemi anomalileri • Hormonal komplikasyonlar: Dişi • Hormonal komplikasyonlar: Erkek • Obstetrik komplikasyonlar 6. Sinir sistemi • Adipositas dolorosa • Psödotümör serebri 7. İmmün sistem disfonksiyonu 8. Deri hastalıkları 9. Göz hastalıkları 10. Cerrahi komplikasyonlar • Perioperatif riskler: anestezi, yara komplikasyonları, enfeksiyonlar, insizyonal herni. 11. Kanser • Meme • Kolon • Dişi üreme: serviks, endometrium, over • Safra kesesi • Böbrek • Prostat 12. Obezitenin mekanik komplikasyonları • Artrit • Artmış karın içi basıncı 13. Psiko-sosyal komplikasyonlar • Psikolojik komplikasyonlar • Sosyal komplikasyonlar • Ekonomik etki

Gereç ve Yöntem: Bu çalışmada; araştırma evreni olarak belirlenen hastaların İzmir Tepecik Eğitim ve Araştırma Hastanesi obezite polikliniğinde anketleri doldurulduktan sonra beden ölçümleri alınıp, yapılmış laboratuvar testleri taranarak, obezite ve morbid obezitede endokrin bulgular değerlendirilmiştir. Tüm analizler SPSS17 paket programı kullanılarak gerçekleştirildi. Kategorik değişkenler frekans ve yüzdelere betimlendi. Değişkenler arasındaki ilişki Ki-kare ve Fisher Kesinlik Testi ile incelendi. Bu araştırma basit, kesitsel, tanımlayıcı bir anket çalışması olup Aralık 2014'den başlayarak 6 ay sürede tamamlandı.

Bulgular: Çalışmaya toplam 139 hasta dahil edildi. Tüm hastalar içinde 30 yaş ve altında olan 24 (%17,3), 31-50 yaş aralığında olan 61 (%43,8) ve 50 yaşın üstünde olan 54 (%38,9) hasta bulunmaktaydı. Obez grubunda 30 yaş ve altında olan 17 (%25), 31- 50 yaş aralığında olan 33 (%48,5) ve 50 yaşın üstün olan 18 (%26,5) hasta bulunmaktaydı. Morbid obez grubunda 30 yaş ve altında olan 7 (%9,9), 31-50 yaş aralığında olan 28 (%39,4) ve 50 yaşın üstün olan 36 (%50,7) hasta bulunmaktaydı. Obez ve morbid obez grupları yaş açısından heterojen bulundu ($p=0,005$). Obez ve morbid obez grupları arasında öğrenim durumu açısından anlamlı farklılık vardır ($p=0,027$). >50 yaş obez grubunda diyabeti olan 3 (%16,7) ve diyabeti olmayan 15 (%83,3) hasta vardı. Morbid obez grubunda diyabeti olan 19 (%52,8) ve diyabeti olmayan 17 (%47,2) hasta vardı. Gruplar arasında diyabet açısından anlamlı farklılık bulundu ($p=0,011$). 31-50 yaş arası obez grubunda insülin direnci $4,20 \text{ uIU/mL}$ olan hasta yoktu. Morbid obez grubunda $TSH \leq 4,20 \text{ uIU/mL}$ olan 22 (%78,6) ve $TSH > 4,20 \text{ uIU/mL}$ olan 6 (%21,4) hasta vardı. Gruplar arasında TSH açısından anlamlı farklılık bulundu ($p=0,007$).

Tablo 4.1. Demografik özellikler

	Toplam (n=139)		Obez		Morbid Obez		p
	n	%	n	%	n	%	
Yaş							
≤30	24	17.3	17	25.0	7	9.9	0.005
31-50	61	43.8	33	48.5	28	39.4	
>50	54	38.9	18	26.5	36	50.7	
Cinsiyet							
Kadın	117	84.2	57	83.8	60	84.5	0.912
Erkek	22	15.8	11	16.2	11	15.5	
Öğrenim Durumu							
Lise altı	98	70.5	42	61.8	56	78.9	0.027
Lise ve üstü	41	29.5	26	38.2	15	21.1	
Çalışma Durumu							
Çalışıyor	33	23.7	20	29.4	13	18.3	0.160
Çalışmıyor	83	59.7	40	58.8	43	60.6	
Emekli	23	16.5	8	11.8	15	21.1	
Medeni Durum							
Evli	111	79.9	54	79.4	57	80.3	0.898
Bekar	28	20.1	14	20.6	14	19.7	



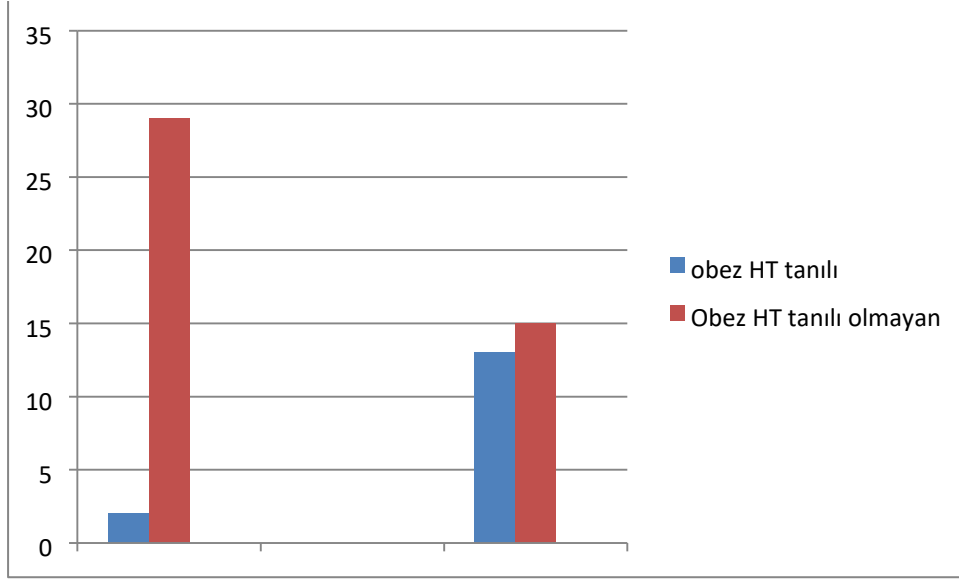
Grafik 4.1. Obez ve morbid obezlerde öğrenim durumu

Tablo 4.2. Yaş≤30 olan hastalarda hastalıklar

	Yaş: ≤30(n=24)				
	Obez (n=17)		Morbid Obez (n=7)		p
	n	%	n	%	
Hipertansiyon					-
Var	0	0.0	0	0.0	
Yok	17	100.0	7	100.0	
Diyabet					
Var	0	0.0	2	28.6	0.076
Yok	17	100.0	5	71.4	
Tiroid Hastalıkları					
Var	5	29.4	2	28.6	>0.999
Yok	12	70.6	5	71.4	
İdrar Yolu Hastalıkları					
Var	4	23.5	2	28.6	>0.999
Yok	13	76.5	5	71.4	
Kalp Hastalıkları					
Var	1	5.9	0	0.0	>0.999
Yok	16	94.1	7	100.0	
Kolesterol					
Var	5	29.4	0	0.0	0.272
Yok	12	70.6	7	100.0	
Anemi					
Var	6	35.3	2	28.6	>0.999
Yok	11	64.7	5	71.4	

Tablo 4.3. Yaş:31-50 olan hastalarda hastalıklar

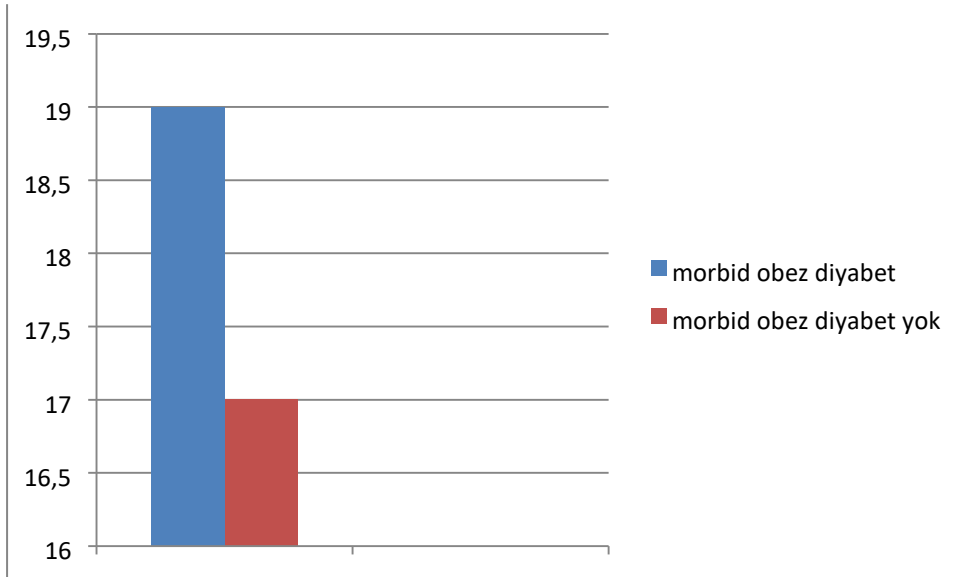
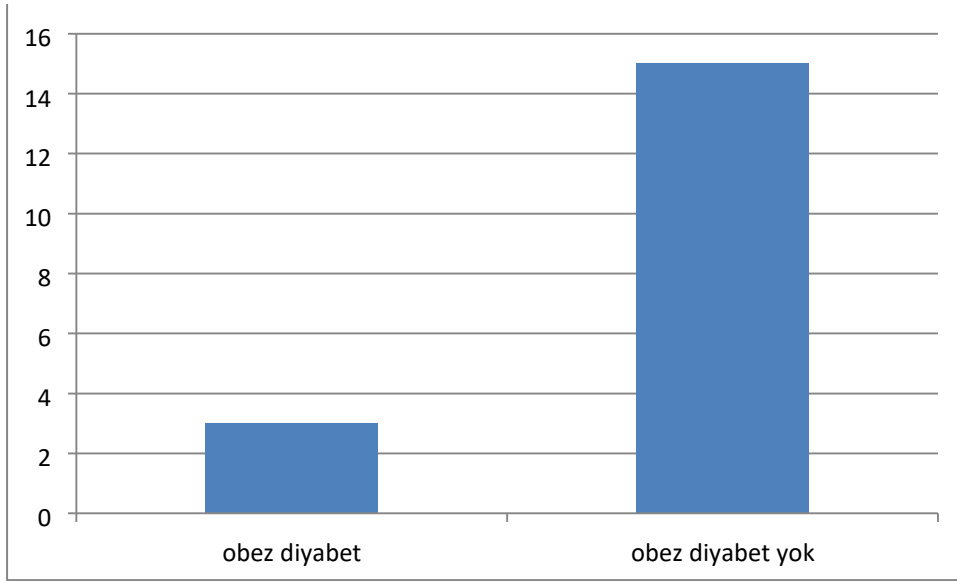
	Yaş: 31		1-50 (n=61)		
	Obez (n=33)		Morbid Obez (n=28)		
	n	%	n	%	p
Hipertansiyon					
Var	4	12.1	13	46.4	0.003
Yok	29	87.9	15	53.6	
Dişabet					
Var	2	6.1	3	10.7	0.653
Yok	31	93.9	25	89.3	
Tiroit Hastalıkları					
Var	6	18.2	5	17.9	0.974
Yok	27	81.8	23	82.1	
İdrar Yolu Hastalıkları					
Var	12	36.4	6	21.4	0.202
Yok	21	63.6	22	78.6	
Kalp Hastalıkları					
Var	1	3.0	2	7.1	0.589
Yok	32	97.0	26	92.9	
Kolesterol					
Var	12	36.4	10	35.7	0.958
Yok	21	63.6	18	64.3	
Anemi					
Var	15	45.5	8	28.6	0.175
Yok	18	54.5	20	71.4	



Grafik 4.2. 31-50 yaş Obez ve morbid obezlerde HT tanısı

Tablo 4.4. Yaş>50 olan hastalarda hastalıklar

	Yaş: >50 (n=54)					
	Obez (n=18)		Morbid Obez (n=36)		p	
	n	%	n	%		
Hipertansiyon						
Var	7	38.9	20	55.6	11	0.248
Yok		61.1	16	44.4		
Diyabet						
Var	3	16.7	19	52.8	15	0.011
Yok		83.3	17	47.2		
Tiroit Hastalıkları						
Var	2	11.1	6	16.7	16	0.704
Yok					88.9	
İdrar Yolu Hastalıkları						
Var	6	33.3	16	44.4	12	0.433
Yok		66.7	20	55.6		
Kalp Hastalıkları						
Var	3	16.7	5	13.9	15	>0.999
Yok					83.3	
Kolesterol						
Var	7	38.9	15	41.7	11	0.845
Yok		61.1	21	58.3		
Anemi						
Var	7	38.9	14	38.9	11	>0.999
Yok		61.1	22	61.1		



Grafik 4.3. >50 yaş Obez ve morbid obezlerde diyabet tanısı

Tablo 4.5. Yaş≤30 olan hastalarda diğer özellikler

	YAŞ: ≤30 (n=24)				
	OBEZ (n=17)		M.OBEZ (n=7)		P
	n	%	n	%	
TANSİYON					
<120; <80	16	94.1	4	57.1	0.059
120-139; 80-89	1	5.9	2	28.6	
≥140; ≥90	0	0.0	1	14.3	
PTÖ					
POZİTİF	0	0.0	1	14.3	0.292
YOK	17	100.0	6	85.7	
HEMOGRAM					
<11	0	0.0	0	0.0	-
≥11	17	100	7	100	
AKŞ					
<100	14	82.4	6	85.7	>0.999
100-125	3	17.6	1	14.3	
>125	0	0.0	0	0.0	
TKŞ					
<140	17	100.0	6	85.7	0.292
140-200	0	0.0	1	14.3	
>200	0	0.0	0	0.0	
HbA1c					
<5.7	16	94.1	7	100.0	>0.999
5.7-6.4	1	5.9	0	0.0	
>6.4	0	0.0	0	0.0	
İNSÜLİN DİRENCİ					
<2.5	7	41.2	0	0.0	0.065
≥2.5	10	58.8	7	100.0	
KORTİZOL					
≤19.4	15	88.2	7	100	>0.999
>19.4	2	11.8	0	0.0	
T4					
≤1.71	17	100.0	7	100.0	-
>1.71	0	0.0	0	0.0	
TSH					
≤4.20	13	76.5	5	71.4	>0.999
>4.20	4	23.5	2	28.6	
TOTAL KOLESTEROL					
≤239	16	94.1	6	85.7	0.507
>239	1	5.9	1	14.3	
HDL					
<40	6	35.3	1	14.3	0.551
40-59	10	58.8	6	85.7	
>59	1	5.9	0	0.0	
LDL					
<100	6	35.3	3	42.9	>0.999
100-129	6	35.3	2	28.6	
>129	5	29.4	2	28.6	

Tablo 4.6. Yaş:31-50 olan hastalarda diğer özellikler

	YAŞ: 31-50 (n=61)				
	OBEZ (n=33)		M.OBEZ (n=28)		P
	n	%	n	%	
TANSİYON					
<120; <80	24	72.7	14	50.0	0.114
120-139; 80-89	5	15.1	5	17.9	
≥140; ≥90	4	12.1	9	32.1	
PTÖ					
POZİTİF	0	0.0	5	17.9	0.017
YOK	33	100.0	23	82.1	
HEMOGRAM					
<11	1	3.0	2	7.1	0.589
≥11	32	97.0	26	92.9	
AKŞ					
<100	23	69.7	16	57.1	0.266
100-125	9	27.3	8	28.6	
>125	1	3.0	4	14.3	
TKŞ					
<140	28	84.8	22	78.6	0.490
140-200	4	12.1	6	21.4	
>200	1	3.0	0	0.0	
HbA1c					
<5.7	21	63.6	12	42.9	0.153
5.7-6.4	12	36.4	15	53.6	
>6.4	0	0.0	1	3.6	
İNSÜLİN DİRENCİ					
<2.5	13	39.4	4	14.3	0.029
≥2.5	20	60.6	24	85.7	
KORTİZOL					
≤19.4	29	87.9	24	85.7	>0.999
>19.4	4	12.1	4	14.3	
T4					
≤1.71	33	100.0	28	100.0	-
>1.71	0	0.0	0	0.0	
TSH					
≤4.20	33	100.0	22	78.6	0.007
>4.20	0	0.0	6	21.4	
TOTAL KOLESTEROL					
≤239	25	75.7	21	75.0	0.945
>239	8	24.2	7	25.0	
HDL					
<40	6	18.2	3	10.7	0.412
40-59	19	57.6	21	75.0	
>59	8	24.2	4	14.3	
LDL					
<100	6	18.2	3	10.7	0.117
100-129	16	48.5	8	28.6	
>129	11	33.3	17	60.7	

Tablo 4.7. Yaş>50 olan hastalarda diğer özellikler

	YAŞ: >50 (n=54)				
	OBEZ (n=18)		M.OBEZ (n=36)		P
	n	%	n	%	
TANSİYON					
<120; <80	10	55.6	13	36.1	0.273
120-139; 80-89	5	27.7	10	27.8	
≥140; ≥90	3	16.7	13	36.1	
PTÖ					
POZİTİF	1	5.6	8	22.2	0.244
YOK	17	94.4	28	77.8	
HEMOGRAM					
<11	1	5.6	2	5.6	>0.999
≥11	17	94.4	34	94.4	
AKŞ					
<100	12	66.7	15	41.7	0.219
100-125	4	22.2	13	36.1	
>125	2	11.1	8	22.2	
TKŞ					
<140	12	66.7	22	61.1	0.455
140-200	5	27.8	7	19.4	
>200	1	5.6	7	19.4	
HbA1c					
<5.7	6	33.3	9	25.0	0.714
5.7-6.4	9	50.0	18	50.0	
>6.4	3	16.7	9	25.0	
İNSÜLİN DİRENCİ					
<2.5	8	44.4	7	19.4	0.053
≥2.5	10	55.6	29	80.6	
KORTİZOL					
≤19.4	16	88.9	35	97.2	0.255
>19.4	2	11.1	1	2.8	
T4					
≤1.71	17	94.4	36	100.0	0.333
>1.71	1	5.6	0	0.0	
TSH					
≤4.20	16	88.9	30	83.3	0.704
>4.20	2	11.1	6	16.7	
TOTAL KOLESTEROL					
≤239	15	83.3	30	83.3	>0.999
>239	3	16.7	6	16.7	
HDL					
<40	4	22.2	9	25.0	0.487
40-59	9	50.0	22	61.1	
>59	5	27.8	5	13.9	
LDL					
<100	6	33.3	7	19.4	0.519
100-129	5	27.8	11	30.6	
>129	7	38.9	18	50.0	

Sonuç: Obezite derecesi arttıkça endokrin problemler daha sık görülmektedir ve yaşı ilerlemesi de obezitede yaşanan problemleri artırmaktadır. Erken yaşta eğitim, ilerleyen yaşlarda obezite sıklığını, derecesini ve komplikasyonlarını azaltabilecektir.

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ID-52 / OP: “Management of foreign bodies in upper gastrointestinal system in adult patients”

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Abstract (ID-52)

Introduction: The presence of foreign bodies in the gastrointestinal system is the cause of serious mortality and morbidity around the world and in Turkey. Endoscopic treatment is provided in most cases. The aim of this study was to define the clinical and epidemiological characteristics of foreign bodies in the upper gastrointestinal system, determine its localization features, and examine the endoscopic treatments applied and their results.

Materials and Methods: Patients who underwent endoscopy because of the presence of foreign bodies in their upper gastrointestinal system in the Department of Gastroenterology between January 2016 and December 2019 were included in this study. Data about the characteristics and localization of foreign bodies, presence of complications, and the treatment method used were obtained from the esophagogastroduodenoscopy reports of the patients. Age, gender, mental status, the time of endoscopy, symptoms, and mortality status of the patients were obtained from the hospital electronic database.

Results: Of the 43 patients included in the study, 16 (37.2%) were females, and the mean age of all patients was 52.2 years (22–86 years). Dysphagia was found to be the most common symptom and was seen in 16 (45.7%) patients. The foreign bodies were most frequently detected in the esophagus (n = 29; 67.4%), followed by the stomach (n = 8; 18.6%). Of the foreign bodies detected during endoscopy, 28 (65.1%) were identified as food, 6 (14%) as metal, and 9 (20.9%) had other structures. The most preferred treatment method was removing the foreign bodies using a rat tooth forceps (n = 21; 48.8%). Complications developed in 13 (30.2%) patients, and the most common was laceration.

Discussion and Conclusion: The presence of foreign bodies in the gastrointestinal system generally does not require any surgical intervention, but an early endoscopic examination is the most common, safe, and effective method for the diagnosis and treatment of the foreign bodies ingested.

Keywords: Upper gastrointestinal system, foreign bodies, endoscopic treatment, complications

ID-53 / PP: “A Case of Intrathoracic Giant Liposarcoma”

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Abstract (ID-53)

Introduction: Liposarcoma is the most common neoplasia in soft tissue after malignant fibrous histiocytoma. It is usually detected in intramuscular fascia, retroperitoneal space and extremities. Distant metastases are not common. It usually tends to recur locally and invade. Intrathoracic localization is not typical for liposarcomas. It may present with different symptoms depending on its region. In our article, we have included the giant liposarcoma case and its interesting images. We aimed to emphasize that intrathoracic giant tumors may be liposarcoma.

Case presentation: A 60-year-old female patient who complains of dyspnea and dysphagia was admitted to our clinic. In the physical examination of the patient, respiratory sounds could not be heard in the middle-lower zone of the left lung. An opacity filling the middle-lower zone of the left hemithorax was detected in the chest X-ray of the case. In the tomography images of the patient (Figure 1a), a giant mass was observed containing a mediastinal component, adjacent to the aorta and esophagus, causing mediastinal shift, filling the paracardiac area and part of the left thorax, and leaning on the thoracic wall. When evaluated with positron emission tomography in terms of malignancy, it was observed that the activity of the lesion was heterogeneous and the fluorodeoxyglucose uptake was 2.5 in some parts of it. The patient was evaluated with magnetic resonance imaging (Figure 1b) to investigate aortic and esophageal invasion in the preoperative period. Since invasion was not reported in the adjacent tissues, the decision of operation was taken for the case. Left lateral thoracotomy was preferred as the incision. On exploration, it was observed that the mass filling the thorax had a lobulated contour. Its components in the thorax were resected after dissection (Figure 2a). Interestingly, the mediastinal component similar to the heart figure (Figure 2b) was resected by dividing it from the diaphragm, aorta and esophagus. It was revealed that there was no injury to the esophagus with the help of inserting a nasogastric catheter. Non-full-thickness diaphragmatic injury was repaired by primary suturing. No additional complication developed in the patient, who started oral feeding on the third day of the postoperative period. The patient was discharged on the fifth day of the postoperative period after the thoracic drain was removed. After pathological examination, it was reported that the tumor was a well-differentiated liposarcoma. The patient has been followed up for about two years without recurrence.

Conclusion: Since the thoracic cavity is quite wide, it is a suitable region for giant tumors. However, very few tumors reach this size. Large sized masses are unlikely to be asymptomatic due to adjacent vital organs. We emphasize the interestingness of our case due to the fact that it is a rare pathology to be detected in the thorax and its size and shape. We think that it will contribute to the literature.

Keywords: Dysphagia, dyspnea, intrathoracic, liposarcoma, neoplasm

ID-54 / Oral Presentation: “Impact of the COVID-19 pandemic on characteristics of emergency department visits in a tertiary care children’s hospital in Turkey”

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Abstract (ID-54)

Introduction and Purpose: The coronavirus disease 2019 (COVID-19) pandemic has been a challenge for healthcare systems worldwide, representing an enormous threat for emergency departments (EDs). Healthcare facility preparedness is a key component of the response to the COVID-19 pandemic; it is essential to ensure appropriate space, supplies, and personnel. The aim of this study was to reveal how the COVID-19 pandemic has affected the characteristics of patient visits by comparing profiles in a pediatric ED.

Materials and Methods: This was a single-center retrospective study performed in the pediatric ED of a tertiary hospital with approximately 120,000 pediatric ED visits per annum. The period between March 11, 2020, and June 1, 2020, and the same timeframe in 2019 were retrospectively evaluated. For each day, the total number of ED visits was calculated. Patient gender, age, time of ED visit, triage priority, arrival characteristics, diagnostic codes, and hospital admissions for each day’s visits were recorded and the proportion was calculated for each parameter.

Results: During the study period, ED visits declined by 80.8% in comparison to the previous year. In terms of diagnoses, in 2020, there was a decrease in the mean daily number and proportion of patients diagnosed with infectious diseases ($p<0.001$). Evaluating rates of diagnoses, the rate of visitors with upper respiratory tract infections decreased from 36.5% to 20.7% while the rate of visitors with lower respiratory tract infections decreased from 4.8% to 2.3% in 2020 ($p<0.001$). Likewise, there was a decrease in the percentage of acute gastroenteritis cases; the rate was 7.9% in 2019 and 5.0% in 2020 ($p<0.001$). Although there was no apparent change in psychiatric disorders between the two years, the rate of suicide attempts increased in 2020 ($p: 0.016$), in contrast to the aforementioned decrease in the daily number of such cases. In terms of traumatic injuries, there was a decrease in the daily number of cases in 2020 compared to 2019 ($p<0.001$). However, the overall rate of such cases increased, being 14.7% in 2019 and 18.4% in 2020 ($p<0.001$). There was a statistically significant decrease in the rate of

visitors with green codes, but there was an increase in yellow codes and no difference in red codes. The proportion of hospitalizations also increased while the total number declined ($p<0.001$).

Discussion and Conclusion: The number of ED visits during the pandemic was just 20% of that of the previous year in the same period in our study. Possible explanations for this decrease include the reduction in other seasonal infections due to social isolation and the fear of patients and parents about being exposed to COVID-19 in the ED. These findings may also be related to the adoption of national restrictive measures, but no pediatric study has specifically addressed that point yet. During the pandemic period, our pediatric ED experienced a significantly decreased volume of visitors presenting with low-acuity conditions. Understanding the frequency and distribution of ED visits can help shape public health preparedness policies such as healthcare planning to ensure the availability of resources.

Keywords: Children, COVID-19, SARS-CoV-2, emergency department, pandemic, visit

ID-62 /OP: “Receptor Status Differs in Prognosis for Breast Cancer”

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Abstract (ID-62)

Introduction: Breast cancer is a type of cancer originates in breast tissue cells. It is the most common cancer type in the world following lung cancer. Prognosis of the disease is mostly depending on type and stage of the cancer. One of the worst prognoses is seen in a specific type called triple negative breast cancer which the name itself representing not having any of the three mostly recognized receptors as estrogen, progesterone and c-erb2 receptors.

Material and Methods: This is a retrospective matched case control study with breast cancer patients of two types. 102 patients divided equally having triple negative breast cancer of 51 patients on one arm and triple positive breast cancer of 51 patients on the other arm. Analyses were run for diseases prognostic values and patients demographic values. Result: Both disease free survival and overall survival were significantly different compared year by year between groups as $p:0.004$ and $p:0.002$ respectively.

Conclusion: Triple negative breast cancer prognosis is worse than other breast cancer types. The most important reason is being unable to use hormonal treatment because of the receptor status and that a disease specific targeted treatment could not have been developed so far. Therefore, it is necessary to identify new molecular targets and to develop treatments for them.

Keywords: Breast Cancer, Estrogen Receptor, Progesterone Receptor, HER2

ID-63 / OP: “Investigation of the effects of etanercept on liver cells and apoptosis in rats with obstructive icterus”

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Abstract (ID-63)

Introduction: At any level of the bile ducts, as a result of the partial or complete occlusion concluding of any disease, obstructive jaundice occurs by the inhibition of bile flow. In this study, it was aimed to determine effects of etanercept on liver cells and apoptosis in rats with obstructive icterus.

Materials and Methods: In each group, which had 10 animals, 3 groups were formed for experiment, control and sham group. Group I (n = 10): Sham Group, after the laparotomy, the main bile duct of animals was exposed and the bell was closed after laparotomy, the common bile ducts of the rats in Group II and III were exposed and ligated with 4/0 silk. The animals in group 3 were given intraperitoneal etanercept (enbrel) at a dose of 2 mg/kg for 7 days, starting from the day bile ducts were ligated. Afterwards, liver and blood samples were taken from the rats and they were sacrificed. AST, ALT, total bilirubin, TNF α , HMGB1(High Mobility Group Box Protein), serum caspase 3, ALP, TLR4(Toll like receptor) levels were measured from blood samples. Caspase 3, HMGB-1, TLR4, TNF α levels of tissue samples were checked. Liver samples were evaluated microscopically for tissue degeneration, portal inflammation and focal necrosis.

Results: There was no difference in AST, ALT, ALP, caspase 3 levels between group 2 and group 3. Serum HMGB1 level in group 3 was lower compared to group 2 (p=0.024). TLR 4 values in group 3 were higher than group 2 (p=0.002). However, tissue TLR 4 values were lower in group 3 compared to group 2 (p=0.001). Serum TNF α levels had no significant difference was found between all 3 groups (p=0.27). When tissue caspase-3 levels were examined, no significant difference was found between group1, group 2 and group 3 (p=0.15). Tissue HMGB1 values in group 1 and group 3 were lower than

the values in the second group ($p<0.0001$). There was no difference between group 2 and group 3 in the parameters measured in microscopic examination.

Discussion and Conclusion: We investigated the effects of etanerceptin for anti-inflammatory and antiapoptotic purposes in the treatment of obstructive jaundice. Biochemically and histopathologically, when we examine our study data; we think that there is no anti-inflammatory, antiapoptotic effect of etanerceptin on obstructive jaundice therapy, but it may have effects on DNA damage at cellular level. At the histopathological level, we also observed that this effect was not in the short term.

Keywords: Etanercept, Apoptosis, Obstructive jaundice

Full text (ID-63):“Tıkanma İkteri Yapılan Ratlarda Etanercept’in Karaciğer Hücrelerine Ve Apoptoza Etkilerinin Araştırılması”

Giriş ve Amaç: Safra yollarının herhangi bir seviyesinde, herhangi hastalığa bağlı olarak gelişen kısmi veya tam tıkanıklık sonucu safra akışının engellenmesi ile tıkanma sarılığı oluşur. Kolestazda gelişen hastalarda morbidite ve mortalitenin önde gelen nedenleri arasında sepsis gibi infeksiyöz komplikasyonların gelişimidir (1). Çalışmamızda tıkanma ikteri yapılan ratlarda etanerceptin oluşacak olan karaciğer apoptozuna olan etkilerini araştırmayı amaçladık.

Gereç ve Yöntem: Çalışma, Adnan Menderes Üniversitesi Tıp Fakültesi(A.Ü.T.F.) Hayvan Deneyleri Yerel Etik Kurulundan onay alındıktan sonra (13.06.2017 tarih, 64583101/2017/056 sayılı onay belgesi) A.Ü.T.F. Deneysel Araştırma Laboratuvarında yapılmıştır. Ratlardan deney, kontrol ve sham grubu olmak üzere toplam 3 grup oluşturuldu. Grup I (n=10): Laparotomi sonrası ana safra kanalı ortaya konup batın kapatıldı. Grup II (n=10): Laparotomi sonrası ana safra kanalı 4/0 ipekle bağlandı. Grup III (n=10): Laparotomi sonrasında ana safra kanalı 4/0 ipekle bağlandı. Aynı günden itibaren 7 gün boyunca 2 mg/kg dozunda intraperitoneal etanercept verildi. Sham grubu dışındaki ratlarda postop 2 gün içinde ikter gelişti. Postop 7’inci günde tüm ratlardan genel anestezi sonrası biyokimyasal parametreler için kan örneği, histopatolojik inceleme karaciğer örnekleri alındı. Sonrası ratlar servikal dislokasyonla sakrifiye edildi. Alınan karaciğer örnekleri odaksal nekroz, fibrozis, dejenerasyon, portal inflamasyon, steatoz, periportal nekroz açısından değerlendirildi.

Bulgular: Ratların serum AST düzeyleri kontrol grubunda(grup 1) $126,2\pm26,9$ (U/L), etanercept almayan(grup 2) grupta $496,8\pm187,2$ (U/L), etanercept alan grupta(grup 3) $468,9\pm179,8$ (U/L) olarak saptandı. Grup 1 deki değerlerin diğer iki gruba kıyasla daha düşük düzeyde olduğu görüldü($p<0,001$), ancak grup 2 ve grup 3 arasında anlamlı fark bulunmadı($p=0,99$).

Serum ALT düzeyleri grup 1 de grup 2 ve grup 3’ e kıyasla daha düşük bulundu($p<0,001$). Grup değerleri sırası ile $44,9\pm12,44$ (U/L), $154,5\pm66,47$ (U/L), $120,7\pm50,3$ (U/L) hesaplandı. Ancak grup 2 ve grup 3 arasındaki ALT düzeyleri kıyaslandığında iki grup arasında anlamlı fark bulunmadı($p=0,42$).

Kan örneklerindeki ALP düzeyleri grup 1 de diğer iki gruba kıyasla daha düşük bulundu($p=0,005$). Grup değerleri sırası ile $182,2\pm66,7$ (U/L), $357,3\pm140,4$ (U/L), $316,84\pm115,41$ (U/L) olarak hesaplandı. Grup 2 ve grup 3 kıyaslandığında ALP düzeyleri arasında anlamlı fark bulunmadı($p=0,69$).

Total bilirubin düzeyleri grup 1 de diğer iki gruba kıyasla daha düşük bulundu($p<0,001$). Grup değerleri sırası ile $0,12\pm0,4$ (mg/dl), $12,69\pm1,5$ (mg/dl), $13,5\pm4,6$ (mg/dl) hesaplanırken, grup 2 ile grup 3 arasında total bilirubin düzeyleri arasında fark bulunmadı($p=0,117$).

Serum caspase-3 düzeyleri grup 1 de $5,21\pm2,77$ (ng/ml) , grup 2 de $4,82\pm3,09$ (ng/ml), grup 3 de $4,46\pm2,51$ (ng/ml) olarak hesaplandı. 3 grup birbiri ile kıyaslandığında gruplar arasında anlamlı fark bulunmadı($p=0,82$).

Serum HMGB1 düzeylerine bakıldığında birinci gruptaki değerlerin diğer gruplara kıyasla daha düşük olduğu görüldü($p<0,0001$). Grup değerleri sırası ile $145,9\pm77,78$ (pg/ml), $1288,61\pm346,53$ (pg/ml), $959,49\pm264,44$ (pg/ml) olarak hesaplandı. Grup 2 ve grup 3 kıyaslandığında grup 3 teki HMGB1 düzeyinin grup 2' ye kıyasla daha düşük olduğu gözlemlendi($p=0,024$).

Alınan kanlardan Serum TLR4 düzeylerine bakıldığında grup 1 deki değerlerin diğer gruplara kıyasla daha düşük olduğu gözlemlendi($p<0,001$). Grup değerleri sırası ile $1,05\pm0,4$ (ng/ml), $8,92\pm3,44$ (ng/ml), $12,23\pm2,79$ (ng/ml) olarak hesaplandı. Grup 2 ile grup 3 karşılaştırıldığında grup 3 deki değerlerin grup 2 ye kıyasla daha yüksek olduğu gözlemlendi($p=0,002$).

Serum TNF α düzeylerine bakıldığında grup değerleri sırası ile $324,78\pm76,15$ (pg/ml), $445,15\pm231,14$ (pg/ml), $388,76\pm145,58$ (pg/ml) olarak hesaplandı. Gruplar arası anlamlı fark bulunmadı ($p=0,27$).

Doku caspase-3 düzeyleri birinci grupta $0,82\pm0,18$ (ng/mg protein), ikinci grupta $0,99\pm0,14$ (ng/mg protein), üçüncü grupta $0,87\pm0,22$ (ng/mg protein) olarak hesaplandı. Gruplar arasında anlamlı farklılık bulunmadı($p=0,15$).

Rat doku örneklerinde HMGB-1 düzeyleri grup sıraları ile $192,24\pm39,87$ (pg/mg protein), $350,56\pm65,6$ (pg/mg protein), $246,6\pm51,25$ (pg/mg protein) olarak hesaplandı. Grup 1 ile grup 3 deki değerler arasında anlamlı farklılık bulunmazken($p=0,68$), grup 1 ve grup 3 teki değerlerin ikinci gruptaki değerlere göre daha düşük olduğu gözlemlendi($p<0,001$).

Doku TLR4 düzeyleri birinci grupta $1,79\pm0,63$ (ng/mg protein), ikinci grupta $4,61\pm2,18$ (ng/mg protein), üçüncü grupta $2,71\pm1,16$ (ng/mg protein) olarak hesaplandı. Grup 1 deki değerlerin grup 2 ye kıyasla daha düşük olduğu($p=0,001$), grup 3 ile arasında bir fark olmadığı görüldü($p=0,32$). İkinci gruptaki değerlerin üçüncü gruptaki değerlere göre daha yüksek olduğu görüldü ($p=0,001$).

Karaciğer TNF α düzeyleri sırası ile $1,79\pm0,63$ (pg/mg protein), $364,23\pm103,14$ (pg/mg protein), $323,86\pm67,21$ (pg/mg protein) olarak hesaplandı. Grup 2 ve grup 3 te, grup 1 e kıyasla daha yüksek

bulundu($p<0,001$). İkinci grup ile üçüncü grup arasında TNF α düzeyleri arasında fark bulunmadı($p=0,45$).

Doku örnekleri mikroskopik olarak steatoz açısından incelendiğinde her üç grupta da steatoz olmadığı gözlemlendi. Dejenarasyon açısından incelendiğinde grup 1 de diğer gruplara kıyasla daha az dejenarasyon olduğu gözlemlendi($p<0,001$). Grup 2 ile grup 3 arasında fark gözlenmedi($p>0,05$). Odaksal nekroz açısından incelendiğinde grup 1 de diğer gruplara kıyasla daha az odaksal nekroz olduğu gözlemlendi($p<0,001$). Grup 2 ile grup 3 arasında fark gözlenmedi($p>0,05$). Periportal nekroz açısından incelendiğinde grup 1 de diğer gruplara kıyasla daha az dejenarasyon olduğu gözlemlendi($p<0,001$). Grup 2 ile grup 3 arasında fark gözlenmedi($p>0,05$). Fibrozis açısından incelendiğinde grup 1 de diğer gruplara kıyasla daha az fibrozis olduğu gözlemlendi($p<0,001$). Grup 2 ile grup 3 arasında fark gözlenmedi($p>0,05$).

Tartışma ve Sonuç: Tıkanma sarılığı (TS) ana safra yollarında ya da intrahepatik safrayollarındaki tıkanıklığa bağlı olarak görülebilen klinik bir tablodur(2). Etanercept (Enbrel) bir TNF α inhibitörü olup, TNF α molekülünü bağlamaktadır. Etanercept, rekombinant DNA tarafından üretilen biyolojik bir ilaçtır. Abdul Hamid ve ark.(3) yaptıkları bir çalışmada karaciğer sirozu olan hastalara TNF α inhibitörü etanercept verilmesinin karaciğer hasarını azalttığını bildirmişlerdir.

Zhou ve ark.(4)' çalışmalarında ikterik ratlarda TNF- α 'nın diğer gruplara göre yüksek olduğunu, ginsenosidle koruma yaptığı grupta TNF- α düzeyinin düşük olduğunu bildirmiştir. Çalışmamızda her iki grupta farklılık saptanmadı. TNF- α 'nın inflamasyon sonrasında etkisi 30 dakika içinde başlar ve 90-120 dakika içinde maksimuma ulaşır, 4 saat sonra etkisi kaybolur(5). Serum örneklerini sakrifikasyondan hemen sonra almamızdan ötürü TNF α düzeyinin serumda anlamsız çıkabileceğini, Etanerceptin TNF α üzerine etkisinin olmadığını düşünüyoruz.

Çalışmamızda karaciğer fonksiyon testlerinde(KCFT) kontrol grubuna göre parametreler yüksek çıksada grup 2 ve grup 3 arasında farklılık gözlenmedi. Etanerceptin TSda KCFT'ye etkisi olmadığını gözlemekteyiz.

Kaspazlar antioksidan savunmayı ve konakçı direncini arttırmakta, apoptozun yanı sıra doku tahribini de engelleyerek antiinflamasyonu sağlamaktadır(6). Liu ve ark.(7)'nin çalışmasında tıkanma ikterli ratlarda hidrojenli salinin etkisini araştırmada belirteç olarakta kaspaz-3'ü kullanmışlardır. Çalışmamızda alınan örneklerle bakıldığında gruplar arasında kaspaz-3 değerlerinde farklılık saptanmadı. Etanerceptin ikterde antiapoptotik aktivitesinin olmadığını düşünmekteyiz.

HMGB1(High Mobility Group Box 1) nükleer proteini koruyan bir protein olup DNA hasarı, ekstraselüler hasar ve farklılaşmanın önemli bir göstergesidir(8,9). Liu ve ark.(2)'nin çalışmasında tıkanma ikterli ratlarda HMGB1 düzeyinin serumda, karaciğer dokusunda yükseldiğini ve hidrojen salinle tedavi ettikleri grupta0 HMGB1 düzeyinin doku ve serumda düştüğünü bildirmişlerdir. Bizim

çalışmamızda ikinci grupta HMGB1 düzeyi yükselirken üçüncü grupta HMGB1 düzeyi ikinci gruba göre düşük saptanmıştır. HMGB1' in tıkanma ikterinde karaciğer hasarında önemli bir gösterge, etanerceptin karaciğerin DNA hasarında etkisi olabildiğini düşünmekteyiz.

Tool like receptore 4 (TLR4) ince barsak mukozasında bulunan, bakteriyel komponentlerin mukoza reseptörlerini uyaran bir reseptör olarak bilinmektedir(10). Lin ve ark.(11)'nin çalışmasında TS' ye bağlı olan karaciğer yetmezliğinde TLR4' ün iyi bir belirteç olabileceği belirtilmiştir. Çalışmamızda üçüncü grupta en yüksek değer, kontrol grubunda ise en düşük değer saptandı. Doku TLR4 değerlerinde ise üçüncü grubun TLR4 değerinin diğer gruplardan düşük, en yüksek sonucun ikinci grupta olduğu gözlemlendi. Doku örneklerinde hem TLR4' ün TS' nin inflamatuvar belirteçliği açısından literatür ile paralellik gösterdiğini, etanerceptin tedaviye anlamlı yanıt verdiğini görmekteyiz. Serum TLR4 değerlerinde aynı sonucu saptayamadık. TLR4' ün sadece karaciğerde değil; ince barsak, kolon mukozasında reseptör özelliği olduğu için(12) bu değişkenliğin olabileceğini, dokudan alınan örneklerin daha doğru olduğunu düşünmekteyiz.

Karaciğer hasarı ve TS ile ilgili literatürde çalışmalarında Knodell ve ark.(13)' nin yaptığı histopatolojik skorlama kullanılmıştır. Kontrol grubunda skorlama derecelerimiz düşük, grup 2 ve grup 3 de daha yüksek nekroz derecelerine rastladık ancak grup 2 ve 3 arasında fark gözlemlemedik. Etanerceptin histopatolojik ölçüde etkili olmadığını düşünmekteyiz.

Biyokimyasal, histopatolojik olarak çalışma verilerimizi incelediğimiz zaman; etanerceptin TS tedavisinde antiinflamatuvar, antiapoptotik etkinliğinin olmadığını ancak hücresel düzeyde DNA hasarı üzerine etkilerinin olabileceğini düşünmekteyiz. Histopatolojik düzeydede etkisinin olmadığını düşünmekteyiz.

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ID-64 / OP: “Percutaneous Metallic Stents in Malignant Biliary Obstruction: Comparison of Nitinol and Wall Stents”

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Abstract (ID-64)

Introduction and Purpose:

Biliary obstruction is a common phenomenon in malignant diseases, which may require percutaneous self-expandable metallic stents that are placed through a 7 F catheter in a compressed state, forming a large inner lumen of 10 mm after expansion. Therefore, reocclusion rates are low and patency times are long. There are many types of self-expanding metallic stents, and each has its own strengths and weaknesses. In this study, we aimed to evaluate the patients with nitinol stents and wall stents, two main metallic stent groups.

Materials and Methods

The medical records of 204 patients who underwent percutaneous stent placement due to malignant biliary obstruction in our department were reviewed retrospectively. Records of 41 patients could not be accessed securely. Data from a total of 6 patients were not included in the study, since 3 of the remaining 163 patients underwent intervention for benign reasons, 2 died before stent placement, and plastic stent was placed in 1 patient. The data of the remaining 157 patients (mean age: 58.98, SD: 14.5), 79 of whom were male and 78 were female, were analyzed. Technical success rate, treatment success in the first 30 days, early minor, major and late complications, procedural and early mortality, stent patency times and mean patient survival times were evaluated. Chi-square was used to compare categorical values, and t-test was used to compare numerical values. $P < 0.05$ was taken as statistical significance criterion. SPSS program was used for statistical evaluation.

Results

A total of 213 self-expandable metallic biliary stents were implanted in 157 patients, 103 of which were nitinol stents and 83 were wall stents. Mean stent patency and survival times were 157 days and 200 days in the wall stent group, and 142 days and 171 days in the nitinol stent group, respectively. The procedure-related mortality rate was 1.35% in the nitinol stent group and 3.6% in the wall stent group, while the 30-day mortality rate was 10.8% in the nitinol stent group and 15.6% in the wall stent group.

In both groups, 13 reocclusions were noted. Minor, major, and late complication rates were 21.5%, 22.9%, and 4% in the nitinol stent group, and 19.8%, 21%, and 7.2% in the wall stent group, respectively.

Discussion

Although it varies in various series, the average stent patency period is 75-96 days. In our series, it was found to be 157 days for wall stents and 142 days for nitinol stents.

Successful placement of self-expandable metallic stents has been reported in the literature at rates of 95-100%. In our series, this rate was found to be 98.2% for wall stents and 99% for nitinol stents, which aligns with the literature.

The most common complication in the early period is cholangitis and it is reported with an average frequency of 10%. In some studies, this rate reaches 40-50%. In our series, the rates of early minor complications and major complications were about 21% for both groups, which aligns with the literature.

Conclusion

Nitinol stents and wall stents are safe options for the percutaneous treatment of malignant biliary obstruction.

Full-text (ID-64)

Introduction and Purpose

The biliary system undertakes two main tasks, absorption of vital elements and the removal of metabolic wastes from the liver (1). Obstruction of the biliary system is a common phenomenon in malignant diseases, and its palliation not only improves the general condition and quality of life of the patient, but also prolongs life by improving digestion, immunity, kidney and liver functions.

Non-surgical palliation options are external and internal biliary drainage methods. External biliary drainage has disadvantages such as the need for frequent irrigation and catheter replacement, dislocation, predisposing to infection, and causing pain (2,3).

Internal biliary drainage can be performed endoscopically or percutaneously. Plastic stents are usually placed with the endoscopic method. Plastic stents have disadvantages such as frequent occlusion, frequent migration, and therefore the need for frequent reinterventions (4). Metallic endo-protheses have been designed aimed at circumventing these limitations. The most ideal solution today is self-expandable metallic stents placed percutaneously (5). These stents are placed at the end of a 7 F or 10 F catheter in a compressed state; however, when they are opened, they form a large inner lumen of 10 mm (6). Therefore, re-occlusion rates are low and patency time is long. When fully expanded they exert strong radial forces to the biliary walls and are eventually embedded into wall. Therefore, their migration risk is theoretically negligible. However, there are many types of self-expanding metallic stents, and

each has its own strengths and weaknesses. In this study, we carried out retrospective analysis of the patients treated with stents made of nitinol and stainless steel (wall-stent), which are among the most often used metallic stent groups.

Material and Methods

Patient population: In order to investigate the effectiveness of treatment with percutaneous transhepatic metallic stents in malignant biliary obstructions, the medical records of 204 patients who underwent biliary stenting in the Interventional Radiology unit of our department between January 1, 1995 and December 31, 2005 were retrospectively analyzed. Medical records of 41 patients could not be accessed securely. Data from a total of 6 patients were not included in the study, since 3 of the remaining 163 patients underwent intervention for benign reasons, 2 died without the opportunity to place a stent, and plastic stent was placed in 1 patient. The data of the remaining 157 patients (mean age: 58.98, SD: 14.5), 79 of whom were male and 78 were female, were analyzed. A total of 213 metallic stents were placed in 157 patients. Wall stent was placed in 83 of the patients, and they formed the first group. Nitinol stent was placed in 74 of the patients, and they formed the second group. (Table 1).

Technique: All procedures were performed under the guidance of fluoroscopy and ultrasonography, following the administration of broad-spectrum antibiotics, appropriate analgesia and local anesthesia. Before the procedure, cholangiography was performed with a 21 G needle to evaluate the anatomy of the biliary tree, the level and extent of the stricture. Following this, the intrahepatic bile ducts were catheterized with an 'introducer set' containing 0.018 guidewire and a 5F 'dilator/introducer'. Obstruction in the biliary duct was tried to be overcome with standard guide wire techniques. In cases where we were able to pass the occluded area, either the stent was placed directly over the extra stiff guide wire in the same session, or the biliary drainage catheters with 8 F or 10 F multiple side holes were left over the extra stiff guide wire via external internal drainage, and the stent was placed 2-3 days later. If the obstruction point could not be easily passed in the first time, excessive manipulation was avoided in order not to increase the risk of cholangitis and sepsis, and the external drainage catheter was left. An external internal drainage catheter was placed with a new intervention 2-3 days later, and the stent was placed 1-3 days later.

The follow-up of each patient was based on findings at outpatient examinations, periodic blood tests, and telephone calls. Imaging tests such as ultrasonography, percutaneous transhepatic cholangiography, or endoscopic retrograde cholangiography were performed on those patients who had recurrent symptoms of cholangitis or jaundice.

Technical success, treatment success in the first 30 days, early minor, major and late complications, procedure-related and 30-day mortality rates were evaluated in all patients. Additionally, stent patency times and mean patient survival times after stent implantation were evaluated in patients for whom follow-up information could be obtained.

Primary patency of the stents was defined as the interval between initial placement and recurrence of symptoms due to obstruction. If there was no evidence of occlusion during a patient's life, the patency period was considered equal to the survival period

Continuous values were compared with t-test and categorical values were compared with chi-square test. Statistical significance was determined as $p < 0.05$.

	Nitinol stent n:74	Wall stent n:83
Age (Mean/SD)	57.8/15.5	60/13.5
Gender (F/M)	37/37	41/42
Etiology (n/%)		
Pancreas cancer	14 (18.9%)	28 (33.7%)
Cholangiocarcinoma	12 (16.2%)	15 (18%)
Gall bladder cancer	9 (12.1%)	10 (12%)
Metastasis	34 (45.9%)	26 (31.3%)
Other cancers	5 (6.75%)	4 (4.8%)
Obstruction level (n/%)		
Distal choledoc	16 (21.6%)	30 (36%)
Prox-mid choledoc	34 (45.9%)	25 (30%)
Hepatic hilum	18 (24.3%)	17 (20.5)
Multipl segments	6 (8.1%)	11(13.3%)

Table 1: Distribution of patient populations

Table 2: Distribution of intervention approaches

	Nitinol stent n: 74	Wall stent n: 83
Approach (Laterality)		
Right (n/%)	60/74 81%	61/83 73.5%
Left (n/%)	3/74 4%	6/83 7.2%
Bilateral (n/%)	11/74 14.9%	16/83 19.3%
Number of sessions		
Single session (n/%)	3/74 4%	2/83 2.4%
Two sessions (n/%)	50/74 67.5%	64/83 77.1%
Three sessions (n/%)	20/74 27%	16/83 19.3%
More than three sessions (n/%)	1/74 1.35%	1/83 1.2%
Number of stents		
Single stent (n/%)	59/74 79.7%	*66/83 79.5%
Bilateral stent (n/%)	11/74 14.9%	**16/83 19.3%
End to end stents (n/%)	4/74 5.4%	1/83 1.2%

*Including one patient whose stent failed to expand

**Including one patient who received 3 stents in the form of bilateral and end to end

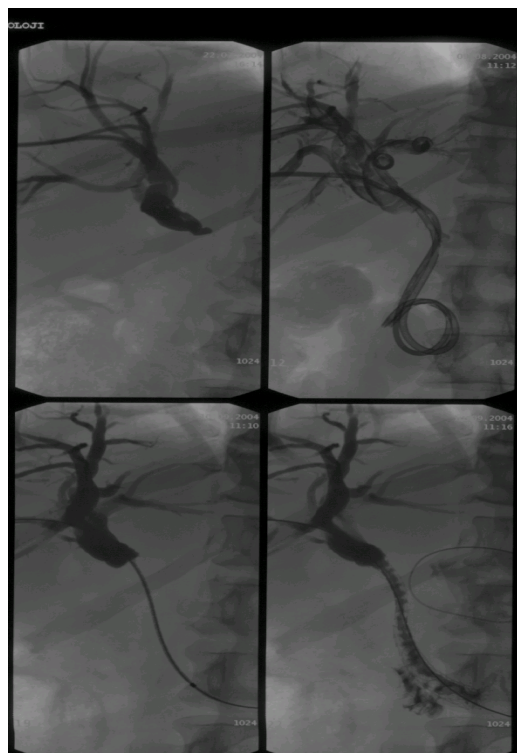


Figure 1: 56 years old male with metastatic tumor obstructing mid to distal choledoc. The patient received nitinol stent in two steps. After passing the stricture normal biliary drainage is achieved and self expandable nitinol stent is deployed.

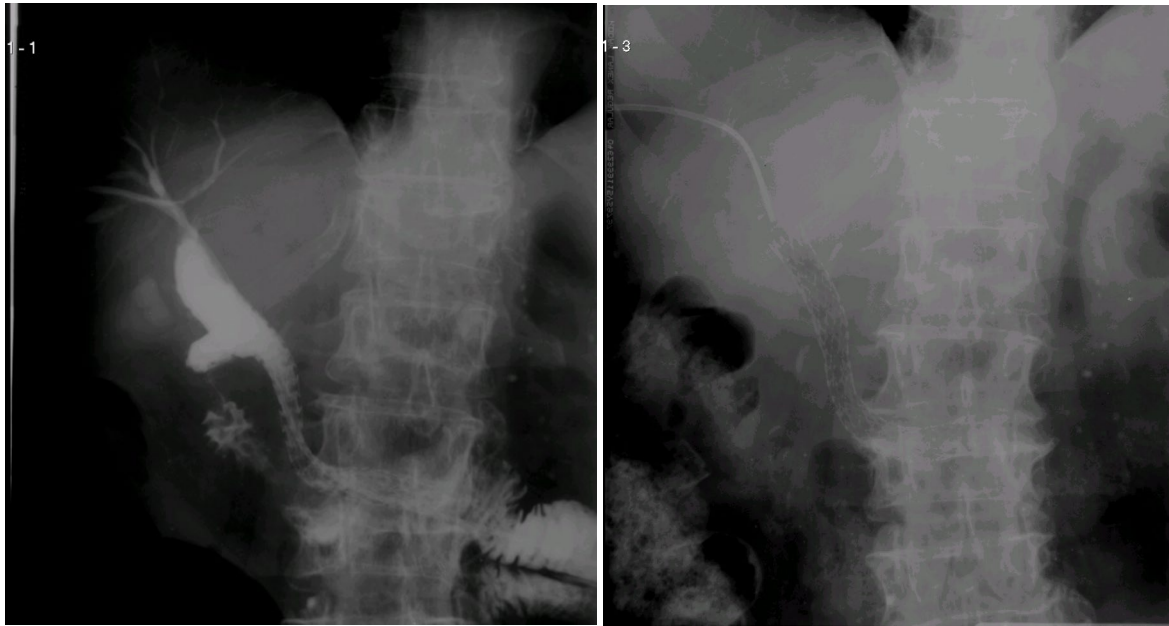


Figure 2: a) Spot radiogram of a patient with cholangiocarcinoma that obstructed the middle part of the common bile duct after wall stent insertion.

b) Spot radiogram taken to evaluate the stent position in the same patient

Results

A total of 213 metallic stents were placed in 157 patients. Wall stent was placed in 83 of the patients. Mean age and SD of these patients were 60 and 13.5 with approximately equal

male and female ratio. Nitinol stent was placed in 74 of the patients with mean age of 57.8 and SD of 15.5 with equal male and female ratio (Table 1).

The etiology of biliary obstruction was pancreas carcinoma in 42 patients (26.7%), gall bladder carcinoma in 27 patients (12.1%), cholangiocellular carcinoma in 27 patients (17.2 %), metatatic cancer in 60 pateints (38.2%) and other tumors in 9 patients (5.6%).

Obstuction level was distal choledoc in 46 patients (29.3%), mid-proximal choledoc was in 59 patients (37.5%), hepatic hilum in 35 patients (22.3%) and diffuse multisegmental in 5 patients (11.9%) (Table 1).

In cases where we were able to pass the occluded area, either the stent was placed directly over the extra-stiff guide wire in the same session (n=5; 3.2%), or biliary drainage catheters with 8 F or 10 F multiple side holes were left over the extra-stiff guide wire via external internal drainage. (Figure 1). The stent was placed 2-3 days later (n=114, 72.6%) (Table 2).

If we could not easily pass the occlusion point in the first attempt, external internal drainage catheter was placed with a new intervention 2-3 days later, and the stent was placed 1-3 days later. (n=36, 23%). In two patients, the occluded segment could not be passed in the second attempt. One of these patients was a case of pancreatic cancer that had infiltrated both common bile ducts at the hilar level. After the second attempt from the right was unsuccessful, a new puncture was performed from the left and an internal external catheter was placed three days later. The next day after decompression, the stricture could be overcome from the right and a bilateral Y-shaped stent was placed.

The other patient was a pancreatic cancer with complex multisegmental biliary obstruction. Significant arterial bleeding and hematoma occurred during the second attempt. Hemoglobin decreased from 10.9 to 10, but transfusion was not required and bleeding was self-limited by responding to catheter replacement techniques. A new intervention was performed one week later; again, the stenosis could not be passed. In the fourth attempt, the stenosis was passed and the stent was placed, but balloon dilatation was required in the control.

After satisfactory dilatation was achieved, the stent delivery system was placed in the middle of the stricture so that the lesion was sufficiently passed by the stent both proximal and distal, and the stent was opened. The length of the stents after deployment was 6-10 cm and the diameter was a maximum of 10 mm.

A single stent was placed in 124 patients (78.9%), and no further intervention was required during the follow-up period or until death. Two stents were applied to 32 patients at the first attempt (Bilateral stenting n=26 (16.5%), end-to-end stenting n=5 (3.2%), new stent as stent within the stent n=1 (0.6%) because it was not deployed.). Three stents, bilateral and end-to-end, were placed in one patient at the first placement.

Percutaneous biliary stent placement resulted in the successful placement of 108 of 110 stents in the wall stent group and 102 of 103 stents in the nitinol stent group. Our technical success rate was 98.2% and 99%, respectively.

In the patient group treated with wall stent, clinical improvement was achieved in 72 of 83 patients, with bilirubin values falling 75% or more from baseline and/or below 5mg/dl. The therapeutic success rate was 86.7%. Therapeutic success was achieved in 67 (90%) of 74 patients in the nitinol stent group (Table 3).

Major complication rate was 18/83 (21%), minor complication rate was 17/83 (19.8%), late complication rate was 6/83 (7.9%) for wall stents and 17/74 (22.95%), 16/74 (21.5%) and 3/74 (4%) for nitinol stent group respectively. Cholangitis, sepsis, hemobilia, leakage and abscess rates for wall stents were 10.8 %, 8.4 %, 4.8%, 6% and 4.8% respectively. These rates were 14.6%, 9.5%, 5.4%, 5.4% and 4% for nitinol group respectively (Table 4).

When metallic stents are occluded by mud or tumor growth from the inside or outside, it is possible to open this occlusion with a balloon and wire. When this is not possible, the obstruction can be removed by placing a new stent inside the old stent. In our study the stents were occluded in 13 patients (15.6%) in the follow-up of patients with wall stent.

In the group of patients with nitinol stent, additional interventions were performed in 13 patients (17.5%) due to re-occlusion.

Procedural death was observed in 3 (3.6%) cases in the wall stent group and only in one case (1.35%) in the nitinol stent group. The mortality rate within 30 days was 15.6% for wall stent and 10.8% in nitinol stent group.

Survival time was calculated on a total of 70 patients out of 38 patients in the wall stent group and 32 patients in the nitinol stent group. Since the follow-up information of the remaining patients could not be accessed, they were not included in this account.

The mean survival time in the wall stent group was 157 days, and in nitinol stent group was 142 days. The mean stent patency times were calculated as 200 days and 171 days respectively. (Table 3, 4)

There was no statistically significant difference in the compared values of both groups.

Table 3: Outcome of treatments

	Nitinol stent n:74	Wall stent n:83
Technical success (n/%)	102/103 (99%)	108/110 (98.2%)
Treatment success (n/%)	67/74 (90%)	72/83 (86.7%)
Procedural mortality (n/%)	1/74 (1.35%)	3/83 (3.6%)
30 day mortality (n/%)	8/74 (10.8%)	13/83 (15.6%)
Minor complications (n/%)	16/74 (21.5%)	17/83 (19.8%)
Major complications (n/%)	17/74 (22.95%)	18/83 (21%)
Late complications (n/%)	3/74 (4%)	6/83 (7.2%)
Reocclusion (n/%)	13/74 (17.5%)	13/83 (15.6%)
Restent (n/%)	10/74 (13.5%)	5/83 (6%)

Table 4: Complications in nitinol and wall stent groups

	Nitinol stent n:74	Wall-stent n: 83
Early minor complications (n/%)	16/74 21.5%	17/83 19.8%
Cholangitis	11/74 14.6%	9/83 10.8%
Hemobilia	4/74 5.4%	4/83 4.8%
Leakage	4/74 5.4%	5/83 6%
Early major complications (n/%)	17/74 22.95%	18/83 21%
Sepsis	7/74 9.5%	7/83 8.4%
Major hemorrhage	1/74 1.35%	1/83 1.2%
Subcapsular collection	3/74 4%	2/83 2.4%
Abscess	3/74 4%	4/83 4.8%
Bilioma	5/74 6.7%	1/83 1.2%
Acute cholecystitis	1/74 1.35%	0/83 0%
Acute pancreatitis	0/74 0%	2/83 2.4%
Peritonitis	1/74 1.35%	1/83 1.2%
Duedonitis	0/74 0%	1/83 1.2%
Late complications (n/%)	3/74 4%	6/83 7.2%
Cholangitis	2/74 2.7%	5/83 6%
Sepsis	0/74 0%	1/83 1.2%
Abscess	1/74 1.35%	1/83 1.2%
Acute cholecystitis	1/74 1.35%	3/83 3.6%
Peritonitis	2/74 2.7%	0/83 0%
Duedonitis	1/74 1.35%	0/83 0%

Discussion

Most of the studies in the literature have focused on wall stents, as they require a small 7F insertion catheter, create a large inner luminal diameter of 1 cm when opened, and cause infrequent migration by being embedded in the walls. These stents also provide an additional advantage by allowing drainage between the loops of the wire mesh in the ducts at the second level branching points. The nitinol stents, which were developed later, have all the advantages of wall stents, but they have become an important alternative due to their additional advantages such as being more flexible and thus not causing bending.

Successful placement of self-expandable metallic stents has been reported in the literature at a rate of 95-100% (6,7). In our series, this rate was found to be 98.2% for wall stents and 99% for nitinol stents, which is in line with the literature and does not differ between the two groups.

In our series, we did not apply a stent with a size shorter than the occlusion length. With a wall stent in four cases and a nitinol stent in one case, we attempted to overcome long occlusions by placing two stents end-to-end, and we were able to achieve successful bile flow in all of these cases.

No stent migration was observed in our series. This evaluation gave similar results in other series (22). The strong opening force applied by self-expandable stents to the wall of the biliary tract and their gradual embedding in the wall prepare this result.

The most common complication in the early period is cholangitis and is reported with an average frequency of 10%. In some studies, this rate reaches to 40-50% (8).

Stoker and Lameris (9) and Gordon et al (10) reported the frequency of early complications, which they determined as intrahepatic arterial hemorrhage, subphrenic abscess, and septicemia, as 8% in their series. Adam et al. (11) reported that they detected only 5% of cholangitis as an early complication.

In our series, the rate of cholangitis was 10.8%, sepsis was 8.4%, hemobilia was 4.8%, the leakage was 6%, abscess was 4% in the wall stent group. In the nitinol stent group, the rate of cholangitis was 14.6%, sepsis was 9.5%, hemobilia was 5.4%, leakage was 5.4% and abscess was 4%.

In various studies, major complication rates in the early period are reported to be between 2.3 and 20.8% (6,9,12,13,14,15,16).

The most common late complication is recurrent jaundice. According to some publications, this is affected by the level of obstruction and is observed with a frequency of 5-11% in distal strictures (8); the rate can be up to 45% in hilar strictures (6)

In a large series of 969 patients, the reocclusion rate was found to be 35%. Although it varies, the mean stent patency period was 75-96 days (6).

In our series, re-intervention was required in 13 patients (15.6%) in the wall stent group and in 13 patients (17.5%) in the nitinol stent group.

Gordon et al. reported re-occlusion rates with 24% (10) and Salomonowitz et al. with 17.5% (13) similar to ours. On the other hand, Adam et al. reported lower re-occlusion rates of 7% (11) and Lammer et al reported 11% (15).

With metallic stents, 30-day mortality was found to be 7-12% in other series, and procedure-related mortality was 0-3.7% (6). These values are in line with the values in our series (30-day mortality rate of

15.6% in the wall stent group and 10.8% in the nitinol stent group and procedure-related mortality rate of 3.6% in the wall stent group, and 1.35% in the nitinol stent group).

The mean patency times calculated in the literature range from 196-273 days for metallic stents (7,15-18, 21). In the series of Lammer et al. this was calculated as 272 days (15). In this series, the re-occlusion rate was 19% for metallic stents.

In our series, the mean stent patency time was calculated as 200 days for wall-stents and 171 days for nitinol stents, which is in line with the literature.

The median life expectancy reported after malignant biliary obstruction shows significant differences in the literature and it is between 187-246 days (11, 18-22). The mean survival time in our wall stent group was 157 days, and in nitinol stent group was 142 days.

Metallic stents show good palliative efficacy in malignant biliary system obstructions. Although their price is five times more expensive than plastic stents, they are a more economical option in the long term due to their ease of placement, shorter hospital stay, less parenchymal damage, and longer patency (17).

The majority of cases live for less than seven months, and the majority of stents remain open during this time. However, a substantial number of patients live beyond seven months, and stent patency time is important in these patients. In our study, both nitinol and wall stents exhibited good stent patency times in this regard

The main limitations of our study are primarily due to its retrospective nature. For example, in one of the groups, the tumor may extend more widely, contain harder and more complex strictures, and may be accompanied by more serious co-morbid conditions that may affect survival. Again, due to the retrospective nature of the study, the follow-up information of some of the patients could not be reached. On the other hand, products of different brands with different designs were classified together in the wall-stent and in the nitinol stent group, and this heterogeneity makes it impossible to make more precise evaluations. In the future as data pools more, a more refined classification approach taking into account the specific brands with unique technical design properties can be constructed.

Conclusion

Nitinol stents and wall stents are options that can be safely used in the percutaneous treatment of malignant biliary obstruction.

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ID-65 / OP: “Important Morphological Angles of The Knee Joint and Their Relationship to Pathologies”

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Abstract (ID-65)

Introduction and Purpose: Biliary obstruction is a common phenomenon in malignant diseases, which may require percutaneous self-expandable metallic stents that are placed through a 7 F catheter in a compressed state, forming a large inner lumen of 10 mm after expansion. Therefore, reocclusion rates are low and patency times are long. There are many types of self-expanding metallic stents, and each has its own strengths and weaknesses. In this study, we aimed to evaluate the patients with nitinol stents and wall stents, two main metallic stent groups.

Methods: The medical records of 204 patients who underwent percutaneous stent placement due to malignant biliary obstruction in our department were reviewed retrospectively. Records of 41 patients could not be accessed securely. Data from a total of 6 patients were not included in the study, since 3 of the remaining 163 patients underwent intervention for benign reasons, 2 died before stent placement, and plastic stent was placed in 1 patient. The data of the remaining 157 patients (mean age: 58.98, SD: 14.5), 79 of whom were male and 78 were female, were analyzed. Technical success rate, treatment success in the first 30 days, early minor, major and late complications, procedural and early mortality, stent patency times and mean patient survival times were evaluated. Chi-square was used to compare categoric values, and t-test was used to compare numerical values. $P < 0.05$ was taken as statistical significance criterion. SPSS program was used for statistical evaluation.

Results: A total of 213 self-expandable metallic biliary stents were implanted in 157 patients, 103 of which were nitinol stents and 83 were wall stents. Mean stent patency and survival times were 157 days and 200 days in the wall stent group, and 142 days and 171 days in the nitinol stent group, respectively. The procedure-related mortality rate was 1.35% in the nitinol stent group and 3.6% in the wall stent group, while the 30-day mortality rate was 10.8% in the nitinol stent group and 15.6% in the wall stent group. In both groups, 13 reocclusions were noted. Minor, major, and late complication rates were 21.5%, 22.9%, and 4% in the nitinol stent group, and 19.8%, 21%, and 7.2% in the wall stent group, respectively.

Discussion: Although it varies in various series, the average stent patency period is 75-96 days. In our series, it was found to be 157 days for wall stents and 142 days for nitinol stents. Successful placement

of self-expandable metallic stents has been reported in the literature at rates of 95-100%. In our series, this rate was found to be 98.2% for wall stents and 99% for nitinol stents, which aligns with the literature. The most common complication in the early period is cholangitis and it is reported with an average frequency of 10%. In some studies, this rate reaches 40-50%. In our series, the rates of early minor complications and major complications were about 21% for both groups, which aligns with the literature.

Conclusion: Nitinol stents and wall stents are safe options for the percutaneous treatment of malignant biliary obstruction.

Keywords: Knee, MRI, Q-PA, LPTA

ID-66 /OP: “The Clinical Features of COVID-19 Infection at The Children and Adolescents with Obesity: A Retrospective Analysis from a Tertiary Hospital”

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Abstract (ID-66)

Introduction and Purpose: At the onset of the pandemic, coronavirus disease-2019(COVID-19) in pediatric patients was thought to have a milder course than adults. However, as the pandemic progressed, it was observed that it could be severe in children. But our knowledge of exactly who this virus will severely affect is still limited. Obesity in childhood and adolescence can be considered a risk factor for greater susceptibility and severity of COVID-19. The aim of this study is to evaluate the obese patients hospitalized in the last 6 months.

Materials and Methods: We conducted a retrospective study including 21 obese patients. Obesity was defined as a body mass index (BMI) at or above the 95th percentile for children and teens of the same age and sex. The severity of COVID-19 was defined based on the clinical features, laboratory testing and chest X-ray imaging, including mild, moderate, severe cases. Demographic characteristics and laboratory parameters on admission were collected from the electronic database of the hospital.

Results: Among the study dates, 21 of the 181 (%11.6) patients hospitalized due to COVID-19 were obese. Of the 21 obese patients included in the study, 10 (47.6%) were girls. The median age of patients was 12 years (range:3- 17 years). The patients were classified into the severity of the disease as following: 5 (23.8%) mild cases, 9 (42.9%), moderate cases and 7 (33.3%) severe cases. Five patients of them had noninvasive ventilation support. The mean of hospitalization duration was 8 days(range 2-16 days). Lymphopenia (47.6%) was the most common abnormal parameter in complete blood counts, followed by leukopenia (38%), neutropenia (14.2%), and thrombocytopenia (9.5%).

Discussion and Conclusion: Obesity is an important risk factor for severity and mortality in adult patients (1).The risk factors that link obesity to COVID-19 demonstrated for adults are also present among children: chronic subclinical inflammation, impaired immune response, and underlying cardiorespiratory diseases (2). In this study, 76.2% of the obese patients were moderate and severe. In other published pediatric studies, it was observed that COVID-19 progressed more severely in children with obesity (3,4). Further studies are needed to confirm these results.

Keywords: COVID-19, children, obesity

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ID-67 / OP: “Evaluation of Clinical and Laboratory Findings of Patients with COVID-19 Over 50 Years Old: A Retrospective Study”

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Abstract (ID-67)

Introduction: Individuals of any age can acquire SARS-CoV-2 infection but older adults are more likely to have severe disease. It is known that older people are more susceptible to the virus. 75% of known infections are in people 50 years and older. Therefore, the management of patients with COVID-19 over the age of 50 is very important.

In this study, we aimed to investigate the epidemiological, clinical and laboratory findings of COVID-19 patients over the age of 50 in a tertiary education and research hospital.

Materials and Methods: This was a retrospective study that included patients whose ages over 50 years and who applied to the emergency service with suspected COVID-19 in April 2020. Patients older than 50 years of age, suspected for COVID-19 and had positive nasopharyngeal PCR were included in the study. Patients under the age of 50, patients with a pre-diagnosis of Covid-19 (U07.3) The medical records of the patients included in the study were retrospectively reviewed through their patient files. Demographic characteristics of the patients such as age, gender, admission symptoms, clinical findings, laboratory results, imaging results and hospital follow-up periods were recorded using a standardized form.

Results: A total of 119 patients over 50 years of age with positive nasopharyngeal PCR were included in the study. Comorbid diseases were present in 56 (47.05%) of the patients. The most common clinical symptoms were cough (45.3%), fever (38.6%), malaise (21%), respiratory distress (19.32%) and myalgia (10.08%). Positive computed tomography (CT) findings were detected in 88 (73.9%) cases. It was observed that the rates of service and intensive care hospitalization increased with age.

Conclusion: Age is an important risk factor in COVID-19 disease. Comorbid diseases and the need for care also make this group of patients more vulnerable. In COVID-19 disease, special protocols should be established for elderly patients and studies involving larger masses should be conducted.

Keywords: COVID-19, old age people, mortality

ID-69 / OP: “Obesity Paradox in Heart Failure Patients; Age is Important; Single Center Experience”

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Abstract (ID-69)

Introduction: Obesity and heart failure are spreading like a worldwide epidemic of diseases. Obesity is known to be an important risk factor for cardiovascular diseases. It is known that the risk of cardiovascular disease is high in obese individuals. The Framingham heart study suggests a 5% increase in the risk of developing HF per unit BMI in men and 7% in women. (1) The obesity paradox suggests that there may be an inverse relationship between obesity and established cardiovascular disease prognosis. Obesity is thought to be a protective factor for mortality in heart failure patients. This is called the obesity paradox in cardiovascular diseases. Horwich et al. showed that the best prognosis in heart failure is in overweight and obese patients. (2) Studies conducted so far have shown that the obesity paradox is valid regardless of patient age. In our study, we will investigate whether the obesity paradox is valid for young people, but whether this paradox is observed in the elderly.

Method: Patients diagnosed with heart failure, who were admitted to the intensive care unit of Bandırma state hospital between 2011 and 2017, were retrospectively analyzed. Patients with left ventricular ejection fractions ≤ 40 were included in the study. A total of 145 patients were included in the study and followed up for 4 years. The body mass indexes of the patients at the time of admission were calculated and patients with a BMI >30 were considered obese.

Results: 75 patients were under 75 years old and 70 patients were over 75 years old. Obesity in young patients under the age of 75 was 52 percent (39 patients). When looking at young patients, 4-year all-cause mortality was 59% in non-obese patients, while it was 33% in obese patients. Mortality was significantly lower in young patients with obesity ($p<0.05$). In young heart failure patients, an average of 26 days of hospitalization was observed as a result of 4-year follow-up in obese patients, and an average of 14 days in non-obese patients. It was observed that obesity significantly increased the length of hospital stay in young heart failure patients ($p<0.05$). In other words, while the obesity paradox was observed in all-cause mortality in young patients, this paradox was not observed during hospitalization. Obesity was observed as 38% in elderly patients over 75 years of age. Mortality was 81% in obese and 55% in non-obese ($p<0.05$). The mean hospital stay was 31 days in obese patients and 10 days in nonobese patients ($p<0.05$). In other words, obesity paradox was not observed in elderly patients in terms of both mortality and hospital stay.

Conclusion: It has been shown that the obesity paradox in heart failure is valid only on mortality in

young patients, but the length of hospital stay is longer. In patients over 75 years of age, this paradox was not observed in mortality and length of stay. Although the mechanism of the obesity paradox cannot be fully explained, Endotoxin/lipopolysaccharide hypothesis and Malnutrition/inflammation complex syndrome (MICS) may explain the obesity paradox and the inverse relationship. (3) It is thought that the reason for this paradox in young patients is because obese individuals are more symptomatic, so they are admitted to cardiology outpatient clinics earlier and medical treatment is started earlier. However, it is observed that this advantage of obesity turns into a disadvantage with age. Obesity has been shown to increase mortality and cause poor prognosis for cardiovascular diseases. Patients with heart failure benefit from cardiac and respiratory rehabilitation. It is recommended to avoid obesity with exercise and diet recommendations in terms of cardiac reserve and ventilation reserves.

Keywords: Obesity, obesity paradox, heart failure

ID-70 / OP: “Evaluation of Clinical Conditions Associated with Anatomical Variations of The Extrahepatic Biliary Tract with Magnetic Resonance Cholangiopancreatography”

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Abstract (ID-70)

Introduction: Low insertion of the cystic duct is an anatomical variation of the extrahepatic biliary tract and increases the risk of choledocholithiasis. A new anatomical classification with magnetic resonance cholangiopancreatography (MRCP), Type 1 variation with low insertion has been shown to be strongly associated with choledocholithiasis. Another anatomical variation is the pancreaticobiliary maljunction (PBM), where the pancreatic and the bile ducts join outside the duodenal wall to form a long duct and can also be diagnosed with MRCP. There are literature data indicating that PBM increases the risk of gallbladder and biliary tract stones and biliary cancer.

The first aim of this study is to determine the frequency of the types of cystic duct insertion with MRCP in the patient and control groups, and to determine whether there is a difference between the types and groups in terms of the development of cholelithiasis, choledocholithiasis and pancreaticobiliary malignancy. The second aim is to evaluate whether PBM can be considered as a risk factor for the development of cholelithiasis, choledocholithiasis and biliary malignancy.

Material and Method:Imaging archive was scanned retrospectively for MRCP examinations. The patients' age, gender, history of cholecystectomy, pancreaticobiliary malignancy and malignant diagnosis were recorded. MRCP examinations were evaluated for the presence of cholelithiasis, choledocholithiasis, and PBM. The distance between the level of cystic duct insertion and the duodenal papilla (CDDP) and the length of the extrahepatic bile duct (EHBD) were measured and the type of insertion was determined (CDDP/EHBD Type 1: $\leq 50\%$, Type 2: 51-74%, Type 3: $\geq 75\%$). Radial insertion of the cystic duct (lateral, medial and posterior) was recorded. Type 1 cases were grouped according to presence/absence of intrapancreatic insertion. The cases who did not have a history and radiologic signs of pancreaticobiliary disease were determined as the control group. Insertion types, PBM and the presence of cholelithiasis, choledocholithiasis or malignancy were compared between the groups.

Results: MRCPs of 505 (359 patients and 146 control) cases were included. Cholelithiasis was observed significantly more frequently in type 1 than type 2 ($p=0.002$), and choledocholithiasis was observed

significantly more frequently in type 1 than in type 2 ($p<0.001$) and type 3 ($p=0.027$). The frequency of choledocholithiasis was significantly higher in the group with intrapancreatic insertion ($p=0.019$). There was no significant relationship between cystic duct insertion types and pancreaticobiliary malignancy ($p=0.68$) (Table 1). Type 1 insertion was observed more frequently in the patient group ($p<0.001$) and type 2 in the control group ($p<0.001$). In type 1, medial and posterior insertions were more common ($p<0.001$). The frequency of PBM was significantly higher in the patient group than in the control group ($p=0.014$) (Table 2). Of 29 cases with PBM, 14 (48.3%) cholelithiasis, four (13.8%) choledocholithiasis, and three (10.3%) pancreaticobiliary malignancy were found.

Conclusion: The most common type of cystic duct insertion is type 2 and lateral. Low insertion (Type 1) cystic duct variation and intrapancreatic insertion increase the frequency of choledocholithiasis. PBM can be considered as a risk factor for the development of cholelithiasis and biliary malignancy.

Keywords: Cystic duct; anatomic variation; magnetic resonance cholangiopancreatography; pancreaticobiliary maljunction

Full-text (ID-70)

Introduction and Purpose: Low insertion of the cystic duct is an anatomical variation of the extrahepatic biliary tract and increases the risk of choledocholithiasis. A new anatomical classification with magnetic resonance cholangiopancreatography (MRCP), Type 1 variation with low insertion has been shown to be strongly associated with choledocholithiasis. Another anatomical variation is the pancreaticobiliary maljunction (PBM), where the pancreatic and the bile ducts join outside the duodenal wall to form a long duct and can also be diagnosed with MRCP. There are literature data indicating that PBM increases the risk of gallbladder and biliary tract stones and biliary cancer.

The first aim of this study is to determine the frequency of the types of cystic duct insertion with MRCP in the patient and control groups, and to determine whether there is a difference between the types and groups in terms of the development of cholelithiasis, choledocholithiasis and pancreaticobiliary malignancy. The second aim is to evaluate whether PBM can be considered as a risk factor for the development of cholelithiasis, choledocholithiasis and biliary malignancy.

Material and Method: Imaging archive was scanned retrospectively for MRCP examinations. The patients' age, gender, history of cholecystectomy, pancreaticobiliary malignancy and malignant diagnosis were recorded. MRCP examinations were evaluated for the presence of cholelithiasis, choledocholithiasis, and PBM. The distance between the level of cystic duct insertion and the duodenal papilla (CDDP) and the length of the extrahepatic bile duct (EHBD) were measured and the type of insertion was determined (CDDP/EHBD Type 1: $\leq 50\%$, Type 2: $51-74\%$, Type 3: $\geq 75\%$). Radial insertion of the cystic duct (lateral, medial and posterior) was recorded. Type 1 cases were grouped according to presence/absence of intrapancreatic insertion. The cases who did not have a history and radiologic signs of pancreaticobiliary disease were determined as the control group. Insertion types,

PBM and the presence of cholelithiasis, choledocholithiasis or malignancy were compared between the groups.

Results: MRCPs of 505 (359 patients and 146 control) cases were included. Cholelithiasis was observed significantly more frequently in type 1 than type 2 ($p=0.002$), and choledocholithiasis was observed significantly more frequently in type 1 than in type 2 ($p<0.001$) and type 3 ($p=0.027$). The frequency of choledocholithiasis was significantly higher in the group with intrapancreatic insertion ($p=0.019$). There was no significant relationship between cystic duct insertion types and pancreaticobiliary malignancy ($p=0.68$) (Table 1). Type 1 insertion was observed more frequently in the patient group ($p<0.001$) and type 2 in the control group ($p<0.001$). In type 1, medial and posterior insertions were more common ($p<0.001$). The frequency of PBM was significantly higher in the patient group than in the control group ($p=0.014$) (Table 2). Of 29 cases with PBM, 14 (48.3%) cholelithiasis, four (13.8%) choledocholithiasis, and three (10.3%) pancreaticobiliary malignancy were found.

Conclusion: The most common type of cystic duct insertion is type 2 and lateral. Low insertion (Type 1) cystic duct variation and intrapancreatic insertion increase the frequency of choledocholithiasis. PBM can be considered as a risk factor for the development of cholelithiasis and biliary malignancy

Table 1: Comparison of cystic duct insertion types and frequencies of gallstone and pancreaticobiliary malignancy.

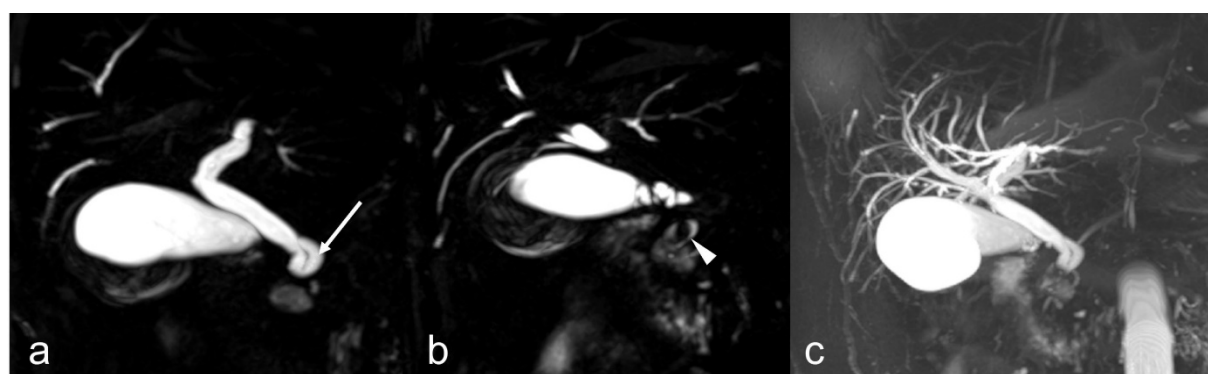
	Type 1 (n=147)	Type 2 (n=293)	Type 3 (n=65)	p
Cholelithiasis	99 (67,3%)	153 (52,2%)	39 (60%)	0,009
Choledocholithiasis	30 (20,4%)	3 (1%)	1 (1,5%)	<0,001
Pancreaticobiliary malignancy	9 (6,2%)	25 (8,5%)	5 (7,7%)	0,682
Total	147 (100%)	293 (100%)	65 (100%)	

Table 2: Comparison of cystic duct insertion types and PBM frequencies between patient and control groups.

	Patient group (n=359)	Control group (n=146)	p
Type 1	128 (35,7%)	19 (13%)	<0,001
Type 2	185 (51,5%)	108 (74%)	<0,001
Type 3	46 (12,8%)	19 (13%)	0,951
PBM	26 (7,2%)	3 (2,1%)	0,021*

*, Fisher's exact test

Figures



Thin section (a,b) and MIP (c) MRCP images of a 73 years-old male patient. Type 1 (low) and medial insertion of the cystic duct (arrow) and a filling defect consistent with a stone in distal choleduct (arrowhead) are seen. MIP image also demonstrates obstructive dilatation of gallbladder and biliary ducts.

ID-71 / OP: “Association Between Maternal and Infant Nutrition on Difficult Defecation in Children Between 1-4 Months of Age”

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Abstract (ID-71)

Introduction and Purpose: Constipation occurs when there is an abnormally delayed or infrequent passage of hard feces accompanied by excessive straining and or pain. Difficult defecation is the most important gastrointestinal complaint of childhood. The prevalence of childhood constipation has been estimated at 0.7 % to 29.6 % in the general population worldwide. Our study purpose is to evaluate the association of mother and infant nutrition on the difficulty of defecation in children between 1-4 months of age.

Materials and Methods: This was a single-center cross-sectional survey performed between January 2015 and August 2016 in Tepecik Teaching Hospital. The 75 cases between 1-4 months of age were included in the study. The control group consisted of 30 cases who were admitted to the pediatrics outpatient clinic for routine control without any constipation complaint. The survey consisted of two parts including the mother's diet and infantile socio-demographic and clinical features.

Results: Obstructed defecation was most frequently observed when the infant was 78 days old. Weight and height values of the children with difficulty defecation were lower than the control group and it was statistically significant ($p=0.12$, $p=0.41$). Among the patients with obstructed defecation that were included in the study, 71 (94.7%) patients had a history of defecation in the first 24 hours after birth and 4 (5.3%) had a history of defecation after the first 24 hours. Defecation pattern changes in the family and the existence of constipation in the first-degree relatives were detected significantly higher in the difficulty defecation group. Difficulty defecation rate was found significantly higher in children not being breastfed. With regards to maternal nutrition, two groups showed statistically significant differences in terms of milk, juice, yogurt vegetable, and legumes consumption. The control group significantly consumed more of these foods ($p<0.001$, $p=0.016$, $p=0.001$, $p=0.015$). Discussion and Conclusion: Cesarean birth, more children in the family, parents education level, defecation pattern changes in the family and existence of constipation in the first degree relatives, formula feeding, feeding the mother with low fiber foods and less fluid consumption of the mother associates in difficult defecation of infants.

Keywords: Constipation, Infant, nutrition, Obstructed defecation

Full-text (ID-71): “Anne ve Bebek Beslenmesinin 1-4 Ay Arası Çocuklarda Defekasyon Güçlüğü Üzerine Etkisi”

Giriş: Çocukluk çağının gastrointestinal sistem yakınması olan defekasyon güçlüğü en büyük bölümünü konstipasyon oluşturur. Konstipasyon, haftada üç defadan az, sert ve ağrılı dışkılamadır (1,2). Prevalansı %0,7 ile %29,6 arasında bildirilmekte ve pediatrik poliklinik başvuruların %3-5’ini, pediatrik gastroenteroloji klinik başvuruların ise %25’ini oluşturmaktadır (3,4).

Konstipasyonun beslenmeyle ilişkisinin araştırıldığı çalışmalarda, anne sütü ile beslenen bebeklerde konstipasyon sıklığının daha az olduğu, anne sütü almayan, ek gıdaya erken başlayan çocukların konstipasyona daha yatkın olduğu bildirilmektedir (5,6).

Defekasyon güçlüğü olan bebeklerde anne beslenmesi de önemli rol oynayabilir. Ancak annenin konstipe olmasının bebeğin konstipasyonu ile ilişkili olduğunu belirten az sayıda çalışma bulunmaktadır (7).

Çalışmamızın amacı; defekasyon güçlüğü olan 1-4 ay arası çocuklarda, anne ve bebek beslenmesinin rolünü saptamaktır.

Gereç ve Yöntem: Çalışmamız Ocak 2015- Ağustos 2016 tarihleri arasında gerçekleştirilen tek merkezli kesitsel araştırmadır. Çalışmamıza çocuk polikliniğine defekasyon güçlüğü nedeniyle başvuran ROMA III kriterlerine göre fonksiyonel konstipasyon tanısı alan olgular alındı. Hastaların 1-4 ay arası olması nedeniyle Roma kriterlerinden dışkılama sayısı ve dışkı sertliği kriterleri değerlendirildi. Dışkılama alışkanlığı edindikten sonra görülen dışkı kaçırma, aşırı dışkı tutma, tuvaleti tıkayabilen büyük dışkı hikayesi daha büyük çocuklara uygun olduğu için kullanılmadı. Sakral gamze, sakral agenezi, perianal fistül, anormal yerleşimli anüs, perianal skar, hipotroidi, inek sütü protein alerjisi ve ateş, kusma, kanlı dışkılama gibi alarm semptomlara sahip olan bebekler çalışma dışı bırakıldı.

Çalışmaya fonksiyonel konstipasyon tanısı olan 1-4 ay arasında 75 olgu ve kontrol grubu olarak 30 sağlıklı olgu alındı. Her iki gruba hasta değerlendirme ve diyet değerlendirme olmak üzere iki bölümden oluşan anket uygulandı. Hasta değerlendirme bölümünde yaş, cinsiyet, ağırlık, boy, doğum şekli ve doğum ağırlığı, gebelik haftası, ilk mekonyum zamanı, beslenme şekli, kilo alımı, dışkılama sıklığı, dışkı şekli, ilaç kullanımı, ebeveynlerin öğrenim düzeyi, ebeveynlerinde, kardeşlerinde ve akrabalarında konstipasyonun varlığı, ailenin gelir düzeyi, ailedeki çocuk sayısı, ebeveynlerin yaş ve çalışma durumunu içeren sorulardan oluşmaktadır. İkinci bölüm ise anne beslenmesiyle ilgili sorulardan oluşmaktadır.

Tüm analizler “SPSS for Windows 20.0” istatistik programı kullanılarak yapıldı ve istatistiksel anlamlılık düzeyi $p < 0,05$ olarak belirlendi.

Bulgular: Çalışmamıza defekasyon problemlili (grup 1) 75 olgu ve sağlıklı 30 olgu (grup 2) olmak üzere toplam 105 olgu alınmıştır. Cinsiyetlere göre bakıldığında anlamlı fark bulunmadı ($p > 0,05$).

Grupların yaş dağılımı sırasıyla: Grup 1'deki olgular ortalama 78 ± 28 gün (min 30-120 gün), grup 2'deki olgular ortalama 82 ± 30 gün (min 32-120 gün) bulundu. Yaş ortalaması açısından anlamlı fark saptanmadı ($p > 0,05$).

Olguların antropometrik incelemesinde grup 1'deki olgular ortalama $5,3 \pm 1$ kg, grup 2'deki olgular $5,8 \pm 1,2$ kg ağırlığındaydı. Olguların boyları incelendiğinde grup 1'deki olgular $56,6 \pm 4,7$ cm, Grup 2'deki olgular $59,1 \pm 4,1$ cm ölçüldü. Sağlıklı grupta 3 persantilin altında çocuk yoktu. İki grup ağırlık ve boy yönünden karşılaştırıldığında anlamlı fark saptandı ($p = 0,012$, $p = 0,041$).

Doğum şekline bakıldığında; normal doğumun sağlıklı grupta daha fazla olduğu görüldü ve anlamlı fark saptandı ($p = 0,001$).

Doğum kiloları incelendiğinde grup 1' ,deki olguların ortalama doğum kilosu $2,97 \pm 0,73$ kg, grup 2' de $3,1 \pm 0,69$ kg olarak bulundu. İki grup arasında anlamlı fark saptanmadı ($p > 0,05$).

Defekasyon gücülüğü olan olguların 44'ü (% 8,7) matür, 28'i (% 7,3) prematür, 3'ü (%4) postmatürdü. Sağlıklı grupta karşılaştırıldığında anlamlı fark bulunmadı ($p > 0,05$).

Mekonyum öyküsü incelendiğinde grup 1'deki olguların 71'i (%94,7) doğumdan sonra ilk 24 saatte, 4'ü (%5,3) ilk 24 saatten sonra dışkılama öyküsüne sahipti. Bu 4 olgunun 2'si organik sebep olmadan 48 saatten sonra dışkılama öyküsüne sahipti. Grup 2'deki olguların hepsinde ilk 24 saatte mekonyum öyküsü mevcuttu. İki grup karşılaştırıldığında anlamlı fark saptanmadı.

Sağlıklı grupta eğitimsiz anne ve baba bulunmamaktaydı ve annelerin ortalama yaşı daha yüksek saptandı. Her iki grupta annelerin çalışmama oranının benzerdi. (%90 ve %83,3). Ailenin gelir düzeyi açısından da gruplar arasında fark saptanmadı.

Ailedeki çocuk sayısı incelendiğinde grup 1' deki ailelerin ortalama çocuk sayısı daha fazlaydı ($p = 0,008$). Kardeşte, ebeveynde ve akrabalarındaki dışkılama paterni değişikliği Grup 1'deki olgularda yüksek saptandı ($p = 0,010$, $p < 0,001$, $p = 0,002$). Her iki grupta yüksek oranda anne sütü ile beslenme görüldü. Anne sütüne başlangıç zamanına bakıldığında iki grup arasında anlamlı fark saptanmadı. Formül mama başlama zamanı iki grupta da ortalama 8 gündü ve anlamlı fark saptanmadı ($p > 0,05$). Defekasyon gücülüğü olan olguların dışkı şekilleri %33,3'ü sert, %13,3'ü sulu, %53,3'ü normal olarak belirtildi. Dışkılama sıklığı ise 32 olguda (%42,6) iki günde bir, 7 olguda (%9,4) üç günde bir, 36 olguda ise (%48) haftada bir şeklindeydi.

Dışkılama gücülüğü olan olguların dışkılama problemine yönelik ilaç kullanımı sorgulandığında 20 olguya (%26,7) tedavi uygulanmadığı, 1 olguya (%1,3) probiyotik, 20 olguya (%26,7) laksatif-fitil, 16 olguya (%21,3) bitkisel içecek (en sık rezene çayı), 18 olguya (%24) kombine tedaviler (en sık laksatif-fitil ve bitkisel içecek) verildiği görüldü.

Anketin ikinci bölümünde anne beslenmesi sorgulandı. Her iki gruptaki annelerin günde en az 1 litre su içtiği gözlemlendi. Sıvı gıda tüketimi karşılaştırıldığında, meyve suyu ve süt tüketimi yönünden anlamlı fark saptandı ($p=0,016$, $p<0,001$). Kola ve gazlı içecek, çay ve kahve tüketimi yönünden anlamlı fark saptanmadı ($p>0,05$) (Tablo 1). Her iki grupta alkol tüketimi gözlenmedi. Sigara kullanımı yönünden iki grup arasında anlamlı fark saptanmadı ($p>0,05$). Katı gıda tüketiminde; yoğurt, sebze ve kuru fasulye, nohut, mercimek gibi kuru bakliyat tüketimi yönünden anlamlı fark saptandı ($p=0,001$, $p=0,001$, $p=0,015$). Peynir, meyve, patates, kepekli ekmek gibi lifli besinler, ekmek- hamur işi ve hazır gıda tüketimi yönünden ise anlamlı fark saptanmadı ($p>0,05$).

Tartışma: Çocukluk çağının en önemli gastrointestinal sistem yakınması olan konstipasyon, haftada üç defadan az, sert ve ağrılı dışkılamadır (2,8). Doğum şeklinin konstipasyona etkisine yönelik çalışmalara rastlanılmamıştır. Çalışmamızda normal doğumun sağlıklı grupta daha fazla olduğu görüldü ve anlamlı bulundu ($p=0,001$). Normal yolla doğan bebeklerin annenin vajinal ve dışkı bakterileri ile kolonize olduklarından intestinal mikrobiyatanın konstipasyonun daha az görülmesinde etkisi olduğunu düşünmekteyiz (9).

Konstipe çocuklarla yapılan birçok çalışmada cinsiyetlerin eşit oranda olduğu görülmüştür (10-13). Çalışmamızda da destekler nitelikte cinsiyetler arasında anlamlı fark bulunmadı.

Birçok çalışmada mekonyumlarını ilk 24 saatten sonra yapan çocuklarda konstipasyonun daha sık görüldüğü bildirilmiştir (14,15). Çalışmamızda defekasyon güçlüğü yakınması olan olguların 4'ü (%5,3) ilk 24 saatten sonra dışkılama öyküsüne sahipti.

Çoğu çalışmada düşük doğum ağırlıklı bebeklerde konstipasyonun daha sık görüldüğü bildirilmiştir (16,17). Prematür bebeklerde mekonyum çıkışında gecikmenin nedeni prematürelere sindirim sisteminin motor mekanizmalarının olgunlaşmasında gecikme ve enteral beslenmenin yetersiz olması nedeni ile sindirim sistemi hormonlarının uyarılmasındaki yetersizliğe bağlanır (18). Çalışmamızda olguların 28'i (%37,3) prematüredü. Vakalarımız içinde prematür olgular az sayıda olduğu için anlamlı veri elde edilemedi.

Anne ve baba eğitim düzeylerinin konstipasyondaki rolüne bakıldığında sağlıklı gruptaki ebeveynlerin eğitim düzeylerinin daha yüksek olduğu görüldü. Bilinçli çocuk bakımı ve sağlıklı beslenmenin etkisi olabileceği düşünüldü.

Genetik faktörlerin rolü fonksiyonel konstipasyonda tartışmalıdır. Yapılan birçok çalışmada ailede kabızlık hikayesi gösterilmiştir (19-21). Çalışmamızda iki grup arasında kardeşte, ebeveynlerde ve akrabalarındaki dışkılama paterni değişikliği açısından anlamlı fark saptandı ($p=0,010$, $p<0,001$, $p=0,002$). Defekasyon güçlüğü'nün nedeni ailelerin benzer beslenme alışkanlıklarına sahip olması düşünüldü.

Dışkılama düzenine anne sütünün olumlu etkisini gösteren çalışmalar mevcuttur (22,23). Anne sütündeki motilin mide boşalım hızını arttırır. Ayrıca bir diğer hipotez, anne sütü alan bebeklerde lipidlerin daha kolay sindirilmesi ve uzun zincirli yağ asitleri varlığıdır. Üçüncü hipotez, anne sütündeki prebiyotiklerdir. Birçok çalışmada tek başına anne sütü ile beslenenlerin günlük ortalama dışkı sayısının daha fazla olduğu bildirilmiştir (13,15). Bu durum gastrointestinal sistemin doğumdan sonraki gelişmesine değişik besinlerin farklı katkılar yapması ile açıklanabilir. Çalışmamızda anne sütünün dışkı sayısını artırıcı etkisi özellikle tek başına verildiği ilk aylarda gözlemlendi, anne sütü almamış olgular 3 tane olduğu için net değerlendirme yapılamadı.

Defekasyon güçlüğünde sadece dışkılamanın sıklığının değil, dışkı şekli de önemlidir. Defekasyon güçlüğü olan olgularımızda dışkı şekilleri %33,3'ü sert, %13,3'ü sulu, 53,3'ü normal olarak belirtildi. Dışkı şekilleri için kullanılan Bristol çarkı, bebeklik yaş grubunda çalışma yapıldığı için kullanılmadı.

Dışkılama problemine yönelik kullanılan yöntemlere bakıldığında, ülkemizde yapılan bir çalışmada konstipasyon tedavisine yönelik uygulanan geleneksel yöntemlerin en sık; zeytinyağı içirme, anüse sabun koyma, fitil kullanma, lavman olduğu belirtilmiştir (24). Çalışmamızda en sık laksatif-fitil ve bitkisel içecek uygulandığı ancak mevcut şikayet üzerine olumlu katkısı olmadığı saptandı.

Anne beslenmesinin bebekteki defekasyon güçlüğüne etkisine yönelik çalışmalara pek rastlanılamamıştır. Çalışmamızda posalı yiyeceklerden sebze ve kuru fasulye, nohut, mercimek gibi kuru bakliyat tüketimi sağlıklı gruptaki annelerde yüksek saptandı ve anlamlı bulundu ($p=0,001$, $p=0,001$, $p=0,015$).

İnek sütünün fonksiyonel konstipasyon etiyolojisindeki yerini araştıran çalışma sayısı sınırlıdır. Bazı çalışmalarda inek sütü alım miktarlarına bağlı kalsiyumun barsak lümeninde yağlarla birleşerek sabun oluşturduğu ve barsak motilitesini uyarmayıp konstipasyon oluşumunda rolü olduğu belirtilmiştir (25). Çalışmamızda sağlıklı gruptaki annelerin süt ve yoğurt tüketimi yüksek saptanmıştır. Literatürlere aksi bir durum olarak bulunmuş ve annenin inek sütü ve süt ürünleri tüketiminin, bebek inek sütü ile beslenmediği için konstipasyona etkisi olmadığını düşündürmüştür.

Diyetteki düşük sıvı alımı da konstipasyon için önemli risk faktörlerindendir. Sıvı alımının artırılması yumuşak dışkılamayı sağladığı için kabızlık tedavisinde oldukça önemlidir (26). Çalışmamızda her iki gruptaki annelerin benzer şekilde günde en az 1 litre su içtiği gözlemlendi ancak meyve suyu tüketimi yönünden anlamlı fark saptandı ($p=0,016$). Anne sütündeki sıvı oranının artmasının konstipasyonun azalmasında etkili olduğunu düşündürdü.

Sonuç: Sezaryanla doğum, ebeveynlerin düşük eğitim düzeyi, fazla çocuk sayısı, ebeveyn, kardeş ve 1. derece akrabalarında konstipasyon, formül mama ile beslenme, annenin düşük lifli gıdalar ve az miktarda sıvı tüketimi bebeklerde defekasyon güçlüğüne yol açmaktadır.

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Tablo 1: Annelerin sıvı tüketimi

Sıvı tüketimi	Grup	n	Ortalama	p
Çay (bardak)	Grup 1	75	6.86 ± .93	0.38
	Grup 2	30	7.0 ± .00	
Süt (bardak)	Grup 1	75	1.87 ± 2.72	0.001*
	Grup 2	30	5.27 ± 1.91	
Meyve suyu (bardak)	Grup 1	75	2.08 ± 2.76	0,016 *
	Grup 2	30	2.06 ± 2.31	
Kola-gazlı içecek (bardak)	Grup 1	75	1.08 ± 1.66	0.54
	Grup 2	30	1.60 ± 1.30	

Kahve (bardak)	Grup 1	75	2.08 ± 2.75	0.98
	Grup 2	30	1.20 ± 0.45	
Su (litre)	Grup 1	75	7.00	0.16
	Grup 2	30	7.00	

ID-72 / OP: “Could Gastric Intestinal Metaplasia Be A More Dominant Cause Of Hyperhomocysteinemia Than Atrophic Gastritis Via Malabsorption Of Vitamin B12”

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Abstract (ID-72)

Introduction and Aims: Homocysteine (Hcy) is a sulfur-containing amino acid that functions as a key intermediate in methionine metabolism. Hyperhomocysteinemia is a well-established independent risk factor for the development of atherosclerotic related diseases by causing vascular endothelial damage. The majority of cases of hyperhomocysteinemia are attributed to low levels of vitamin B12 and/or folic acid, which are co-factors of the most important enzymes of the methionine metabolic pathway. Atrophic gastritis (AG) is characterized by the death of the parietal cells and the loss of gastric glandular epithelium. Gastric intestinal metaplasia (GIM) is histologically defined as the replacement of glandular and/or foveolar epithelium by intestinal epithelium and is characterized by its morphological similarity to enterocytes. AG is a well-known cause of vitamin B12 deficiency and hyperhomocysteinemia. Thus we aimed to comparatively investigate serum Hcy level and its correlation with serum vitamin B12 and folic acid levels, amongst patients with GIM, AG and non-atrophic non-metaplastic gastritis but without different conventional atherosclerosis factors.

Patients and Methods: 57 patients with GIM, 60 patients with AG and 66 patients with chronic gastritis were included in the study. Glucose, creatinine, total cholesterol, triglyceride, low-density lipoprotein, cholesterol, high-density lipoprotein cholesterol, vitamin B12, folic acid and Hcy levels were measured by biochemical methods.

Results: Hcy levels were significantly higher in patients with GIM ($11.49 \pm 4.95 \mu\text{mol/l}$) and AG ($9.37 \pm 3.87 \mu\text{mol/l}$) than in controls ($7.03 \pm 6.64 \mu\text{mol/l}$, $p < 0.01$ and $p = 0.042$, respectively). Vitamin B12 levels were significantly lower in patients with GIM ($253.88 \pm 95.78 \text{ pmol/l}$) and AG ($251.83 \pm 63.70 \text{ pmol/l}$) than in controls ($363.69 \pm 123.41 \text{ pmol/l}$, $p < 0.01$ and $p < 0.01$, respectively). Folic acid levels were significantly lower in patients with GIM ($14.01 \pm 6.00 \text{ ng/ml}$) than in controls ($15.29 \pm 6.13 \text{ ng/ml}$, $p = 0.02$). A logistic regression analysis showed that male gender, GIM, AG and vitamin B12 deficiency were predictors for hyperhomocysteinemia.

Conclusions: Our results showed that similar to AG, GIM may cause hyperhomocysteinemia via malabsorption of vitamin B12, which is an independent risk factor for atherosclerosis and cardiovascular diseases. In clinical practice Although vitamin B12 deficiency is usually associated with AG, it should be kept in mind that vitamin B12 deficiency related hyperhomocysteinemia may also be present in cases with GIM.

Keywords: Gastric intestinal metaplasia, atrophic gastritis, vitamin B12, homocysteine

ID-73 / OP: “The Relationship Between Subconjunctival Orbital Fat Prolapses and Body Mass Index”

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Abstract (ID-73)

Introduction: To evaluate the relationship between body mass index (BMI) increase in the development of subconjunctival orbital fat prolapse (SOFP).

Materials and Methods: BMI values and SOFP adipose tissue thickness were evaluated retrospectively in SOFP cases detected by cross-sectional imaging methods between January 2016 and December 2020. SOFP and BMI values were compared with Spearman correlation test.

Results: 14 patients (12 men and 2 women) with bilateral SOFP were included in the study. The average SOFP thickness was 8.34 mm (5-17 mm). All patients were overweight (mean BMI 28). Two patients exceeded the obesity (BMI >30) limit. The correlation between SOFP and BMI increase ($p=0.6$) was high.

Conclusion: All SOFP cases were overweight. The risk of SOFP increases with obesity. Obese patients should be examined for SOFP development.

Keywords: Orbital Neoplasms, Obesity, Conjunctival Diseases, Fat

Full text (ID-73):“The Relationship Between Subconjunctival Orbital Fat Prolapses and Body Mass Index”

Introduction: Orbital adipose tissue is divided into extra and intraconal according to its location. Intraconal orbital fat is located within the extra-ocular muscle cone and is surrounded by Tenon's capsule and extra-ocular muscle (1,2,3). Subconjunctival fat prolapse (SOFP) is an acquired lesion by the aging process, trauma, or surgery. SOFP is a benign entity characterized by orbital fat herniation through a dehiscence in Tenon's capsule, usually between the superior and lateral recti (4).

SOFP is defined as a pathology whose frequency increases with age and weight (2). The relationship between SOFP and BMI has not been statistically evaluated in the literature. The literature is limited to case reports. In this study, the relationship between BMI and SOFP was evaluated in a case series.

This study aims to evaluate the role of increased BMI in the etiology of SOFP cases.

Materials and Methods: An observational cross-sectional study was conducted in patients with SOFP detected on the brain and orbital computed tomography (CT) cross-sectional imaging between January 2016 and December 2020. In the study, patients with SOFP detected on CT scans were evaluated in terms of obesity with the BMI result calculated from the height, weight, and age data in the system data. Patients whose height and weight data could be accessed from the system were included in the study. Cases with unilateral SOFP were excluded from the study. Cases with thyroid disease, orbital or cranial surgery were excluded from the study.

CT studies were made using the Somatom Definition Flash dual-source 128-slice CT scanner (Siemens Healthcare, Forchheim, Germany). Examinations were done using standard brain or Orbita protocols with a section thickness of 3 mm (1 mm collimation) and a reconstruction interval of 0.6 mm (50% overlapping).

Lesions of the same density as the fat located in the super-temporal quadrant of the eyes of the patients, in continuity with the intraconal fat on the axial cross-sectional images, and between the lateral wall of the eyeball medially and the lateral rectus muscle laterally were evaluated for SOFP. Measurements were made from the adipose tissue anterior to the line connecting the anterior margins of the bilateral zygomatic bone. The average of the prolapsed adipose tissue thickness on both sides was calculated.

Correlation between mean herniated adipose tissue thickness and BMI values was investigated in patients.

Statistical analysis: All statistical analyzes were done with the help of SPSS version 24.0 (IBM Corp., Armonk, NY, USA). Kolmogorov-Smirnov normality test was performed before performing a paired student t-test since the number of patients was ($n < 50$). Paired student t-test was used to determine the significant differences between the variables of parametric data in the SOFP cases. Pearson correlation coefficient was used for correlation between SOFP thickness and BMI. If the found r value is (-1), it is interpreted as a fully negative linear relationship, (+1) is a fully positive linear relationship, and if $r = 0$ there is no linear relationship between the two variables.

Results: Subconjunctival orbital fat prolapse (SOFP) was detected in 14 patients (Table 1). The mean patient age was 68 years (range 55-83 years), 12 (85%) were male and two were female. Eight patients had clinical symptoms. Included non-pulsatile yellow mass (five patients), pain (two patients), and restriction of lateral gaze symptoms (one patient). Seven patients were detected incidentally (Fig. 1). The lesions were bilateral in all cases (Fig. 2,3). BMI measurements were found to be 28 (range 26-32) on average. BMI values were found to be obese (>30) in two cases and overweight (25-32) in 12 cases. A mean of 8.35 mm (range 4-12 mm) was found in SOFP measurements. A high correlation was found between an increase in BMI and an increase in SOFP thickness ($p=0.6$) (table 2). A graph linear between BMI increase and SOFP was observed (Figure 4). Arterial hypertension was present in five (35%) patients and diabetes mellitus in four (28%) patients.

Discussion: The study examined the relationship between SOFP and BMI. SOFP appears as a yellowish, mobile mass located on the conjunctiva and is rare among orbital lesions with an incidence of 2%. (5). The major factors in the pathogenesis of SOFP are weakening of the Tenon capsule and intermuscular septum with aging, trauma, and surgery (3-6). In this study, in which the relationship between obesity and SOFP was examined, the etiology of spontaneous SOFP was examined. All our SOFP cases were overweight. The relationship between obesity and SOFP pathogenesis was determined in this study.

Trauma surgical interventions have been defined in the etiology of SOFP. Spontaneous SOFP cases have been reported in obese elderly men in the literature (7,8). There are few studies in the literature that associate SOFP with obese elderly men (9). These studies are mostly in the form of case reports. In this study, the relationship between obesity and SOFP was defined statistically.

The clinical conclusion of this study is that SOFP gains importance as a pathology that must be examined in the follow-ups of overweight patients. The eye examination should be performed for the detection of SOFP in obesity clinics. Detection of SOFP at an early stage in obese patients is useful for treatment.

This study had some limitations. Clinical follow-up of the patients could not be performed. Operation and, if any, pathological results of the cases could not be reached. Since our study was a retrospective study, imaging methods, especially fat-suppressed magnetic resonance examinations, could not be performed in patients.

In this study, the relationship between SOFP and obesity was demonstrated. The volume of herniated adipose tissue was not measured in the study. This study, which was conducted in a single center and with a small number of cases, should be performed prospectively with a multicenter and larger patient group. In these studies, it will be useful to evaluate patients with fat-suppression magnetic resonance imaging. The operation and pathology results of the patients and imaging findings should be evaluated together.

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Table 1: Age, gender, BMI and SOFP values.

Age	Gender	BMI	SOFP (mm)
67	M	25	5
72	M	29	11
55	M	27	7
62	F	28	4
78	M	29	12
75	M	29	10
66	M	30	12
83	M	32	10
67	M	28	6
72	M	26	8
55	F	28	11
56	M	27	9
75	M	26	8
75	M	28	4

Table 2. Correlations table.

Correlations

			BMI	SOFP
Spearman's rho	BMI	Correlation Coefficient	1,000	,600
		Sig. (2-tailed)	.	,023
		N	14	14
	SOFP	Correlation Coefficient	,600	1,000
		Sig. (2-tailed)	,023	.
		N	14	14



Figure 1 a



Figure 1 b



Figure 2 a

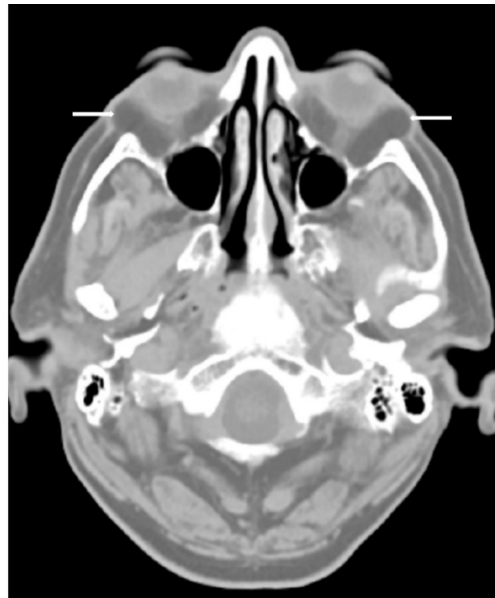


Figure 2 b

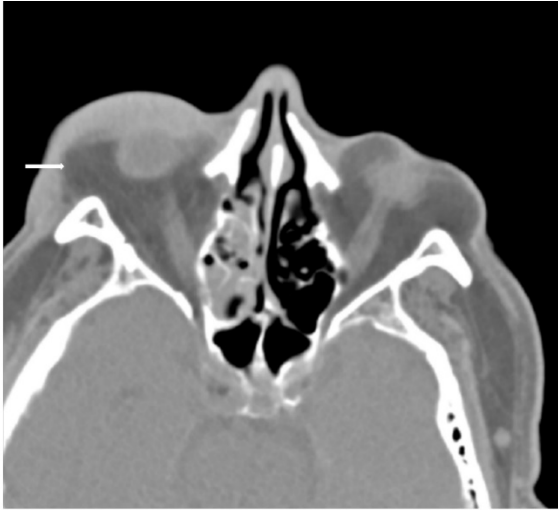


Figure 3

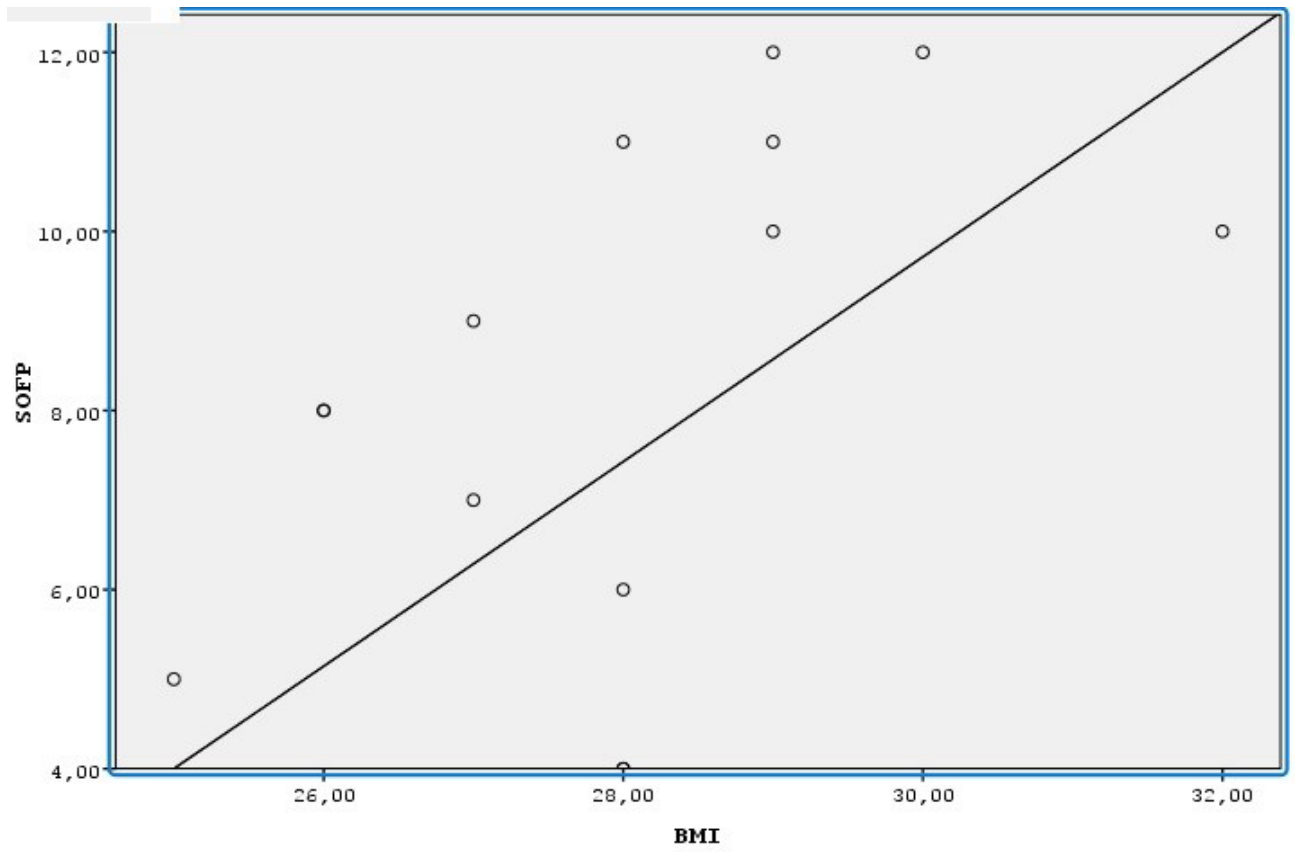


Figure 4

Figure Legends.

Figure 1 (a, b): Axial computed tomography (CT) scans show a bilateral, low-density mass (arrows) in the lateral portion of the globe. Such lesion is continuous with the intraconal fat. It lies between the lateral wall of the eyeball medially and the lateral rectus muscle.

Figure 2: Fatty mass in the lateral corner of the orbits featured by the CT in with volumetric reconstructions in the coronal plane (A). Axial plane (B), showing the SOFP in the lateral corners (arrows), is contiguous with the intraconal fat.

Figure 3: More prominent bilateral SOFP on the right side in a 67-year-old man. Axial CT scan without contrast shows herniated fat in the superotemporal aspect of the right epibulbar area (arrows). Prolapsed fat is continuous with intraconal fat.

Figure 4: In this scatter plot graphic was observed that the change between SOFP and BMI showed nominal distribution.

Table Legends:

Table 1: Distribution of patients' age, sex, SOFP thickness, and BMI values.

Table 2: Spearman correlation table of the distribution of SOFP thickness and BMI values.

ID-74 / OP: “Increasing Obesity Frequency In The Etiology Of Childhood Hypertension”

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Abstract (ID-74)

Introduction: Hypertension is a significant risk factor for cardiovascular morbidity and mortality, not only in adults, but in youths also as it is associated with long-term negative health effects. Although office blood pressure has guided patient management for many years, ambulatory blood pressure monitoring (ABPM) provides useful information, facilitates the diagnosis and management of hypertension in children and adolescents, by monitoring treatment and evaluation for secondary causes or specific phenotypes of hypertension. The aim of this study is to retrospectively evaluate ABPM results performed in Pamukkale University hospital pediatric clinic and to evaluate the prevalence of obesity among these patients who were found to be hypertensive.

Materials and Methods: The data of all children who underwent ABPM in Pamukkale pediatric clinic between March 2021 and October 2021 were analyzed. The gender, age, body mass index and BMI percentile values of the patients and ABPM results were recorded. Ethics committee approval was obtained for the study.

Results: ABPM was performed on 89 patients. The male/female ratio of the patients was 53/36, and the mean age was 13.6 years. While 33 (37.1%) patients had normal body weight, 11 (12.4%) were overweight and 45 (50.6%) were obese. 74 (83%) patients were found to be hypertensive (Table 1). Impaired dipping rate was 49.5%. The prevalence of obesity was statistically significantly higher among hypertensive patients ($p=0.03$) (figure 1). Among the hypertensive patients, 12 patients had secondary hypertension, while 4 of these 12 patients were obese. Six of 12 patients with masked HT were obese.

Conclusions: The prevalence of hypertension in children and adolescents has increased over the past decade. This trend is most likely related to increases in primary hypertension associated with increased rates of obesity in children. The results of the presented study also supported this information. We found that the majority of pediatric patients who needed ABPM were obese. Early diagnosis and treatment of childhood hypertension helps to prevent long-term complications of hypertension.

Keywords: ambulatory blood pressure monitoring, children, obesity

Full-text (ID-74): “Increasing Obesity Frequency in The Etiology of Childhood Hypertension”

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Conclusions: The prevalence of hypertension in children and adolescents has increased over the past decade. This trend is most likely related to increases in primary hypertension associated with increased rates of obesity in children. The results of the presented study also supported this information. In this context, measures should be taken for childhood obesity and at the same time, the presence of hypertension in children should be investigated in all children with obesity. Early diagnosis and treatment of childhood hypertension helps to prevent long-term complications of hypertension.

Table 1. Demographic characteristics and ambulatory BP results

Age Mean (SD)	13.65 (3.27)
Gender n (%)	
Male	53 (59.5)
Female	36 (40.4)
BMI Mean (SD)	27.10 (7.68)
BMI percentile n (%)	
<85p	33 (37.1)
85-95p	11 (12.4)
>95p	45 (50.6)
ABPM measurements Mean (SD)	
Overall SBP	50.8 (29.3)
Overall DBP	31.2 (25.1)
Day SBP	49.3 (30.2)
Day DBP	29.7 (24.8)
Night SBP	56 (34.2)
Night DBP	37.5 (32.3)
Ambulatory HT n (%)	74 (83)
White coat HT n (%)	11 (12)
Masked HT n (%)	12 (13)
Ambulatory dipping n (%)	45 (50.5)

BMI; body mass index, ABPM; Ambulatory blood pressure monitoring SBP; systolic blood pressure, DBP; diastolic blood pressure, HT; hypertension

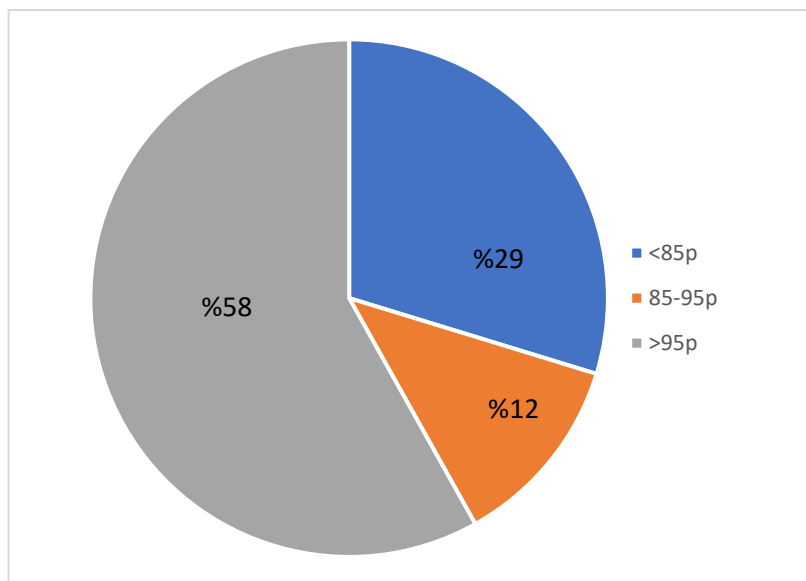


Figure 1. Distribution of hypertensive children according to body mass index percentile results

ID-75 / OP: “Effects of Cyanocobalamin and Its Combination with Morphine on Neuropathic Rats and the Relationship Between These Effects and Thrombospondin 4 Expression¹”

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Abstract (ID-75)

Introduction and Aims: Neuropathic pain (NP), a chronic form of pain, has no specific effective treatment. Combining drugs with different mechanisms of action may provide more satisfactory results in NP. Thrombospondin 4 (TSP4) is a glycoprotein upregulated in the spinal cord following peripheral nerve injury and it contributes to the development of NP. We aimed to investigate the effects of cyanocobalamin treatment alone or in combination with morphine on pain behavior and expression of spinal TSP4 protein in neuropathic rats.

Methods: NP was induced by chronic constriction of the sciatic nerve. Cyanocobalamin (5 and 10 mg/kg/day) was administered 15 days before surgery and on 4th and 14th days after surgery. Morphine (2.5 and 5 mg/kg/day) was administered only after surgery. Combination treatment included cyanocobalamin and morphine, 10 and 5 mg/kg/day, respectively. All drugs were administered intraperitoneally. Nociceptive thresholds were detected by esthesiometer, analgesia meter, and plantar test, and TSP4 expression was assessed by Western blotting and fluorescent histochemistry.

Results: Sciatic nerve constriction decreased nociceptive thresholds in all tests ($p<0.001$, both analgesymeter and aesthesiometer; $p=0.016$; plantar test) and induced TSP4 expression on the 4th postoperative day ($p=0.004$), when compared to sham group. The decrease in nociceptive thresholds persisted except plantar test ($p<0.001$, both analgesymeter and aesthesiometer) and the increased TSP4 expression reversed on the 14th postoperative day, when compared to sham group. Cyanocobalamin and low dose morphine alone did not produce any antinociceptive effects. In comparison to saline-injected NP group, high-dose morphine improved the decreased nociceptive threshold only in aesthesiometer when administered alone ($p<0.001$ and $p=0.014$, on the 4th and 14th postoperative days, respectively).

However when combined with high dose cyanocobalamin, it decreased the threshold in all tests ($p < 0.001$, both analgesymeter and aesthesiometer, $p = 0.030$, plantar test, on the 4th postoperative day; $p = 0.002$ and $p = 0.006$, analgesymeter and aesthesiometer, respectively, on the 14th postoperative day). Cyanocobalamin and morphine significantly induced TSP4 expression when administered alone in both doses for 4th or 14th postoperative days, when compared to sham group (Cyanocobalamin 5 and 10 mg/kg/day: $p = 0.009$, $p = 0.019$, on the 4th postoperative day; $p = 0.007$, $p = 0.007$, on the 14th postoperative day, respectively and Morphine 2.5 and 5 mg/kg/day: $p = 0.006$, $p = 0.019$, on the 4th postoperative day; $p = 0.031$, $p = 0.007$, on the 14th postoperative day, respectively). Also, they increased in the ipsilateral TSP4 immunoreactivity on the 14th postoperative day significantly ($p < 0.001$, both cyanocobalamin 10 and morphine 5 mg/kg/day). However, this increase was less when two drugs were combined ($p = 0.001$, vs saline-injected NP group).

Discussion and Conclusion: Our findings show that the decrease in pain thresholds is accompanied by an increase in spinal TSP4 expression simultaneously at the early postoperative period in neuropathic rats. The increase of spinal TSP4 by cyanocobalamin administration suggests that TSP4 protein may mediate the regenerative potentials of B12 vitamins. The absence of a prominent antinociceptive effect with morphine therapy can be attributed to the development of tolerance. The decrease in expression increase of TSP4 expression and the improvement in the decreased pain thresholds detected in the combination group reminds that cyanocobalamin treatment is likely to prevent the development of morphine tolerance. It seems that the combined use of two drugs is more effective in improving pain behavior and the decrease of increased TSP4 expression partially when compared to using them alone. Interference with TSP4 expression may contribute to antinociceptive effects of drugs.

Keywords: Cyanocobalamin; Morphine; Neuropathic Pain; Rats; Thrombospondin 4.

Full-text (ID-75)

Introduction: Currently, drugs used to treat neuropathic pain (NP) have limited safety and many adverse effects. Thrombospondin (TSP) glycoproteins have critical roles in abnormal synaptogenesis, leading to spinal sensitization and pain. Peripheral nerve injury induces TSP4 upregulation in the dorsal spinal cord that correlates with behavioral hypersensitivity initiation and maintenance¹. Blockage of TSP4 expression may have therapeutic potential in NP.

Opioid analgesics are potent painkillers, however their intensely addictive effects and development of tolerance to antinociceptive effects considerably restrict their consumption. Vitamin B₁₂ exerts antiallodynic effect by inhibiting peripheral pain signals². Combining two or more different drugs in patients with NP may allow lower doses, improve analgesic efficacy, and reduce adverse effects³. We aimed to investigate whether the administration of cyanocobalamin (Vitamin B₁₂ analogue) alone or in

combination with morphine (opiate analgesic) induces an antinociceptive effect in neuropathic rats and to reveal the relationship between lumbar spinal cord TSP4 level and this potential antinociceptive effect.

Methods: This study was approved by “Ege University Animal Experiments Local Ethics Committee” (2017-092) and carried out using Wistar rats.

The right sciatic nerves of rats were loosely ligated three times with 4.0 silk suture under ketamine/xylazine (40:20 mg/kg, i.p.) anesthesia. Cyanocobalamin, morphine and saline were administered intraperitoneally. Figure 1 shows the flowchart of the experimental design.

Dynamic plantar esthesiometer, plantar test and analgesiameter were used to measure mechanical allodynia, thermal hyperalgesia, and mechanical hyperalgesia, respectively. %Change in nociceptive thresholds on the 4th and 14th postoperative days was calculated as follows: $\text{Post-surgery} / \text{Basal paw withdrawal latency} \times 100$. Data were analyzed by one-way ANOVA followed *posthoc* Bonferroni test.

Lumbar spinal cord were removed on the 4th and 14th postoperative days. Spinal cord samples were homogenised and centrifuged. Protein concentration in the supernatants were measured spectrophotometrically. 100 µg protein was loaded onto SDS-PAGE gel and transferred onto nitrocellulose membranes. Blots were incubated overnight at 4°C with antibodies against TSP4 (1:250, Santa Cruz) and β-actin (1:20000, Sigma-Aldrich) and then with anti-mouse secondary antibody (TSP4; 1:500 and β-actin; 1:10000, GE Healthcare) for 1 hour at 37°C. Band images were obtained by scanning with C-DiGit Chemiluminescence Scanner after ECL incubation. Band densities were quantified by Image Studio Digits v4.0 program. Data were presented as the ratio of TSP4 band density to β-actin and analyzed by Kruskal-Wallis test followed by Mann-Whitney U test.

Intracardiac perfusion was carried out with 4% paraformaldehyde solution on the 14th postoperative day. The L4-L6 spinal cord were removed, post-fixated overnight and transferred into 30% sucrose. 30 µm thick transverse spinal sections were obtained using the LEICA CM1950 cryostat device. Sections were placed on polylysine-coated slides and incubated with primary antibodies against TSP4 (mouse monoclonal, 1:100, Santa Cruz) and glial fibrillary acidic protein (GFAP; rabbit polyclonal, 1:100, Abcam) overnight at 4°C and then with secondary antibodies (anti-mouse IgG, 1:100 and anti-rabbit IgG, 1:100, EMD Millipore) for 2 hours at room temperature. Stained sections were imaged through a fluorescence microscope (Olympus BX51). Dorsal horn TSP4 immunoreactivity was defined as %surface area, and astrocyte cells were quantified as GFAP (+) cell count. Data were obtained using Image J program and analyzed with one-way ANOVA followed by a *posthoc* LSD test. Pearson correlation was performed to determine the relationship between GFAP (+) cells and TSP4. Data were presented as mean±standard error of mean and significance level was accepted as $p < 0.05$.

Results: There were no differences between the nociceptive thresholds in any tests and spinal cord TSP4 expressions of control and sham groups, therefore sham group data were used for all comparisons. Ligation of sciatic nerve decreased the nociceptive thresholds remarkably on the 4th postoperative day in all tests. Additional reduction in mechanical thresholds, but not thermal, was observed on the 14th postoperative day. Treatment of NP rats alone with cyanocobalamin at both doses or low dose morphine (2.5 mg/kg/day) did not induce any antinociceptive effects on the 4th and 14th postoperative days. However, high dose morphine (5 mg/kg/day) alone noticeably reversed the reduced mechanical nociceptive at esthesiometer, but not analgesymeter, on the 4th and 14th postoperative days. Co-administration of cyanocobalamin and morphine (10 and 5 mg/kg/day, respectively) increased the decreased nociceptive thresholds remarkably in all tests on the 4th postoperative day and improved only the decreased mechanical nociceptive thresholds on the 14th postoperative day (**Figure 2**).

Spinal cord TSP4 expressions of all NP groups increased on the 4th postoperative day when compared to sham group. However, there were no significant differences among the NP groups. On the 14th postoperative day, TSP4 expression of the saline-injected NP group was statistically not different from the sham group. However, in all drug administered NP groups, TSP4 expression significantly increased compared to the sham group. The increase in TSP4 expression on 14th postoperative day was quite remarkable in the NP rats treated with both doses of cyanocobalamin alone compared to the saline-injected NP group (**Figure 3**).

There were no statistically significant differences between TSP4 and GFAP immunoreactivities of control, sham, and saline-injected NP groups in the ipsilateral (injury side) and contralateral (non-injury side) dorsal horn on the 14th postoperative day. TSP4 and GFAP immunoreactivities of drug-administered groups increased remarkably at both ipsilateral and contralateral sides. However, the increase in ipsilateral TSP4 immunoreactivity in the combination group was significantly less than those in cyanocobalamin and morphine alone groups. The increase in ipsilateral GFAP immunoreactivity in the combination group was less than only that of the morphine-injected NP group (**Figure 4**). Pearson correlation showed a very strong linear relationship between TSP4 and GFAP immunoreactivities in the ipsilateral and contralateral spinal cord ($p < 0.001$, ipsilateral $r = 0.826$, **Figure 6a**; contralateral $r = 0.811$, **Figure 6b**).

Discussion: In our study, ligation of sciatic nerve resulted in mechanical, thermal hyperalgesia, and tactile allodynia and also increased the spinal TSP4 expression significantly on the 4th postoperative day. On the 14th postoperative day, mechanical hyperalgesia and allodynia, but not thermal hyperalgesia, persisted, while increased TSP4 expression reversed. Differences in the type and diameter of the suture material, number of ligation, and degree of ligature tightness may lead to variability in behavioral responses⁴. Following peripheral nerve injury, increased spinal astrocytic activity and TSP4 expression mediate the development of behavioral hypersensitivity⁵. Similar to our finding on the 4th, but not on

the 14th, postoperative day, various NP models including spinal cord injury increased TSP4 expression in the relevant spinal cord segments during the period when pain thresholds decreased the most^{1,6}. The different NP models can affect recovery time from hypersensitivity and this situation may obstruct predicting the synchronicity of behavioral findings with molecular changes.

On both postoperative days, cyanocobalamin did not exhibit any antinociceptive effects and increased significantly the TSP4 expression. Also, it increased the GFAP, an astrocyte marker, and TSP4 immunoreactivities on the 14th postoperative day. Vitamin B₁₂ treatment⁷, increased spinal astrocyte activation⁸ and upregulated TSP expression at injury sites⁹ are associated with the capacity of axon regenerate. The lack of antinociceptive effect of cyanocobalamin in our study may be related to the duration of treatment, since vitamin B₁₂ can support nerve regeneration by its long-term healing effect⁷. Increased TSP4 expression along with astrocyte activation suggests that TSP4 may be an important molecule mediating the regenerative effects of vitamin B₁₂.

In this study, morphine administered alone did not exhibit any antinociceptive effects (except high dose and in esthesiometer) and increased the TSP4 expression and GFAP immunoreactivity. Decreased μ -opioid analgesia, increased spinal glial activity, and abnormal pain signs may occur in both opioid tolerance and NP¹⁰. The lack of antinociceptive effect of morphine and the induced spinal astrocytic activity support that morphine tolerance occurred in our neuropathic rats. The effects of TSP4 on the development of behavioral hypersensitivity are mediated by the interaction between epidermal growth factor (EGF)-like domains of TSP4¹¹. Morphine uses the EGF-like domains that came out by hydrolysis of TSP-1¹². Because all members of the TSP family have EGF-like domains¹³, there may be a similar relationship between morphine and TSP4 as well. However, other mechanisms associated with pain can not be ruled out under *in vivo* conditions.

Our data showed that the co-administration of cyanocobalamin and morphine produced a significant antihyperalgesic effect and reduced the increased TSP4 expression as well as GFAP immunoreactivity. The decrease in spinal astrocytic activity in addition to the antihyperalgesic effect suggest that the tolerance may have been overcome. Limited number of studies have suggested that cyanocobalamin enhances the antinociceptive effect of morphine by preventing tolerance development^{14,15}. Pearson correlation showed a linear and strong relationship between spinal GFAP and TSP4 immunoreactivities (**Figure 6**), suggesting that TSP4 is synthesized from astrocytes.

In conclusion, cyanocobalamin enhanced the antinociceptive effect of morphine, most likely by preventing the development of tolerance. Therefore, cyanocobalamin may be a good candidate for combination with morphine in the long-term treatment of NP. However, it should be taken into account that long-term opioid therapy is not recommended for non-cancer chronic pain or pain lasting more than three months. Opioids are still valuable in NP treatment, since painkiller effects of common nonsteroidal anti-inflammatory drugs are insufficient. Therefore, even though opioids cannot be the first line therapy

for long-term treatment in neuropathic pain, interventions that prevent the development of tolerance on opioids may improve their safety by reducing severe adverse events in well-selected patients. There is a relationship between cyanocobalamin and/or morphine effect and the spinal cord TSP4 expression, and further studies are required to clarify this relationship.

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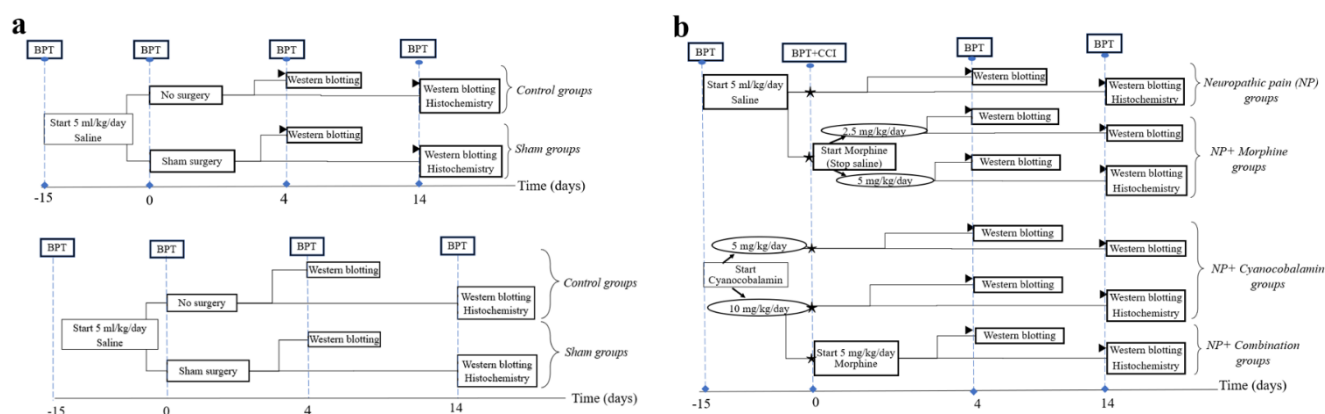


Figure 1. Flowchart showing the experimental design of the present study. (a) experimental groups without CCI and (b) experimental groups with CCI/Neuropathic Pain). CCI: Chronic Construction Injury of sciatic nerve, BPT: Behavioral Pain Tests. Asterisk (*) represent CCI. Arrowhead (►) indicates the sacrifice and the subsequent process.

Notes:

- 1) The pain thresholds of all animals, including rat groups sacrificed on the 14th postoperative day were measured on the 4th postoperative day and these data were also used to assess pain threshold change on the 4th postoperative day.
- 2) Spinal cord tissues used in Western Blotting and Fluorescent Histochemistry studies were obtained from separate animals.

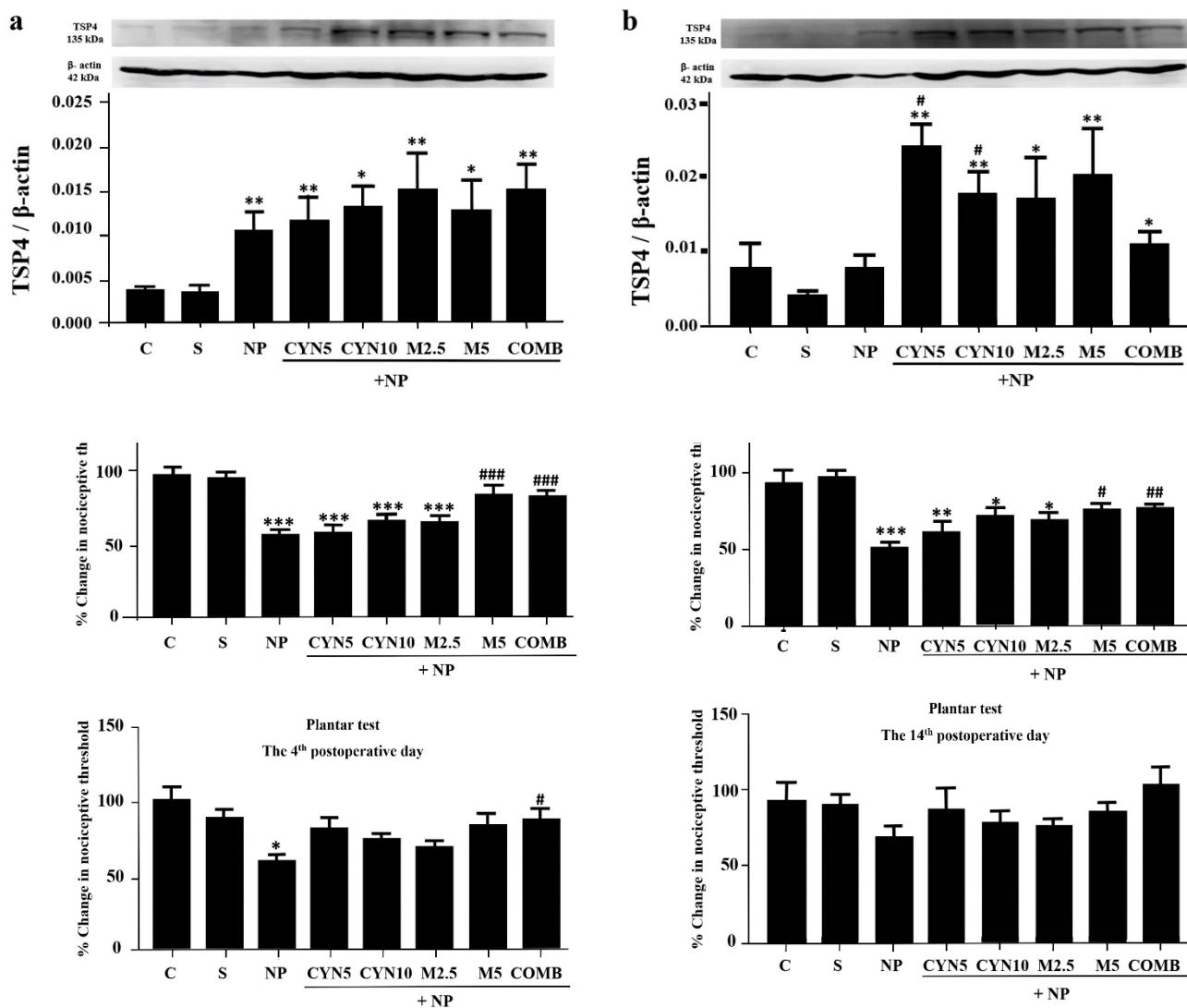


Figure 3. TSP4 protein expressions in L4-L6 spinal cord segments taken from rats on the (a) 4th and (b) 14th postoperative days (n=4-6). C, Control; S, Sham; NP, Saline-injected neuropathic pain; CYN5 and CYN10, NP+5 and 10 mg/kg/day cyanocobalamin, respectively; M2.5 and M5, NP+2.5 and 5 mg/kg/day morphine, respectively; COMB, NP+10 mg/kg/day cyanocobalamin+5 mg/kg/day morphine.

(a) **p=0.004, **p=0.009, *p=0.019, **p=0.006, *p=0.019, **p=0.002; NP, CYN5, CYN10, M2.5, M5 and COMB, respectively, vs S group.

(b) **p=0.007, **p=0.007, *p=0.031, **p=0.007, *p=0.039; CYN5, CYN10, M2.5, M5 and COMB, respectively, vs S group. #p=0.015, #p=0.031; CYN5 and CYN10, respectively, vs NP group.

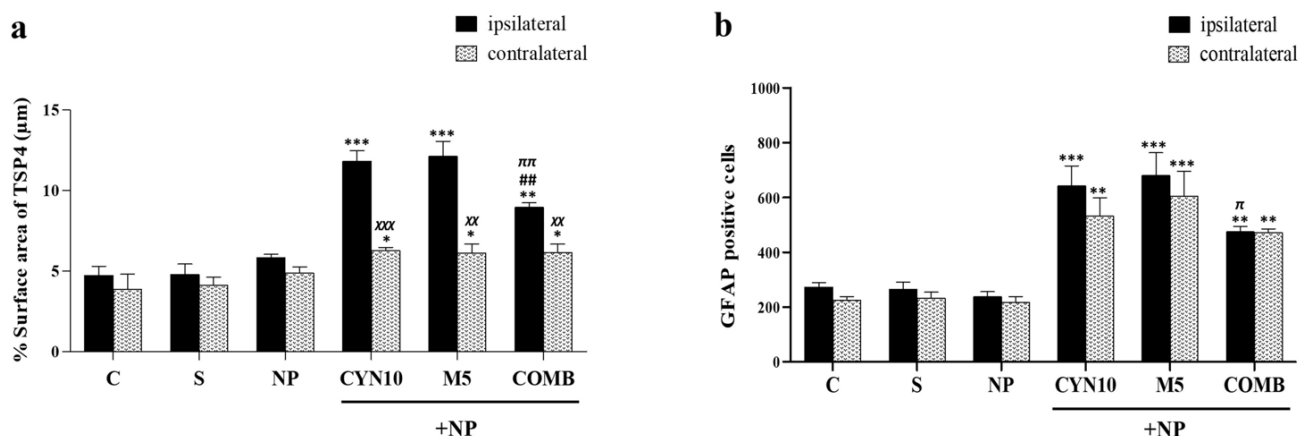


Figure 4. (a) Percentage of TSP4 surface area (μm) and (b) GFAP immunoreactive cells (number) in the lumbar dorsal horn on the 14th postoperative day (n=3-4). The analyzed cross-sectional areas contain lamina I-II-III in the dorsal horn. C, Control; S, Sham; NP, Saline-injected neuropathic pain; CYN10, NP+10 mg/kg/day cyanocobalamin; M5, NP+5 mg/kg/day morphine; COMB, NP+10 mg/kg/day cyanocobalamin+5 mg/kg/day morphine.

(a) ***p<0.001, ***p<0.001, **p=0.001; ipsilateral sides of CYN10, M5 and COMB, respectively, vs ipsilateral side of NP group. ^{##}p=0.001, ipsilateral side of COMB vs ipsilateral side of CYN10 group. ^{ππ}p=0.002, ipsilateral side of COMB vs ipsilateral side of M5 group. *p=0.017, *p=0.021, *p=0.022; contralateral sides of CYN10, M5 and COMB, respectively, vs contralateral side of NP group. ^{xxx}p<0.001, ^{xx}p=0.006, ^{xx}p=0.004; contralateral sides of CYN10, M5, and COMB, respectively, vs own ipsilateral sides.

(b) ***p<0.001, ***p<0.001, **p=0.005; ipsilateral sides of CYN10, M5 and COMB, respectively, vs ipsilateral side of NP group. ^πp=0.029, ipsilateral side of COMB vs ipsilateral side of M5 group. **p=0.001, ***p<0.001, **p=0.005; contralateral sides of CYN10, M5 and COMB, respectively, vs contralateral side of NP group.

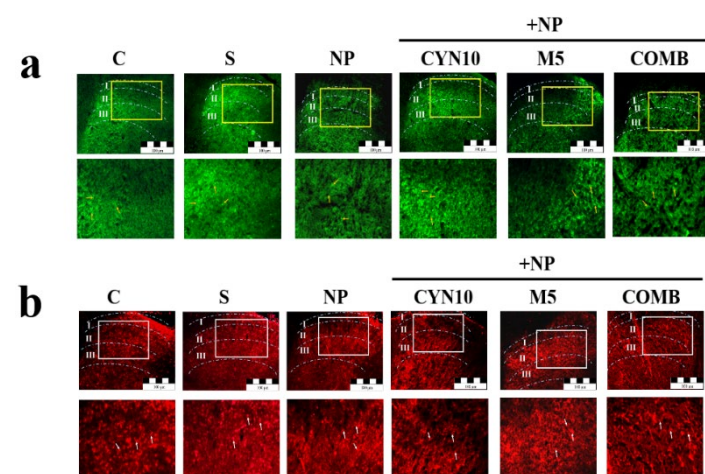
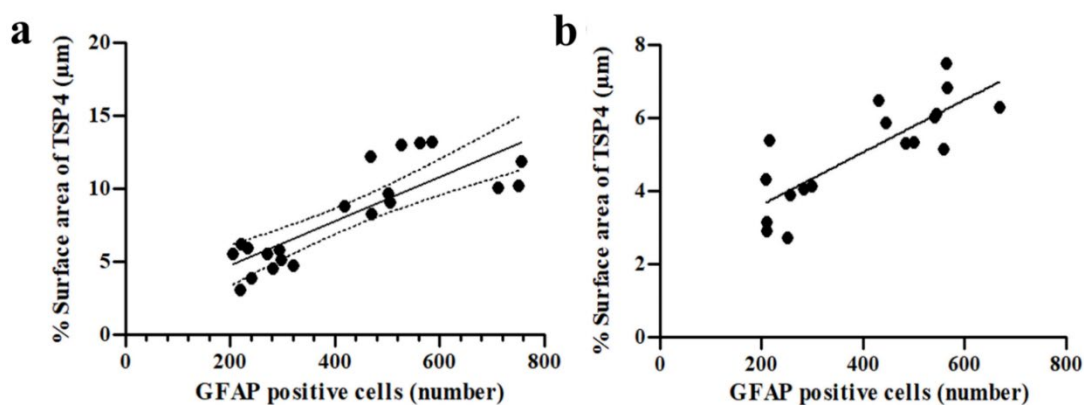


Figure 5. Representative images of **(a)** TSP4 and **(b)** GFAP immunoreactivities in the ipsilateral dorsal horns of L4-L6 spinal cord transverse sections of experimental groups (Scale bar:100 μ m). The analyzed cross-sectional areas contain lamina I-II-III in the dorsal horn and have been marked over the images. The areas marked in the above images are magnified just below, and TSP4 proteins are indicated by yellow arrows and GFAP immunoreactive cells by white arrows. **C**, Control; **S**, Sham; **NP**, Saline-injected neuropathic pain; **CYN10**, NP+10 mg/kg/day cyanocobalamin; **M5**, NP+5 mg/kg/day morphine; **COMB**, NP+10 mg/kg/day cyanocobalamin+5 mg/kg/day morphine.

Figure 6. Pearson's correlation shows a linear relationship between GFAP immunoreactive cells and TSP4 protein surface area in both **(a)** ipsilateral ($p<0.001$, $r=0.826$, $n=21$) and **(b)** contralateral ($p<0.001$, $r=0.811$, $n=18$) spinal cord sections. The data of each group show a normal distribution pattern. GFAP positive cell number is accepted as the dependent variable (X-axis), and the percentage of TSP4 surface area is accepted as the independent variable (Y-axis).



ID-76 / PP: “A Rare Case of Synovial Sarcoma with Extensive Myxoid Areas; A Variant Worth Considering”

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Abstract (ID-76)

Introduction and Objective: Synovial sarcoma is a malignant mesenchymal neoplasm with partial epithelial differentiation and it accounts for approximately 10-20% of soft tissue sarcomas in the adolescent and young adult population. They do not actually originate from synovial cells but from pluripotent mesenchymal cells that try to resemble synovial cells microscopically. It is a translocation-associated soft-tissue malignancy and driven by one of the fusion oncoproteins SS18-SSX1, SS18-SSX2, or rarely, SS18-SSX4. Cases of synovial sarcoma may rarely contain myxoid areas, but are not defined as a variant. Differential diagnosis may be difficult with sarcoma cases in other myxoid morphology.

Case Report: A below-knee amputation was performed on a relatively well-circumscribed mass lesion that destroyed the metatarsal bones of a 56-year-old male patient. Microscopically, the tumor was almost entirely composed of myxoid component. Tumor showed nodulation and there was increased cellularity in the periphery of the nodules. Diffuse strong positivity was detected with TLE-1, CD99 and bcl2 immunohistochemically, and t(X,18) translocation was also detected as positive. The case was reported as synovial sarcoma with extensive myxoid areas.

Discussion and Conclusion: Synovial sarcoma is a soft tissue sarcoma with variable morphological and genetic characteristics. Focal myxoid change is well known in these tumors, but diffuse myxoid change is rare. The largest myxoid synovial sarcoma series in the literature includes 7 cases. Most of the cases in this study were located in the lower extremities, like conventional SS and classical monophasic synovial sarcoma focus is observed, albeit focally, similar to our case. Also like our case, S100 positivity was observed in half of the cases.

Another case of myxoid variant synovial sarcoma is a 61-year-old patient with a myxoid component in more than half of the tumor and located in the lower extremities similar to our case.

Other myxoid soft tissue sarcomas are included in the differential diagnosis of myxoid variant synovial sarcoma cases. Myxoid liposarcoma, myxoid malignant peripheral nerve sheath tumor, myxofibrosarcoma, low-grade fibromyxoid sarcoma-like tumors should be considered in the differential diagnosis. Myxoid malignant peripheral nerve sheath tumor may cause problems especially in cases

with focal S100 positivity, as in our case. However, the diagnosis can be made easily by visualization of the typical monophasic synovial sarcoma area, strong diffuse TLE1 positivity and detection of t(X,18) translocation. It is important to consider synovial sarcoma while making the differential diagnosis of myxoid entities.

Conclusion: In conclusion, although rare, myxoid variant synovial sarcoma cases reported in the literature are remarkable. It is not yet known whether these cases differ in terms of treatment and prognosis. We think that with the recognition of this variant, differences may arise in terms of clinical follow-up, treatment and prognosis of the disease.

Keywords: Sarcoma, synovial, amputation

ID-77 / OP: “Tissue Engineering Applications of Combined Decellularized Tissues and Graphene Oxide”

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Abstract (ID-77)

Introduction: Graphene oxide (GO), which has many applications in the field of nanotechnology, is one of the thinnest materials in the world with unique chemical and physical properties and is widely used in tissue engineering in order to increase the biomechanical strength of other biomaterials. The aim of tissue engineering, which is a multidisciplinary field of science, is to prepare functional organs/tissues by using in vitro production techniques and to produce solutions to the limitation of organ donation.

Materials and Methods: The decellularization method, which is one of the most used methods in tissue engineering, is used to remove cellular components from organs/tissues via physical, chemical, enzymatic methods or their combinations, and thus to obtain tissue scaffolds that can be used for organ/tissue production. In this study, information is given about the studies in the literature in which decellularized tissues and GO were used together. In the studies, scaffolds were produced by using decellularized tissue and GO together, and these tissue scaffolds were used to form skin, cartilage, nerve tissue, and cardiac muscle. In addition, studies were performed for bone tissue formation by regulating the inflammatory response.

Results: The results of studies show that there is great potential in combining nanotechnology and tissue engineering through the combined use of decellularized tissue and GO.

Keywords: Graphene oxide, decellularization, nanotechnology, tissue engineering

Full-text (ID-77): “Hücresizleştirilmiş Dokular ve Grafen Oksit’in Birlikte Kullanılmasının Doku Mühendisliği Uygulamaları”

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Özet: Nanoteknoloji alanında birçok uygulaması olan grafen oksit (GO), benzersiz kimyasal ve fiziksel özelliklere sahip dünyanın en ince malzemelerinden biridir ve doku mühendisliğinde diğer biyomalzemelerin biyomekanik gücünü artırmak için yaygın olarak kullanılmaktadır. Multidisipliner bir bilim dalı olan doku mühendisliğinin amacı *in vitro* üretim tekniklerini kullanarak işlevsel organ/doku üreterek organ bağışındaki kısıtlılığa çözümler üretmektir. Doku mühendisliğinde en çok kullanılan yöntemlerden birisi olan hücresizleştirme yöntemi, fiziksel, kimyasal, enzimatik yöntemler veya bunların kombinasyonlarını kullanarak hücresel bileşenlerin organ/dokulardan uzaklaştırılması ve böylece organ/doku üretimi için kullanılabilecek doku iskeleleri elde edilmesi amacıyla kullanılır. Bu çalışmada hücresizleştirilmiş dokular ile GO’nun birlikte kullanıldığı literatürdeki çalışmalar hakkında bilgi verilmiştir. Yapılan çalışmalarda hücresizleştirilmiş doku ve GO birlikte kullanılarak doku iskeleleri üretilmiş ve bu doku iskeleleri deri, kıkırdak, sinir dokusu, ve kalp kası oluşturmak için kullanılmıştır. Buna ek olarak, enflamatuvar yanıtı düzenleyerek kemik dokusu oluşumu çalışmaları da yapılmıştır. Yapılan çalışmaların sonuçları, hücresizleştirilmiş doku ve GO’nun birlikte kullanılması yoluyla nanoteknoloji ve doku mühendisliğinin biraraya getirilmesinin büyük bir potansiyeli olduğunu göstermektedir.

Anahtar Kelimeler: grafen oksit, hücresizleştirme, nanoteknoloji, doku mühendisliği

Giriş: Multidisipliner bir bilim dalı olan doku mühendisliğinin amacı *in vitro* üretim tekniklerini kullanarak işlevsel organ/doku üreterek organ bağışındaki kısıtlılığa çözümler üretmektir [Shafiee & Atala, 2017]. Doku mühendisliğinde en çok kullanılan yöntemlerden birisi olan hücresizleştirme yöntemi, fiziksel, kimyasal, enzimatik yöntemler veya bunların kombinasyonlarını kullanarak hücresel

bileşenlerin organ/dokulardan uzaklaştırılması ve böylece organ/doku üretimi için kullanılabilecek doku iskeleleri elde edilmesi amacıyla kullanılır [Gilpin & Yang, 2017].

Nanoteknoloji, en az bir boyutta nanometre ölçeğinde veya metrenin milyarda biri olan malzeme ve cihazların sentezi, tasarımı, karakterizasyonu ve uygulanmasıyla ilgili bir bilim alanı olarak tanımlanabilir [Silva, 2004]. Nanoteknoloji alanında birçok uygulaması olan grafen oksit (GO), benzersiz kimyasal ve fiziksel özelliklere sahip dünyanın en ince malzemelerinden biridir ve doku mühendisliğinde diğer biyomalzemelerin biyomekanik gücünü artırmak için yaygın olarak kullanılmaktadır [Kanayama v.d., 2014]. GO, bir dereceye kadar hücre yapışmasını, çoğalmasını ve farklılaşmasını destekler [Ku & Park, 2013; Lee v.d., 2011].

Bu çalışmanın amacı hücresizleştirme yöntemleri kullanılarak üretilen hücresizleştirilmiş dokular ile GO'nun birlikte kullanıldığı literatürdeki çalışmalardan bahsetmektir.

Hücresizleştirilmiş Dokular ve Grafen Oksit'in Birlikte Kullanılması: Hücresizleştirilmiş doku ve GO'nun birlikte kullanılması ile ilgili birçok çalışma mevcuttur. Bir çalışmada, deri doku mühendisliğinde kullanılmak üzere adipöz kök hücre (ASC)'lerin hücre dışı matriks (ECM)'lerinden elde edilen ve uygun miktarda grafen oksit (GO) içeren biyolojik olarak uyumlu, biyobozunur, düşük immünojenite gösteren ve genipin ile çapraz bağlı doku iskelesi geliştirilmesi amaçlanmıştır [Nyambat v.d, 2018]. ASC'lerin ECM'lerinden üretilen doku iskelelerinin mekanik özelliklerini arttırmak için, doku iskelelerine farklı miktarlarda grafen oksit (GO) ve genipin uygulanmıştır. Hücresizleştirme sırasında, ASC hücre tabakaları, sodyum klorür, Tris ve etilen diamin tetraasetik asit (EDTA) içeren birinci hücresizleştirme çözeltisine yerleştirilmiş ve ardından hücre tabakaları, sodyum dodesil sülfat (SDS) içeren ikinci hücresizleştirme çözeltisine aktarılmıştır. *In vitro* bozunma hızı, çapraz bağlı olmayan ECM temelli doku iskelelerinde, genipin ile çapraz bağlı ECM temelli doku iskelelerine göre önemli ölçüde daha yüksek bulunmuştur. 4 haftalık *in vivo* çalışma sonucunda, subkutan implantasyondan sonrası, orta miktarda GO içeren ECM doku iskelelerinde, daha düşük enflamatuar reaksiyon ve uygun seviyede biyobozunma kaydedilmiştir. Bu nedenle, üretilen ECM temelli doku iskelelerinin, cilt hasarları ve ön çapraz bağın kısmi yırtıklarının iyileşmesi gibi diğer yumuşak doku mühendisliği uygulamalarında uygun bir ksenojenik doku biyomalzemesi olabileceği belirtilmiştir.

Bir başka çalışmada SDS kullanılarak sıgır kalbinden hücresizleştirilmiş doku elde edilerek hücresizleştirilmiş dokunun mekanik dayanıklılığını arttırmak için hücresizleştirilmiş doku ve GO'dan oluşan hibrit doku iskeleleri geliştirilmiştir [Jafarkhani v.d., 2019]. GO konsantrasyonunun etkileri numunelerin morfolojisi, gözenek boyutu, gözeneklilik, mekanik mukavemet ve su alma kapasitesi yönünden değerlendirilmiştir. Buna ek olarak, hibrit yapı iskelelerinin biyoyuumluluğu incelenmiş ve %3 GO içeren hibrit doku iskelesinin, mekanik mukavemeti ve hücre canlılığını GO'suz doku iskelesine kıyasla yaklaşık %25 oranında iyileştirdiği bulunmuştur. 7 gün boyunca yapılan hücre canlılığı test sonuçları, gözenekli doku iskelelerinin fibroblastların çoğalmasını ve hücre aktivitesini desteklediğini

göstermiştir. Bu çalışmanın, klinik uygulamalar için biyomimetik yapılar geliştirmek amacıyla grafen bazlı materyaller kullanılmasıyla ilgili yeni bilgiler sunduğu belirtilmiştir.

Gong ve arkadaşlarının yaptığı bir çalışmada kırık dokudan elde edilen hücrelerden arındırılmış hücre dışı matriksi GO ile modifiye edilerek kırık dokunun onarımı için doku iskelesi olarak kullanılmıştır [Gong v.d., 2021]. Kırıkta ince dilimlenmiş ve bunun ardından SDS, deoksiribonükleaz (DNaz) ve ribonükleaz (RNaz) kullanılarak hücresizleştirilmiştir. 1-etil-3-(3-dimetilaminopropil) karbodiimid hidroklorür (EDC) ve N-hidroksi süksinimit (NHS) kullanılarak GO, hücresizleştirilmiş doku iskelesine çapraz bağlanmıştır. GO modifikasyonu doku iskelesinin iç yapısını ve mekanik özelliklerini iyileştirmiştir. GO ile modifiye edilmiş (2 mg/ml) kompozit doku iskelesinin *in vitro* olarak hücre yapışmasını, hücre çoğalmasını ve kondrojenik farklılaşmayı arttırdığı gösterilmiştir. Üzerine kemik iliği mezenkimal kök hücreleri ekilmiş olan kompozit doku iskelesinin, 12 haftalık implantasyondan sonra tavşan dizindeki hiyalin kırıkta hasarlarını tamamen kapattığı belirtilmiştir. Sonuçlar, GO ile modifiye edilmiş kompozit doku iskelesinin, kırıkta doku mühendisliği ve eklem kırıkta yaralanmasının tedavisi için güçlü bir platform olduğunu ortaya çıkarmıştır.

Zheng ve arkadaşlarının yaptığı bir çalışmada, şablon olarak magnezyum nanoparçacıkları (MgNP) kullanılarak, enflamatuar yanıtın düzenlenmesi için magnezyumla zenginleştirilmiş GO nanosarma (nanoscroll)'lar (MgNP@GNS) tasarlanmıştır [Zheng v.d., 2021]. İlk olarak, GO ve magnezyum iyonlarının (Mg²⁺) Raw264.7 makrofaj hücresi üzerindeki fenotip dönüşümü ile ilgili farklı etkileri incelenmiştir. Sonuçlar, GO'nun enflamatuar M1 makrofajlarını aktive ettiğini ve Mg²⁺'nın M1 makrofajlarının iyileştirici M2 fenotipine doğru değişimini kolaylaştırdığını ortaya koymuştur. Mg²⁺'nin sürekli salınımı ile MgNP@GNS nanoplatformu tip 1 ve tip 2 enflamatuar yanıtlarını uyumlu olarak düzenleyebilmiştir. Mg²⁺'nin, GO'nun hücre içine alımını azalttığı ve enflamatuar süreç ile sıkı bağlantılı olan nükleer faktör kappa-B sinyal yolağını azaltıcı yönde düzenlediği gösterilmiştir. MgNP@GNS tarafından indüklenen sıralı enflamatuar yanıtın, kemotaktik, mitojenik ve morfojenik olarak *in vitro* anjiyogenez ve osteogenezi uyardığını ortaya çıkarmıştır. Üzerine MgNP@GNS biriktirilmiş hücresizleştirilmiş kemik matriksi, doku iskelesi olarak kullanılarak sıçan kranial kemik defekti modelinde vaskülarize kemik rejenerasyonu sağlanmıştır. Bu çalışma ile biyomateryal kaynaklı bağışıklık tepkilerini düzenlemek ve böylece kemik rejenerasyonunu arttırmak için tedavi edici nanotıp kullanımının potansiyeli gösterilmiştir.

Bir başka çalışmada, sıçanlardan elde edilen siyatik sinir dokusu hücresizleştirilmiş ve GO ile birleştirilerek siyatik sinirin iyileşmesi için doku iskelesi olarak kullanılmıştır [Wang v.d., 2017]. GO ile birleştirilen hücresizleştirilmiş doku iskelesi, sıçanlarda hasarlı siyatik sinirin tedavisi için *in vivo* olarak uygulanmıştır. Sıçanlardan elde edilen siyatik sinirleri hücresizleştirmek için Triton X-100, DNaz ve RNaz kullanılmıştır. GO ile birleştirilen hücresizleştirilmiş doku iskelesi uygulanan grupta, sinir aksiyon potansiyelinin, kasın maksimum gerilim değerinin, gastroknemius kasının yaş ağırlık değerinin, gastroknemius kalınlığının, miyelin kılıf kalınlığının ve akson çapının sadece hücresizleştirilmiş doku iskelesi uygulanan gruptan anlamlı seviyede daha yüksek olduğu gösterilmiştir. Böylece, GO ile

birleştirilen hücreleştirilmiş doku iskelesinin sinir hasarlarını onarmak için kullanılabileceği belirtilmiştir.

Bir çalışmada ise uygun hücre ve doku gelişimi için mikro ortam sağlamak amacıyla GO ve hücreleştirilmiş domuz miyokardından elde edilen ECM ve GO'dan oluşan hibrit hidrojel geliştirilmiştir [Tsui v.d., 2021]. Hücreleştirme için SDS ve Triton X-100 kullanılmıştır. Hücreleştirilmiş doku-GO hidrojel yapı iskeleleri ve insan kaynaklı pluripotent kök hücrelerinden farklılaştırılan kardiyomiyositler kullanılarak üretilen yapay kalp dokularının, önemli ölçüde artan seçirme kuvvetleri sergilediği ve kasılma fonksiyonunu düzenleyen genlerin ekspresyonunu artırdığı gösterilmiştir. Kalsiyum kullanımı, aksiyon potansiyeli süresi ve iletim hızı gibi elektrofizyolojik fonksiyonların da bu hibrit biyomateryal tarafından indüklendiği bulunmuştur. Hücreleştirilmiş doku-GO hidrojel, biyomürekkep olarak kullanılıp kalp dokuları oluşturulmuş ve bu dokular, cisapride'in proaritmik potansiyelini değerlendirmek için kullanılmıştır. Cisapride'in klinik dozlarda uygulanmasıyla, hücreleştirilmiş doku-GO örnekleri kullanılarak oluşturulmuş kalp dokularında aksiyon potansiyeli uzaması ve atım aralığı düzensizlikleri gözlenmiştir. Bu sonuçlarla, üretilen bu dokulardaki gelişmiş elektrofizyolojik fonksiyonların fizyolojik olarak uygun ilaç tepkileri üretmek için kullanılabileceği gösterilmiştir.

Sonuç: Organ yetmezliği, insan ölümlerinin en başta gelen sebeplerinden biridir ve organ bağışı miktarının kısıtlı olması çok önemli bir problemdir. Doku mühendisliğinin amacı, laboratuvar ortamında doku/organ üretilmesidir. Bu alandaki yöntemlerinden en sık kullanılanlardan birisi hücreleştirme tekniğidir. Bu çalışmada hücreleştirilmiş dokular ile GO'nun birlikte kullanıldığı literatürdeki çalışmalar hakkında ayrıntılı bilgiler verilmiştir. Literatürdeki bu çalışmalarda hücreleştirilmiş doku ve GO birlikte kullanılarak doku iskeleleri üretilmiş ve bu doku iskeleleri kıkırdak, deri, kalp kası ve sinir dokusu oluşturmak için başarılı uygulamalarla kullanılmıştır. Buna ek olarak, enflamatuar yanıtı düzenleyerek kemik dokusu oluşumu çalışmaları da yapılmıştır. Yapılan çalışmalar, hücreleştirilmiş doku ve GO'nun birlikte kullanılması yoluyla nanoteknoloji ve doku mühendisliğinin biraraya getirilmesinin özellikle işlevsel doku/organ üretiminde büyük bir potansiyeli olduğunu göstermektedir.

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ID-79 / OP: “Comparison of the First and Second Year Characteristics of Multisystem Inflammatory Syndrome in Children”

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Abstract (ID-79)

Introduction and Purpose: Coronavirus disease 2019 (COVID-19) has caused a global pandemic and led to more than 5.000.000 deaths worldwide. Initially, children appear to be less affected than adults, showing milder symptoms until the emergence of the multi-inflammatory syndrome in children (MIS-C). The clinical presentation of MIS-C includes fever, severe illness, and the involvement of two or more organ systems, in combination with laboratory evidence of inflammation and laboratory or epidemiologic evidence of SARS-CoV-2 infection. This study aimed to compare the demographic and clinical characteristics of MIS-C in two years.

Materials and Methods: A single-center retrospective study was conducted in Dr. Behcet Uz Children's Hospital. MIS-C has been diagnosed according to the Turkey Ministry of Health COVID-19 Guideline. The patients diagnosed with MIS-C were divided into two groups: Group 1 patients were hospitalized between February and December 2020, Group 2 patients were hospitalized between January and November 2021. Statistical analysis was performed with SPSS statistical package (version 25 for Windows).

Results: Group 1 consisted of 33 (36.7%) patients, and group 2 consisted of 57 (63.3%) patients. In group 1, the mean age was 81.3 ± 47.8 months, and 60.6% were male. The most common organ involvement was hematologic (87.9%), followed by dermatologic (66.7%) and gastrointestinal involvement (63.6%). When patients are classified according to the clinical severity of the disease, 17 (51.5%) patients were mild, 8 (24.2%) moderate, and 8 (24.2%) were severe. In group 2, the mean age was 92.3 ± 59.1 months, and 71.9% were male. The most common organ involvement was gastrointestinal (63.2%), followed by hematologic (56.1%) and cardiac involvement (54.4%). When patients are classified according to the clinical severity of the disease, 34 (59.6%) patients were mild, 10 (17.5%) moderate, and 13 (22.8%) were severe. There was no statistical difference between the age, gender, and the rate of underlying disease in the patient groups. When organ involvement was evaluated, there was no statistical difference in the rate of cardiac, renal, respiratory, gastrointestinal, and neurological involvement between the groups. Hematological and dermatological involvement was statistically

higher in group 1 than group 2 (P values 0.002, 0.004). There was no difference in the duration of fever in the two groups. The total length of hospital stay was statistically longer in group 1 (10.7±4.0 vs. 9.0±3.6, P=0.028). However, there was no statistical difference in the rate of abnormal echocardiography, decreased ejection fraction, pediatric intensive care unit admission, inotropic support, and oxygen support between the groups. For treatment, corticosteroid and low-molecular-weight heparin treatment were statistically more commonly used in group 1 (P values 0.029, 0.010) (Table 1). When laboratory findings were evaluated, there was no statistical difference between the groups (Table 2).

Discussion and Conclusion: MIS-C is a new phenomenon reported worldwide. Comparing the first and second years of patients diagnosed with MIS-C, patients in 2020 had more common hematological and dermatological involvement, and the total length of hospital stay was longer. However, corticosteroid and low-molecular-weight heparin treatment were more commonly used in patients in 2021. Further studies are needed to evaluate the characteristics of MIS-C.

Keywords: COVID-19, MIS-C, children

Table I. Demographic and clinical characteristics of patient groups

	Group 1	Group 2	<i>P-value</i>
Cases, n, (%)	33 (36.7)	57 (63.3)	
Age, months, mean ±SD	81.3±47.8	92.3±59.1	0.595
The age distribution,n, (%)			
<1 year	2 (6.1)	0 (0)	
1 - <6 years	17 (51.5)	26 (45.6)	
6 - <10 years	6 (12.8)	10 (17.5)	
10 - <15 years	8 (24.2)	15 (26.3)	
≥15 years	0 (0)	6 (10.5)	
Gender, male, n, (%)	20 (60.6)	41 (71.9)	0.268
Underlying diseases, n, (%)	3 (9.1)	4 (7)	0.704
Duration of fever, days, mean ±SD	5.6±2.4	4.6±2.2	0.065
Organ involvement, n, (%)			
Cardiac	19 (57.6)	31 (54.4)	0.769
Renal	2 (6.1)	3 (5.3)	1.000
Respiratory	4 (12.1)	3 (5.3)	0.255
Hematologic	29 (87.9)	32 (56.1)	0.002
Gastrointestinal	21 (63.6)	36 (63.2)	0.964

Dermatologic	22 (66.7)	20 (35.1)	0.004
Neurological	1 (3)	0 (0)	0.186
SARS-CoV-2 Antibody positive, n, (%)	27 (81.8)	51 (89.5)	0.263
Clinical classifications of illness severity, n, (%)			0.694
Mild	17 (51.5)	34 (59.6)	
Moderate	8 (24.2)	10 (17.5)	
Severe	8 (24.2)	13 (22.8)	
The total length of hospital stay, days, mean±SD	10.7±4.0	9.0±3.6	0.028
Echocardiography, n, (%)			
Abnormal	15 (45.5)	29 (51.8)	0.564
Ejection fraction, n, (%)			
Decreased (<55%)	5 (15.2)	8 (14)	0.885
PICU admission, n, (%)			
Inotropic support, n, (%)	10 (30.3)	8 (14)	0.063
Oxygen support, n, (%)	7 (21.9)	7 (12.5)	0.247
Treatment, n, (%)			
IVIG	33 (100)	53 (93)	0.120
Corticosteroid	13 (39.4)	36 (63.2)	0.029
Antibiotic treatment	27 (81.8)	47 (90.4)	0.251
Low-molecular-weight heparin	16 (48.5)	43 (75.4)	0.010
Aspirin	24 (72.2)	34 (70.8)	0.853

Group 1: Patients diagnosed with MIS-C in 2020, Group 2: Patients diagnosed with MIS-C in 2020, SD: Standard deviation, IVIG: intravenous immunoglobulin, PICU: Pediatric intensive care unit

Table II: The comparison of laboratory characteristics of the patient groups

Variables	Group 1 (n=33)	Group 2 (n=57)	<i>P</i> value
Laboratory findings			
WBC (mean± SD)/mm ³	10121±5293	11330±4946	0.248
ANC (mean± SD)/mm ³	7248±3853	8341±4142	0.319
ALC (mean± SD)/mm ³	2013±1972	2191±1708	0.202
Hb (mean±SD), g/dL	11.4±1.3	11.6±1.5	0.193
PLT (mean± SD)/mm ³	2044841±112809	217421±80351	0.688
CRP (mean±SD), mg/L	13.5±8.0	16.04.9±9.6	0.660
Sedimentation (mean±SD), mm/h	68.6±25.7	71.1±30.2	0.568
D-dimer (mean±SD), µg/L	1437±1785	764±449	0.090
Fibrinogen (mean±SD), mg/dL	583±147	652±254	0.375

Group 1: Patients diagnosed with MIS-C in 2020, Group 2: Patients diagnosed with MIS-C in 2020, SD: Standard deviation, WBC: white blood cell, ANC: absolute neutrophil count, ALC: absolute lymphocyte count, Hb: Hemoglobin, PLT: platelet count, CRP: C-reactive protein

ID-81 / OP: “Surgical Treatment Results in Patella Fractures”

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Abstract (ID-81)

Introduction and Purpose: Displaced patella fractures that cause disruption of the knee extensor mechanism are usually treated surgically. A smooth extensor mechanism is essential for unassisted walking. Surgical treatment of patella fractures is usually accomplished by open reduction and fixation. However, in the presence of undetected broken parts, partial or total patellectomy can be performed.

In this study, we aimed to compare the results of surgical treatment applied to patella fractures with the results of recommended treatment.

Materials and Methods: Forty-nine patients hospitalized with a diagnosis of patella fracture and treated surgically in our clinic between 1996 and 2001 were included in the study. Patients were classified according to fracture types and treatment modalities. Clinical findings such as range of motion, pain and muscle atrophy were evaluated in controls. The continuity of fixation, gradation and union of the joint were evaluated in patients who underwent osteosynthesis. Böstman scoring system was used clinically. The mean follow-up time was 36.5 months.

Results: Thirty-six (73.46%) of the patients were male and 13 (26.53%) were female. The mean age was 42.44 (18-84). Of the fractures, 41 (79%) were closed and 11 (21%) were open. Three patients had bilateral patella fractures. Osteosynthesis was applied to 34 fractures (34 patellae of 32 patients), partial patellectomy to 15 of 14 patients (15 patellae of 14 patients), and total patellectomy to 3 (5,76%). Modified anterior tension band was used in 24 (70.58%) of 34 patellar fractures that underwent osteosynthesis, circumferential cerclage was used in 8 (23.52%) and screws were used in 2 (5.88%). Out of 14 patients who underwent partial patellectomy, 6 (40%) of 15 knees had excellent, 6 (40%) good, and 3 (20%) bad results. There were 5□ extension limitation in 2 (13.33%). There were 10□ extension limitation in 2 (13.33%). Radiologically, osteoarthritis was found in 4 (26.66%) and heterotopic ossification in 8 (53.33%). Two had good and one poor results in total patellectomy. There was moderate pain with use in all three knees. There was 10□ extension restriction in one knee.

Heterotopic ossification was detected in 2 knees. According to the scoring system developed by Böstman et al. used in the clinical evaluation of patella fractures, the mean score of 52 patella fractures was 24.77.

Discussion and Conclusion: Although there is a consensus on the indications for surgical treatment of patella fractures, there are still debates about the surgical method to be chosen. The multiplicity of treatment options is due to the fact that there is still no complete consensus on this issue. Fractures with retinacular tears, open fractures, fractures with separation of more than 3 mm and stepping of more than 2 mm are treated with surgical methods.

As in our study, the first choice in the surgical treatment of patellar fractures is osteosynthesis. However, partial patellectomy can be performed in cases where adequate reduction cannot be achieved and a large distal or proximal fragment can be preserved. Total patellectomy is considered as a salvage method in multi-compartmental and separated fractures without a large fragment.

Keywords: Patellar fractures, osteosynthesis, patellectomy

Full-text (ID-81)

Introduction and Purpose: Patella fractures are very common injuries in the skeletal system. It accounts for about 1% of all injuries (1,2,3). Displaced patella fractures that cause disruption of the knee extensor mechanism are usually treated surgically (4,5,6). A smooth extensor mechanism is essential for unassisted walking. Surgical treatment of patella fractures is usually accomplished by open reduction and fixation. However, in the presence of undetected broken parts, partial or total patellectomy can be performed (1,3,4,5,7). In this study, we aimed to compare the results of surgical treatment applied to patella fractures with the results of recommended treatment.

Materials and Methods: Forty-nine patients hospitalized with a diagnosis of patella fracture and treated surgically in our clinic between 1996 and 2001 were included in the study. Patients were classified according to fracture types and treatment modalities. Clinical findings such as range of motion, pain and muscle atrophy were evaluated in controls. The continuity of fixation, gradation and union of the joint were evaluated in patients who underwent osteosynthesis. Böstman scoring system was used clinically. The mean follow-up time was 36.5 months.

Results: Thirty-six (73.46%) of the patients were male and 13 (26.53%) were female. The mean age was 42.44 (18-84). Of the fractures, 41 (79%) were closed and 11 (21%) were open. Of 49 patients, 26 (53.06%) had right, 20 (40.81%) left, and 3 (6.12%) bilateral patella fractures. Traffic accidents account for 28 (57.14%) causes of patella fractures, simple falls 10 (20.40%), falls from a height 9 (18.36%), and beating 2 (4.08%) was forming. Osteosynthesis was applied to 34 fractures (34 patellae of 32 patients), partial patellectomy to 15 of 14 patients (15 patellae of 14 patients), and total patellectomy to 3 (5.76%). Modified anterior tension band was used in 24 (70.58%) of 34 patellar fractures that

underwent osteosynthesis, circumferential cerclage was used in 8 (23.52%) and screws were used in 2 (5.88%). Out of 14 patients who underwent partial patellectomy, 6 (40%) of 15 knees had excellent, 6 (40%) good, and 3 (20%) bad results. There were extension° extension limitation in 2 (13.33%). There were 10°5 limitation in 2 (13.33%). Radiologically, osteoarthritis was found in 4 (26.66%) and heterotopic ossification in 8 (53.33%). Two had good and one poor results in total patellectomy. There was extension°moderate pain with use in all three knees. There was 10 restriction in one knee. Heterotopic ossification was detected in 2 knees. According to the scoring system developed by Böstman et al. used in the clinical evaluation of patella fractures, the mean score of 52 patella fractures was 24.77.

Discussion and Conclusion: Although there is a consensus on the indications for surgical treatment of patella fractures, there are still debates about the surgical method to be chosen. The multiplicity of treatment options is due to the fact that there is still no complete consensus on this issue. Fractures with retinacular tears, open fractures, fractures with separation of more than 3 mm and stepping of more than 2 mm are treated with surgical methods (7,10,19). In recent years, plates have been used in the treatment of patella fractures. In cases of comminuted fractures, osteosynthesis via a locking plate seems to have several advantages but long-term results are not yet available (8). In a study conducted by Kai Fehske et al. in 2021, it was reported that 30% of surgeons use fixed-angle plate osteosynthesis in comminuted patella fractures (9). In another study conducted by Clemens Gwinner et al. in 2016, it was reported that; for non-displaced and dislocated non-comminuted transverse patellar fractures (2-part) modified anterior tension band wiring is the treatment of choice and can be combined - due to its biomechanical superiority - with cannulated screw fixation. In severe comminuted fractures, open reduction and fixation with small fragment screws or new angular stable plates for anatomic restoration of the retropatellar surface and extension mechanism results in best outcome. Additional circular cerclage wiring using either typical metal cerclage wires or resorbable PDS/non-resorbable FiberWires increases fixation stability and decreases risk for re-dislocation. Distal avulsion fractures should be fixed with small fragment screws and should be protected by a transtibial McLaughlin cerclage. Partial or complete patellectomy should be regarded only as a very rare salvage operation due to its severe functional impairment (10). As in our study, the first choice in the surgical treatment of patellar fractures is osteosynthesis. However, partial patellectomy can be performed in cases where adequate reduction cannot be achieved and a large distal or proximal fragment can be preserved. Total patellectomy is considered as a salvage method in multi-compartmental and separated fractures without a large fragment.

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ID-85 / OP: “Influence of Obesity in Children with Appendicitis”

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Abstract (ID-85)

Introduction: Appendectomy is a common surgical intervention in children with incidence of 1-4 in 1000 cases per year. The developed world is facing alarming rates of childhood obesity which affects the time required for diagnosis of appendicitis in children, wound healing, length of hospital stay and postoperative complications. However only few data exist that evaluate the impact of obesity on surgical outcomes in children. In our study; we analyzed the impact of obesity on presentation, diagnosis and post-operative course in children with appendicitis.

Material and Methods: The medical records of all children aged 1 to 16 years treated for appendicitis between January 2020 and January 2021 were reviewed retrospectively. Demographic data including age, sex, weight and comorbidities, time to presentation and use of diagnostic imaging, including whether the images were correct according to the surgical findings, average length of hospital stay and postoperative complications (wound infection, wound dehiscence, and intra-abdominal abscess) were analyzed.

Results: A total of 211 children were admitted to hospital with a diagnosis of appendicitis. Of these, 29 (%13.7) met the criteria for overweight-obesity (OW) that was defined as greater than 2 standard deviations above the standardized mean weight for age. The remaining 182 were grouped as normal-weight (NW). Groups were similar in age, sex, presentation, diagnosis and type of surgery. Accuracy of preoperative diagnostic ultrasound was higher in NW group when compared to OW group (64.3% vs 44.8%) ($p<0.05$). Compared with NW group, postoperative length of stay in hospital was higher in the OW group (3.0 ± 1.1 vs 7.9 ± 5.5) ($p<0.001$). This group also had a higher postoperative complication rate as compared to NW group (5.5% vs 51.7%) ($p<0.001$).

Conclusion: Ultrasound is less effective in diagnosing appendicitis in obese children. Obese children with appendicitis tend to have a more prolonged postoperative course, longer post-operative hospital stays that may be related to longer times to ambulation and tolerating diet and higher risk of developing postoperative complications mostly due to impairments in immune function. Obesity

should be considered as a surgical risk factor affecting outcomes of surgery and surgeons must be aware of these issues related to childhood obesity to anticipate and promptly try to minimize them.

Keywords: Childhood obesity, overweight children, appendicitis

ID-86 / PP: “A Rare Case of Perivascular Epithelioid Cell Tumor (PEComa) of The Spleen”

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Abstract (ID-86)

Introduction and Purpose: Perivascular epithelioid cell tumors (PECmoa) are rare mesenchymal neoplasms that arise from perivascular epithelioid cells which express both melanocytic and myogenic markers. We report a very rare case of a PEComa of the spleen.

Case Presentation: A 25-year-old man consulted a doctor regarding intermittent abdominal pain that he had experienced for 1 year. On physical examination, there was minimal tenderness in the left lower quadrant of the abdomen. An abdominal computed tomography indicated a mass of 12 cm in diameter in the spleen which was considered to be a hamartoma.

Splenectomy was performed. Macroscopically the spleen was measured 20 × 8 × 5 cm. Numerous well-circumscribed solid white nodules, ranging in size from 1 cm to 0,4 cm, scattered throughout the spleen parenchyma were observed. Histopathologically, the tumor shows nested architecture and nests are surrounded by thick-walled and staghorn vessels. The tumor was composed mainly of spindle and epithelioid cells with abundant granular eosinophilic cytoplasm and round nuclei and small nucleoli. Also noted pseudoinclusions, multinucleated cells and Touton giant cells. Stromal hyalinization was also observed.

In the immunohistochemical staining, tumor cells were positive for human melanin black 45 (HMB-45), alpha-smooth muscle actin, desmin, and partially positive for Melan-A. The final diagnosis was PEComa of the spleen.

Discussion and Conclusion: PEComa's are found in various localizations, but lesions in the spleen are extremely rare. Due to their rarity, the clinical, radiological and histological features of these tumors have not been yet determined. It should be distinguished from their mimickers. Therefore, we think that this rare splenic tumor is worthy to present.

Keywords: Perivascular epithelioid cell tumor, PECmoa, splenic PEComa

ID-87 / OP: “Correlation of CRP Value on Day 3 with Necrosis and Mortality in Acute Biliary Pancreatitis”

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Abstract (ID-87)

Introduction: Acute pancreatitis is, characterised with the inflammation of the pancreas, that has a wide range from local edema to infected necrosis of pancreas. Contrast enhanced CT scan has an crucial role both diagnosis and follow-up of acute pancreatitis.

The question, however, from which patients and when a CT scan should be taken still remains (1,2). It takes a few days for pancreas perfusion to be disrupted, so peripancreatic necrosis to occur. Therefore, necrosis can be missed with an early CT scan. CRP, an acute phase reactant, is used to follow-up of infection and systemic inflammation in acute pancreatitis.

In our study, we researched if CRP values can be used to determine which patients need to be evaluated with a CT scan.

Materials and Methods: Between January 2015 and 2020, 258 patients admitted to Gaziosmanpaşa-Taksim Education and Research Hospital with diagnoses of acute pancreatitis were included in this study.

Patients characteristics such as sex, age, CRP levels in admission and in 72 hour later, presence of necrosis on CT scan that is taken on 3 or 5th day of admission and mortality recorded. Cut-off value for CRP was setted as 150mg/dl (2) and the patients were separated in two groups according to CRP levels (≥ 150 mg/dl and < 150 mg/dl.) at admission and 72 hour later.

Results: Out of 258 patients, 183 (70.9%) were women, 75 (29.1%) were men and the median age was 62 (17-95). 15(6%) patients had CRP ≥ 150 in the admission and 66(25.5%) patients CRP levels reached ≥ 150 in the follow-ups. 30(12%) patients were diagnosed with necrosis in the CT scan and 10(33.3%) of those died. In-hospital mortality was 5%.

The necrosis observed significantly more in patients with a CRP ≥ 150 on the 3th admission day ($p=0.001$). The patients whose CRP levels increased in the follow-ups have also been diagnosed with necrotising pancreatitis significantly more than others ($p<0.001$).

In the multivariate analysis, CRP levels ≥ 150 and necrosis on CT detected as independent prognostic factor in hospital mortality (Necrosis; OR:8.94, 95%CI:1.8-43.6, $p=0.007$, CRP; OR:11.6, 95%CI:1.07-125.3, $p=0.043$).

Sensitivity for 3th admission day CRP value for necrosis and mortality was 97% and 92% respectively. Negative predictive value of CRP levels ≥ 150 is 99% for both parameters.

Conclusion: CRP value of ≥ 150 mg/dl on the 3th admission day indicates a high rate of pancreatic necrosis and mortality. Therefore, patients who has CRP ≥ 150 on 3.day should be evaluated with a contrast enhanced CT scan.

Keywords: pancreatitis, crp, necrosis

ID-88 / OP: “Association of Choroidal Vascularity Index and Body Mass Index in An Adult Population”

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Abstract (ID-88)

Introduction and Purpose: To evaluate the relationship between body mass index groups and choroidal thickness and choroidal vascularity index.

Materials and Methods: In this retrospective study, 90 individuals were included. The groups were divided into 3 groups according to BMI: Group 1 (18.6-24.9), Group 2 (25.0-29.9), Group 3 (30.0-34.9). The mean age of all patients was 39.28 ± 14.64 years. The mean BMI of all patients was 26.68 ± 4.45 as the BMI increased, the age was significantly higher ($p=0.010$). All groups were evaluated using detailed eye examination and the enhanced depth imaging optical tomography images were binarized by the Image-J program. Choroidal thickness (CT) and choroidal vascularity index (CVI) values of 3 groups were compared.

Results: No significant differences were detected between the groups in terms of CT taken from the temporal, nasal distances, and the subfoveal. Total choroidal area (TCA), luminal area (LA), stroma area (SA) and CVI did not differ significantly between the groups. Subfoveal CT was $307,85 \pm 76.17$ in group 1 and $303,80 \pm 72,48$ in group 2 and $313,22 \pm 60,32$ in group 3 ($p=0.871$). Choroidal vascularity index calculated as the ratio of the lumen area to the total choroidal area was $\%77 \pm \%9$ in group 1, $\%74 \pm \%16$ group in 2, and $\%75 \pm \%14$ in group 3 ($p=0.985$).

Conclusion: CT and CVI were not significantly different in different body mass index groups.

Keywords: Body mass index, choroidal vascularity index, choroid thickness

Full-text (ID-88): “Association of Choroidal Vascularity Index and Body Mass Index in An Adult Population”

Giriş ve Amaç: Obezite son yüzyılda sıklığı giderek artan bir sağlık problemidir. Dünya Sağlık Örgütü verilerine göre 2030 yılında erişkin nüfusun $\%57.8$ 'i aşırı kilolu veya obez sınıflandırması içerisinde olacaktır.(1) Kalp hastalığı, serebrovasküler olay, hipertansiyon, dislipidemi, diyabet ve kanser hastalıkları gibi bir çok komorbidite sebebi vücut kitle indeksi (VKİ) artması ile artmaktadır.(2, 3)

Sadece Amerika Birleşik Devletlerinde bir yılda 147 ile 210 milyar Amerikan doları obezite ve neden olduğu sağlık sorunları nedeni ile harcanmaktadır. (4)1975'ten günümüze 3 kat artan bu epidemik sağlık sorunu için acilen önlemler alınması gerekmektedir.

Obezitenin tanısının konulmasında en ideal ve sık kullanılan metod VKİ'dir. Klinikte hastanın boyu ve kilosu ile kolaylıkla hesaplanabilir. VKİ18.5 ve altı az kilolu, 18.5-24.99 arası normal, 25-29.99 arası kilolu, 30 ve üzeri ise obez olarak sınıflandırılmaktadır. Obez grubu ise kendi arasında 30-34.99 arası tip 1, 35-39.99 tip 2, 40 ve üzeri ise tip 3 olarak sınıflandırılmaktadır. Obezite sınıfı yükseldikçe komorbidite riski artış göstermektedir. (5, 6)

Obez hastaların kan akımı ve hiperlipidemiye bağlı olarak görülen değişiklikleri non invaziv ve klinikte hızlı bir şekilde değerlendirebilmemiz gerekli önlemleri erken dönemde almak açısından oldukça önemlidir. Gözün yapısı sayesinde klinik pratikte sıklıkla kullanılan the enhanced depth imaging optical tomography yöntemi sayesinde gözün damardan zengin tabakası olan koroid tabakası rahatlıkla değerlendirilebilmektedir.(7) Koroidin zengin vasküler ve stromal yapısı ImajeJ yazılımı ile ikileştirilmesi yapılabilmektedir. Bu sayede TCA, LA ve SA hesaplanabilmekte ve lümen alanının toplam koroid alanına bölünmesi ile CVI hesaplanmaktadır.(8) Günümüzde birçok hastalığın CVI hesaplanmış ve özellikle damar yapısını etkileyebilecek patolojilerde LA ve CVI'de değişiklikler saptanmıştır.(9, 10)

Bu çalışmada normal,aşırı kilolu ve tip 1 obez grupların EDI-OCT görüntüleri incelenmiş, CVI ve CT değerleri arasında istatistiksel olarak anlamlı fark olup olmadığı araştırılmıştır.

Gereç ve Yöntem: Çalışmaya 90 kişi dahil edilmiştir. Gruplar normal,aşırı kilolu ve tip 1 obez VKİ'lerine göre olacak şekilde olacak şekilde 3 eşit gruba ayrılmıştır. Tüm katılımcılardan klinik verileri kullanmak için bilgilendirilmiş onamları alınmıştır. Hastaların boy ve kiloları obezite polikliniğinde aile hekimi uzmanı (K.A) tarafından ölçülmüştür.

Tüm grupların ayrıntılı oftalmolojik muayeneleri aynı göz uzmanı tarafından yapılmıştır(S.T). Tüm grupların refraktif değerleri, BCVA, non kontakt tonometre ile göz içi basınçları ölçümleri ve fundus muayeneleri incelenmiştir.

Dışlama kriteri olarak öncesinde göz travması veya göz cerrahisi geçirmemiş ve konjenital malformasyon,ambliyopi, +/-1 D ve üzeri refraktif kusuru olan hastalar çalışmaya dahil edilmemiştir. Tüm gruplardan sağ gözler çalışmaya dahil edilmiştir. EDI-OCT görüntüleri koroidin diurnal varyasyonunu minimize etmek için günün aynı saatinde (09.00 öö- 10.00 öö) çekilmiştir.

CT ölçümü aynı göz uzmanı tarafından (S.T) spectral-domain OCT (Heidelberg Engineering, Heidelberg, Germany) kullanılarak ölçülmüştür. The Spectralis OCT (Heidelberg Engineering) standart görüntüleme protokolü kullanılmıştır. 9- mm horizontal görüntü fovea merkezli gerçekleştirilmiş ve ayrıca sinyal oranını iyileştirmek için tüm bölümler ortalama 100 - B taraması ile iyileştirilmiştir. Çekim

sırasında göz takip modu kullanıldı. Görüntüleme öncesi tüm deneklerin pupilleri dilate edildi. CT hiperreflektif RPE çizgisinden hiporeflektif koroidoskleral bileşkeye kadar olacak şekilde ölçüldü. Foveanın merkezinden ve bu noktadan 500, 1000 ve 1500 µm uzaklıkta nasal ve temporal noktalardan CT ölçülmüştür.

Sonoda ve ark. görüntü ikileştirme tekniğini kullanarak CVI'yi hesaplamışlardır.(11) Ancak Agrawal ve ark. bu tekniğin üzerine bazı değişiklikler yaparak modifiye etmişlerdir. Bu çalışmada bu modifiye teknik kullanılmıştır.(8) Öncelikle açık kaynak ImageJ yazılımı (version 1.47; provided in the public domain by the National Institutes of Health, Bethesda, MD, USA; <http://imagej.nih.gov/ij/>) görüntü hazırlanması için kullanılmıştır. 1x1 1 piksel EDI-OCT görüntüsü 200 mikron uzaklık ayaralandıktan sonra merkezi fovea ortalanacak şekilde 1500 mikronluk alan işaretlenmiştir. Ve subfoveal TCA hesaplanmıştır. Sonrasında görüntü Niblack modu ile ikileştirilip LA ve SA alanı hesaplanmıştır.

Son olarak LA TCA'ya bölünerek CVI değeri hesaplanmıştır. Çalışmanın istatistiği yapılırken tanımlayıcı istatistiklerde numerik veriler ortalama ve standart sapma, kategorik veriler ise sayı ve yüzde olarak verildi. Numerik verilerin dağılımına histogram grafikleri ile bakıldı. İki den fazla bağımsız gruplar arasında numerik verilerin analizi One Way Anova ve Kruskal Wallis testleri ile yapıldı. P anlamlılık değeri <0,05 olarak kabul edildi. Analizlerde SPSS 23.0 paket programı kullanıldı.

Bulgular: Çalışmaya üç ayrı grup olarak toplamda 90 kişi dahil edildi. Tüm hastaların yaş ortalaması $39,26 \pm 14,56$ idi. Tüm hastaların VKİ ortalaması $26,68 \pm 4,45$ VKİ artıka yaş anlamlı fazla görüldü ($p=0,010$). Gruplar arası temporal, nasal mesafelerden ve merkezden alınan CT açısından anlamlı farklılıklar izlenmedi. TCA, LA, SA, CVI ve LA/SA oranının gruplar arasında anlamlı farklı olmadığı görüldü (Tablo 1).

Tartışma ve Sonuç: Obezite son yüzyılda sıklığı giderek artan bir sağlık sorunudur. Eşlik ettiği komorbiteler ve sosyo-ekonomik sorunlar nedeniyle direk ve indirek sağlık problemlerine yol açmaktadır. (3) Kardiyovasküler hastalıklar başta olmak üzere yüksek kolesterol, serebrovasküler olaylar, yüksek kanser insidansı gibi bir çok problemin yüksek vücut kitle indeksi ile birliktelik gösterildiği bilinmektedir.(2) Koroid görüntülemesi sayesinde vücudumuzun en zengin kapiller yapısı hakkında fikir elde edilmekte ve bu sayede hastalıklar ile ilişkisi değerlendirilebilmektedir. Koroid görüntülemesi EDI-OCT sayesinde non invaziv bir şekilde yapılmaktadır.(7) Ve CT ile bir çok hastalığın, ilaç ve etmenin ilişkili olduğu gösterilmiştir. Bunlara dekonjestan ve antihistamik ilaçlar, sigara içiciği ve Vogt-Kayanagi-Harada ve SSR hastalığı gibi hastalıklar örnek olarak gösterilebilir. Son dönemde CT'na ek olarak CVI koroid yapısı ile bu etmenler arasındaki ilişkiyi değerlendirmede kullanılmaktadır. Bu parametre ile koroidin LA'nın TCA'ya oranı hesaplanmakta ve koroid değişimleri hakkında daha önemli bir değerlendirme yapılmaktadır. (11) Obez bireylerde hiperlipidemi ve vasküler problemler ile ateroskleroz görülme sıklığının arttığı bilinmektedir. Özellikle CVI'nin lümen aleyhine

azaldığını gösterecek olan CVI'nin azaldığının gösterilmesi klinik kontrollerde non invaziv hızlı bir değerlendirme aracı olabilir. Ancak bu çalışmada normal vücut kitle indeksi ile CVI arasında kilolu ve tip 1 obez bireyler arasında istatistiksel olarak anlamlı fark bulunmamıştır. Öncül ve ark obez kadınlarda yaptığı çalışmada 197 gözde sadece morbid obez grubunda CT'nin diğer gruplara göre daha ince bulunduğu gösterilmiştir.(12) Aynı şekilde Teberik ve ark sadece morbid obezler ile normal VKİ verilerini incleediği çalışmada ise morbid obez grubunda CT'da anlamlı olarak azalma olduğu tespit edilmiştir.(13) Ancak yaptığımız çalışmada sadece tip 1 obez hastaların CVI'lerine bakıldığı için morbid obezlerin CVI'lerinde nasıl bir ilişki olduğunu söylemek mümkün değildir. Ancak şu hali ile de normal, kilolu ve tip 1 obezlerde CT arasında fark olmamasını önceki çalışmanın verileri ile çalışmamızın verilerinin uyumlu olduğunu göstermektedir. Temel E. ve ark yaptığı çalışmada ise 144 sağlıklı gönüllülerin gözleri incelendiğinde özellikle Tip 1 obez ve kilolu olan grupların CVI'si normal ve VKİ'i 18.5 altında olan gruba göre daha az olduğu görülmüştür.(14) Bu da özellikle LA'daki azalmadan kaynaklanmakta ve VKİ ile LA azalması ve dolayısı ile CVI'deki azalmanın kardiyovasküler yapıyı göstermesi açısından önemli olabileceğini göstermektedir. Ancak bu çalışmada Temel E. ve ark yaptığı çalışmanın aksine aşırı kilolu ve Tip 1 obezler ile normal VKİ sahip bireyler arasında fark tespit edilememiştir. Bunun sebebi çalışmaya katılanların az olması olabileceği gibi çalışmamızda VKİ 18.5 ve altında olanlar değerlendirilmemiş olması olabilir.

Çalışmamızın bazı önemli limitasyonları vardır. Bunlardan ilki çalışmaya VKİ 18.5 ve altı ile Tip 2 ve Tip 3 morbid obezler dahil edilmemiştir. Bu konuda bu gruplarında dahil edildiği ve daha fazla koroid görüntülerinin incelendiği çalışmalara ihtiyaç duyulmaktadır. Sonuç olarak çalışmamızda 3 farklı VKİ grupları ile CVI ve CT arasında istatistiksel olarak anlamlı fark bulunmamıştır. Ancak bu ilişkiyi değerlendirmek için daha geniş sayıda gönüllüler ile yapılmış ve tüm alt grupların bir arada değerlendirildiği bir çalışmaya ihtiyaç duyulmaktadır.

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Tablolar

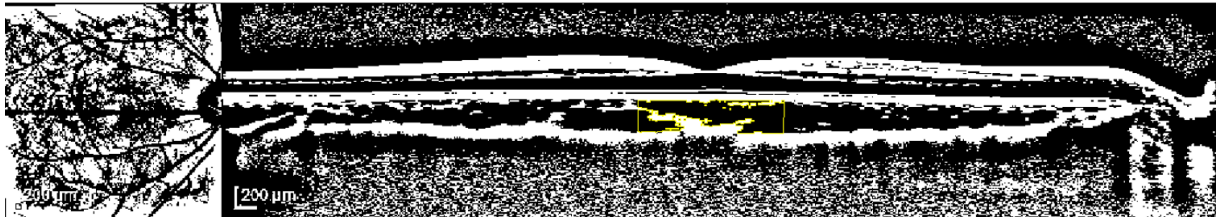
Tablo 1: Tüm parametrelerin gruplar arası değerlendirilmesi

	BMI 18-24,99 (n=29)		BMI 25-29,99 (n=31)		BMI 30-34,99 (n=30)		p
	Ort.	SS	Ort.	SS	Ort.	SS	
Yaş	35,72	16,78	37,48	12,39	44,50	13,25	0,010
Dioptri	0,09	0,54	-0,07	0,54	-0,02	0,51	0,461
EOCT	307,85	76,17	303,80	72,48	313,22	60,32	0,871
T500	291,21	73,49	282,30	65,53	300,65	48,70	0,530
T1000	285,13	63,28	273,31	63,36	285,90	50,87	0,652
T1500	275,86	66,47	257,80	58,98	284,12	50,89	0,210
N500	270,71	65,89	284,63	78,79	283,12	54,42	0,684
N1000	265,00	68,35	274,92	78,59	277,73	57,10	0,757

N1500	259,87	66,70	264,96	76,67	263,01	54,65	0,957
TCA	485127,61	147733,71	465223,91	132309,83	431263,64	113660,03	0,288
LA	375264,96	120602,70	349198,48	118704,67	324376,25	106965,41	0,341
SA	109862,64	51804,19	116025,43	68581,59	106887,39	80944,03	0,683
CVI	0,77	0,09	0,74	0,16	0,75	0,14	0,912
LA/SA	4,19	2,68	4,18	2,77	3,85	1,82	0,986

Resimler

Resim 1: Imaje J programı ile EDI-OCT görüntüsünde merkezi foveanın koroid alanının ikileştirilmesi



ID-91 / OP: “Continuous Renal Replacement Therapy with Low Concentration Sodium Citrate Solution: Our Experience in Pediatric Intensive Care Unit”

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Abstract (ID-91)

Introduction and Objectives: Continuous renal replacement therapy (CRRT) is widely used in pediatric intensive care. Regional citrate anticoagulation is a method that has become more preferred due to its longer filter lifespan and less hemorrhagic complications compared to systemic anticoagulation. This study aims to describe our experience in CRRT with low concentration citrate replacement solution (18 mmol/L)(LCCRS), which is more similar to the plasma content and has only a few published experiences in the pediatric critical care literature.

Materials and Methods: Nineteen critically ill children aged between 1 month to 18 years who were admitted to our PICU from January 2020 to August 2021 and received CRRT with LCCRS were included in this study.

Baseline patient demographics, admission reason to the pediatric intensive care unit (PICU), citrate loading dose, calcium infusion dose, filter lifespan, and dialysis sessions were recorded. Statistical analyzes were performed using SPSS 21.0 software. All numerical and categorical data were evaluated with descriptive statistical methods. The Mann-Whitney U test was used for numerical data that did not show normal distribution, and the Chi-Square test was used for the analysis of categorical data. Statistical significance was determined at $P < 0.05$.

Results: Ten (52.6%) male and 9 (47.3%) female patients were included in the study. The median age of the patients was 12 months (12–36[IQR]). The mean CRRT session duration of the patients was 3 days (± 0.95), the median filter lifespan was 68 hours (42–72[IQR]), the mean citrate loading dose was 2.4 (± 0.44) mmol/L, and the mean calcium gluconate dose was 0.48(± 1.5) mEq/kg/hr. Electrolyte imbalances (hypophosphatemia and hypokalemia) occurred in three patients during CRRT.

Each of the adverse events (citrate accumulation, epistaxis, and bleeding at the hemodialysis catheter incision site requiring fresh frozen plasma transfusion) were observed only in one of the patients. Due to LCCS use, sodium imbalance did not occur. Metabolic acidosis was detected only in the patient with citrate accumulation.

Conclusion: Regional citrate anticoagulation providing lower blood flow rates compared to systemic anticoagulation, therefore causes less hemodynamic imbalance, should be preferred if there is no contraindication. We think that citrate toxicity and electrolyte imbalances may decrease by using low concentration citrate solution. There is a need for multicenter prospective studies using different citrate solutions on patients.

Keywords: hemodiyafiltrasyon, rejyonel sitrat antikoagölasyonu, CRRT

ID-92 / OP: Oral Presentation: “Evaluation of the Effect of Plasma Application on the Surface Properties of Implant Materials”

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Abstract (ID-92)

Introduction: Commercially pure titanium is the most popular implant material (1). To increase the mechanical strength of the titanium, TiZr has been used because of better stability (2). Surface topography and chemistry of TiZr is similar to Grade 4 (3). In process of development, chemical properties of the surfaces were focused to improve vascularization and accelerate osseointegration between implants and host tissues (4). Plasma sources has been used for surface modification thereafter.

Plasma is defined as the fourth state of the matter which characterized with positive, negative ions and negatively charged electrons in a neutral gas background (5, 6) .Depending on the settings of plasma source used, provided potential benefits to implant surface and resulted in higher surface energy when applied before placement (7). This study was conducted to determine whether plasma application cause any difference in surface properties in Ti and TiZr implants.

Materials and Methods: Titanium and Roxolid SLA surface discs were used for study and divided to four groups which was Titanium(Ti), plasma treated titanium(Ti-Pl), Roxolid(Rox) and plasma treated Roxolid group(Rox-Pl).

Plasma treatment was carried out with a non-thermal atmospheric pressure plasma device. To examine the effect of plasma on surface chemistry, XPS test was performed. Measurements for surface roughness were performed with profilometer and samples were examined with SEM to observe surface topography.

Results: In both groups, an increase in O level and decrease in C levels have been seen after plasma. In general, both materials showed decreased C-C bonds, increased C-O and O-C=O bonds after plasma. Plasma increased surface roughness in both groups(Table 1). The roughness difference between Rox and Ti groups, which was seen at first, almost disappeared(Figure 1). Plasma application appeared to cause a slight increase in the appearance of irregular areas on the surface and the expansion and deepening of the pit appearance in SEM images(Figure 2).

Discussion and Conclusion: In studies with different plasma sources(8, 9), it was observed that oxygen concentration increased in accordance with our study. In two different studies, C level decreased after plasma in accordance with our study(10, 11). Reduced C amount in plasma groups shows that plasma is effective in removing carbon absorbed into the surface.

Previous studies with SLA surface have shown that the substrate composition can affect surface topography after surface treatment(12-14). Based on this scientific evidences, it can be explained that why the surface roughness of Roxolid was higher than Titanium in our findings.

SEM images in Ti and Rox groups showed that, while more holes and pitches observed on the surface of the Ti group, lamellar and needle-like structures were observed in Rox group in consistent with two studies which concluded that different properties in different materials is depend on its original microstructural properties(15) (16). We stated that Ra values had been increased by plasma application in these groups. This situation can be considered as the reflection of increased roughness level on SEM images.

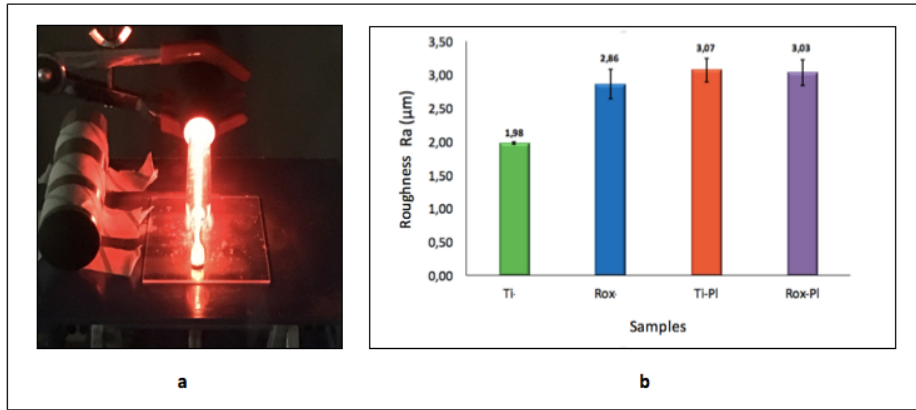
As a conclusion atmospheric pressure cold plasma can be used for surface modification without leading damage in implant surfaces.

Full-text (ID-92): “Plazma Uygulamasının İmplant Materyallerinin Yüzey Özellikleri Üzerine Etkisinin Değerlendirilmesi”

Giriş ve Amaç: Dental implantlar kayıp dişleri yerine koyabilmek için en çok tercih edilen tedavi seçeneklerinden biri olmuştur¹. Grade 4 Titanyumun osseointegrasyon kapasitesi, biyouyumluluğu ve üretiminin kolaylığı titanyumu en popüler implant materyali haline getirmiştir². Titanyumun mekanik dayanıklılığını arttırmak için ve daha iyi stabilite sağlamak için TiZr alaşımı kullanılmıştır³. %13-17 oranında Zr içeren Titanyum alaşımı (Roxolid®, Institut Straumann AG, Switzerland=TiZr), %13-42 oranında daha yüksek dayanım⁴ göstermiştir ve artmış korozyon direncine⁵ sahiptir. Yüzey topografisi ve yüzey kimyası ise TiZr ile Grade 4 Titanyum ile benzerlik göstermektedir⁶. Diş hekimliğinde dental implantlar gelişmeye başladığından beri, hızlı ve daha iyi osseointegrasyon sağlamak için birçok çalışma yapılmıştır. Gelişme sürecinde ise, damarlanmayı arttırmak ve implant ile konak doku arasında osseointegrasyonu arttırmak için özellikle implant yüzeylerinin kimyası üzerine yoğunlaşılmıştır⁷. Plazma kaynakları da bu gelişmeleri takiben yüzey modifikasyonu için kullanılmıştır. Plazma maddenin dördüncü hali olarak tanımlanır ve nötr bir gaz içinde pozitif, negatif iyonlardan ve negatif olarak yüklenmiş elektronlardan oluşmaktadır^{8,9}. Non-termal plazmalar (NTP) iyonizasyon ve plazma üretimi için ortam havasını kullanır ve soğuk plazma üreterek hızlı ve güvenli hasta başında uygulama sağlar. Kullanılan plazma cihazının ayarlarına ve kimyasına bağlı olarak implant yerleştirilmesinden önce uygulandığında yüzey enerjisinin artmasını sağlar¹⁰.Yüzeye plazma uygulaması fonksiyonel gruplar oluşturmak, ıslanabilirliği değiştirmek ve kontaminasyonu gidermek gibi avantajlar sağlar. Bu avantajla, plazma uygulamasını fiziko kimyasal özellikleri geliştirmek için

ideal ve etkili yüzey modifikasyonu metodu haline getirir^{11,12}. Bu çalışma plazma uygulamasının Ti ve TiZr implantların yüzey özelliklerinde herhangi bir değişime neden olup olmadığını belirlemek için yapılmıştır.

Gereç ve Yöntem: Titanyum ve Roxolid kumlanmış ve asitle pürüzlendirilmiş(SLA) yüzeyli diskler(5 mm çapında 1 mm yüksekliğinde)(Institut Straumann AG, Switzerland) kullanılarak Titanyum grubu(Ti), Plazma uygulanmış Titanyum grubu(Ti-Pl), Roxolid grubu(Rox) ve plazma uygulanmış Roxolid grubu(Rox-Pl) olmak üzere dört gruba ayrılmıştır. Ti-Pl ve Rox-Pl gruplarına plazma uygulaması ticari olarak bulunan atmosferik plazma cihazı (PlasmaOne, Plasma Medical Systems GmbH, Germany) kullanılarak 2 mm sabit mesafeden sabit bir düzenek kurularak diskler steril lamel üzerine koyularak PS12 numaralı plazma ucu ile 24 saat boyunca UV ışınıyla sterilize edilmiş kabinde yapılmıştır (Figure 1a).



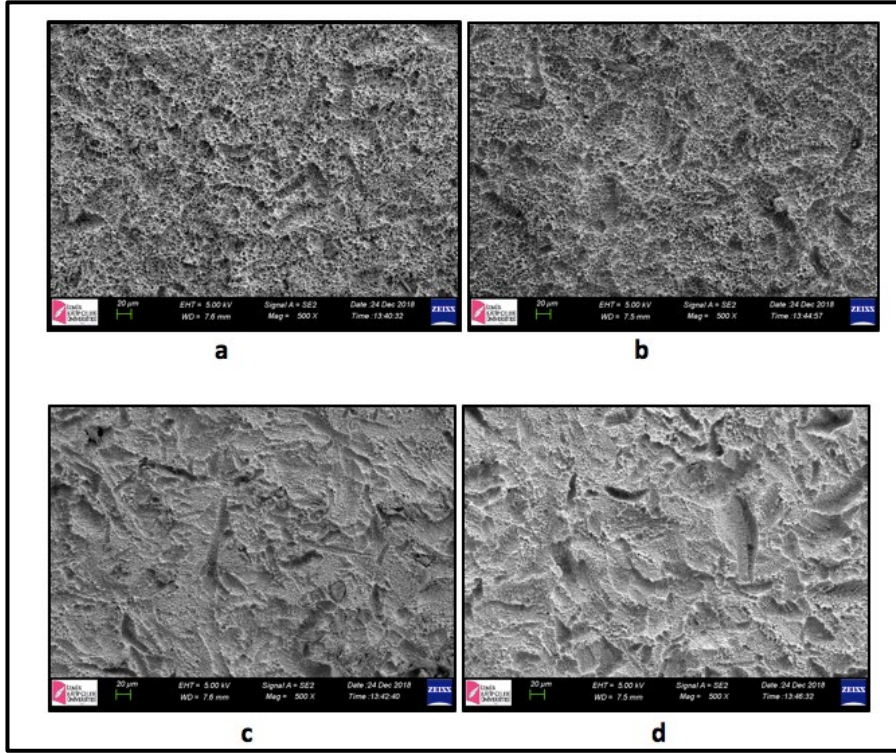
Şekil 1: Plazma uygulama düzeneği(a), yüzey pürüzlülüğü grafiği(b). Plazma uygulamasının yüzey kimyası üzerine etkisini değerlendirmek için, X-Işını Fotoelektron Spektroskopisi (XPS) Ege Üniversitesi Merkez Araştırma ve Teknik Analiz Laboratuvarında Thermo K-Alpha XPS (Thermo Fisher Scientific, West Palm Beach, FL, USA) cihazı ile yapılmıştır. XPS analizi her grupta bir diskte üç noktadan uygulanmıştır. Yüzey pürüzlülüğü analizi profilometre (Mitutoyo SurfTest, SJ-210, Kanagawa, Japan) ile IKCU Makina Mühendisliği Bölümü'nde her grupta bir disk için beş kez tekrarlanarak yapılmıştır. Örnekler SEM (Carl Zeiss Microscopy, Germany) ile 3KV artan voltaj altında altın ile (QUORUM, Q150 RES; East Sussex; United Kingdom) kaplandıktan sonra yüzey pürüzlülüğü ve topografisini incelemek için yapılmıştır.

Bulgular: XPS analizi O, C, N, Zr, Ti elementlerinin atomik kompozisyonlarını ve relatif peak densitelerini belirlemek için yapılmıştır (Tablo 1). Rox gruplarında Ti ve Zr elementlerinden oluştuğu için her iki elementi de bulundururken, Ti gruplarında sadece Ti elementi görülmüştür. Her iki grupta da, plazma uygulamasından sonra O elementinde artış görülmüştür. Plazma gruplarında azalmış C miktarı görülmüştür ve bu durum plazmanın yüzeye absorbe edilmiş C türlerini kaldırmada etkin olduğunu göstermiştir. C türlerinin kaldırılması temiz yüzey sağlar ve yüzey enerjisini artırır.

Samples	Atomic Compositions (%)					Relative Peak Intensity (%)		
	C	O	Ti	N	Zr	C-C	C-O	O-C=O
Ti	52,9	34,65	9,46	2,99	-	97,15	1,23	1,62
Ti-Pl	52,17	35,7	9,05	3,06	-	96,63	1,28	2,07
Rox	59,48	29,7	4,97	4,48	1,36	96,98	0,86	2,15
Rox-Pl	53,54	34,92	6,26	3,96	1,3	95,07	2,56	2,35

Tablo 1: XPS Analizi (Atomik kompozisyon ve rölâtif peak densiteleri)

Plazma uygulamasından sonra Ti grubunda C-C bağları azalırken, C-O ve O-C=O bağları artmıştır. Rox grubunda C-C bağları azalırken, C-O bağları ve O-C=O bağları artmıştır. Genel olarak, her iki materyalde de plazma uygulaması sonrası C-C bağlarında azalma, C-O ve O-C=O bağlarında artış görülmüştür. Plazma polar grupları arttırmış ve böylece yüzey hidrofilisitesini arttırmıştır. Yüzey pürüzlülüğü ölçümlerine göre, Roxolid materyalden yapılmış SLA yüzeyli implantlar Titanyumdan daha yüksek Ra değerine sahiptir(Figure 1b). Plazma uygulaması her iki grupta da yüzey pürüzlülüğünü arttırmıştır. Bu çalışmada görülen sonuçlara göre, plazma uygulaması titanyum yüzeyde daha fazla pürüzlülük değişimine neden olmuştur. Plazma uygulamasının sonucu olarak da ilk başta titanyum ve Roxolid yüzeylerde görülen pürüzlülük farkının uygulama sonrası neredeyse kaybolduğunu göstermiştir. Plazma uygulaması öncesi ve sonrası her iki materyal grubunda da SEM incelemesinde benzer görüntüler elde edilmiştir. Plazma uygulaması yüzeyde düzensiz alanların görünümünde hafif artışa ve çukur görünümünün derinleşmesine ve genişlemesine neden olmuştur (Figür 2).



Şekil 2: Ti yüzeyin plazma uygulaması öncesi (a) ve sonrası (b) Rox yüzeyin plazma uygulaması öncesi (c) ve sonrası (d) SEM görüntüleri

Tartışma ve Sonuç: Farklı plazma kaynakları ile yapılan çalışmalarda^{13,14} oksijen konsantrasyonunun arttığı görülmüştür. Bu sonuçlar bizim çalışmamızdaki artmış O seviyeleri ile uyum göstermektedir. Çalışmalarda farklı düzeylerde artış gözlenmesinin sebebinin plazma kaynaklarının gaz kompozisyonları ile ilişkili olduğu düşünülmüştür. Plazma uygulamasının O seviyesini arttırmasının sebebi yüzeyde oksijenden zengin fonksiyonel gruplar oluşturulmasıdır. Plazma uygulamasından önce ve sonra XPS analizi yapılan iki çalışmada da C seviyesinin azaldığı görülmüştür¹⁴⁻¹⁶. Kimyasal C sinyali havadaki karbon ile kontaminasyonu gösterir⁶ ve plazma uygulamasından sonra C seviyesinin her iki grupta da azalması plazmanın absorbe olan karbonu yüzeyden temizlemede etkin olduğunu gösterir. Bizim çalışmamızda 120 sn plazma uygulaması yüzey element kimyasını değiştirmiş ve bu değişim çoğunlukla C türlerinin kaldırılması ile sağlanmıştır¹⁷. Plazma ile yüzeydeki organik materyalin kaldırılması C-C ve C-H bağlarının kırılması ile sağlanır¹⁴. Önceki çalışmalarda C türlerinin kaldırılması ile yüzey enerjisinin arttığı çalışmamıza benzer olarak gösterilmiştir^{18,19}. Her grupta görülen eser miktarda N ise materyalin ölçüm öncesi hava ile kontaminasyonunu gösterir.

Titanyum ve Roxolid XPS de benzer bulunmuştur ve bu benzerlik her iki materyalin de monofazik fazda olması ve ikisinde de yüzey oksit tabakasının SLA özellik sebebiyle benzer olması ile açıklanabilir. XPS analizi yüzey elemental kimyasının plazma ile değiştirilebildiğini göstermiştir.

Bir çalışmada, Roxolid grubunda Sa değeri Titanyum grubundan yüksek bulunmuştur²⁰. Bu noktada sonuçlar bizim çalışmamız ile uyumludur. SLA yüzeyle yapılan önceki çalışmalarda substrat

kompozisyonunun yüzey modifikasyonu sonrası yüzey topografisine etki edebileceği gösterilmiştir²¹⁻²³. Ayrıca materyallerin sertlik ve partikül boyutu farkının da yüzey modifikasyonundan farklı etkilenmesine sebep olduğu gösterilmiştir²⁴. Bu kanıtlar ışığında, Roxolid materyalin yüzey pürüzlülüğünün fazla oluşu açıklığa kavuşmuştur. Yüzey pürüzlülüğü bu çalışmalara benzer olarak bizim çalışmamızda da plazma uygulaması sonucu artmıştır, artış miktarındaki farkların gaz kompozisyonuna bağlı olduğu düşünülmüştür.

Yüksek büyütmelelerdeki SEM görüntüleri Ti grubunda yüzeyde daha fazla oluk ve girintiler gözlenirken, Rox grubunda daha fazla lamellar ve iğne benzeri yapılar gözlenmiştir. Bizim çalışmamıza benzer şekilde bir çalışmada daha benzer görüntüler görülmüş ve farklı yüzeylerdeki farklı yapılar görünmesinin materyallerin farklı olan mikro yapısal özelliklerinden kaynaklandığını rapor etmişlerdir²⁵. Önceki çalışmalarda titanyum ve titanyum-zirkonyum yüzeylerin mikro düzeyde benzer ancak nano düzeyde farklı oldukları belirtilmiştir. Bu nano yapıların oluşma mekanizmaları tam olarak bilinmese de, asitleme ve kumlama süreçlerinin sonunda, materyalin oluştuğu malzemeye bağlı olarak yüzey oksit tabakasındaki farklılıkları yansıttığı düşünülmektedir²⁶. Plazma uygulamasından sonra düzensiz yapılar ve pürüzlülükler her iki grupta da minimal olarak artış göstermiştir. Plazma gruplarında Ti ve Rox gruplarına göre çukurcukların daha derin ve geniş olduğu gözlenmiştir. Daha önce Ra düzeylerinin de bu gruplarda plazma uygulaması sonucu arttığını gözlemlemiştik. Bu durum aynı zamanda SEM imajlarında görülen artmış pürüzlülük düzeyinin de bir yansımasıdır. Bizim çalışmamızla benzer olarak bir başka çalışmada farklı materyallerde plazma uygulaması sonucu SEM görüntülerinde artmış düzensizlikler gözlenmiştir²⁷. Aynı zamanda plazma uygulanan bir başka çalışmada farklı dört substrat üzerinde önemli değişimlere rastlanmamış sadece uygulama süresi arttırıldığında biraz daha pürüzlü yüzeyler gözlenmiştir¹⁴. Bu sonuçlar soğuk plazma uygulamasının yüzeyde anlamlı bir hasar ya da abrazyona neden olmadığını göstermiştir. Bir başka çalışmada ise pürüzlü zirkonyum yüzeylere atmosferik basınçlı helyum plazma uygulanmış ve bizim çalışmamıza benzer şekilde yüzey pürüzlülüğünde minimal artış görülmüştür²⁸. Sonuç olarak atmosferik basınçlı soğuk plazma uygulaması implant yüzeylerinde hasara neden olmasan yüzey modifikasyonunda kullanılabilir kanısına varılmıştır.

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ID-93 / OP: “The Role of Bone Sintigraphy in Muscle and Skeleton Lesions”

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Abstract (ID-93)

Introduction and Purpose: With the development of radiological imaging methods, significant progress has been made in the diagnosis and treatment of musculoskeletal diseases. Today, although more effective imaging methods are used besides bone scintigraphy, its importance is still emphasized in the diagnosis of certain lesions. Apart from scintigraphy, direct radiography, computed tomography, ultrasonography, magnetic resonance imaging are other frequently used diagnostic methods. The most important advantage of scintigraphy, which is one of the nuclear medicine methods, over other diagnostic methods is that it provides functional information. Bone scintigraphy, which is the basic nuclear medicine technique in the diagnosis of musculoskeletal disorders, has high sensitivity. We examined the scintigraphies obtained in musculoskeletal lesions followed in our clinic.

Materials and Methods: Demographic data, direct radiography, computed tomography, magnetic resonance imaging and bone scintigraphy, and pathology results of 52 patients hospitalized for differential diagnosis with a preliminary diagnosis of bone mass or inflammatory disease in the orthopedics and traumatology clinic were collected retrospectively. The diagnostic value of scintigraphy alone and its contribution to other diagnostic methods, and the results of bone scintigraphy according to pathology distributions were examined.

Results: Thirty-three (63%) of the patients were male and 19 were female (37%). The mean age was 38.7 in females and 45.1 in males. 28% of 52 cases were between the ages of 0-29. The youngest case was 3 years old and the oldest was 83 years old. Pathology results were obtained as 21 (43%) malignant bone tumors, 21 (43%) benign bone tumors, and 10 (14%) other diseases (chronic osteomyelitis, hydatid cyst, degenerative arthritis, etc.). Both acid phosphatase and alkaline phosphatase values were found to be normal in 6 of 21 patients with malignant bone tumors and 14 of 21 patients with benign bone tumors. There were 3 patients with an increase in activity in scintigraphy but no finding on x-ray, and 7 patients with a finding in x-ray but no increase in activity in scintigraphy. No finding was observed in both x-ray and scintigraphy in 1 patient.

Discussion and Conclusion: Benign-malignant or primary-secondary tumor differentiation cannot be made definitively with bone scintigraphy. Since the change in osteoblastic activity and bone blood

supply in the bone is reflected in the scintigraphy as an increase in activity, it provides an advantage to clinicians, radiologists and pathologists in the diagnosis and follow-up phase. In particular, 3-phase bone scintigraphy creates specific activity increase diagrams in certain diagnoses, which helps the clinician to create a differential diagnosis. Although more sophisticated radiological diagnostic methods that can be used with the developing technology gain importance and become widespread, the place of scintigraphy in diagnosis and follow-up has decreased, it is still used especially in the evaluation of metastatic musculoskeletal diseases.

Keywords: Scintigraphy, Acidphosphatase, Alkaline phosphatase, Musculoskeletal lesions

Full-text (ID-93): “Kas ve İskelet Sistemi Lezyonlarında Kemik Sintigrafisinin Yeri”

Giriş: Kas iskelet sistemi lezyonları, anatomik ve patofizyolojik özelliklerinden dolayı diğer vücut bölgelerindeki lezyonlara oranla daha düşük tedavi başarısına sahiptir. Tedavi genellikle uzun zaman, çok sayıda ameliyat, bazen de amputasyon gerektirir. Bu nedenle uygun tedaviye bir an önce başlamak ve ciddi komplikasyonlardan kaçınmak için tanının mümkün olan en kısa sürede ve doğru olarak tespit edilmesi gerekmektedir. Günümüzde radyolojik görüntüleme yöntemleri gelişmesi ile kas iskelet sistemi hastalıklarında tanı ve tedavide oldukça ilerleme sağlanmıştır.

Direkt grafi, bilgisayarlı tomografi, ultrasonografi, manyetik rezonans görüntüleme ve sintigrafi oldukça sık kullanılanlardır. Geleneksel radyografiler anatomik olarak genel bir bakış açısı sunarak sonraki prosedürün belirlenmesine rehberlik ettiğinden genellikle ilk tercih edilen görüntülemelerdir. Ancak genellikle %30–50 kemik kaybı olunca radyolojik olarak pozitif hale geldiğinden erken tanı mümkün değildir (1). Bilgisayarlı tomografi (BT) kompleks anatomi bölgelerinde direkt grafilere göre daha yararlıdır ancak kronik osteomyelit gibi kemik enfeksiyonlarında ve yumuşak doku lezyonlarında tanısal değeri sınırlıdır. Manyetik rezonans görüntüleme (MRG)’nin enfeksiyon gibi kemik lezyonlarını dışlamada negatif öngörü değeri çok yüksektir. Ancak anormal kemik iliği sinyali neden olabilecek diğer patolojileri ilgili tanıdan ayırt etme kabiliyeti yani pozitif öngörü değeri daha düşüktür. Ayrıca metalik implantlar kullanımını sınırlar. Ultrasonografi, kemik ve yumuşak doku lezyonlarında primer bir görüntüleme yöntemi değildir ancak MRG’nin kontrendike olduğu durumlarda ve ortopedik materyalleri bulunan hastalarda yararlı olabilir (2).

Radyolojik görüntüleme yöntemleri ile karşılaştırıldığında 1960’lı yıllardan bu yana aktif olarak kullanılan ve çeşitli etiyolojilerin aydınlatılmasında anahtar rol oynayan nükleer tıp yöntemlerinden biri olan bu tanı aracının en önemli özelliği fonksiyonel bilgi sağlamasıdır. Kas iskelet sistemi rahatsızlıklarının tanısında temel nükleer tıp tekniği olan kemik sintigrafisi yüksek duyarlılığa sahiptir. Tek foton emisyonlu tomografi (SPECT) görüntüleme tekniği kesitsel görüntüleme ile daha ayrıntılı anatomik lokalizasyon sağlar (3). Üç fazlı kemik sintigrafisi, kas-iskelet sistemi enfeksiyonlarının tanısında en yaygın olarak kullanılan radyonüklid görüntüleme yöntemidir. Tc-99 m ile işaretli difosfonatlar (metilen difosfonat ve hidroksi metilen difosfonat) ile uygulanır. Tutulum mekanizması,

difosfanatların amorf kemik mineral matriksini oluşturan hidroksiapatit kristallerine fizikokimyasal adsorpsiyon ile bağlanması şeklindedir. Radyofarmasötüğün kemik yapıda tutulum miktarı, bölgesel kan akımı ve osteoblastik aktivite ile ilişkili olarak yeni kemik oluşumuna bağlıdır (4).

Üç fazlı kemik sintigrafisinde ilk faz dinamik ‘perfüzyon’ fazı, ikinci faz ise perfüzyonun hemen ardından alınan statik görüntü ‘kan havuzu’ fazıdır. Üçüncü faz olan ‘iskelet’ fazı 2–4 saat sonra ilgili alandan elde edilir. Osteomiyelitte üç fazda da artmış radyoaktivite tutulumu gözlenir. Yumuşak doku enfeksiyonlarında ilk iki fazda tutulum mevcutken iskelet fazında tutulum olmaz. Kemik yapıyı tutan dejeneratif patolojiler gibi non-enfeksiyöz patolojilerde ise iskelet fazında tutulum olurken perfüzyon ve kan havuzu fazında normal bulgular izlenir. Üç fazlı kemik sintigrafisi kas-iskelet sistemi enfeksiyonlarını göstermede yüksek duyarlılığa sahiptir (tutulum yoksa enfeksiyon yoktur). Ancak osteoblastik aktivite kırık, geçirilmiş cerrahi, malignite, protez gevşemesi, metabolik kemik hastalığı gibi birçok durumda da artış gösterdiğinden özgüllüğü düşüktür. Kalça eklemi protezlerinden sonra en az iki yıl, diz eklemi protezlerinden sonra beş yıl kemik yapıda remodeling devam ettiğinden kemik sintigrafisi pozitif olabilir (5).

Üç fazlı kemik sintigrafisine ek olarak işaretli lökosit sintigrafisi yapılırsa kas iskelet sistemi enflamatuvar patolojilerinde tanı doğruluğu artmaktadır. Pozitron Emisyon Tomografisi/ Bilgisayarlı Tomografi (PET/BT), metabolik ve anatomik görüntülemeyi bir arada yapabilen nispeten yeni bir görüntüleme modalitesidir. PET/BT'nin kas iskelet sistemi enflamatuvar lezyonlarının değerlendirilmesinde kullanılabilirliği birçok çalışmada gösterilmiş olmakla birlikte günümüzde kullanımı tümöral lezyonlar ile sınırlıdır (3).

Materyal ve Metot: Ortopedi ve travmatoloji kliniğinde kemikte kitle veya inflamatuvar hastalık ön tanısı ile ayırıcı tanı için yatan 52 hastanın demografik verileri, direkt grafi, bilgisayarlı tomografi, manyetik rezonans görüntüleme ve kemik sintigrafileri ile patoloji sonuçları retrospektif olarak toplandı. Bu hastalar tanısal açıdan değerlendirildiğinde 21 malign tümör, 21 benign tümör ve 10 muhtelif vaka olarak sınıflandırıldı. Sintigrafinin tek başına tanısal değeri ve diğer tanı yöntemlerine katkısı, patoloji dağılımlarına göre kemik sintigrafi sonuçları, ayrıca belli tanılara sensitif ve spesifik olduğu düşünülen biyokimyasal markerlarla olan ilişkileri incelendi.

Bulgular: Hastaların 33’ü erkek (%63), 19’u kadın (%37) idi. Kadınlarda yaş ortalaması 38,7, erkeklerde 45,1 olarak bulundu. 52 vakanın % 28’i 0-29 yaş arasında idi. En genç vaka 3 yaş, en yaşlısı 83 yaşındaydı. Bunlardan 21’i (%43) malign kemik tümörü, 21’i (%43) benign kemik tümörü ve 10 tanesi (%14) diğer hastalıklar (kronik osteomyelit, kist hidatik, dejeneratif artrit vb.) olarak patoloji sonucuna ulaşıldı. Malign kemik tümörü tespit edilen 21 hastanın 6’sında ve benign kemik tümörü saptanan 21 hastanın 14’ünde hem asit fosfataz hem de alkalin fosfataz değeri normal olarak saptandı. Sintigrafide aktivite artışı saptanıp röntgende bulguya ulaşamayan 3 adet hasta, röntgende bulguya

rastlanıp sintigrafide aktive artışı saptanmayan 7 hasta tespit edildi. 1 hastada hem röntgende hem de sintigrafide bulgu izlenmedi.

Tartışma: Delbeke ve Habibian'ın belirttikleri gibi 3 fazlı kemik sintigrafisi farklı klinik patolojilerde kullanılabilir. Ancak oldukça spesifik tutulum patternleri olsa bile bir tanıya saplanmadan önce, klinik bilgiler temelinde yorumlanmalı, ayırıcı tanı düşünölmeli, en sonunda olası tanı bildirilmelidir (6).

İskelet sistemi sintigrafilerinde karakteristik patternlerin tanımı yapılırsa patolog ve radyoloğa daha güvenli tanı söyleme imkanı doğar. Ancak tümör patternlerinin her zaman aynı olmadığı, vakadan vakaya değışiklik gösterdiği bilinmelidir. Biz de 6 osteosarkom vakamızda bu özelliği gözledik.

Guan ve Chu'nun ayrıca İsrail ve arkadaşlarının ilk denemelerini yaptığı benign ve malign kemik lezyonlarında sintigrafik sayısal analiz ile ayırıcı tanıya gitme çabaları ümit vericidir, ancak bu tür çalışmalar klinik uygulamada zaman alıcı olması ve en önemlisi ayırıcı tanıda ek bilgiler vermemesi nedeniyle taraftar bulamamıştır (7,8).

52 vakamızdan sadece l'inde yalancı pozitif sintigrafi saptadık. Söz konusu vaka 65 yaşında erkek hasta travmatik sol subkapital kollum femoris kırığı tanısı ile bize müracaat etti. Radyografide herhangi bir patolojik zemin olmaması ve travma şiddetinin zayıflığı nedeniyle çektiğimiz kemik sintigrafisinde, kırık sahasının uzağında trochanter minör 'e uyan bölgede aktivite artışı saptadık. Operasyonda kalça protezi takılan hastanın pre-op incelemesinde de aktivite olan bölgeyi açıklayacak patolojiye rastlanmadı. Hem kırık sahasından hem de aktiviteye uyan bölgelerden aldığımız kemik parçalarının patolojisi normal kemik dokusu olarak geldi. Travmanın oluş mekanizması da böyle bir aktiviteyi açıklamıyordu. Son kontrolü post-op 8.ayda yapılan hastanın herhangi aktif şikayeti bulunmuyordu.

Sintigrafi (+) Röntgen (-) olan diğer vakalarımızın birisi tümör metastazı, diğeri ise anamnezinde travma öyküsü olan hastalarımızdı. Literatürde bu röntgen (-) iken sintigrafi (+) olan vaka sayısı oldukça fazladır. Bizim çalışmamızdaki bu çarpıcı sonuç, vakalarımızın muhtelif nedenlerden dolayı hastalığın terminal döneminde bize müracaat etmelerinden kaynaklanmaktadır.

52 vakamızdan 42 sinde asit ve alkalen fosfataz çalışması yapıldı. Literatürde asit ve alkalen fosfataz ölçümlerinin tümör teşhisinde değeri olmadığı bildirilmektedir. Bizde 18 malign kemik tümörünün sadece 10'unda alkalen fosfataz yüksekliği saptadık. Yine literatürde belirtildiği üzere asit fosfotaz prostat karsinom metastazlarında yüksek bulunur (9,10). Ancak bizim 3 vakamızda yüksek değerler gelmiş ve bu vakaların hiçbirinde prostat karsinomu saptanmadı.

Multiple myelomda bir seride lezyonun sintigrafik olarak görülmesi % 38-60, radyografik olarak %64-75 iken, bazı serilerde ise daha düşük oranlar belirtilmektedir. Bazı çalışmalara göre ise myelomatöz depozitlerin sintigrafide genellikle soğuk olur kavramı yanlıştır. Aktivite

kaybolmamış azalmıştır. Dolayısıyla çoğu lezyon sıcak görülmektedir. Bizim 2 vakamızda da radyografi ve sintigrafinin pozitif sonuç vermesi bu görüşleri doğrular niteliktedir (11).

Benign yumuşak doku tm'lerinde kan gölü fazı görüntüleri genellikle normal iken, geç imajlarda aktivite saptanır. Malign yumuşak doku tm'lerinde de geç imajlarda aktivite saptanırken, liposarkom, synovial sarkom, malign fibröz histiositom ve rabdomyosarkomda hem kan gölü hem de geç imajlarda aktivite görülmektedir (12). Biz patolojik tanısı lipom olan 5 vakamızda tm çapının küçük olması ve kalitesiz teknik gibi nedenlerle hiçbir aktivite göremedik. Diğer vakalarımızda literatüre uygun neticeler aldık.

Kemik sintigrafisi ile kemik metastazlarının erken saptanabileceği literatürde belirtilmesine rağmen biz sadece 1 vakada böyle bir fırsatı yakaladık. Hastaların bize geç gelmeleri, gelseler bile pahalı bir tetkik olmamasına rağmen yine karşılayacak maddi gücü bulamaması nedeniyle yeterli sayıda erken teşhiste kullanamadık.

Radyografi ile tanı konulabilen benign lezyonlarda sintigrafi gerekli değildir. Radyografi ile tanı konamıyorsa, osteomyelit şüphesinde, malign tm'lerde kırık iyileşmesi ve perthes takibinde, ayrıca multipl lokalizasyonlu olması muhtemel her türlü hastalıkta sintigrafi şarttır. Özellikle akut osteomyelit şüphesinde ilk istenecek tetkiklerden biri sintigrafi olmalıdır. Diğer vakalarda sintigrafinin yeri radyografiden sonra, BT'den öncedir. 3 fazlı kemik sintigrafisinin lezyonun vaskülaritesini, dolayısıyla malignitesini göstermede katkısı büyüktür. Ayrıca dinamik olayları (osteoblastik aktivite) yansıtması bazı vakalarda üstünlük sağlar.

Yoğun araştırmalar ve teknolojik gelişmeler nedeniyle tıpta kullanılmaya başladığı günlerden bu yana, önemli oranda kapsamını genişleten ve lezyonları saptamada, natürünü belirlemede radyolog ve patolog'a destek veren kemik sintigrafisi, gittikçe yaygın kullanım sahası bulmaktadır. Tetkikin makul fiyatlarda olması, işgücü kaybına neden olmaması, invaziv olmaması, radyasyon riskinin azlığı, bir defada tüm iskeletin taranması gibi özellikleri göz önünde bulundurarak, uygun endikasyonla da kullanıldığında çok faydalı bir tanı aracı olduğu kanısındayız.

Sonuç: Kemik sintigrafisi ile benign-malign veya primer-sekonder tümör ayrımı kesin olarak yapılamamaktadır. Osteoblastik aktivite ve kanlanmadaki değişikliği sintigrafide aktivite artışı olarak yansıttığından klinisyen, radyolog ve patoloğlara tanı ve takip aşamasında avantaj sağlamaktadır. Özellikle 3 fazlı kemik sintigrafisi belli tanılarda spesifik aktivite artış diyagramları oluşturmakta bu da klinisyenin ayırıcı öntanı oluşturmasına yardımcı olmaktadır.

Anahtar Kelimeler: Sintigrafi, Asit fosfataz, alkalen fosfataz, kas-iskelet sistemi lezyonları

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Tablolar

21 vaka	Malign	%43	Osteosarkom	6
			Epidermoid ca metastazı	4
			Sinovyal sarkom	2
			Kondrosarkom	2
			Karsinom metastazı	2
			Fibrosarkom	1
			Multiple myelom	1
			Plazmositom	1
			Meme karsinom metastazı	1
			Epidermoid karsinom	1
21 vaka	Benign	%43	Soliter kemik kisti	4
			Fibrom	3
			Lipom	3
			Enkondrom	2
			Anevrizmal kemik kisti	2
			Brown tümör	1
			Dev hücreli tümör	1
			Paget hastalığı	1
			Schwannom	1
			Nörofibrom	1
Diğerleri		%14	Pseudoanevrizma	1
			Kronik osteomyelit	2
			Kist hidatik	1
			Osteonekroz	1

Osteoporoz	1
Protez gevşemesi	1
Dejeneratif artrit	1
Normal	3

Tablo 1. Vakaların tiplerine göre dağılımı

A d	Yaş Cins	Lokalizasyon	X-Ray	Scan	BT	MRI	Anjio	Patoloji	Asit Fosfataz	Alkalen Fosfataz
1. M . K .	80 / E	Sağ radius	+	+				Kist hidatik	4,5	30
2. M . P .	41 / E	Sağ diz	+	+			+	Synovial sarkom	9,3	2,2
3. M . G .	60 / E	Sol humerus	+	+	+	+	+	Fibrosarko m	10	60
4. A . T .	65 / E	Sol kalça	+	+	+			Karsinom met.	41	41
5. M .	43 / E	Torakal vertabra	+	+	+			Multipl myelom	59	813

Ö

.

6. 65 / Sağ tibia + +

M E

Kr. 42 93

osteomyeli

t

.

K

.

7. 46 / Sol + +

Z E humerus

Epidermoi 50 95

d Ca met

.

T

.

8. 9 / E Sağ + +

Ö clavícula

Soliter
bone kist

.

P

.

9. 52 / Sol + +

H E humerus

Plazmosit 18 100
om

.

K

.

1 75 / Sol kalça + +

0. E

Osteoporo 7 34

z

İ.

A

.

1 31 / Sağ kalça + +

1. E

Epidermoi 44 70

d Ca met

IZ

.

B.

1	42	/	Sağ	+	+	+	Chondrosa	18	70
2.	E		humerus				rkom		
A									
.									
G									
.									
1	23	/	Sol ayak	+	+		Osteoid	24	51
3.	E						osteoma		
H									
.									
C.									
1	29	/	Sol fibula	+	+	+	Osteosark	16	53
4.	K						om		
A									
.									
K									
.									
15	17	/	Sol scapula	+	+		Nörofibro		
.P	K						m		
.									
T.									
1	23	/	Sol	+	+	+	Kr.osteomy	20	134
6.	K		clavicula				elit		
Z.									
D									
.									
1	21	/	Sol	+	+	+	Chondrosa	8	34
7.	K		humerus			+	rkom		
H									
.									
G									
.									

1 8. N . K .	55 / K	Sağ humerus	+	+	+	Osteosarko m	41	109
1 9. A . Ş.	83 / E	Sol humerus	+	+		Epidermoi d Ca met	51	30
2 0. C. P.	28 / E	Sol bacak	+	+		Fibrom	12	20
2 1. C. D .	17 / E	Sağ ulna	+	+		Soliter bone kist	75	23
2 2. R. B.	4 / E	Sağ femur	+	+		Anevrizma l bone kist	18	15
2 3. M . T.	35 / E	Sol diz	+	-		Lipom	12	18
24 .İ. K.	65 / E	Sağ omuz	+	-		Lipom	15	20

2 5. C. A .	31 /	Sağ uyluk	+	-		Fibrom	10	20
2 6. M . A .	68 /	Sağ uyluk	+	-		Fibrom	18	17
27 .İ. Ö.	20 /E	Sol fibula	+	+		Giant cell tm.	17	20
2 8. T. A .	18 /	Sol bacak	+	+	+	Schvanno m	18	25
2 9. O . A .	60 /K	Sol uyluk	+	-		Lipom	18	25
3 0. N . C.	35 /K	Sağ fibula	+	+		Anevrizma l bone kist		
3 1. Z.	18 /K	Sol kalça	+	+	+	Osteonekr oz		

M

.

3 61 / Sağ femur + + + Paget 13 92

2. K

M

.

K

.

3 65 / Sol ayak + + + Synovial 22 70

3. K

sarkom

Ş.

K

.

3 54 / Sol diz + + + +

Pseudoane
vrizma

4. E

A

.

T.

3 35 / Sağ el + - +

Dejeneratif
artrit

5. E

B.

E.

3 65 / Sağ omuz + + +

72 13

6. E

M

Epidermo
id Ca met

.

D

.

3 50 / Sağ femur + + +

22 38

7. K

Brown
tm.

H

.

Y

3	45	/	Sağ fibula	+	-	+	10	55
8.	K						Enchondro	
S.							m	
O								
.								
3	16	/	Sol humerus	+	+			
9.	K						Soliter	
A							bone kist	
.								
A								
4	53	/	Sağ humerus	+	+			
0.	K						Osteosark	
Y							om	
.B								
.								
4	3 / K		Sol tibia	+	+			
1.							Soliter	
F.							bone kist	
A								
4	40	/	Sağ clavicula	+	+		20	40
2.	E							
M							Enchondro	
.							m	
A								
.								
4	68	/	Sağ kalça	+	+			
3.	K						Protez	
N							gevşeme	
.							si	
H								
.								
4	11	/	Sağ fibula	+	+		Osteosarko	20
4.	K						m	33
N								

.B

.

4 49 / Sol iliak + +

18 20

5. E kemik

Y

Karsinom

.

met.

G

.

4 17 / Sağ humerus + + +

18 54

6. E

Osteosarko

S.

m

M

.

4 45 / Sağ el + + +

60 13

7. E

Epidermoi

M

d Ca

.T

.

4 33 / Sol fibula + +

Osteosarko

8. E

m

Z.

B.

4 30 / Sol femur - +

20 105

9. K

Meme Ca

G

met.

.B

.

5 40 / Sağ tibia - +

Normal

0. K

M

.E

.

5 46 / Sağ kalça - + Normal

1. K

H

.

D

.

5 53 / Sağ tibia - - Normal

2. E

A

.

K

.

Tablo 2. Vakaların demografik özellikleri, kan tetkikleri ve patolojik tanıları

Sintigrafi	Röntgen	Sayı	%
+	+	41	76,9
+	-	3	5,7
-	+	7	13,3
-	-	1	1,9

Tablo 3. Vakaların sintigrafi ve röntgen ilişkisi

Asit fosfataz	Alkalen fosfataz	Malign tümörlerde	Benign tümörlerde
Yüksek	Yüksek	4	-
Yüksek	Normal	4	1
Normal	Yüksek	7	6
Normal	Normal	6	14

Tablo 4. Tümör vakalarının asit fosfataz / alkalen fosfataz ilişkisi

ID-94 / OP: “The Importance of Salivary Cystatin C for Kidney Function Determination”

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Abstract (ID-94)

Introduction: Chronic kidney disease is a worldwide problem of utmost importance. Its incidence is around 11-13%. Glomerular filtration rate (GFR) is the one and only functional parameter that can show the correct level of kidney damage due to various diseases. Until recently measuring serum levels of creatinine and forming equations based on its levels is the most common method used for GFR calculation. Serum cystatin c level measurement also has potential compared to creatinine. We aimed to measure salivary levels of cystatin c to find out any possible relation with GFR calculation.

Materials and Methods: Total of 119 patients were participated in the study. Saliva samples of patients are collected via saliva collection kit. ELISA tests were run from serum samples being hold at -80oC following their thawing session. Patients are divided into two groups depending on their GFR values calculated based on their GFR their serum creatinine levels. Salivary results are compared with serum levels of cystatin c and GFR levels.

Results: Salivary cystatin c levels are not significantly correlated with serum cystatin c levels. When patients are divided into two groups with better and worse GFR values, salivary levels of cystatin c are not found to be significantly different between groups.

Conclusion: Salivary levels of cystatin c is not found to be a reliable and significant marker for calculation of GFR.

Keywords: Cystatin C, glomerular filtration rate, salivary, chronic kidney disease

ID-95 / OP-Case Rep.: “Renal Tuberculosis”

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Abstract (ID-95)

Introduction: Urogenital tuberculosis (TB) is the third most common form of extrapulmonary TB (after lymph node involvement and tuberculous pleural effusion). Urogenital TB occurs in 2 to 20 percent of individuals with pulmonary tuberculosis. Among patients with miliary disease, hematogenous seeding of the urogenital tract occurs in 25 to 62 percent of cases.

Materials and Methods: TB involving the kidney and urologic system has two forms. The classical presentation occurs most commonly; it primarily involves the urinary collecting system (including renal pelvis, calyces, ureters, and bladder). Less commonly, kidney parenchymal lesions occur, including interstitial nephritis and glomerulonephritis. Interstitial nephritis associated with tuberculosis is a rare condition.

Results: We reported bilateral renal masses in a clinical case of a 34 year-old patient with end stage kidney disease caused by renal tuberculosis is presented.

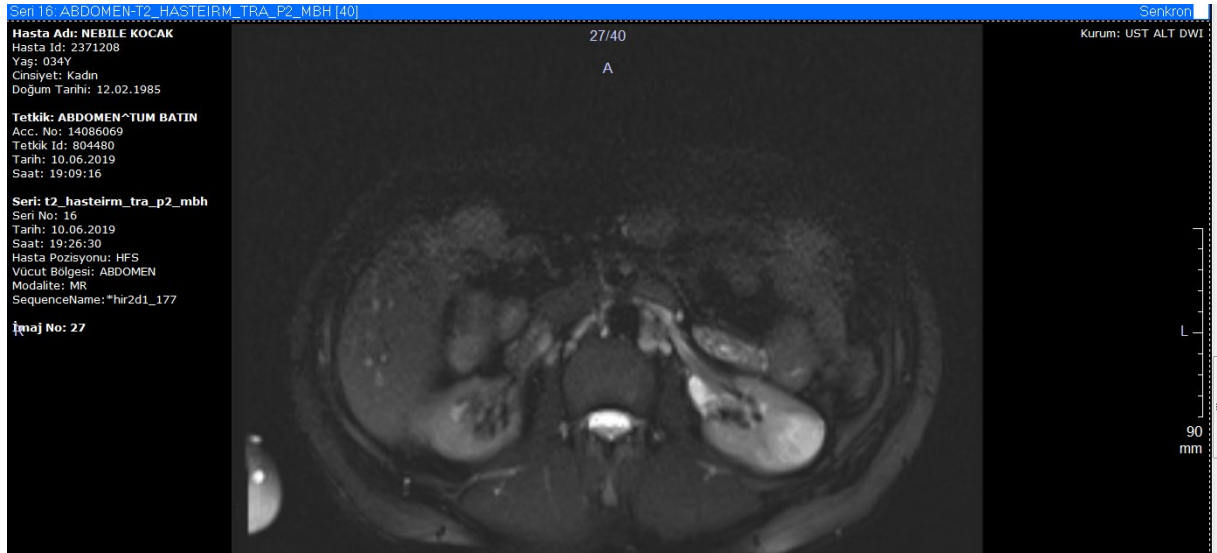
Keywords: Tuberculosis,

Full-text (ID-95)

Introduction: Urogenital tuberculosis (TB) is the third most common form of extrapulmonary TB (after lymph node involvement and tuberculous pleural effusion) [1]. Urogenital TB occurs in 2 to 20 percent of individuals with pulmonary TB [1-3]. Among patients with miliary disease, hematogenous seeding of the urogenital tract occurs in 25 to 62 percent of cases [1]. In one review including more than 9000 patients with TB, urogenital TB affected two males to each female, with a mean age of 40 years (range 5 to 90 years) [4]. Up to 50 percent of patients have radiographic evidence of past infection and 10 percent may have active infection [5]. TB involving the kidney and urologic system has two forms. The classical presentation occurs most commonly; it primarily involves the urinary collecting system (including renal pelvis, calyces, ureters, and bladder). Less commonly, kidney parenchymal lesions occur, including interstitial nephritis and glomerulonephritis. Interstitial nephritis associated with tuberculosis is a rare condition.

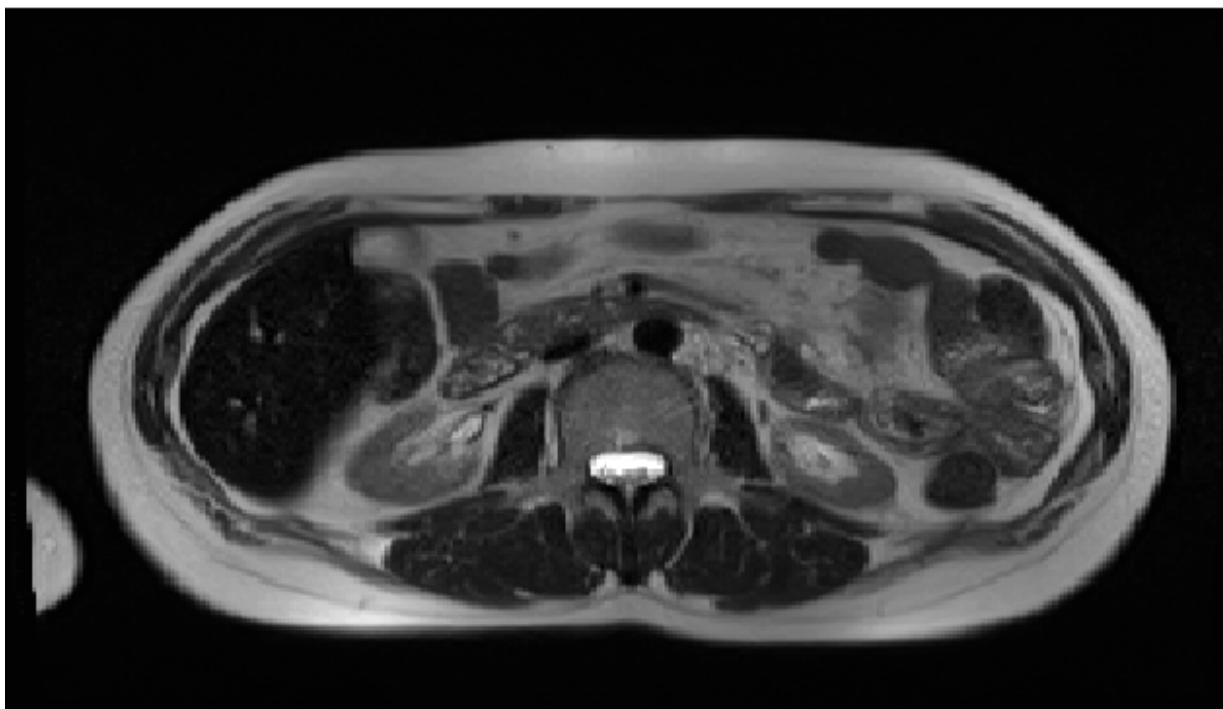
We reported bilateral renal masses in a clinical case of a 34 year-old patient with end stage kidney disease caused by renal tuberculosis is presented.

Case Report: A 34-year-old female patient with no significant past medical history ,was admitted to the hospital with the complaints of fatigue and lack of appetite. Physical examination revealed a temperature of 36.6 °C, blood pressure of 125/87 mmHg, pulse rate of 89 beats/min, and respiratory rate of 17 breaths/min. The clinical examination revealed no any pathology except hepato-splenomegaly. Laboratory values were as follows: Hg:9.6 , Urea:102mg/dl, Creatinin: 6.1 mg/dl, PTH:252 ng/L,ESR:95 mm/hour, ANA, ANCA tests was resulted as negative. The patient was hospitalized in nephrology service and hemodialysis was started to the patient with uremic symptoms and oliguria. The patient had not a remote history of positive purified protein derivative skin test results. Subsequent radiological examination using MRI of pelvis , upper and lower abdomen was performed and it was revealed; multiple semisolid lesions in both of kidneys, (maximum: 53 mm in diameter) and both kidneys were lobulated giving a radiological impression of chronic renal parenchymal disease. Bladder was normal and no hydronephrosis or wall thickening of the ureter was seen (Fig.1).



Renal biopsy was done two times and histologic examination of the mass showed granulomatous interstitial nephritis without necrosis and many histiocytes and diffuse tubular damage. Hereupon, the patient was subjected to further investigations. **Mantoux test** showed a mildly positive reaction :15 mm induration (suggestive for end-stage kidney disease). Urine PCR was negative for *Mycobacterium tuberculosis*. Then, treatment for tuberculosis was started. The initial regimen consists of four drugs (isoniazid, rifampin, pyrazinamide, and ethambutol) for 2 months, followed by two drugs (isoniazid, rifampin) for 4 months.

After the 6-month tuberculosis therapy, MRI control was done and it was revealed only signs of chronic renal disease. All of solid lesions had been disappeared. (Fig.2).



Renal functions had not been improved and 3 days/week hemodialysis was continued.

Conclusion: Pseudotumoral presentation of renal tuberculosis is very rare and it should be suspected when atypical renal masses are seen in countries with a high prevalence of TBC. It has preventable complications if timely diagnosis and treatment is established and so, in order to avoid outcomes such as renal failure, clinicians should be aware of the signs and symptoms of renal TBC .

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ID-97 / OP: “Trauma as A Rare Cause of Basal Ganglion Hemorrhage: A Case Series and Literature Review”

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Abstract (ID-97)

Introduction and Aim: Traumatic basal ganglia hemorrhages (TBGH) are a rare cause of traumatic brain injury (TBI). Due to their location in the brain, they are likely to be confused with hypertensive BGH but both entities can be distinguished from each other by certain characteristics. Our purpose with following case series to draw attention to the differential diagnosis of BGH and show the clinical diversity of the symptoms and prognosis. We also aimed to highlight an important point about the significance of accurate diagnosis for medicolegal approach.

Case-1: A 19-year-old male patient admitted to our hospital due to sudden loss of consciousness after a motorcycle accident. He had no past medical history. Laboratory tests and vital signs were normal. Blood drug panel was negative. Neurological examination revealed a GCS of 3. Brain CT showed a 55x25 mm hematoma at the left putamen and 14mm left sided midline shift. CT angiography (CTA) was normal. He had a decompressive craniectomy for his midline shift and control brain CT showed improvement. Despite of the improvement in neurological status, he died due to pneumosepsis.

Case-2: A 33-year-old male patient admitted to our hospital with a severe TBI after a car accident. He had no past medical history. Laboratory tests and vital signs were normal. Drug panel was negative. Neurological examination revealed a GCS of 10. Brain CT showed a 35x20 mm wide hematoma in the right BG and right frontal deep white matter. CTA was normal. He was discharged with mild neurological deficits.

Case-3: A 22-year-old female patient admitted to our hospital with a severe TBI after a car accident. She had no past medical history. Laboratory tests and vital signs were normal. Drug panel was negative. The patient immediately intubated due to her low GCS score. Brain CT revealed a 20x20mm hematoma at the right insular cortex and BG. CTA was normal. Diffusion MRI findings were compatible with

diffuse axonal injury. Her neurological status remained stable and she was discharged with a diagnosis of organic mental disorder.

Discussion and Conclusion: All three cases reported hereby were young and had distinct anamnesis of head trauma related to traffic accident. They had no pathology that can cause hemorrhage both in vital signs and in laboratory tests, and CTAs showed no vascular abnormality. In line with these findings and anamnesis, the cerebral hemorrhages of these patients were considered as traumatic.

TBGH constitutes about 3% of all traumatic intracerebral hemorrhages and they are thought to occur as a result of ruptures caused by acceleration/deceleration forces on lenticulostriate artery (LSA) and anterior choroidal artery (AChA). They can be distinguished from hypertensive BGH since it is observed in younger generation, seen concomitantly with DAI, and tend to be limited to gray matter.

Treatment and follow-up strategies may be problematic if other concurrent TBI symptoms are overlooked, and etiological factors are not clearly determined. Especially in young patients, in the absence of common etiological factors such as vascular abnormalities, hypertension or bleeding diathesis, the history of trauma should be questioned. Elucidating the causality between trauma and BGH is crucial for the correct treatment, effective follow-up and medicolegal approach.

Keywords: Basal ganglia, hemorrhage, trauma

Full-text (ID-97)

Introduction: Intracranial hemorrhages (ICH) are divided into two groups as spontaneous (non-traumatic) and traumatic [1]. Spontaneous ICH are more commonly seen in the elderly population due to its hypertensive etiology [2]. Traumatic basal ganglia hemorrhage (TBGH) is defined as a hemorrhagic lesion located in the basal ganglia, internal capsule or thalamus. It's a rare condition seen in only 3% of patients who admitted to the emergency department with closed head trauma while the incidence is higher in post mortem studies [3]. The mechanism is unclear however it is believed to arise from mechanical disruption of the lenticulostriate or anterior choroidal vessels as a result of trauma [4]. Prognosis is variable and depends on many factors while treatment strategies are quite different from spontaneous ICH [5]. We here present three patients with TBGH to emphasize that basal ganglion hemorrhages' clinical features can vary and if there are none of the common etiological factors such as vascular pathology, hypertension or bleeding diathesis, the history of trauma should be questioned, when detected.

Case-1: A 19-year-old, right-handed male patient was transferred to our hospital due to the sudden loss of consciousness after a motorcycle accident. The accident occurred due to another vehicle hitting the patient's motorcycle. He was intubated in the admission. He had no past medical history including drug abuse or neurological diseases and laboratory tests were normal. Blood drug panel was negative. His vital signs were within normal ranges. Neurological examination revealed a GCS of 3. Brain CT

showed a 55x25 mm wide hematoma at the left putamen and 14 mm left sided midline shift. No vascular pathology was detected in CT angiography. He had a decompressive craniectomy for his midline shift and control brain CT showed improvement. After that he diagnosed as aspiration pneumonia and received long-term antibiotic therapy. Despite of the improvement in neurological status, the infectious parameters increased, and the patient died due to pneumosepsis.

Case-2: A 33-year-old, right-handed male patient was admitted to our hospital with a severe traumatic brain injury due to a car accident while the patient was on the passenger seat. He had no past medical history including drug abuse or neurological diseases and laboratory tests were normal. Drug panel was negative. His vital signs were within normal limits. Neurological examination revealed a GCS of 10. Brain CT showed a 35x20 mm wide hematoma in the right basal ganglia and right frontal deep white matter. CT angiography was normal. He was operated on for his bone fractures and discharged with mild neurological deficits.

Case-3: A 22-year-old, right-handed female patient was admitted to our hospital with a severe traumatic brain injury after a car accident while the patient was on the passenger seat. She had no past medical history including drug abuse or neurological diseases and laboratory tests were normal. Drug panel was negative. Her vital signs were within normal limits. The patient immediately intubated due to her low GCS score. Brain CT revealed a 20x20 mm wide hematoma at the right insular cortex and basal ganglia. CT angiography was normal. After extubation the patient became desorientated and had left hand tremor. Diffusion MRI showed hyperintense lesions in the corpus callosum splenium and genu, also petechial hemorrhages were detected in the left lentiform nucleus. The clinical and radiological finding was compatible with diffuse axonal injury. Her neurological status remained stable and she was discharged with a diagnosis of organic mental disorder.

Discussion: We presented three TBGH patients above with variable clinical features due to hemorrhages that are located in different regions of the brain to emphasize that one of the known etiological factors for basal ganglion hemorrhages is head trauma. Distinguishing TBGH from non-traumatic basal ganglion hemorrhages constitutes high importance for why the treatment strategies differ from non-traumatic types and determining the causality between trauma and hemorrhage is also crucial for the medico-legal approach[6,7].

Traumatic brain injury (TBI) is a serious condition that causes up to one thirds of trauma related deaths and has two types namely primary and secondary TBI [1]. Primary TBI is related to direct mechanical injury caused by trauma such as intraparenchymal hemorrhage, subdural or epidural hemorrhage and diffuse axonal injury. On the other hand secondary TBI is an overall condition that is related to the pathologies causing primary injury and includes disruption of blood-brain-barrier (BBB), disruption in CSF circulation, release of reactive oxygen radicals, inflammation, excitotoxicity, and metabolic dysfunction in neurons [8]. The most common cause of TBI is traumatic intracranial hemorrhage (TICH)

which are caused by trauma related shear strain, rotation, and rupture in intracerebral arteries and veins. They are most frequently observed in frontotemporal white matter, and rarely in basal ganglia [9,10]. Common trauma related intracranial extraaxial hemorrhages are epidural, subdural, and subarachnoid hemorrhages whereas trauma related intracranial intraaxial pathologies examined in four groups namely intracerebral hematoma, parenchymal contusion, traumatic axonal injury, and brain stem injury [11]. While TBGH constitutes about 3% of all TICH, bilateral TBGH is extremely rare and limited to case reports [12]. These type of hemorrhages are thought to occur as a result of ruptures caused by acceleration/deceleration forces on lenticulostriate artery (LSA) and anterior choroidal artery (AChA) that are formed during trauma [4] and can be distinguished from hypertensive hemorrhage since it is observed in younger generation, is seen concomitantly with limited or diffuse axonal injury symptoms, and is tend to be limited to gray matter. [13,14]. TBGH has a better outcome compared to primary hypertensive basal ganglion haemorrhages [5,14] but also have a risk of secondary traumatic brain injury since it is possible to expand within the first 24 hours following the traumatic incident [9,13]. Since the location of these type of hemorrhages is close to the ventricles, TBGH carries the high risk of impaired CSF circulation and increased intracranial pressure syndrom by widening into the ventricles. Size of hematoma (especially >2cm in diameter classified as large hematoma) [15], concurrent bleeding disorders, concomitant traumatic axonal injury, hemorrhage in brain stem or ventricles, age 60 or older, initial abnormal pupil response, anamnesis of serious head trauma, and abnormal motor response to painful stimuli indicate poor prognosis in TBGH [9,16–18].

All three cases reported hereby were young and had distinct anamnesis of head trauma related to traffic accident. They had no pathology that can cause hemorrhage both in vital signs and in laboratory tests, and CT angiographies showed no vascular abnormality. None of the 3 patients were drivers of the vehicles that was the main cause of the accident. All these findings and detailed anamnesis made us think that the cerebral hemorrhages of the patients most likely occurred due to trauma. Especially the MR images of Case 3 showed ischemic lesions at corpus callosum and left temporal lobe, and petechial hemorrhages at right lentiform nucleus which suggest traumatic axonal injury and thus supports trauma related hemorrhage diagnosis [9,19].

After admission to ICU, all three patients showed different prognoses. Case 1 may be considered to be the patient who has the poorest prognosis among all three since his hemorrhage is larger compared to others, expanded rapidly and required decompressive surgery by causing a midline shift. Otherwise in Case 3, despite of her relatively small sized bleeding, concomitant diffuse axonal injury caused permanent mental problems. In Case 1, cerebral hemorrhage was not directly responsible for the patient's death but multiple pathologies related to major traumatic event that require ICU monitoring, complicated the patient's clinical picture.

Although rare, when TBGH are detected, it is important to distinguish them from primary basal ganglion bleedings not only for applying accurate treatment and foreseeing the prognosis but also for medico-legal aspect [20]. When faced with patients with pathologies that occur after traffic accidents, there is a requirement to prepare a forensic report about the incident. Because being a physician requires not only treating the existing pathologies but also identifying the conditions may cause the pathology and this is only the one of our biggest responsibilities in the social order.

Conclusion: TBGH is a rare clinical entity but can have poor prognosis. Despite having better prognosis compared to primary hypertensive basal ganglion hemorrhage; the treatment and follow-up of TBGH may be problematic if it is not well known, other concurrent traumatic brain injury symptoms are overlooked, and if etiological factors are not clearly determined. When basal ganglia bleeding is encountered, especially in young patients, in the absence of well known etiological factors such as vascular pathology, hypertension or bleeding diathesis, the history of trauma should be questioned. Elucidating the causality between trauma and brain hemorrhage is crucial for correct treatment, effective follow-up and medico-legal approach.

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ID-99 / OP: “Trauma as A Rare Cause of Basal Ganglion Hemorrhage: A Case Series and Literature Review”

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Abstract (ID-99)

Introduction and Objective: High flow nasal cannula oxygen therapy (HFNC), which is given as heated and humidified, is a method that is increasingly used in children with respiratory distress all over the world. In our study, we aimed to evaluate the change in vital signs, the effectiveness of the treatment and the success of the treatment in patients who received high-flow nasal cannula oxygen therapy for respiratory distress and respiratory failure in the pediatric emergency service and pediatric intensive care unit.

Material and Methods: 191 cases aged between 1 month and 18 years who were followed up in the Pediatric Emergency Service and Pediatric Intensive Care Unit between 1 month and 18 years of age, and whose data were available, were included. GCS, DSS, mRDAI score, KTA, SpO₂, S/F ratio of the cases before and 1 hour after HFNCO were recorded. Demographic characteristics of the patients, HFNCO indication, underlying chronic diseases, treatment success, duration of treatment, length of hospital stay, and mortality were recorded in the data recording form. The cases that needed NIMV and IMV under HFNCO treatment were considered unsuccessful. The patients who were discharged from the HFNCO treatment were considered successful. Statistical analysis was performed with the Statistical Program Social Sciences (SPSS) 26 package program.

Results: 191 cases included in the study, 121 (63,4%) were male and 70 (36,6%) were female. The mean age was 37,53±51,89 months. The mean body weight was 13,51±11,07 kg. The most common indication for HFNCO treatment was bronchopneumonia (n=83, 43,5%). According to HFNCO treatment indication, the 3 most successful patient groups were asthma (100%), croup (100%) and acute bronchiolitis (98%). While 53,4% (n=102) of the cases had an underlying chronic disease, the most common chronic disease (18,6% n=19) was chronic lung disease/bronchopulmonary dysplasia. HFNCO treatment was successful in 81,7% (n=156) of the cases. In all cases, a significant difference was

observed in heart rate, respiratory rate, SpO₂, GCS, mRDAI score, SpO₂/FiO₂ at the first hour of HFNCO treatment ($p<0.05$). In 156 patients who were successful in HFNCO treatment, a significant difference was observed in heart rate, respiratory rate, SpO₂, GCS, mRDAI score, SpO₂/FiO₂ at the first hour of treatment ($p<0.05$). There was a significant difference in GCS at the first hour of treatment in 35 patients who failed HFNCO treatment ($p<0.05$). When the 1st hour blood gas parameters of the cases who were successful in HFNCO treatment were examined, a statistically significant difference was observed in the pH, pCO₂, HCO₃ and lactate values ($p<0.05$). When the 1st hour blood gas parameters of the patients who failed HFNCO treatment were examined, a statistically significant difference was found in the lactate value ($p<0.05$). When the successful and unsuccessful groups were compared in terms of length of hospital stay, a statistically significant difference was found between them ($p<0.05$). During HFNCO treatment, 28 (14,7%) of 191 cases required invasive mechanical ventilation, 7 (3,7%) required non-invasive mechanical ventilation. No case died during HFNCO treatment.

Conclusion: HFNCO treatment; it is a non-invasive, simple, effective, easily tolerated oxygen delivery method by children. However, more comprehensive, randomized and controlled studies are needed to determine its safety and efficacy more precisely, to know the factors affecting the failure of HFNCO treatment, to provide early transition to other treatment modalities, and to reduce the length of hospital stay and cost.

Keywords: Child, respiratory distress, high-flow nasal cannula oxygen

Full-text (ID-99): “Çocuk Acil Serviste ve Çocuk Yoğun Bakım Ünitesinde Yüksek Akımlı Nazal Kanül Oksijen Tedavisinin Etkinliğinin Değerlendirilmesi”

Giriş ve Amaç: YANKO kullanım endikasyonlarını, hastaların demografik verilerini, yaşamsal bulgulardaki değişikliklere etkisini, altta yatan kronik hastalık durumunun kullanıma etkilerini, YANKO kullanım süresini ve hastanede kalış süresine etkilerini, kan gazı parametrelerindeki değişimi ve etkinlik değerlendirilmesini, başarısızlığı öngörebilecek faktörleri belirleyip daha erken diğer tedavi modalitelerine geçişi ve geniş kullanım alanlarındaki başarısını belirtmeyi amaçladık.

Çocuklarda solunum yolu hastalıkları sık acil servis başvurularındandır. Takipne, taşikardi, hipoksemi solunum sıkıntısını gösteren başlıca parametrelerdir. Standart oksijen tedavisine her zaman yanıt vermeyen ve akut bronşiolit, pnömoni, astım, entübasyon öncesi/sonrası oksijenizasyon, trakeostomi durumu gibi birçok patolojide nazofarengeal ölü boşluğu azaltmak, ventilasyon ve oksijenizasyonu sağlamak amaçlı YANKOT ile ısıtılmış ve nemlendirilmiş oksijen, geniş bir nazal kanül yoluyla yüksek akım hızında ve oksijen konsantrasyonu belirlenerek verilebilmektedir.

Gereç ve Yöntem: Çalışmamız tek merkezli retrospektif kohort çalışma olarak dizayn edilmiştir. Çalışmaya kurumumuzda Çocuk Acil Servis ve Çocuk Yoğun Bakım Ünitesinde 1 Ekim 2018-1 Temmuz 2020 tarihleri arasında takip edilen 1 ay-18 yaş arası yüksek akımlı nazal kanül oksijen tedavisi uygulanan 194 olgudan, verilerine ulaşılan 191 olgu dahil edilmiştir. Olguların YANKOT öncesi ve 1 saat sonrası GKS, DSS, Mrdaı skorları, KTA, SpO₂, S/F oranları kaydedildi. Veri kayıt formlarına hastaların demografik özellikleri, kronik hastalıkları, tedavi başarısı, süresi, hastanede kalış süreleri, sonlanım durumları kaydedildi. İstatistiksel analiz SPSS 26 programı ile yapıldı.

Bulgular: Çalışmaya katılan 191 hastadan 156'sında YANKO tedavisi başarılı olarak değerlendirilirken, 35 hastada ise YANKO tedavisi başarısız olmuştur ve hastalarda NIMV veya IMV gereksinimi olmuştur. 191 hastadan 49'u (%25,7) akut bronşiolit, 83'ü (%43,5) bronkopnömoni, 16'sı (% 8,4) lobar pnömoni, 6'sı (%3,1) astım, 2'si (%1) krup, 14'ü (%7,3) sepsis, 6'sı (%3,1) status epilepticus, 6'sı (%3,1) postekstübasyon, 9'u (%4,7) bunlar dışındaki diğer tanılar ile YANKO tedavisi aldı. 191 hastanın yaş ortancası 13 ay olup, en küçük yaş 1ay, en büyük yaş 204 aydır. Olguların 121'i (%63,4) erkek, 70'i (%36,6) kadın cinsiyettedir. Olguların ortalama ağırlık ortancası 10 kg olup, en küçük ağırlık 3 kg, en büyük ağırlık 60 kg'dır. Hastalarımızın 19 (%9,9)'u kronik akciğer hastalığı/bronkopulmoner displazi, 16 (%8,4)'sı hisli çocuk, 7 (%3,7)'si astım, 3 (%1,6)'ü kistik fibrozis, 9 (%4,7)'u ipotonik infant, 17 (%8,9)'si serebral palsy, 7 (%3,7)'si epilepsi, 4 (%2,1)'ü kas hastalığı, 2 (%1)'si konjenital kalp hastalığı, 13 (%6,8)'ü metabolik/genetik hastalık, 3 (%1,6)'ü malignite, 2 (%1)'si kronik böbrek yetmezliği ile takipliydi. Hastalarımızın 89 (%46,6)'unda altta yatan kronik hastalık öyküsü yoktu. Akut bronşiolit nedeni ile YANKO tedavisi alan 49 hastanın 48 (%98)'inin, bronkopnömoni nedeni ile YANKO tedavisi alan 83 hastadan 65 (%78,3)'inin, lobar pnömoni nedeni ile YANKO tedavisi alan 16 hastadan 12 (%75)'sinin, astım nedeni ile YANKO tedavisi alan 6 hastadan hepsinin (%100), krup nedeni ile YANKO tedavisi alan 2 hastadan hepsinin (%100) , sepsis nedeni ile YANKO tedavisi alan 14 hastadan 8 (%57,1)'inin, status epilepticus ile YANKO tedavisi alan 8 hastadan 2 (%33,3)'sinin, postekstübasyon YANKO tedavisi alan 6 hastadan 5 (%83,3)'inin, diğer endikasyonlar ile YANKO tedavisi alan 9 hastadan 8 (%88,9)'inin tedavi sonucunun başarılı olduğu görüldü. Hastaların YANKO tedavisi ortalama süresi 2 gün, en az 1 en fazla 39 gün, hastanede yatış ortalama süresi 5 gün, en az 1 en fazla 390 gün olarak saptandı. Başarılı ve başarısız gruplar YANKO tedavi süresi açısından karşılaştırıldığında aralarında istatistiksel olarak önemli fark görülmedi (p=0,377). Başarılı ve başarısız olan gruplar hastanede yatış süresi açısından karşılaştırıldıklarında aralarında istatistiksel olarak önemli fark görüldü (p=0,000). Altta yatan kronik hastalığı olan ve olmayanlar YANKO tedavi süresi açısından karşılaştırıldıklarında aralarında istatistiksel açıdan önemli bir fark yokken (p=0,921), hastanede yatış süreleri açısından karşılaştırıldığında aralarında istatistiksel açıdan önemli bir fark vardı (p=0,000). Olguların laboratuvar değerlerinde; Lökosit (WBC) ortancası 13 300 /mm³, Mutlak nötrofil sayısı (MNS) ortancası 7 950 /mm³, Mutlak lenfosit sayısı (MLS) ortancası 3 169 /mm³, Hemoglobin (Hgb) ortalaması 11,23±1,74 g/dL, Platelet (Plt) ortancası 339 000 /mm³, C-reaktif protein (CRP) ortancası 1

mg/L, sodyum (Na) ortancası 137 mEq/L, potasyum (K) ortancası 4,4 mEq/L, kalsiyum (Ca) ortancası 9,3mg/dL, üre ortancası 19 mg/dL, kreatinin ortancası 0,24 mg/dL, glukoz ortancası 116 mg/dL olarak bulunmuştur. Hastaların YANKO tedavi başlangıcındaki solunum sayısı dakikada minimum 20, maksimum 90, ortanca 52 idi. YANKO tedavisi başlangıcından 1. saatine kadar solunum sayısındaki değişim incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,000$). Hastaların YANKO tedavi başlangıcındaki kalp tepe atımı minimum 70, maksimum 222, ortanca 145 idi. YANKO tedavisinin başlangıcından 1. saatine kadar kalp tepe atımı değerlerindeki değişim incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,000$). Hastaların YANKO tedavi başlangıcındaki SpO2 minimum 70, maksimum 100, ortanca 94 idi. YANKO tedavi başlangıcından 1. saatine kadar SpO2 değerleri incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,000$). Hastaların YANKO tedavi başlangıcındaki GKS ortalaması minimum 7, maksimum 15, ortanca 15 idi. YANKO tedavi başlangıcından 1. saatine kadar GKS değerleri incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,012$). Hastaların YANKO tedavi başlangıcındaki S/F oranı minimum 118, maksimum 320, ortanca 189 idi. YANKO tedavi başlangıcından sonuna kadar S/F oranı incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,000$). Hastaların YANKO tedavi başlangıcındaki mRDAI skoru minimum 3, maksimum 10, ortanca 6 idi. YANKO tedavi başlangıcından 1. saatine kadar mRDAI skoru değerleri incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,000$). Başarısız olan 35 hastanın YANKO tedavisi başlangıcındaki kalp tepe atımı ortalaması $145,46 \pm 17,09$ atım/dk, tedavinin 1. saatindeki kalp tepe atımı ortalaması $143,14 \pm 18,97$ idi. YANKO tedavisinin başlangıcından 1. saatine kadar kalp tepe atımı değerlerindeki değişim incelendiğinde istatistiksel olarak önemli bir fark görülmedi ($p=0,370$). Başarısız olan 35 hastanın YANKO tedavi başlangıcındaki solunum sayısı dakikada ortalama $47,49 \pm 15,72$, tedavi 1. saatindeki solunum sayısı ortalaması $47,94 \pm 16,70$ idi. YANKO tedavisi başlangıcından 1. saatine kadar solunum sayısındaki değişim incelendiğinde istatistiksel olarak önemli bir fark görülmedi ($p=0,776$). Başarısız olan 35 hastanın YANKO tedavi başlangıcındaki SpO2 ortalaması $93,14 \pm 4,82$, tedavi 1. saatindeki SpO2 ortalaması $93,83 \pm 4,64$ idi. YANKO tedavi başlangıcından 1. saatine kadar SpO2 değerleri incelendiğinde istatistiksel olarak önemli bir fark görülmedi ($p=0,295$). Başarısız olan 35 hastanın YANKO tedavi başlangıcındaki S/F oranı minimum 133, maksimum 306, ortanca 182, tedavi 1. saatinde S/F oranı minimum 112, maksimum 316, ortanca 181 idi. YANKO tedavi başlangıcından 1. saatine kadar S/F oranı incelendiğinde istatistiksel olarak önemli bir fark görülmedi ($p=0,485$). Başarısız olan 35 hastanın YANKO tedavi başlangıcındaki GKS minimum 7, maksimum 15, ortanca 14, tedavi 1. saatinde GKS minimum 4, maksimum 15, ortanca 12 idi. YANKO tedavi başlangıcından 1. saatine kadar GKS değerleri incelendiğinde istatistiksel olarak önemli bir fark görüldü ($p=0,048$). Başarısız olan 35 hastanın YANKO tedavi başlangıcındaki mRDAI skoru minimum 3, maksimum 9, ortanca 5, tedavi 1. saatinde mRDAI skoru minimum 3, maksimum 9, ortanca 6 idi. YANKO tedavi başlangıcından 1. saatine kadar mRDAI skoru değerleri incelendiğinde istatistiksel olarak önemli bir fark görülmedi ($p=0,845$). YANKO tedavi endikasyonuna göre en başarılı 3 hasta grubunun astım (%100), krup (%100) ve akut bronşiolit

(%98) olduğu görüldü. Başarı oranı en düşük hasta gruplarının ise status epileptikus(%33,3) ve sepsis (%57,1) nedeni ile tedavi alan hasta grupları olduğu görüldü.

Tartışma: Solunum sıkıntısı vücudun solunum işinin ve solunum için gerekli enerji ihtiyacının artmasıdır. Solunum yetmezliği ise solunum sıkıntısı olan bir hastada eğer tedavi başlatılmazsa kompanseman sistemleri devredışı kalarak hastanın oksijenizasyonu ve ventilasyonunun bozulması ile gelişir. Akut solunum yetmezliği mortalite ve morbiditenin en önemli sebeplerindendir. Bu sebeple erken tanı ve etkili tedavisi gerekir. Solunum yetmezliğine epiglottit, laringotrakeit, subglottik stenoz, yabancı cisim aspirasyonu gibi santral hava yolu obstrüksiyonları, astım, bronşiolit, pnömoni, kistik fibrozis gibi akciğer patolojileri, kas ve sinir hastalıkları, travmalar neden olabilir. Bizim çalışmamızda solunum yetmezliği nedenleri olarak akut bronşiolit, bronkopnömoni, lobar pnömoni, astım, krup, sepsis, status epileptikus, postekstübasyon ve diğer nedenler alınmıştır. Oksijen tedavisi, solunum sıkıntısı ve solunum yetmezliğinde tedavinin en önemli basamağıdır. Yüksek akımlı nazal kanül oksijen tedavisi, konvansiyonel oksijen tedavisinin yetersiz kaldığı hastalarda kullanılan, çocuklar tarafından iyi tolere edilen, güvenli etkili noninvaziv tedavi modalitesidir. Çalışmamızda yer alan 191 hastanın ortanca yaşı 13 ay, %63,4 ‘ü erkekti.Tanımlar yaş grupları ile uyumlu olarak dağıldı. Çalışmamızın demografik verileri literatür çalışmaları ile benzer bulundu. 131 olguluk ÇYB’de YANKOT uygulanan hastaların değerlendirildiği retrospektif bir çalışmada olguların 78 (%59,5)’inin tanısı pnömoni idi. Bizim çalışmamızda da pnömonili hastalar (%51,9 n=99) YANKO tedavisini en çok kullandığımız hasta grubunu oluşturdu. İkinci en sık endikasyonumuz ise bronşiolit idi (%25,7 n=49).Vural ve arkadaşlarının Çocuk Yoğun Bakımda YANKO tedavisi uygulanan hastaların değerlendirilmesi için yaptıkları retrospektif çalışmada 131 olgunun 73 (%55,7)’ünde altta yatan kronik hastalık vardı, en sık görülen kronik hastalık olarak ise 37 (%28,2) hastada nöromotor hastalık vardı. Bizim çalışmamızda ise olguların 102 (53,4)’sinde altta yatan kronik hastalık vardı, en sık görülen kronik hastalık ise bronkopulmoner displazi (n=19), ikinci sıklıkta görüleni ise serebral palsi idi. Literatürde YANKO tedavisindeki başarı oranları %60-94 arası değişkenlik göstermekteydi. Bizim çalışmamızda başarı oranı %82 ile literatür ile benzerdir. Yine aynı şekilde YANKO tedavisi alan hastalarda tedavi etkinliğinin gösterilmesinde SpO2 ve S/F oranlarının takibi önemlidir. Can ve arkadaşlarının yaptığı, akut solunum yetmezliği nedeni ile YANKO tedavisi uygulanan 204 olgunun dahil edildiği prospektif çalışmada S/F oranı ilk bir saatte anlamlı bir şekilde yükselmiş ve S/F oranının 200 mmHg üzerinde olması YANKO tedavisinin başarılı olacağını öngörmede önemli bir ölçüt olduğu gösterilmiştir. Bizim çalışmamızda da YANKO tedavisi alan tüm hastaların SpO2 ve S/F oranlarının tedavinin birinci saatinde anlamlı şekilde yükseldiği görüldü.

Sonuçlar: Sonuç olarak YANKOT uygulamasının çocuklarda solunum yetmezliğinde kullanımının giderek arttığı bilinmektedir. YANKO tedavisi; noninvaziv, basit, etkili, çocuklar tarafından kolay tolere edilebilen ve kullanımı kolay bir oksijen verme yöntemidir. Ancak güvenilirliğinin ve etkinliğinin daha kesin bir şekilde belirlenebilmesi için ve YANKO başarısızlığını etkileyen faktörlerin bilinip diğer

tedavi modalitelerine erken geçişi sağlamak ve hastanede yatış süresini ve maliyeti azaltmak için daha geniş kapsamlı, randomize ve kontrollü çalışmalara ihtiyaç bulunmaktadır.

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**ID-100 / OP: “An Assessment of Physicians’ Knowledge Levels and Attitudes and Hesitations
For Prescribing Opioids at A Training and Research Hospital”**

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Abstract (ID-100)

Objective: Opioids are very powerful analgesics and important in pain management. Although there are many advantages of opioids, physicians may hesitate to prescribe opioids to patients with severe pain, resulting in many patients not receiving adequate analgesia. The goal of this study was to identify the knowledge levels and the attitudes and hesitation reasons in prescribing opioids among the physicians working at our hospital.

Materials and Methods: Three hundred eight physicians working at SBU İzmir Tepecik Training and Research Hospital (SBÜ İzmir Tepecik Eğitim ve Araştırma Hastanesi) have participated in this descriptive and cross-sectional study. A survey form created following the literature review was used for the study. The data was collected between 01 March and 31 May of 2021. The data was analyzed with SPSS Version 24. The correlation between dependent and independent variables was evaluated by chi-square and t-test analysis. The results with a p-value of $p < 0.05$ were considered as significant.

Results: 51.6% of the study participants were male, 51.9% were working in internal medicine department, 63.3% were residents, 50.6% had 5 years or less of experience, and 63.6% had received pain management training. 72.7% of the physicians thought that many patients suffering pain would benefit from opioids, 32.8% thought that those patients would be addicted to opioids. 22.7% of the physicians trusted their own clinical skills in prescribing opioids. The knowledge level scores of the physicians were 5.27 ± 1.27 (min:2-max:8). 38% of the physicians did not think their level of knowledge as sufficient. Physicians who received pain management training had more confidence in their knowledge level than those who did not ($p < 0.001$), but there was no difference regarding the knowledge levels ($p = 0.362$). There was no difference between knowledge levels according to gender ($p > 0.05$), but men found their knowledge levels to be more sufficient than women ($p < 0.001$). There was no difference between the knowledge levels according to the years in the profession ($p > 0.05$). Physicians with professional experience over 5 years found their knowledge more sufficient ($p < 0.001$). Abuse (85.1%), addiction (84.1%), side effects (67.9%), development of opioid tolerance (62%), and lack of knowledge (47.4%) were reported to be the causes of opioid prescription reluctance.

Conclusion: Physicians acknowledge the importance of opioids in pain management, but stated that they were reluctant to prescribe opioids in this study. Moreover, the physicians had prejudices about

opioids and abuse, addiction and side effects were stated as the major causes of hesitancy and/or reluctance for prescribing opioids. It might be necessary to increase pain management training qualitatively and quantitatively so that physicians's prejudice about opioids, opiophobia and reluctance for prescribing opioids may be eliminated and may increase their self-confidence levels of knowledge about opioids.

Keywords: Pain management, opioid analgesics, opiophobia, physicians, medical education

ID-101 / OP: “Are patients with obesity “scapegoats”? The obesity prejudice levels of health care workers in Turkey”

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Abstract (ID-101)

Introduction: This study assessed obesity prejudice levels, attitudes, and perceptions of health care workers toward individuals with obesity and the relationship between health care workers' perceptions of own and society's weight bias, healthy lifestyle preferences, body mass index and other factors with obesity prejudice levels.

Materials and Methods: This cross-sectional and descriptive study was conducted with 700 health care workers in Turkey via an online survey addressing characteristics, perceptions, and attitudes toward obesity including an obesity prejudice scale. Categorical variables were expressed as frequencies and percentages. The χ^2 test was applied to compare categorical variables. The distribution of the data was evaluated by the Kolmogorov-Smirnov test. Normally distributed data were compared by an independent sample t-test, while the Mann-Whitney U and Kruskal-Wallis tests were used for comparing nonnormally distributed data.

Discussion and Conclusion: Participants' mean age was 40.2±11.3 years and 67.9% were women. Notably, 57.9% worked at tertiary health care centers, 85.9% were physicians, and 64.8% were family physicians; 25% were prejudicial, while 58.1% tended to have prejudice toward individuals with obesity. Obesity prejudice scores were significantly higher among those who were in close contact with and who stated their preference for patients with obesity. Half of the participants tended to have prejudice, and one-fourth were prejudicial toward individuals with obesity. These results highlight the necessity of raising awareness of health care workers to reduce prejudicial attitudes that may negatively impact patients with obesity. Stigmatizing experiences might be detrimental, reducing the quality of life with long-term consequences for emotional and physical health.

Keywords: Obesity, healthcare workers, weight prejudices, obesity bias, stigmatization

ID-102 / OP: “Obesity, Eosinophil/Lymphocyte Ratio, Neutrophil/Lymphocyte Ratios, and Disease Progression in Covid-19 Patients”

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Abstract (ID-102)

Introduction: Coronavirus Disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome Coronavirus 2 (SARS-CoV-2). The first case was reported in Wuhan, Hubei Province, China, in December 2019. Since then, it has continued to spread, resulting in a pandemic.

Obesity is described as having a body mass that is much more than one's height. The goal of this study is to classify our patients with COVID-19 as obese or non-obese according on their BMI and compare their clinical and laboratory outcomes.

Materials and Methods: The combined throat-nose swab sample was examined in 121 patients with a COVID-19 diagnosis who applied between 2020 and 2021 and whose COV-PCR test was positive. Our examine was designed retrospectively. In this examination, the patient group's demographic data (age, gender, diagnosis), BMI, CRP, WBC, PLT, neutrophil absolute value (NE#), lymphocyte absolute value (LY#), and eosinophil absolute value (EO#) were examined. , neutrophil/lymphocyte ratio (NLR), eosinophil/lymphocyte ratio (ELO), sodium, potassium, calcium, AST, ALT, disease severity, and lung imaging were all measured and analyzed. For statistical analysis, the SPSS-22 software program was applied.

Discussion and Conclusion: The research involved 121 patients, 79 (65.3%) of whom were male and 42 (34.7%) of whom were female. The average age of the participants was 58.6 years. The patients' BMI was 26.84 kg/m², with 28 of them being obese and 95 being non-obese. Outpatient clinics followed up on 54 (44.6%) of the patients, whereas inpatient clinics followed up on 67 (55.4%) of the patients. While 25 patients (20.7%) have lung parenchyma involvement, 96 patients (79.3%) do not have lung parenchyma involvement. Obesity and AST were shown to have a statistically significant relationship (p=0.047). CRP (p=0.001), creatinine (p=0.033), NE# (p=0.016), and NLR (p=0.034) readings were shown to have an association with illness severity. Low EO # and ELO were shown to increase the risk of lung involvement (p=0.012 and p=0.007).

Due to the small number of patients and low obesity rate in the sample, no significant association between these variables and the severity and duration of Covid-19 infection was discovered. In light of

these findings, ELO and NLR measures that are inexpensive, practical, and widely available may be beneficial in evaluating the severity of the illness. Obesity and the severity of covid 19 infection may be investigated in research involving a large number of individuals.

Keywords: Covid-19, obesity, body mass index.

ID-103 / PP: “A Rare Case of Anaplastic Thyroid Carcinoma”

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Abstract (ID-103)

Introduction: Anaplastic thyroid cancer is an uncommon, typically lethal malignancy of older adults with no effective systemic therapy. The mean survival time is usually less than 6 months from the time of diagnosis. Unfortunately, this outcome is not fundamentally altered by available treatments. Here we report the consultation case of a patient with anaplastic carcinoma.

Materials and Methods: An 80-year-old woman was admitted with a very large neck mass and dyspnea to the emergency service of the external medical center and underwent emergency thyroid surgery. The patient had right total, left subtotal thyroidectomy. Macroscopically, a 1,5 cm diameter yellow-white nodule in the right lobe and a 0,5 cm diameter calcified nodule in the left lobe of the thyroid is described. Histopathologically, some tumor cells were a large cell with abundant eosinophilic, granular cytoplasm and a large hyperchromatic nucleus with a prominent nucleolus. These tumor cells are appeared to be nested with atypical cells. Cytologically, these atypical cells were characterized as a large cells with prominent nuclear pleomorphism, hyperchromatic nucleus. Some tumour cells were also characterized by spindle cells, numerous mitoses and multinucleated giant cells. In some fields we noticed that there was a lymphocytic stromal hyalinization, vascular invasion and capsule invasion. In the immunohistochemical staining, tumor cells were positive for cytokeratin 7, p53, cyclin D1 and KI-67 proliferation index was detected %40. The final diagnosis was anaplastic thyroid carcinoma developed from oncocytic carcinoma.

Discussion and Conclusion: Anaplastic thyroid carcinoma is relatively rare and a correct pathologic diagnosis is mandatory to exclude less aggressive entities and guide management. Therefore, the development of anaplastic thyroid cancer of the background of oncocytic carcinoma complicates the diagnosis in this case we want to share.

Keywords: Anaplastic thyroid carcinoma, thyroid

ID-106 / OP: “Day Case Surgery Discharge Criteria in A Children’s Hospital”

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Abstract (ID-106)

Introduction: Effective postoperative assessment with protocol-driven discharge is fundamental for day case surgery. This study aimed to present our experience regarding the discharge decision of patients who underwent day case surgery.

Materials and Methods: Between 1999 and 2021, in a children's hospital, patients who were planned for a day case surgery were postoperatively evaluated to decide whether they could be discharged with a multidisciplinary questionnaire guideline. This checklist was adapted and revised over the years from the pediatric day case surgery protocol by the Royal Hospital for Children, Edinburgh. The questions included social (transportation, responsible escort and caregiver, home conditions, telephone, health literacy), medical (ASA, comorbid diseases), and surgical (complications, postoperative symptoms) criteria. The day case exclusion criteria were exceeding 1-hour anesthesia, opening the abdominal or thoracic cavity, age under 1 month, ex-prematurity, comorbid diseases, and sibling death of unknown cause. Discharge assessment was made up to 6 pm by qualified ward nurses before leaving the hospital.

Results: Averagely, 2500 children per year underwent surgical procedures in the day case surgery program. The most commonly performed procedures were for circumcision, inguinal hernia, hydrocele, umbilical/epigastric hernia, undescended testis, hypospadias, urethral dilatation, pilomatrixoma, ankyloglossia, excision of skin lesion, biopsy, sting, wound care, and catheter removal. Most children were aged 1-10 years. None of the operations resulted in permanent disability and mortality related to day case surgery. The main reasons for patients who were not discharged after assessment were transport difficulties, home care problems, vomiting, feeling fatigued, not being able to walk due to caudal anesthesia, circumcision bleeding, and parental anxiety. Free of charge hospitalization provided convenience in the implementation of these criteria.

Discussion and Conclusion: The patients were discharged safely according to the day case surgery discharge criteria.

Keywords: Day case surgery, Discharge checklist, Pediatric

ID-107 / OP: “Comparison of Proteinuria with Acute Covid 19 and Multisystem Inflammatory Syndrome in Children”

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Abstract (ID-107)

Introduction: There are limited numbers of studies focusing on proximal tubular dysfunction in children with acute COVID-19 infection and multisystem inflammatory syndrome in children. In this study, we aimed to compare renal effects in hospitalized children with acute COVID-19 infections and multisystem inflammatory syndrome in children.

Materials and Methods: This retrospective nested-case control study included the children who were hospitalized for acute COVID-19 and multisystem inflammatory syndrome in children were included. The serum creatinine and proteinuria were compared between these two groups. The patients matched according to age.

Results: A total of 48 patients were included in the study including 12 multisystem inflammatory syndromes in children and 36 patients with acute COVID-19. The median age of MIS-C patients was 84 months (ranging from 4 to 14 years) and acute COVID-19 children was 102 months (ranging from 4 to 14 years), and no significant difference between these two groups. ($p < 0.001$). The ratio of patients with proteinuria was significantly higher in the MIS-C group ($n=8$, 66.7%) compared to the acute COVID-19 children ($n=10$, 27.8%) ($p=0.036$). The ratio of patients with high creatinine values according to age was 8.3% ($n=1$) in the patients with MIS-C and 27.8% ($n=10$) in the patients with COVID-19 but no significant difference was present between these groups ($p > 0.05$).

Discussion and Conclusion: Our findings suggested that proteinuria was more significantly common in the children with MIS-C compared to acute COVID-19 patients, while no difference was present between these two groups. The children with COVID-19 infections, especially in the MIS-C patients should be monitored for renal involvement, and prospective high-scaled studies are required.

Keywords: Proteinuria; COVID-19 infection, SARS-CoV-2, creatinine, multisystem inflammatory syndrome in children.

ID-108 / OP: “Retrospective Evaluation of COVID 19 Data in Children”

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Abstract (ID-108)

Introduction: Despite the worldwide spread of COVID 19 infection, information on general characteristics, severity and prognosis in children is limited (1). The aim of this study was to describe the demographic characteristics, lung involvement and intensive care needs of children with COVID-19.

Materials and Methods: This single center cross-sectional study was conducted during the period from onset of the pandemic to October-2021 in Dr Behçet Uz Children’s Hospital which is a 400-bed tertiary care hospital in İzmir, Turkey. The study involved pediatric inpatients with positive SARS-CoV-2 PCR test. The patient medical records were analyzed retrospectively from the hospital database. The recording medical subjects consist of the patient age, gender, underlying comorbidities, clinical findings, pulmonary involvement, duration of hospitalization, intensive care unit requirement. Statistical analysis was performed using SPSS statistical software.

Discussion and Conclusion: A total of 321 pediatric inpatients with positive SARS-CoV-2 PCR result were enrolled in study. Of these patients, 53% of male (n: 170) and 47% of female (n: 151). The mean age was 83 month $\pm$ 73,1 month (minimum month was 1 month-maximum month was 204 month). The percentage of three patient groups stratified by age as 0-5 years, 5-11 years, 11-18 years were found 49.5%, 17.1% and 33.3% respectively. The percentage of underlying comorbidities was found to be 38.9%, and the most common comorbidities were obesity (20%), asthma (18.7%), cardiac disease (10%), malignancy (7%). The pulmonary involvement with demonstrated with radiology percentage was found 35.2%. The patients required oxygen supplementation with 9.3% percent and pediatric intensive care unit admission was 5.9% percent of all.

Previous studies have found the mean age of children to be 7.9 years and is similar to our study. In the literature, asthma, immunosuppression and cardiac diseases are the most common comorbidities (2). When chest radiography findings were evaluated, it was found to be 34.8% in COVID 19 patients (3). The rate of admission to the intensive care unit varies between 0.6% and 8%, although the studies show

differences (4,5). Today, with the increase in the number of covid 19 cases in children, we have started to find more clear data.

Keywords: COVID 19, clinical finding, comorbidities

ID-109 / OP: “Evaluation of Neonatal Arrhythmias at a Tertiary Neonatal Intensive Care Unit”

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Abstract (ID-109)

Introduction and Purpose: Arrhythmias are rarely observed in neonates and occurs as a result of cardiovascular, systemic and metabolic events. It ranges from benign and clinically insignificant to life threatening forms. In this study we aimed to evaluate the etiology and clinical characteristics of neonates with arrhythmias in our neonatal intensive care unit.

Materials and Methods: Neonates who were admitted to the neonatal intensive care unit because of having rhythm problems from January 2019 to November 2021 were included in this retrospective study. Demographic and clinical features were evaluated and electrocardiography (ECG), echocardiography and if performed Holter ECG were analyzed.

Results: Thirty nine neonates with arrhythmias were included in the study. The mean (SD) birth weight was 3130±373 grams and median (minimum-maximum) gestational age was 38 (35-41) weeks. Only one patient was diagnosed during the fetal period. The distribution of neonatal arrhythmias was as follows: %66,5 sinus bradycardia, %20,5 long QT syndrome, %10,5 ventricular extrasystole and %2,5 supraventricular tachycardia. Early neonatal sepsis (%30,7), Down syndrome (%7,6), hypocalcemia (%3,8) and hypothyroidism (%3,8) were determined as the main causes of sinus bradycardia in our study. Two patients in the long QT syndrome group were treated with propranolol and one patient in supraventricular tachycardia group was treated with propranolol and amiodarone. Twelve patients had accompanying congenital heart diseases; atrial septal defect was the most common cardiac pathology.

Discussion and Conclusion: Cardiac arrhythmias are infrequent in neonatal period but important causes of morbidity and mortality. Various cardiac abnormalities or non-cardiac diseases like electrolyte disturbances, sepsis and gestational comorbidities like diabetes or systemic lupus erythematosus can

cause arrhythmias. Clinicians should be aware of the abnormal rhythm in neonates in order to diagnose early and treat appropriately.

ID-110 / OP: “Assessment of Multi-System Inflammatory Syndrome in Children”

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Abstract (ID-110)

Introduction: Multisystem Inflammatory Syndrome in Children (MIS-C) is a new phenomenon reported worldwide with temporal association with Covid-19. Many of these children have had clinical features similar to Kawasaki Disease and they have had high rates of hemodynamic instability, myocardial involvement, and respiratory failure requiring intensive care level support. Characterizing the epidemiology, spectrum of illness, clinical course, treatments, and prognosis of MIS-C is key for reducing morbidity and mortality. Therefore, in this multicenter study we conducted, we evaluated patients diagnosed with MIS-C and the approach to these patients.

Materials and Methods: We conducted retrospective surveillance of patients with MIS-C who were admitted to participating health centers from January 15, 2020, to October 20, 2021. Participating health centers are located in 3 different regions of the country. Medical records of children aged 1 month to 18 years who were diagnosed with MIS-C and hospitalized in the pediatric intensive care unit were evaluated retrospectively. Of 26 children with MIS-C, the median age was 113 months; 53,8% were male; 11,5% were Syrian. There was a 7.7% comorbidity, of which one patient was obese and the other was diagnosed with FMF. Fever (100%), circulatory failure/hypotension (92.7%) and rash (65,4) were the most common presenting symptoms. Depressed left ventricular ejection fraction was found in 54% of patients with median ejection fraction of 58% (IQR, 50,5-66). The most common laboratory findings were lymphopenia (96,2%), d-dimer elevation (96,2%) and trombocytopenia (69,2%). The most common cardiac laboratory marker was troponin elevation at a rate of 53,8%. For treatment, intravenous immunoglobulin was used in 25 (96,2%), corticosteroids in 25 (96,2%), anakinra in 12 (46,2%),

vasopressors/inotrope in 24 (92,3%), anticoagulant in 17 (65,4%). When the respiratory supports applied to the patients were examined, 30,8% invasive mechanical ventilation, 26,9% simple mask oxygen, and 23,1% high flow nasal cannula oxygen therapy were used. Extracorporeal membrane oxygenation was performed in 3 patients (11,5%), plasma exchange in 6 patients (23%) and continuous renal replacement therapy in 1 patient (3,8%). Systolic dysfunction persisted in one patient, and coronary artery dilatation was detected in 2 patients in the follow-up after discharge. Four patient (15,4%) died, twenty-two patients were discharged home. When the mortality risk factors of the patients were evaluated; higher prism ($p:0,002$), white blood cell count ($p:0,002$), polymorphonuclear leukocytes count ($p:0,002$), lactate ($p:0,039$), lactate dehydrogenase ($p:0,046$) and ferritin ($p<0,001$) at PICU entry were associated with higher mortality. Also, increase in sodium ($p:0,026$), potassium ($p:0,032$), urea ($p:0,032$), aspartate aminotransferase ($p:0,009$) and alanine aminotransferase ($p:0,016$) values of the patients during PICU hospitalization was associated with higher mortality.

Discussion and Conclusion: We have characterised important clinical, biochemical and radiological features of MIS-C. Higher incidence of cardiovascular symptoms was noted in MIS-C. In contrast to acute Covid-19 infection in children, MIS-C appears to be a condition of higher severity and mortality. Further larger multicenter studies are needed to further elucidate the spectrum of disease, risk factors formore severe illness. Long-term follow-up will be required to determine any sequelae of MIS-C on myocardial function. Familiarity with the presenting features, and a particular recognition of the severe cardiovascular impact of this disease we hope will be of support to teams caring children affected.

Keywords: Multisystem Inflammatory Syndrome in Children, Pediatric, Pediatric intensive care unit

Full-text (ID-110)

Introduction: Multisystem Inflammatory Syndrome in Children (MIS-C) is a new phenomenon reported worldwide with temporal association with Covid-19 [1]. MIS-C has high rates of hemodynamic instability, myocardial involvement, and respiratory failure requiring intensive care level support [2–4]. In this multicenter study, we evaluated the clinical features, treatments, and outcomes of children diagnosed as MIS-C.

Materials and Methods: We conducted retrospective surveillance of patients with MIS-C who were admitted to participating health centers from January 15, 2020, to October 20, 2021. Participating health centers are located in 3 different regions in Turkey: Tepecik Training and Research Hospital, Van Training and Research Hospital and Sanliurfa Training and Research Hospital. The cases met the World Health Organisation (WHO) criteria for MIS-C [5], and they were hospitalized in pediatric intensive care unit (PICU). The data was taken from the hospital records. Patients with incomplete data were not included. Demographics, clinical and laboratory characteristics, were recorded. The echocardiogram was performed within 48 h of admission to the PICU and immediately before discharge from the PICU by a cardiologist. Systolic myocardial dysfunction was considered to be an ejection fraction less than 60

%. Type of respiratory support applied and vasopressor requirement were recorded using the vasoactive and inotropic score (VIS) [dopamine (mcg/kg/min) + dobutamine (mcg/kg/min) +10 x milrinone (mcg/kg/min) + 100 x adrenaline (mcg/kg/min) + 100 x noradrenaline (mcg/kg/min) + 10,000 x vasopressin (U/kg/min)], along with the treatments received in both dose and frequency [6]. The acute kidney injury (AKI) severity scale was recorded using KDIGO, as well as the need for renal replacement therapy due to AKI [7].

Statistical analyses were performed using the Statistical Package for the Social Sciences version 24.0 software (Armonk, NY: IBM Corp). The normal distribution of the variables was evaluated using visual (histogram and probability graphs) and analytical methods (Kolmogorov-Smirnov and Shapiro-Wilk test). A descriptive analysis was performed using frequency tables for the categorical variables, while means and standard deviations were used to describe the normally distributed variables. Medians and ranges were used to describe the variables with a non-normal distribution. For describing variables that effects on outcome variables were assessed with the Mann-Whitney U test. Correlation analysis was used to evaluate the relationship between numerical variables.

A total of 138 patients with a diagnosis of MIS-C were admitted to participating centers, and 26 of these patients (18,8%) required admission to PICU. Of 26 children with MIS-C, the median age was 113 months; 53,8% were male; 11,5% were Syrian. There was a 7.7% comorbidity, of which one patient was obese and the other was diagnosed with FMF. All patients had cardiac and hematological involvement. Fever (100%), circulatory failure/hypotension (92.7%) and rash (65,4) were the most common presenting symptoms. Depressed left ventricular ejection fraction was found in 54% of patients. Extracorporeal membrane oxygenation was performed in 3 patients (11,5%), plasma exchange in 6 patients (23%) and continuous renal replacement therapy in 1 patient (3,8%). Systolic dysfunction persisted in one patient, and coronary artery dilatation was detected in 2 patients in the follow-up after discharge. Four patient (15,4%) died, twenty-two patients were discharged home with a median duration of pediatric intensive care unit (PICU) stay of 4 days (IQR, 3-7,25 days) and hospital stay of 11,5 days (IQR, 7-17,25 days) (Table 1).

When the mortality risk factors of the patients were evaluated; higher prism ($p:0,002$), white blood cell count ($p:0,002$), polymorphonuclear leukocytes count ($p:0,002$), lactate ($p:0,039$), lactate dehydrogenase ($p:0,046$) and ferritin ($p<0,001$) at PICU entry were associated with higher mortality. Also, increase in sodium ($p:0,026$), potassium ($p:0,032$), urea ($p:0,032$), aspartate aminotransferase ($p:0,009$) and alanine aminotransferase ($p:0,016$) values of the patients during PICU hospitalization was associated with higher mortality. In addition, it was determined that there was a higher mortality in patients with cough ($p:0,006$), AKI ($p:0,037$) and altered consciousness ($p:0,037$) (Table 2).

In the correlation analysis, it was observed that there was a significant positive correlation between PT ($r:0,51$), apTT ($r:0,52$), INR ($r:0,55$), d-dimer ($r:0,42$), AST ($r:0,46$), troponin ($r:0,41$), urea ($r:0,45$)

values and VIS ($r:0,46$) and the length of stay in PICU, and there was a negative correlation between the age of the patients ($r:0,40$) and the total length of hospital stay. In addition, there was a significant negative correlation between fibrinogen ($r:-0,60$) and the length of stay in PICU (Table 3).

Discussion and Conclusion: In this study, children with MIS-C had more cardiovascular, gastrointestinal and dermatologic symptoms at the time of presentation than those in studies published in the US [8] and UK [9]. In addition, these patients required vasoactive support and mechanical ventilation more often and had a greater mortality rate compared to high-income countries.

In our study, unlike other studies, SARS-CoV-2 RT-PCR positivity was not found in any of the patients. The reason for this was thought to be the late admission to the hospital due to the lower socio-economic status of the patients in our study. In other studies, the SARS-CoV-2 RT-PCR positivity of the patients was found to be between 30-70% [10–12]. But like other studies, 69.2% of patients were positive for SARS-CoV-2 IgG antibody, 30.8% had a history of COVID-19 (proven by SARS-CoV-2 RT-PCR), and a history of contact with patients with COVID-19 in 76.9% [8–10].

Feldstein et al.[12] reported that the typical population affected by MIS-C is that of school-age children, as in our study. It has been reported that MIS-C may occur more frequently in obese patients. The studies report a frequency ranging from 10 to 37% of cases having overweight and obesity [8,9,11,12]. Contrary to these studies, the prevalence of obesity was found to be 3,8%, much lower in our study.

In the study of Godfred-Cato et al., 35.8% shock and 49% need for vasopressors were found. Similarly, other studies have shown that the need for vasopressors is approximately 50% [8,10,12]. However, in the study of Acevedo et al., a higher rate of shock (87%) and the need for vasoactive drugs (76%) were shown. In our study, shock (92,7%) and the need for vasoactive medication (%92,3) was found to be high. Although norepinephrine was the most commonly used inotrope in the study of Kaushik et al., in our study it was epinephrine (73%).

Several studies reported 17-29% of kidney involvement in SARS-CoV-2 infection [3,7,10-13]. In our study, similar to the literature, AKI was found at a rate of 15.4%. In addition, it was determined that there was a higher mortality in patients with higher urea level ($p:0,037$). In our study, the most common laboratory findings were lymphopenia (96,2%), d-dimer elevation (96,2%) and thrombocytopenia (69,2%) significantly higher than other studies [11,12]. Like other studies, the most common cardiac laboratory marker was troponin elevation at a rate of 53,8% [11,12]. There was a significant positive correlation between d-dimer, troponin values and the length of stay in PICU.

In other studies, the need for CRRT varies between 0.8-3%, and it was found at a similar rate in our data [8,9]. When the medical treatments used were evaluated, IVIG and steroid usage were found to be higher in our study compared to the literature [8,10–12]. Considering the need for ECMO, it was observed that it was at a higher rate in our study than in other studies [9,10,12]. In our study, there was much higher

mortality (15,4%) than that described in high-income countries [9,11,13]. Limited access to healthcare services, PICU availability, delayed consultation, greater severity of the myocardial involvement, arrhythmia, and shock at the time of admission, along with lack of recognition of the disease, may have contributed to these worse outcomes and more need for ECMO.

In conclusion, cardiovascular involvement was high in MIS-C. MIS-C appears to be a condition of higher severity and mortality. Further larger multicenter studies are needed to further elucidate the spectrum of disease, risk factors for more severe illness. Long-term follow-up will be required to determine any sequelae of MIS-C on myocardial function. Familiarity with the presenting features, and a particular recognition of the severe cardiovascular impact of this disease we hope will be of support to teams caring children affected.

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ID-111 / OP: “The Relationship between Nephropathy, Retinopathy, Abdominal Obesity and Arterial Stiffness in Patients with Type-2 Diabetes Mellitus”

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Abstract (ID-111)

Introduction: Diabetes mellitus (DM) is accepted as an equivalent of coronary heart disease (CHD). Arterial stiffness (AS) has been started to be used as an early predictor of CHD. In this trial, we aimed to define AS parameters in patients with type-2 DM without any known CHD and compare our results with the incidence of complications of type-2 DM like abdominal obesity, nephropathy and retinopathy in our study population.

There were associations between AS and CI, eGFR, hemoglobin level, onset of diabetes, arterial blood pressure values of type-2 DM patients. There were no association between AS and nephropathy, retinopathy rates of type-2 DM patients. We assume that AS is an independent novel cardiovascular risk factor for obesity, anemia, hypertension and type-2 DM.

Materials and Methods: We included 110 type-2 DM patients to our study. We recorded patients, body mass indexes, conicity indexes (CI), waist circumferences, onset of diabetes, smoking, fundus evaluation, hypertension and hyperlipidemia background. Microalbuminuria was used as a marker to identify the diabetic nephropathy. We measured the pulse wave velocity (PWV), augmentation index (AIx), arterial blood pressure of patients.

Discussion and Conclusion: PWV values were positively associated with CI, onset of type-2 DM, systolic blood pressure. PWV values were negatively associated with eGFR. AIx values were positively associated with body mass index, systolic blood pressure AIx values were negatively associated with

hemoglobin. Hypertension was positively associated with PWV. Smoking was negatively associated with AIx. There were no statistically associations among complications of diabetes such as nephropathy, retinopathy and PWV, AIx values.

There were associations between AS and CI, eGFR, hemoglobin level, onset of diabetes, arterial blood pressure values of type-2 DM patients. There were no association between AS and nephropathy, retinopathy rates of type-2 DM patients. We assume that AS is an independent novel cardiovascular risk factor for obesity, anemia, hypertension and type-2 DM.

Keywords: Arterial stiffness, diabetes mellitus, obesity, nephropathy, retinopathy

Full-text (ID-111)

Introduction: Diabetes Mellitus is a chronic metabolic disorder which requires continuous medical care. Today all the world is facing a kind of type-2 DM pandemic (1,2). According to the results of Turkey Diabetes Epidemiology Survey II (TURDEP), the prevalence of diabetes among Turkish adults has reached 13.7% (3,4). Type-2 DM is leading cause of mortality and morbidity due to both prevalence and acute and chronic complications (5). The most significant causes of mortality and morbidity are cardiovascular diseases (CVD). The vascular complications can be in forms of micro or macroangiopathy. Retinopathy, nephropathy and neuropathy are the most crucial microvascular complications. Together with hyperglycemia, hypertension (HT), smoking, dyslipidemia and obesity may also lead to microangiopathy (6,7).

Especially in western countries, nephropathy is the main reason for end stage renal failure. It follows a path which starts with microalbuminuria and goes with constant proteinuria and deteriorating azotemia (8). Diabetic retinopathy is divided into two groups as nonproliferative and proliferative diabetic retinopathy. Diabetic retinopathy is the most significant cause of blindness in the world (9). Diagnosing the arterial stiffness parameters are one of the most effective methods in determining the elastic features of arteries. Pulse wave velocity (PWV) and augmentation index (AIx) are indexes of arterial stiffness (10,11).

Diabetic patients stands for the independent risk group for CVD. In diabetic patients, thickening occurs in intima and media layers and atherosclerotic process speeds up owing to vascular stress and endothelial damage. Our aim is to define the relationship between obesity and microvascular complications with PWV and AIx, and to evaluate the usefulness of this test in predicting prognosis of the patients.

Materials and Methods: This study was conducted prospectively on 128 patients with type-2 DM who applied to Internal Medicine Outpatient Clinic between January 2014 and June 2014. A voluntary participant form was obtained by all participants. Patients with coronary artery disease, peripheral artery

disease and malignancy background and have a glomerular filtration rate under 30mL/min/1.73 m² were not taken into the study.

In physical examination of patients their body weight, height and waist were measured. Age, gender, smoking habits, DM duration (year), HT and hyperlipidemia (HL) backgrounds, drug history were evaluated and recorded. Body mass index (BMI) was calculated using; weigh (kg) / height² (m²) formula. The conicity index (CI) was calculated with; Waist circumference(WC) (m)/(0.109 * body weight (kg) / height (m) ^{1/2}) formula.

Baseline clinical and laboratory methods: Fundus examination results that were done in last three months were recorded to define retinopathy as a complication of type-2 DM. Fundus examination process: mydriatic sicloplegyne %1 eye drop was dripped and was looked by Topcon SL-3E biomicroscope and 90 dioptrylens after 30 minutes. Results were grouped as: Non-proliferative diabetic retinopathy (NPDR), proliferative diabetic retinopathy (PDR), blind and normal.

Fasting plasma glucose, creatinine, total chloesterol, LDL cholesterol, HDL cholesterol, uric acid, microalbumin in spot urine (mg/dl), creatinine in spot urine (mg/dl) levels of patients were measured by Olympus AO5800 autoanalyzer with enzymatic method.

Hemoglobin values were measured by Beckmen Coulter® LH 780 hematology analyzer with empedance method. Hemoglobin A1C (hbA1C 4-6%), was measured by Premier Hb9210 HbA1C analyzer with Boronat affinity high performance liquid chromatography (HPLC) method.

Measured microalbumin in spot urine (mg/dl), creatinine in spot urine (mg/dl) levels of patients were proportionated with each other and the level of nephropathy was classified. Nephropathy classification was arranged according to proportions as normoalbuminuria (<0,02 mg/mg) **microalbuminuria (0,02-0,2 mg/mg)** macroalbuminuria (>0,2 mg/mg). Estimated glomerular filtration rate (eGFR) was calculated, using MDRD (modification of diet in renal disease) formula.

Patients were divided into groups in respect to HT, HL and diabetes treatment. The ones who are treated for hypertension and hyperlipidemia are marked as “positive” and the ones who aren’t treated for these disease are marked as “negative”. Four categorizations were used for type-2 DM treatment. These are:

1. Dieting + exercising (DIET)
2. Dieting + exercising + oral anti-diabetic agent (DIET + OAD)
3. Dieting + exercising + oral anti-diabetic agent + basal insulin (DIET + OAD + BASAL)
4. Dieting + exercising + intensive insulin using (DIET + INTENSIVE)

Arterial stiffness measurement

A single cuffed arteriograph device (I.E.M. GmbH brand Mobil-O-Graph PWA, a model pulse wave analysis device) was used for the arterial stiffness measurements, which is using a validated

oscillometric technique(12,13). The participants included in the study were made to rest for 10 min before measurement, and were required not to smoke or drink any caffeinated beverages in the 30 min leading up to measurement. Prior to measurement, the date of birth, height, weight, and smoking status of each patient were entered into the software program of the device, and the cuff was attached to side of the upper arm with no fistulas on the brachial artery trace. The cuff was held in line with the heart, and the device took two measurements automatically at 30-s intervals.(14-16)

PWV, Alx, systolic blood pressure (SBP), diastolic blood pressure (DBP), mean arterial pressure (MAP), heart rate of patients were recorded by this machine.

Statistical analysis: PASW 18.0 for windows programme was used for statistical analysis. Defining statistics, numbers and percents for categorical variations, average for numerical variations, standard deviation, median were presented as minimum and maximum. In multiple independent group proportionating for numeric variations; if normal distribution assumption is provided, ANOVA test, if not, Kruskal Wallis Test; in dual-group proportionations, if normal distribution assumption is not provided Mann Whitney U Test; if it is provided T Test were used. For categorical variations Chi-Square test was used. For correlations in which normal dispersion is provided between numeric data, Pearson; if it is not provided Sperman's rho test was used. The value for being statistically meaningful level p was accepted to be <0,05.

Approval of the ethics committee: The study was presented to local ethics committee of clinical research and has received approval with decision number 5 in the ethical committee meeting number 8 in 27th August 2014.

Results: 128 patients with type-2 DM diagnosis were taken into the study. Since 12 of these patients' eGFR were found to be less than 30 mL /min/1.73 m²; 2 of the patients didn't apply to us after blood examination, 4 patients were diagnosed to have coronary artery disease backgrounds after the detailed examination of the anamnesis, these patients weren't taken into study. The other 110 type-2 DM patients were enrolled into the study.

The demographic data of the patients are: Their average age are 55,82±9,33 years, 62 (56.4%) women, 48(43.6%) men, average BMI is 31,33 (18-46,6) kg/m². Average CI was calculated as 1,34 , PWV; as 8,41 m/s, Alx as 29,69%. The demographic and clinical features of the patients are shown in Table 1:

Table -1: Demographic and clinical characteristics of the study groups.

	N	Average	SD	Minimum	Maximum	Median
Age(year)	110	55,82	9,33	32	78	56
Height(cm)	110	164,63	8,90	146	192	162,5
Body weight(kg)	110	83,69	13,87	46	113	82
Body Mass Index(kg/m ²)	110	31,33	5,87	18	46,6	30,45
Waist circumference (cm)	110	103,49	11,43	61	133	104
Conicity Index(CI)	110	1,34	0,09	1,05	1,59	1,34
Type 2 DM duration(Year)	110	6,16	5,43	0,5	23	5
Creatinine(mg/dL)	110	0,95	0,18	0,6	1,4	0,95
LDL(mg/dL)	110	134,12	37,00	49	354	132
HDL(mg/dL)	110	47,24	9,05	28	77	46
Hemoglobin(gr/dL)	110	13,35	1,47	9	18,5	13,3
Uric acid (mg/dL)	110	5,30	1,48	1,6	9,5	4,95
HbA1C (%)	110	7,93	2,26	4,9	14,8	7,3
eGFR(mL/min/1.73m ²)	110	76,65	15,00	44,6	111	78,54
Microalbumin in spot urine /creatinine (mg/dL)	110	0,06	0,15	0,001	0,9	0,01
Fasting Plasma Glucose(FPG) (mg/dL)	110	167,51	72,59	83	423	144
PWV (m/s)	110	8,41	1,39	5,3	12,5	8,25
Alx (75%)	110	29,69	12,18	2	53	31
SBP(mmHg)	110	135,35	16,74	96	177	134,5
DBP (mmHg)	110	84,13	10,49	63	126	84
MAP (mmHg)	110	107,73	11,69	81	145	106
Heart rate (HR)	110	85,75	12,04	52	115	84

The demographical features, diabetes durations, blood pressures and laboratory results of patients were compared with PWV and Alx data. There was a statistical positive relation of PWV with CI, Type-2 DM duration, HDL, SBP, and MAP values; where as a statistical negative relation with eGFR value (in order $p=0,001$, $p=0,002$, $p=0,001$, $p<0,001$, $p=0,001$, $p<0,001$). (Figure-1) There was a statistical positive relation between Alx and BMI, SBP and heart rate (HR) values; and a statistical negative relation with hemoglobin (Hb) value (in order $p=0,025$, $p=0,019$, $p<0,001$, $p=0,024$) (Table-2).

Table -2: The results of the correlation analysis showing the associations among arterial stiffness and all clinical and laboratory parameters.

	PWV		Alx	
	Coefficient (r)	P	Coefficient (r)	p
BMI	-0,022	0,816	0,214	0,025
WC	0,137	0,154	0,147	0,125
CI	0,307	0,001	0,096	0,317
DM duration (year)	0,292	0,002	0,088	0,359
Total Cholesterol	0,035	0,713	0,067	0,484
LDL	-0,011	0,910	0,005	0,962
HDL	0,308	0,001	0,103	0,286
Hemoglobin (Hb)	-0,138	0,151	-0,214	0,024
Uric Acid	0,150	0,118	0,122	0,204
HbA1c	-0,151	0,114	-0,073	0,449
eGFR	-0,418	<0,001	0,006	0,953
FPG	-0,175	0,067	-0,120	0,213
SBP	0,467	<0,001	0,224	0,019
DBP	0,044	0,651	0,023	0,815
MAP	0,318	0,001	0,119	0,216
HR	-0,105	0,273	0,328	<0,001

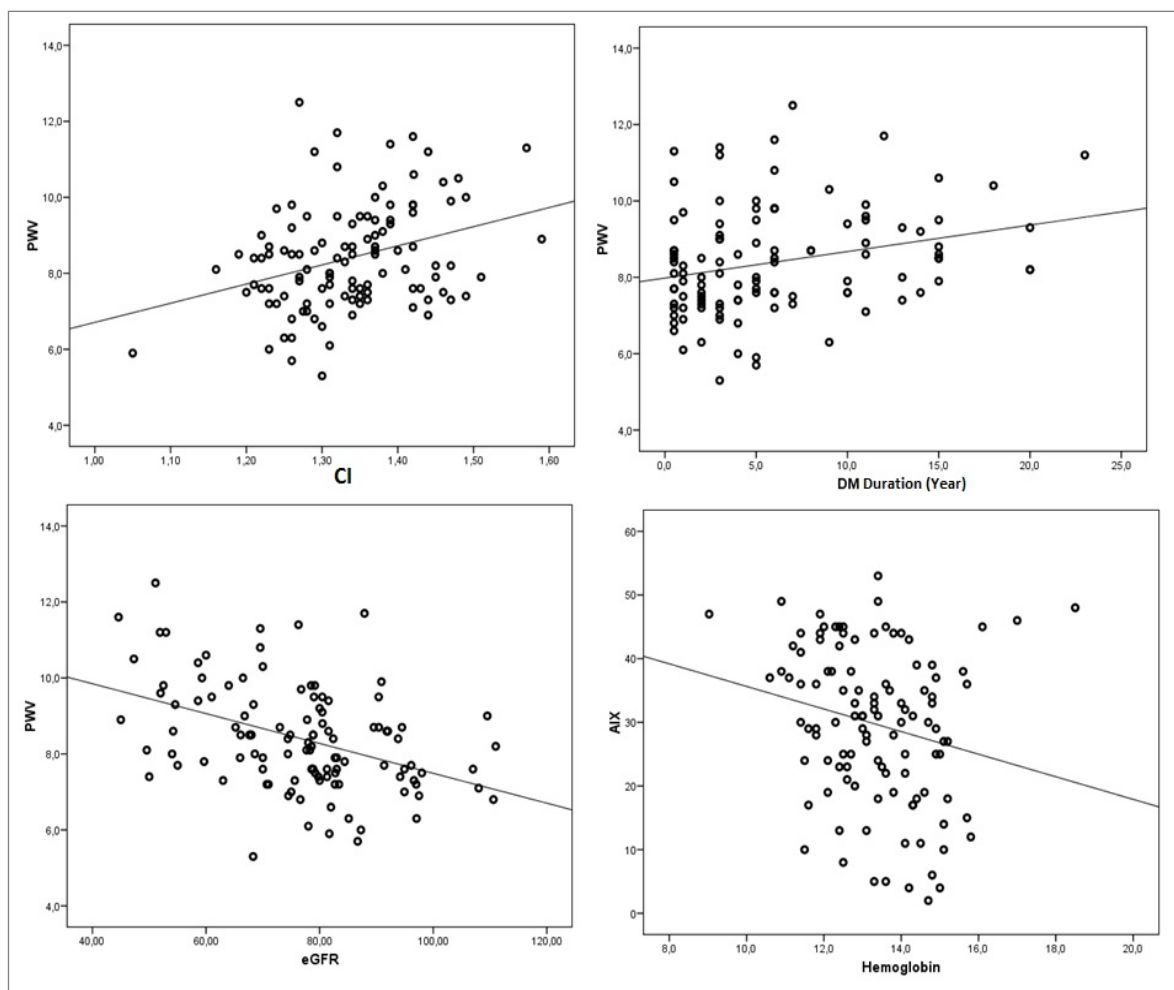


Figure 1: 57 (51,8%) patients were diagnosed with HT, 51 (46,4%) patients were diagnosed with hyperlipidemia; 53(48,2%) patients weren't diagnosed with HT, 59(53,6%) patients weren't diagnosed with hyperlipidemia. 31,8% (n=35) patients were cigarette smokers; 68,2% (n=75) weren't smokers. In terms of statistical PWV value the HT patients were higher than the ones who weren't hypertensive. In terms of statistical Alx averages smokers were lower than non-smokers (in order $p<0,001$; $p=0,018$)(Figure 2,3). Some parameters which are likely to effect the reason for low Alx in smoking patients were taken into consideration. The relation between smoking and WC, CI, BMI was examined. Despate not being statically illogical, non-smokers were defined to have higher BMI, CI and WC. (Table-3)

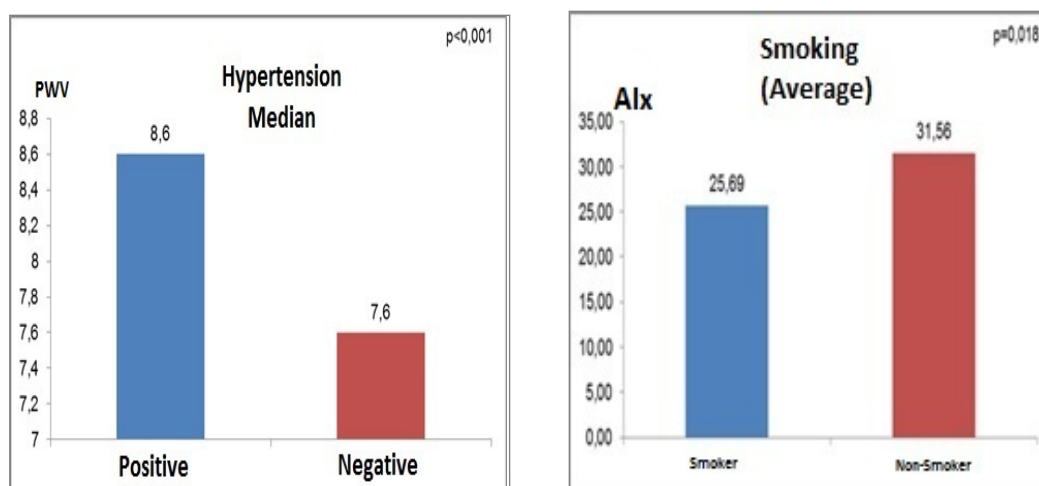


Figure 2-3

Table-3 The relationship between smoking and CI,VKİ and WC

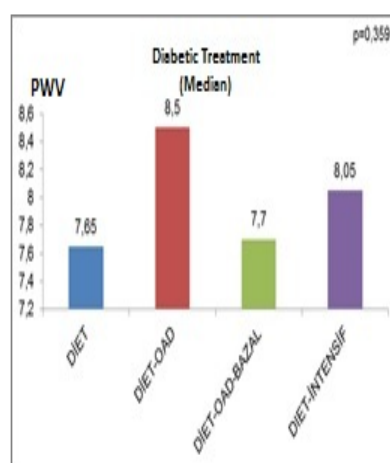
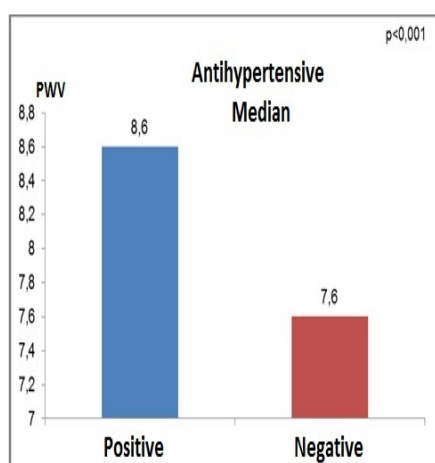
	Smoking Habit		
	Smoker	Non-smoker	p
BMI (Median (Min-Max))	28,7 (18,9-46,6)	31,2 (18-45,8)	0,211
CI (Ort±SD)	1,33±0,07	1,34±0,10	0,436
WC (Ort±SD)	101,94±11,72	104,21±11,29	0,334

29 (26,4%) patients were diagnosed with diabetic retinopathy; 81(73,6%) patients weren't diagnosed diabetic retinopathy. 10 (9,1%) patients with diabetic retinopathy were diagnosed with PDR, 19(17,3%) of them were diagnosed with NPDR. 30(27,3%) of the patients were diagnosed with nephropathy while 80(72,7%) of them weren't. 21(19,1%) of the patients with nephropathy were in microalbuminuric phase, 9(8,2%) of them were in macroalbuminuric phase. No statistical distinction of diabetes complications (nephropathy and retinopathy) was seen with PWV and AI. (Table-4)

Table -4: The comparison of Type 2 DM complications and arterial stiffness parameters

		PWV	AIx
		(Median (Min-Max))	(Ort±SD)
Retinopathy	Negative	8,1 (5,3-11,6)	29,67±12,28
	PDR	8,35 (7,6-11,7)	31,50±14,12
	NPDR	8,6 (5,9-12,5)	28,84±11,26
	p	0,362	0,857
Albuminuria	Normoalbuminuria	8,25 (5,3-12,5)	29,93±11,05
	Microalbuminuria	7,9 (6-11,6)	27,48±15,54
	Macroalbuminuria	9,3 (7,6-10,6)	32,78±13,74
	p	0,124	0,526

55 (50%) of the patients were using an antihypertensive medication, 32 (29,1%) of them were using an antihyperlipidemic medication; while 55(50%) of them were not using any antihypertensive medication and 78 (70,9%) of them weren't using any antihyperlipidemic medication. The patients being treated for type-2 DM were defined as: 2 (18%) Dieting, 71 (64,5%) Dieting + OAD, 9 (8,2%) Dieting+OAD+Basal, 28(25,5%) Dieting+Intensive. Patients having antihypertensive medications had a higher PWV value than the ones who aren't. ($p<0,001$). Arterial stiffness parameters were not statistically significant in the patients being treated for hyperlipidemia and type-2 DM (Figure-4,5).



Discussion: Arterial stiffness leads to prediction of CVD in general population, hypertensive patients and diabetics. The golden standard in measurement of arterial stiffness is aortic PWV measurement. PWV measurement in office conditions contributes to prediction of cardiovascular complications beyond other risk factors. Each one standard deviation rise in PWV value leads to 16-20% rise in the risk of CVD (17).

In this study a statistically positive relation was diagnosed between PWV and type-2 DM duration, HDL, SBP, MAP values. In a study by Theilade et al. in Type-1 DM patients, a positive correlation ($r=0,54$) between PWV and diabetes duration was seen (18). In a study by Cruickshank et al. it was seen that as glucose tolerance fell, PWV values rose (19).

CI and BMI, which are antropometric measurements and used for obesity, were also looked in this study. A statistically meaningful correlation was seen between PWV and CI. The patients who have renal failure criterias was examined in the study of Evans et al. And it was seen that there was a statistically negative association between BMI and PWV (22). In the same study it was found that as the CI value of the patients increased their PWV value increased ($p<0,001$).

There were no statistically significant correlation between PWV and albuminuria level which shows nephropathy stage. In the study of Theilade et al. a positive correlation between PWV and excretion ratio was found (18). Also it was seen in the same study that in normoalbuminuric Type-1 DM patients, PWV was relatively high in comparison to control group. This finding supports the idea of the relation between of DM existence and arterial stiffness in early stages. In our study a statistically meaningful negative relation was seen between PWV and eGFR. Same findings were seen in the study of Theilade and Smith et al. (18,23). It was also shown that as a falling occurs in creatinine clearance in the patients who don't have DM and end stages renal disease, PWV rose (24,25). It can be thought that early modifications in renal functions not only trigger stiffness in small arteries but also in big arteries. With the studies conducted, the essential factors that determine PWV values are: age, gender, PWV, albumin/creatinine proportion, diabetes duration, the number of antihypertensive medicine, ACEI/ARB usage, creatinine clearance, fasting plasma glucose (23,24).

In our study the ones with HT story were found to have statistically higher PWV values than the ones who don't have a HT story. In the study of Cruickshank et al. the findings are similar to ours. After the long term follow up of this study, in died patients PWV was about 2.6 m/sec higher and SBP was 10 mmHg higher in comparison to living patients. In terms of mortality PWV was diagnosed to be relatively predictive (19).

In different studies, some pharmacologic agents were studied in terms of arterial stiffness. In the ones who use more antihypertensive, ACE/ARB and take antihypertensive treatment like in our study, PWV was seen to be higher (18,23). These findings points to vascular disease which has been going on longer. CAFE study showed that the effect of antihypertensive treatment on central blood pressure, in

comparison with effect on lowering the blood pressure, is a better indicator in reflecting the cardiovascular conditions (26).

There are contradictory information between diabetes treatment and PWV. In our study, a statistically meaningful distinction wasn't seen in terms of PWV and Alx values between, the patient groups who were divided into groups according to their diet, exercise, oral antidiabetic and insulin treatments. In a study by Kim et al. it was shown that rosiglitazone decreases PWV by increasing the insulin sensitivity (27). In another study it was shown that insulin treatment increases PWV (28) possibly due to increased anabolic effects of insulin. This subject hasn't been fully clarified yet and so bigger studies are needed.

In our study, a reverse relation between smoking and Alx was seen. So, when the other parameters that may effect arterial stiffness were examined it was seen that BMI and CI in non-smokers were higher. It can be thought that BMI and CI may be as effective as cigarette in effecting arterial stiffness.

In comparison with other studies (18,20) no relation between retinopathy and arterial stiffness was seen. This may be due to the small number of our patient group.

Some studies have been carried out to evaluate the relation between PWV and inflammation parameters. The inflammation parameters which show subclinic organ damage (CRP, IL-6, TNF- α) are connected with PWV(21,29-31). In our study uric acid values were examined as the indirect parameter of inflammation. No statistically meaningful relation between PWV values and uric acid level was seen.

Conclusion: The CI, eGFR hemoglobin, diabetes duration and arterial blood pressure of patients with DM were found to be related with arterial stiffness. No relation between nephropathy and retinopathy with arterial stiffness were seen. DM is equal to coronary artery disease. Arterial stiffness is used as a predicting parameter for coronary artery disease. We are of the opinion that arterial stiffness is a novel risk factor of CVD for obesity, anemia, essential hypertension and in type-2 DM patient group.

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ID-112 / OP: “Redo Thyroid Surgery Experience of an Endocrine Surgery Clinic”

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Abstract (ID-112)

Introduction: The indications of redo-thyroidectomy are nodular recurrence after partial surgery for initially benign thyroid disease or thyroid cancer recognized in the histopathological examination after the thyroid gland is partially removed in the initial operation. Here, we aim to present the redo-thyroidectomy experience of an endocrine surgery clinic of a referral tertiary center. Conclusion: Redo thyroid surgery, which has a higher risk of complications compared to primary thyroidectomy, can be successfully performed by surgeons experienced in endocrine surgery with acceptable complication rates.

Materials and Methods: Files of 682 patients who underwent thyroid surgery at B Clinic of General Surgery Department of Izmir Kâtip Celebi University Ataturk Training and Research Hospital between January 2017 and October 2021 were retrospectively reviewed. The patients who underwent redo-thyroid surgery were included in the study. Cases who underwent completion thyroidectomy or concomitant parathyroidectomy and cases with incomplete data were excluded from the study. The demographic and clinicopathological characteristics and surgical complications were evaluated.

Results: After the initial evaluation, 19 patients were included in the study. The mean age was 54.9 ± 10.9 (range, 34-73). The female/male ratio was 16/3. Index operation was bilateral subtotal thyroidectomy in 13 (68.4%) patients. Mean time interval between primary and redo thyroid operation was 12.1 ± 9.1 years (range, 1-30). Fine-needle aspiration biopsy was performed in 16 (84.2%) patients before redo-thyroidectomy, and benign nodular disease was detected in 9 (56.3%) patients and malignancy in 4 (25%) patients. Bilateral surgical interventions were performed in 14 (73.7%) patients. Intraoperative neuromonitoring was used in 17 (89.5%) operations. Postoperative transient hypocalcemia was observed in 3 (15.8%) patients, vocal cord palsy or surgical site infection was not observed in any patient.

Discussion and Conclusion: Nowadays redo thyroid surgery is an uncommon procedure, due to the growing acceptance of total thyroidectomy for benign nodular disease in the last two decades. Redo-thyroidectomy still represents a challenge, even for experienced endocrine surgeons, because of the higher risk of complications such as hypoparathyroidism and injury to the recurrent laryngeal nerve

(RLN), compared to primary thyroid operations. The RLN is at high risk during reoperations, due to the likelihood of displacement and scarring following previous neck surgery.

Keywords: recurrent goitre; redo thyroid surgery; thyroidectomy

ID-113 / OP: “The Effect of A Structured Distance Course According to E-Learning Characteristics of Nursing Students on Their Motivation and Engagement to The Course”

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Abstract (ID-113)

Introduction: Although e-learning is becoming more and more widespread in higher education due to the necessities and developing technology, the readiness of the students and their e-learning styles in the e-learning processes are important factors in increasing the success of the students. In this context, in this study, it was aimed to determine the effect of a five-hour online course, which is structured according to e-learning styles and readiness levels of the students on the subject of "Writing a Learning Objective" within the scope of the "Educational Principles and Practices in Nursing" course, on the students' level of engagement and motivation to the lesson.

Materials and Methods: In this study, a single-group quasi-experimental pretest-posttest research design was used. The study was conducted with 50 students enrolled in the "Educational Principles and Practices in Nursing Course", who volunteered to participate in the study. The data of the research were collected by using "Individual Introduction Questionnaire" and "E-learning Styles Scale", "Online Learning Readiness Scale", "Student's Engagement Scale" and "Student Motivation Scale", which were converted into a Google survey form. The data were analyzed using the SPSS 20.0 package program. Descriptive statistics of mean, standard deviation (SD), frequency and percentage were used to define the demographic characteristics of the students. The differences in the pretest and posttest scale mean scores were compared with the t test. Ethics committee and institutional permission were obtained from the institution where the research was conducted.

Results: The students' 76% (n:38) were female and 24% (n:12) were male. The average age of them was 19.64 ± 1.10 . The mean scores of the e-learning styles scale sub-dimensions were found "Audio-visual Learning" 30.84 ± 3.92 , "Active Learning" 25.20 ± 4.06 , "Social Learning" 24.98 ± 3.05 , "Independent Learning" 13.00 ± 3.47 , "Logical Learning" 10.64 ± 2.68 , applied before the lesson. The mean score of the Online Learning Readiness Scale of the students was 67.02 ± 12.46 . Although there was no statistically significant difference between the students' engagement scale mean scores in the

online learning environments of the students before and after the lesson, it was determined that the mean scores in all subscales increased. When the mean scores of the students' motivation levels before and after the lesson were compared, a statistically significant difference was found ($t:-3.055$, $p:0.004$).

Discussion and Conclusion: It has been determined that the students have a medium level of readiness for online learning. Based on the average scores obtained from the e-learning styles scale, it was determined that the students had more than one learning style. The online course which organized based on the students' readiness levels and e-learning styles affect positively their commitment to the course and increased their motivation. For online courses, it is recommended that the curriculum of the courses be updated and implemented in larger sample groups according to the e-learning styles and readiness levels of the students.

Keywords: E-Learning, E-Learning Style, Student's Engagement, Readiness for Online Learning,

**ID-114 / OP: “Hipertansif Hastalarda Tedavi Uyumu ve Sağlık Okuryazarlığı
Düzeylerinin Yaşam Kalitesi Üzerine Etkisi”**

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Abstract (ID-114)

Introduction: The aim of this study is to examine in detail the sociodemographic characteristics of hypertensive patients and their knowledge and awareness about their disease; to determine the health literacy levels of patients and their compliance with treatment and to reveal the relationship between them and their effects on the quality of life of individuals.

Materials and Methods: This descriptive cross-sectional study consisted of individuals who applied to IKCU Atatürk Training and Research Hospital for any reason between 01.10.2019-31.12.2019. The sample size was calculated as a minimum of 221 people through the NCSS/PASS program. Sociodemographic data questionnaire, TSOY-32, Scale of Evaluation of Hypertension Medical Adherence with Treatment and Life Change Success Scale, and SF-36 scale were applied to the individuals meeting the inclusion criteria. The data were collected by interviewing individuals face to face. The relationship between categorical variables was examined using the Chi-Square Test. The relationship between the scales was determined by Spearman correlation analysis and linear regression analysis.

Results: The average age of 221 people participating in the study was 61.66 ± 12.98 (min: 21, max: 91), 63.8% of them were women. Hypertension medical adherence scale mean score was found to be 66.41. People who adherence with hypertension treatment were 54.3% of all participants. TSOY-32 average score was found to be 24.99. When the correlation between the adherence with hypertension treatment and health literacy levels of the participants was evaluated, it was found that there was a strong and significant correlation ($r: 0.532$) ($p < 0.001$). A statistically significant relationship was found between Ht adherence and health literacy level and quality of life.

Discussion and Conclusion: The effect of participants' health literacy levels and hypertension medical adherence on quality of life is significant. The increase in the quality of life causes an improvement in health services and a decrease in health expenditures. Necessary arrangements should be made in order to increase the education level and health awareness of individuals.

Keywords: hypertension, health literacy, medical adherence, quality of life, lifestyle changes.

ID-115 / OP: “Evaluation of The Treatments Received By Hospitalized Children with MIS-C”

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Abstract (ID-115)

Introduction: Since April 2020, a group of children with the symptoms and laboratory findings of hyperinflammatory course was reported after Coronavirus diseases 2019 (COVID-19) (1-3). Later than, the Centers for Disease Control and Prevention (CDC) (4) and World Health Organization (WHO) (5) described this post-infectious inflammatory response of the immune system as Multisystem Inflammatory Syndrome in Children (MIS-C) and released their diagnostic criteria. Management of MIS-C requires a multidisciplinary approach. Intravenous immunoglobulin (IVIG) alone or in combination with corticosteroids is the most commonly used treatment modality (6). Tumor necrosis factor inhibitors or interleukin 1 inhibitors, and plasmapheresis are the alternative treatment protocols for unresponsive to IVIG or severe cases (7). This study aimed to evaluate the general demographic characteristics and received treatments by patients with MIS-C.

Materials and Methods: This study was conducted in Dr. Behçet Uz Children’s Hospital which is a 400-bed tertiary care hospital in İzmir, Turkey, during the period of April 1, 2020, and November 1, 2021. Hospitalized patients with MIS-C in pediatric infectious service were included in the study. The general clinical characteristics, demographic findings, and treatments of patients were evaluated

Results: A total of 88 patients with MIS-C were included in this study. Fifty-nine (67%) patients were male and 29 (33%) were female. The median age was 6.5 years (ranging from 2 months to 17 years). The median hospital length of stay was 9 days (ranging from 4-20 days) for the patients with MIS-C. The patients admitted to the intensive care unit were 22 (25%) and admitted at the pediatric infectious disease ward were 66 (75%). Intravenous immunoglobulin was administered to all of the patients. A total of 23 patients (26.1%) were received with only Acetylsalicylic acid as an antiaggregant. Low molecular weight heparin was initiated in 64.8% of the patients (n=57) and after the acute phase reactants regressed and the coagulation parameters such as d-dimer and fibrinogen returned to normal, they were switched to anti-aggregant dose Acetylsalicylic acid. Eight (9.1%) patients did not receive any antiaggregant treatment. A total of 87.5% (n= 77) of the patients received antibiotic treatment.

Discussion and Conclusion: This study revealed that different treatment combinations were given to patients with MIS-C. Since MIS-C is a newly defined clinical condition. Therefore, data with a high

level of evidence regarding MIS-C management are needed. Fundamentally, MIS-C therapy consists of a combination of immunomodulatory therapy (IVIG and/or steroid; and if needed anakinra as intensification therapy), antiplatelet and anticoagulation therapy (9,10). A stepwise progression of immunomodulatory therapies should be used to treat MIS-C. IVIG and low-moderate dose glucocorticoids are considered first-line therapy in most hospitalized patients. High-dose glucocorticoids or anakinra should be used in patients with refractory disease (10). In this study, there were patients who received IVIG and both IVIG and steroids. There were no patients who needed to administer anakinra, and no mortality was observed. According to recent recommendations, low dose aspirin (3-5 mg/kg/day; max 81 mg/day) should be used in patients with MIS-C and continued until normalization of platelet count and confirmed normal coronary arteries at ≥ 4 weeks after diagnosis. Patients with coronary artery aneurysm or z-score ≥ 10.0 should be treated with low-dose aspirin and therapeutic anticoagulation with enoxaparin (10). In this study, enoxaparin was administered in patients with severe cardiac involvement, requiring intensive care unit, and elevated transaminases. After the acute phase reactants regressed and the coagulation parameters such as d-dimer and fibrinogen returned to normal, they were switched to anti-aggregant dose acetylsalicylic acid. In the light of this insufficient information, the management of MIS-C should be planned on a case-by-case basis.

In conclusion, the management of children with MIS-C should be determined for each patient according to the clinical and laboratory findings individually. Multicenter randomized controlled studies are needed to determine standardized treatment protocols in the management of MIS-C.

Keywords: COVID-19, SARS-CoV-2, IVIG, metilprednisolon, antiaggregant

ID-116 / OP: “Genetic and Molecular Approaches in Obesity Studies”

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Abstract (ID-116)

Introduction: Obesity is a multifactorial disorder and a condition characterized by excess body fat. The body mass index deteriorates with excessive fat accumulation as a result of the energy taken into the body by food is more than the energy spent. It is reported that if the increase continues at the same rate until 2030, there may be 2.16 billion overweight and 1.12 billion obese individuals in total, that is, 38% and 20% of the world's adult population, respectively. By 2050, it is estimated that 50% of the world population will have obesity. Obesity, which is an important public health problem, causes a large proportion of non-communicable diseases worldwide and reduces the quality of life of people with mechanical problems such as osteoarthritis and sleep apnea. According to the latest data of the World Health Organization, obesity affects not only adults but also children, and it is estimated that the number of overweight and obese children under the age of five is close to 39 million. A family history of obesity is a well-known risk predictor for childhood obesity. Copy number variants (CNVs) contribute significantly to the genetics of human obesity. More than 1100 independent loci associated with obesity have been identified (1,2,3,4,5).

Our aim is to reveal the importance of genetic structure and molecular mechanisms that determine the hereditary predisposition of the disease not only to environmental and psychological factors.

Materials and Methods: The literature review of the articles related to the subject was obtained from electronic databases. Obesity and related diseases; Type 2 diabetes often accompanies insulin resistance and abnormal glucose homeostasis. Studies have shown that there is a significant relationship between cytokine elevations and the pathogenesis of obesity-related insulin resistance. There are different risk factors for breast cancer, but one of the most well-known of these is being overweight. It has been determined that obesity is effective together with factors related to breast cancer such as cytokine-like proteins, adipokines, especially leptin and adiponectin. One of the most important risk factors for heart disease is severely obesity. It has been proven that the increase in cardiovascular mortality is highly associated with the problem of overweight. Alzheimer's disease and obesity have a large correlation. Evidence shows weight gain associated with this disease. Obesity, diabetes, cardiovascular disease,

cancer, aging and intrauterine fetal retardation are expected to be resolved by proteome evaluations (6,7,8). Obesity genetics is classified as syndromic, monogenic nonsyndromic and polygenic nonsyndromic. Syndromic obesity occurs as a result of pleiotropic syndromes caused by chromosomal rearrangements such as Prader-Willi syndrome, WAGR syndrome, SIM1 syndrome, Bardet-Biedl syndrome, Fragile X syndrome, Cohen syndrome. Nonsyndromic obesity is divided into monogenic and polygenic. Autosomal dominant and autosomal recessive monogenic obesity is typically rare. It begins early in life, is severe, includes small or large chromosomal deletions or single gene defects. This type of obesity is rare and about 7.3% of severe early-onset obesity is affected by a gene. Leptin (LEP), Leptin receptor (LEPR), Proopiomelanocortin (POMC), MC4R, Proproconvertase 1 (PCSK1), Single minded 1 (SIM1), Brain-derived neurotrophic factor (BDNF), and Tyrosine kinase receptor ropomycin-related kinase B (TrkB)) are some of the genes associated with monogenic severe obesity. Most of the proteins involved in monogenic obesity are involved in the leptin-melanocortin signaling pathway, which is important in controlling energy balance in the hypothalamus by coordinating energy intake and energy expenditure (3,5,9,10). Polygenic obesity, which accounts for 60% of hereditary obesity, is also known as diffuse obesity. It is the result of hundreds of polymorphisms, each with a small effect. It can be similar to the inheritance of other complex diseases (3.5). Leptin gene and its receptor were first identified in obesity and became candidate genes for human obesity. People with congenital leptin deficiency were first described in 1997. Leptin is a key hormone secreted by circulating adipocytes at levels proportional to fat mass, which also responds to acute changes in energy status. When investigating the molecular mechanisms of obesity, it is very important to understand the complex functioning of the leptin-melanocortin signaling pathway, which acts as the appetite control circuit. The pace of gene discovery for common diseases has accelerated with the emergence of genome-wide association studies (Genome-wide association study: GWAS). After the first GWAS on obesity published in 2007, many meta-analysis studies have screened body fat distribution and obesity-related features in approximately 300,000 to 700,000 people from different populations. Based on these data, approximately 60 GWAS have been published to date and more than 1100 independent loci associated with obesity have been identified (3,9). MC4R, POMC, FTO, NRXN3, NPC1, NEGR1, GNPDA2, MTCH2, ETV5 are some of the obesity-associated genes discovered by the GWAS approach. NEGR1, NRXN3, CADM2, GRID1, ELAVL4 and SCG3 genes are related to synaptic function and neurotransmitter signaling. POMC, MC4R, BDNF, ETV5, HNF4G and TLR4 genes are related to energy homeostasis (9,11,12). The effects of epigenetic mechanisms regulated by DNA methylation, histone modification, and RNA-based modifications on the development of obesity are investigated with studies and obesity-related genes regulated by epigenetic mechanisms are elucidated (13). DNA cytosine (C) methylation (CpG) which one of the epigenetic modifications, represents the most stable and well-defined epigenetic mechanism involved in obesogenesis. Saturated fat, refined carbohydrates, and other dietary factors can all strongly influence gene-specific DNA methylation in obesity. For example, DNA methylation of the adipokines leptin and adiponectin is believed to be dependent on body mass index

(BMI) and LDL cholesterol levels. It has also been demonstrated that high methylation of the POMC gene is associated with weight gain in individuals who have recently achieved weight loss. In the studies, MSH-positive neurons are much more in obese individuals when thin and overweight subjects are compared. This suggests a regulatory role for methylation in POMC downstream signaling components (14).

Discussion and Conclusion: In the treatment of obesity, diet changes, increased physical activity and lifestyle change provided by behavioral therapy are applied first. Drug use can help maintain weight loss and prevent weight gain over time. With the emergence of genome-wide association studies in the last decade, 227 genetic variants involved in different biological pathways (central nervous system, food sensing and digestion, adipocyte differentiation, insulin signaling, lipid metabolism, muscle and liver biology, gut microbiota) have been linked. Obesity is associated with genetic and environmental factors. Epigenetic changes, chemical alterations of DNA/histone complexes, rapidly alter chromatin accessibility to transcription factors critically determining gene activity. Environmental factors and epigenetic modifications such as histone modification, DNA methylation, micro-RNA and chromatin remodeling cause changes in the gene expression pattern leading to the development of obesity (Figure 1). Genetically identical twins reared under different environmental conditions have different life expectancy and risk of developing diabetes or hypertension. Along the same lines, it has also shown that calorie restriction delays the onset of age-related diseases, mostly through an epigenetic reprogramming. This suggests that environmentally driven epigenetic signals can greatly influence gene expression trajectories throughout life. On the genetic basis of obesity have been identified many genes associated with syndromic monogenic, non-syndromic monogenic and polygenic obesity. Obesity which a complex and inherited disease, results from the interaction between genetic predisposition, epigenetics, metagenomics and environment. It is a disease that requires permanent lifestyle changes. Omics data as promising technologies seen as a hope in the near future in obesity to understand the molecular basis of disease, prevention and treatment of the disease (1,6,8,15).

Keywords: Obesity, Genetics, Epigenetics, Leptin, Omics

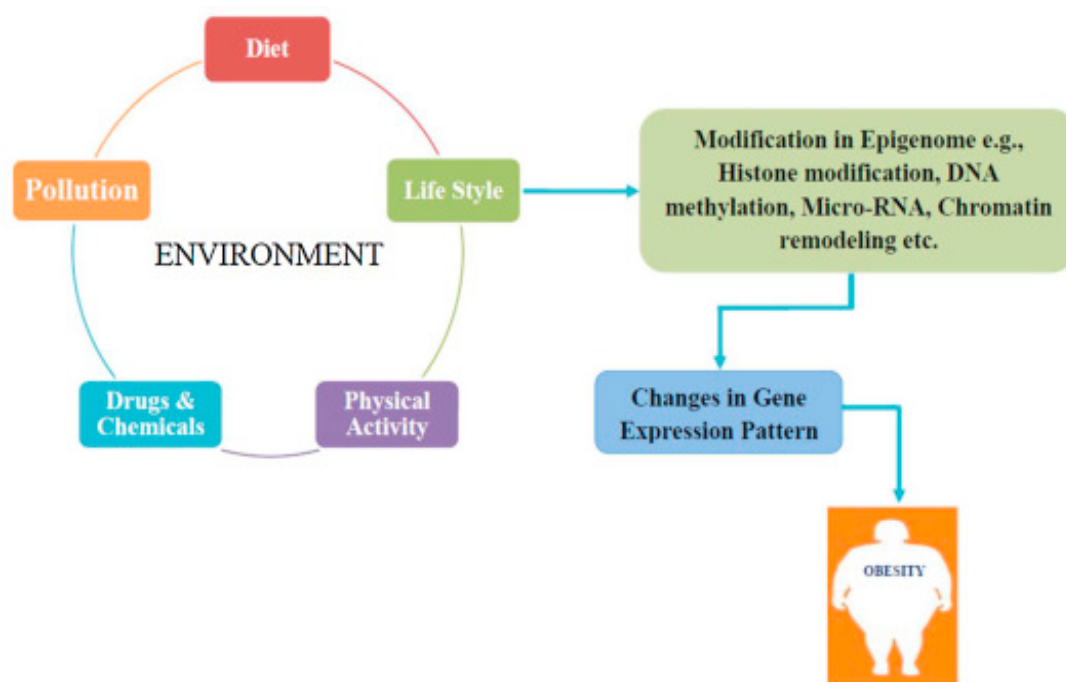


Figure 1. Diagram of the relationship between obesity and epigenetics (1).

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ID-117 / OP: “Favipiravir Use in Children with COVID-19”

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Abstract (ID-117)

Introduction: The new coronavirus severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has spread throughout the World since late 2019 and caused an unprecedented pandemic. At the time of writing of this report, 3 December 2021, there had been 263,563,622 confirmed cases of COVID-19, including 5,232,562 deaths, reported to WHO. While the majority of children infected with SARS-CoV-2 develop mild, self-limiting disease, some patients progress to severe pneumonia, multiorgan failure, and death. Optimized supportive care remains the backbone of therapy. Currently, there is no specific effective antiviral treatment for COVID-19. The most frequently used agents both in Turkey and all over the world including hydroxychloroquine, lopinavir/ ritonavir, favipiravir and remdesivir.

Materials and Methods: This single center cross-sectional study was conducted during the period from onset of the pandemic to October-2021 in Dr Behçet Uz Children’s Hospital which is a 400-bed tertiary care hospital in İzmir, Turkey. Children under the age of 18, had positive SARS-CoV-2 PCR test and were given favipiravir were included in the study. Patient files were retrospectively screened from the computerized hospital system. Age, sex, the underlying diseases, clinical and laboratory findings, the duration of hospitalization, whether they had complications after favipiravir or not, oxygen and intensive care unit requirement, and mortality rate were recorded. Statistical analysis was performed using SPSS statistical software.

A total of 75 patients who received favipiravir treatment were included. Of these patients, 50.7% of male (n: 38) and 49.3% of female (n: 37). The median age was 15 ± 3.6 years (minimum age was 1 years-maximum age was 17 years). The median length of first hospital stays was 6 ± 10.9 days (1- 66 days). Forty-seven patients (62.7%) had an underlying medical condition and the most common group was obesity (14/47, 29.8%). This was followed by epilepsy with or without neurodevelopment disorder (8/47,17%), malignancy (5/47, 10.6%), asthma (5/47, 10.6%) and other causes (15/37, 32%). Obesity was defined as a body mass index (BMI) at or greater than the 95th percentile for children of the same age and sex according to CDC definitions. Fifth of 75 patients (66.7%) had a history of fever lasting at least one day. 51 patients (68%) had concomitant cough. Nausea and vomiting were present in approximately one third of the patients and headache was present in 12 patients. It was compatible with

COVID pneumonia in 35 (85.3%) of 41 patients who had computer tomography imaging. Only 8 (10.6%) of the patients had side effects during the use of favipiravir. Elevated liver enzymes, abdominal pain, headache, vomiting and itching were observed as side effects.

Discussion and Conclusion: Studies suggest that children have a milder infection course than adults, with good prognosis. Children with co-morbidities have a worse clinical prognosis. In our study obesity was the most common underlying medical condition. The majority of patients with COVID-19 will recover without any therapy, so most cases don't need for antiviral therapy. Antiviral treatment should be started in the early period in patients who are predicted to have a severe course of the disease. Our country's Ministry of Health guideline recommends favipiravir as an antiviral treatment option in pediatric patients presenting with moderate-to-severe disease. In our study there were no serious or irreversible side effects in children receiving favipiravir. Favipiravir may be safe and tolerable in short-term use. Current evidence on the efficacy of favipiravir appears to be useful in the management of COVID-19; however, large randomized controlled trials are required to demonstrate whether this effect translates to clinical benefits like shortening the disease course, early hospital discharge, and reducing the need for oxygen requirement.

Keywords: COVID, favipiravir, obesity, child

ID-118 / OP: “Attention Deficit And Hyperactivity Disorder Coexistence Among Obese Patients And Impact Of The Temperament And Character Features”

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Abstract (ID-118)

Introduction: Primary aim of this study is to identify the prevalence of ADHD (attention -deficit / hyperactivity disorder) among obese patients, while controlling the effect of comorbid axis I disorders. Second objective is to assess the association between comorbidity of obesity with ADHD and temperament and character features; by evaluating the temperament and character features of obese patients.

Materials and Methods: This study is a cross-sectional, analytic epidemiological study; conducted in Ege University School of Medicine Psychiatry Department. Patient group included 100 individuals, fulfilling World Health Organization (WHO) criteria for obesity (body mass index [BMI] $\geq 30\text{kg/m}^2$); control group included 80 individuals who have no obesity history and having a BMI of 18.5-24.9 kg/m^2 . Polyclinic group, a subgroup of patient group, consisted of patients attending obesity outpatient clinic. A second patient group consisted of the participants who applied to the announcement and had not attended obesity outpatient clinic but fulfilled WHO criteria for obesity. Control group also gathered by announcement. Weight and height measurements of all participants were made, socio-demographic data were recorded and axis I disorders were evaluated by SCID-I. ADHD diagnosis was made by clinical interview and doubtful cases were deliberated with the consultant of the thesis, and in case of need some were interviewed again. Also; participants were given Wender Utah Rating Scale (WURS) and temperament and character inventory (TCI). **FINDINGS:** The female to male ratio was 3/1 in both groups; the mean age of patient group was $39,33 \pm 9,78$ and control group was $34,13 \pm 7,84$ ($p=0,038$). Assessment with SCID-I showed, only anxiety disorder and OCD frequency were significantly higher in patient group. According to the clinical interviews, ADHD frequencies were 26.00% in patient group and 6.25% in control group ($p < 0.001$ $df=1$). When the patient subgroups were considered the frequencies were 31.7% in polyclinic group and 22% in announcement group. The patient group scored significantly higher in WURS (control group: Mean= $21,80 \pm 14,05$, patient group: Mean= $26,29 \pm 14,56$, $p=0,025$). When Temperament and Character

Inventory scores are compared between patient and control group Disorderliness, Dependence, Purposeful, Self-acceptance, Self-directedness, Social acceptance, Empathy, Cooperativeness, Transpersonal identification, Spiritual acceptance, Self-transcendence scores were significantly different. When correlations were done with the BMI; current BMI was correlated with low Self-directedness and high Self-transcendence, the correlation with the Cooperativeness scores was at the borderline limits.

Discussion and Conclusion: In this study, ADHD was more frequent among obese sample, even more frequent in clinical obese patients, when compared to normal weight controls. The relationship between obesity and ADHD is still not yet fully clarified. Obesity and obesity related factors can set off ADHD symptoms; ADHD and obesity might both be different clinical aspects of common biological dysfunction, or ADHD might contribute to the onset of obesity. Further epidemiological studies with bigger sample sizes are needed both to identify the clinical aspects of adult ADHD, and to clarify the relationship between obesity and ADHD.

Keywords: Obesity, Attention-Deficit/Hyperactivity Disorder, Temperament, Character

Full-text (ID-118): Obezite Hastalarında Dikkat Eksikliği ve Hiperaktivite Bozukluğu Birlikteliği ve Mizaç ve Karakter Yapısının Etkisi

Giriş: Obezite hastalarında psikiyatrik komorbiditenin genel toplumdan daha sık olduğunu bildiren çalışmalar mevcuttur. (Wadden 1987) DEHB’li bireylerde yürütücü işlevlerde ve duygudurum düzenlenmesinde güçlükler, dikkat, baskılanma ve kendini kontrol güçlüğü şeklinde belirtiler oluşur. Obezite özellikle gelişmiş ve gelişmekte olan ülkelerde başta olmak üzere günümüzde en önemli sağlık sorunlarından biri haline gelmiştir (Orhan 2008). Mizaç (temperament), tabiat, yaradılış, huy anlamında kullanılmaktadır. Uyarılara doğuştan yapısal olarak belli bir şekilde tepki verme eğilimi olan mizaç, farklı kültür ve etnik yapılarda yapısal olarak tutarlıdır ve çocukluktan erişkinlik dönemine sabittir.

Gereç ve Yöntem: Bu çalışmada, obezite polikliniğine başvurusu olan ve olmayan obezite hastalarında DEHB tanı sıklığı değerlendirilmiş ve obez olmayanlara göre farklılıkları araştırılmıştır. Ayrıca obezlerle, obez olmayanlar arasında mizaç ve karakter özellikleri açısından farklılıklar değerlendirilmiş ve DEHB tanısına etkileri anlaşılmaya çalışılmıştır.

Çalışma için Ege Üniversitesi Tıp Fakültesi Etik Kurulu’ndan etik kurul onayı alınmıştır. Hasta grubu, 18-55 yaş arasında, Dünya Sağlık Örgütü’nün(DSÖ) belirlediği ölçütlere göre (Beden Kitle İndeksi (BKİ) ≥ 30.0 kg/m²) obezite tanısı konmuş kişilerden oluşmuştur. Kontrol grubu katılımcıları obezite öyküsü olmayan, BKİ<25 kg/m² olan, sosyodemografik özellikler bakımından hasta grubuyla benzer bireylerden oluşturulması hedeflenmiştir. DEHB tanısı DSM-IV kriterlerine göre klinik görüşme ile konulmuştur.

Wender Utah Derecelendirme Ölçeği (WUDÖ): Bu ölçek çocuklukta DEHB belirtilerini geriye yönelik sorgulamak ve erişkinlerde DEHB tanısının konulmasına yardımcı olmak amacıyla geliştirilmiş, 61 maddeden oluşan kendini değerlendirme ölçeğidir. (Öncü 2005)

Mizaç Karakter Envanteri: Cloninger kişiliğin iki temel bileşeni olan mizaç ve karakterdeki normal ve anormal varyasyonları açıklayan boyutsal bir psikobiyolojik kişilik modeli geliştirmiştir. Envanterin Türkçe versiyonunun geçerlilik ve güvenilirlik çalışması Köse ve arkadaşları tarafından 2004'de yapılmıştır (Köse 2004)

Verilerin Analizi: Veri analizlerinin, SPSS (Statistical Package for the Social Science) 16.0 paket programı ile yapılmıştır. Bu çalışmada veri analizlerinde, kategorik değişkenler ki-kare testi ile değerlendirilmiştir. Numerik değişkenler değerlendirilirken, Shapiro-Wilk ve Kolmogorov-Smirnov ile verilerin normal dağılıp dağılmadığı değerlendirilmiş, normal dağılanlar bağımsız iki grup t testi ile, normal dağılmayan veriler Mann-Whitney test ile analiz edilmiş, ayrıca iki değişken arası korelasyon için pearson korelasyon uygulanmıştır. Bütün hipotez kontrolü $\alpha=0.05$ önem seviyesinde ($p<0.05$ anlamlı) uygulanmıştır.

Bulgular: Klinik görüşme sonucunda 31 kişi (%17,2) DEHB olarak değerlendirilmiştir. Hasta grubunda yaş ortalaması $39,33\pm9,78$ iken kontrol grubunda yaş ortalaması $34,13\pm7,84$ ($p=0,038$) bulunmuştur. DEHB sıklığı hasta grubunda %26 (26 kişi) iken kontrol grubunda %6,25 (5 kişi) olmuştur ($p=0,000$ $df=1$). Ağırlık sınıflamasına göre bakıldığında klinik görüşmeye göre DEHB sıklığı normal kilo sınıfında %6,3 (5kişi), iken I. Derece Obezite sınıfında %26,7 (16 kişi), II. Derece Obezite olanlarda %21,7 (5 kişi) ve III. Derece Obezite sınıfında %29,4 (5 kişi) bulunmuştur ($p=0,006$ $df=3$).

WUDÖ puanlarının değerlendirmesinde hasta grubunun daha yüksek puan aldığı görülmüştür (kontrol grubu: ortalama= $21,80\pm14,05$, hasta grubu: ortalama= $26,29\pm14,56$, $z=-2,248$ **$p=0,025$**). Ağırlık sınıflamasına göre WUDÖ puanlarına bakıldığında istatistiksel farklılık olmamak kaydıyla III. Derece Obezite sınıfında Normal Kilo sınıfında olanlara göre daha yüksek puanlar aldıkları gözlenmiştir ($p=0,051$).

Hasta ve kontrol grubunun MKE puanlarının değerlendirmesinde *Düzensizlik, Bağımlılık, Amaçlılık, Kendini Kabullenme, Kendini Yönetme, Sosyal Onaylama, Empati Duyuma, İşbirliği Yapma, Kişiler Ötesi Özdeşim, Manevi Kabullenme, Kendini Aşma* puanlarında istatistiksel farklılık bulunmuştur.

Çalışmada MKE puanları ile BKİ arasında ilişkiyi değerlendirmek için pears correlation uygulanmış BKİ-güncel değerleri ile düşük kendini yönetme ve yüksek kendini aşma puanları arasında korelasyon saptanmış, işbirliği yapma puanları ile korelasyon sınırda kalmıştır. BKİ değerleri ile ödül bağımlılığı ve yenilik arayışı puanları arasında ilişki saptanmamıştır. DEHB saptananlar ile saptanmayanlar arasında *cinsiyet, yaş, eğitim süresi* açısından anlamlı istatistiksel farklılık saptanmamıştır

Tartışma: Çalışmamızda literatürle uyumlu olarak DEHB tanı sıklığı *cinsiyet açısından farklılık göstermemiştir* (erkek %17,7 ; kadın %17, p=0,91). Erermiş ve diğerleri (2004) adolosanlarda yaptıkları çalışmada DEHB oranlarını klinik obezite grubunda %13.3 (4 kişi), klinik başvurusu olmayan obezite grubunda %3.3 (1 kişi) ve normal kontrol grubunda % 3.3 (1 kişi) olarak saptamıştır. Altfas'ın (2002) yaptığı çalışmada obezite kliniğinden izlenen hastalarda %27.4'ünde DSM-IV kriterlerine göre DEHB saptanmıştır. Klas III obezite (morbid obez) grubunda DEHB sıklığı % 42.6 saptanırken bu diğer gruplar ile (klas I-II % 22.8, kilolu grup % 18.9 p=0.002) anlamlı farklılık göstermiştir. Fleming ve arkadaşlarının 2005'de yaptıkları obezite polikliniğine başvuran 75 (ort yaş 40.4 ve BKİ ≥ 35 kg/m²) kadın hastayla yaptıkları çalışmada DSM-IV'e göre DEHB sıklığı % 26.6 bulunmuştur(Cortese 2008).

Bizim çalışmamızda da Altfas'ın çalışmasına uyumlu olarak DEHB sıklığı hasta grubunda belirgin olarak daha fazla bulunmuştur (p<0,001, df=1).

Kesme puanı dikkate alınmaksızın WUDÖ puanlarına bakıldığında hasta grubunun anlamlı olarak daha yüksek puan aldığı görülmüştür (p=0,025). Ağırlık sınıfına göre ise en yüksek WUDÖ puan ortalaması III. Derece Obezite (Morbid obez) grubunda olmuştur. Ancak ağırlık artışıyla doğrusal bir ilişki bulunmamıştır.

Obezitede DEHB sıklığının normal kiloda olan kişilere daha fazla olmasının neden sonuç ilişkisi 3 farklı şekilde düşünülebilir (Cortese 2008). Birincisi obezite ve obeziteyle ilişkili faktörler DEHB semptomlarını daha belirgin hale getiriyor olabilir.

Volkow ve arkadaşları, (2009) BKİ değerleri 19-37 kg/m² arasında olan 21 (12 E, 9 K, ort yaş 34±7) sağ el dominant sağlıklı gönüllü ile yaptıkları çalışmada BKİ ile prefrontal korteks (PFC) ve singulat girus metabolik aktivitesi arasında negatif korelasyon saptamışlardır. PFC'deki bazal metabolizma, yürütücü işlev performansı ile doğru ilişkili bulunmuştur. Ancak kognitif uyarım sırasında meydana gelen bölgesel değişiklikler ne BKİ ile ne de nöropsikolojik performans ile bağlantılı bulunmamıştır. Bu durum obezitenin beyin glukoz kullanımını etkilemeden bilişsel performansa etkisi olduğunun bir kanıtı olarak değerlendirilmiştir.

İkinci olarak, DEHB ve obezite ortak biyolojik disfonksiyonun farklı klinik görünümüleri olabilir. Serotonin üretiminin predüktörü olan triptofanın plazma seviyelerinin düşüklüğü ile obezite arasında bağlantı bildirilmiştir. Serotonin melatonin prekürsörüdür. Melatonin disfonksiyonunun obeziteyle , melatonin ve çinko disfonksiyonunun DEHB ile ilişkili olduğu bildirilmiştir (Bazar 2006).

Üçüncüsü DEHB obezitenin gelişimine katkıda bulunuyor olabilir (Cortese 2008). Yürütücü işlevlerde bozukluk ve dikkat eksikliği anormal yeme davranışı ve düzenli yemenin düzenlenememesiyle sonuçlanabilir. Anormal yeme davranışları DEHB'nin impulsivite, dezorganizasyon, dikkatsizlik ve huzursuzluk semptomu olarak ortaya çıkabilir. Davis ve arkadaşları yapısal eşitlik modelini kullandıkları çalışmalarında DEHB semptomlarından dürtüsellığı anormal yeme davranışları ile

bağlantılı bulmuşlardır. Yapılan çalışmalar hazzı erteleme görevlerinin (özellikle yemekle teşvikte) obezite hastalarında olmayanlara göre daha az etkili olduğunu göstermiştir. (Davis 2009).

MKE çalışmalarına bakıldığında hem obezlerde hem de DEHB hastalarında özellikle yenilik arayışı puanlarının kontrollere göre daha yüksek, kendini yönetme puanlarının ise daha düşük olduğu görülmektedir. Hwang ve arkadaşları (2006) çocuklarda yaptıkları çalışmada, obezite grubunda normal kiloda olan gruba göre daha düşük sebat etme puanları ve daha fazla yenilik arayışı puanları saptamıştır.

Çalışmamızda da obezlerde yenilik arayışı toplam puanı ve yenilik arayışı alt puanları (keşfetmekten heyecan duyma, dürtüsellik, savurganlık, düzensizlik) kontrollere göre daha yüksek saptanmış ancak istatistiksel farklılık sadece düzensizlik alt başlığında olmuştur. Örneklemimizde zarardan kaçınma puanları açısından anlamlı farklılık görülmemiştir. Çalışmamızda Fassino'nun çalışmasına uyumlu olarak kendini yönetme toplam puanı, iş birliği yapma toplam puanı ve iş birliği yapma alt başlıklarından sosyal onaylama ve empati duyma alt puanları obezlerde daha düşük bulunmuştur (sırasıyla $p=0,036$; $p=0,012$; $p=0,011$; $p=0,018$). Ayrıca obezlerde kendini aşma toplam puanı ve alt puanları normal kilolulara göre daha yüksek bulunmuştur (kendini aşma için $p=0,025$; kendilik kaybı için $p=0,15$; kişiler ötesi özdeşim için $p=0,036$ ve manevi kabullenme için $p=0,034$). Ağırlık sınıflamasına göre MKE puanlarına bakıldığında obezite şiddeti ile doğrusal bir ilişki gösteren mizaç ve karakter özelliği saptanmamıştır. Çalışmada MKE puanları ile BKİ arasında ilişkiyi değerlendirmek için pears correlation uygulanmış BKİ-güncel değerleri ile düşük kendini yönetme ve yüksek kendini aşma puanları arasında korelasyon saptanmış, işbirliği yapma puanları ile korelasyon sınırda kalmıştır. BKİ değerleri ile ödül bağımlılığı ve yenilik arayışı puanları arasında ilişki saptanmamıştır.

Sonuç: Özellikle tedaviye dirençli ve diyet uyumu kötü olan obezite hastalarının psikiyatrik bakımının yapılması önerilir. Bu hastaların tedavilerinin yönetiminde mizaç, karakter ve kişilik özelliklerinin ve de özellikle DEHB olmak üzere I. Eksen psikiyatrik tanılarının değerlendirilmesi önerilir.

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ID-119 / OP: “Evaluation of the Contralateral Axilla in Patients with Breast Cancer After COVID-19 Vaccine”

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Abstract (ID-119)

Introduction: Lymphadenopathy developing in the ipsilateral axilla after COVID-19 vaccination is frequently encountered (1). In our study, we aimed to share post vaccination the results of breast cancer patients with radiopathological lymph nodes in the opposite axilla.

Materials and Methods: Twenty-eight female patients with breast cancer were included in the study. Additional imaging or biopsy was performed in cases with radiopathological lymph nodes on US. The other patients were followed up with US for at least two months.

The average age was 60,8 (40 -74). The average of the long axis of the axillary lymph nodes was 16,6 (8-22) mm. Post-vaccination recourse times ranged from 3 weeks to 1 month. All patients received 1st (n:11, 39.3%) or 2nd (n:17, 60.7%) dose of Biontech vaccine. PET-CT was performed in 14 cases and MRI was performed in three cases. No primary focus was detected in the breast. Fine-needle aspiration biopsy was performed in 22 of the cases, one case was suspicious of malignancy. It was interpreted as breast carcinoma metastasis after excision with marking. An the other case who underwent full-thickness biopsy was diagnosed as malignant epithelial tumor. These two cases were evaluated as occult breast cancer. Regression was observed in the follow-up US in 5 of the cases.

Discussion and Conclusion: Biontech vaccine is an mRNA vaccine. It has been shown that more immune response develops in mRNA vaccine applications (1, 2). As long as COVID-19 vaccination continues, vaccination history should be questioned in breast cancer patients. The detection of malignant lymph nodes in two of our cases (2/28; 7 %) showed that contralateral axillary lymph nodes should be approached with caution. Breast Imaging Society has recently published recommendations. If unilateral axillary adenopathy is detected in the screening, short-term follow-up within 4-12 weeks is recommended after appropriate diagnostic work (3, 4).

Keywords: lymphadenopati, Covid-19 vaccine, breast cancer

ID-120 / OP: “Bilateral Cervical Cystic Lymphangioma and Bilateral Plunging Ranula dilemma in differential diagnosis: Or both?”

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Abstract (ID-120)

Introduction: Cystic lymphangioma occurs in infancy in most cases and occurs usually in the neck. Ranulas are rare pseudocysts that are mucos retention from an obstructed sublingual gland and located in the floor of the mouth, and it usually occurs congenitally. Plunging ranula as a complicated ranula is herniation of the pseudocyst through the mylohyoid muscle and present as a cervical swelling. Management of plunging ranula is variable and definitive treatment is usually surgical. In here, this rare case with complicated bilateral cystic lymphangioma and bilateral plunging ranula was presented to review the approach of the differential diagnosis and treatment.

Materials and Methods: Bleomycin was administered to a 44x22 cm left cervical cystic lymphangioma of a girl neonate at three weeks of age which born with a prenatally diagnosed left cystic lymphangioma. The left ranula, which developed in the third month, was incised and marsupialized. She had a left cervical cystic mass growing at the age of one year and recurrent ranula, and the ranula was re-marsupialized, but the left cystic lymphangioma shrank and persisted. She presented with bilateral plunging ranula and bilateral cystic lymphangioma, which started suddenly at the age of two and started growing in 15 days. After US, Doppler US and MRI, bilateral cystic lymphangioma and plunging ranula were excised. Histopathological examination was found to be compatible with lymphangioma. Follow ups is normal in the 1st year postoperatively.

Discussion and Conclusion: Having plunging ranula with cystic lymphangioma and bilateral presence is a very rare condition. It should always be kept in mind that ranula or cervical cystic lymphangioma, which appears simple at first attempt, may recur or develop into plunging ranula. In all cystic lesions in close proximity to all cervical submandibular salivary glands; whether or not cystic lymphangioma or plunging ranula is considered; determination of amylase into the cystic aspiration fluid may be helpful in planning follow-up and treatment in cases with a complicated course.

Keywords: Cervical Cystic Lymphangioma, Ranula, Plunging Ranula, Treatment, Children

Full-text (ID-120)

Introduction: Cystic lymphangioma is a congenital hamartamous malformation of the lymphatic system that typically presents during infancy, and has a tendency to grow unless it is completely extirpated (1) (2). Lymphatic malformations are classified as microcystic (diameter 1 cm), macrocystic (diameter >1 cm) and combination thereof. These classification is also useful therapeutically as size determines whether or not the cystic cavity can be aspirated or compressed (3). Ranula is a rare pseudocyst that is mucous retention from an obstructed sublingual gland and located in the floor of the mouth. It usually occurs congenitally and diagnosed in early adulthood or rarely result from intra oral trauma (4). Plunging ranula is herniation of the pseudocyst through the mylohyoid muscle, the most common presentation is unilateral, painless, progressive cervical swelling (5).

Clinical evaluation and imaging is important for differential diagnosis of cystic lymphangioma and plunging ranula. When ranula and lymphangioma are together, differential diagnosis could be difficult, and treatment of it can be complicated. Treatment options include aspiration, sclerotherapy and surgery.

Here, we aimed to draw attention to the follow-up and treatment of a girl with bilateral cystic lymphangioma and plunging ranula.

Materials and Methods: A 13 days of female baby was admitted to our pediatric surgery department due to cystic submandibular lesion in left side. In history, a prenatal diagnosis of left cervical cystic mass was available on prenatal US. In her physical examination, a cystic mass lesion reaching approximately 2 cm in size, soft and slightly mobile, non-tender, non-pulsatile, without signs of inflammation were found in the left cervicomandibular region. In US / Doppler US, a lobulated dense cystic lesion of 47x22 mm in size with multiple incomplete septa and internal debris without vascularisation was determined in left cervical submandibular area, and a lobulated cystic lesion of 17x7 mm without vascularisation was located in the right parotid inferior. Firstly aspiration of cystic fluid were performed, but bleomycin injection was not given because of the hemorrhagic aspiration. The cytology result was benign.

Two months later the left cervical lesion was reach 48x36x59 mm, left submandibular gland was dilated and tortuous, in parotid space was anechoic, avascular cyst 14x10 mm in size on US. Bleomycin was given into the cyst after the puncture of the cystic fluid, but fever and whole body rash were seen in first day; patient was hospitalised.

At the third month, a plunging ranula in the left side floor of the mouth that appeared to be associated with the left cervical cyst 15 mm in size and extended to left parotid space and maxillary space were determined on US. Then ranula was incised and marsupialised.

At the sixth month, the left cervical lesion size enlarged, and a cystic lesion of 17.8x10.7x9.2 mm in size with thin internal septa which located in the right submandibular gland space on US. Because of

intimate associated with vital structures such as nerves and major vessels of the head and neck; the decision of follow up were made.

At the 16th month ultrasound examination, multilocule cystic lesions of 21x39 mm, 16x27 mm, 26x36 mm in size with thick wall in places multiple septa, containing heterogeneous, hypoechoic components, located in the superior of the thyroid gland, extended to medial of right parotid gland to left parotid gland. Left side floor of the mouth was a recurrent cyst of ranula of 20x10 mm in size, so ranula incision and marsupialisation were performed as second time (Figure a).

At the age of 26 months, ultrasound and magnetic resonance imaging (MRI) of the neck were performed as a result of the rapid growth of the submandibular area in the last 15 days (Figures b 1,2). On ultrasound, a septated dense cystic lesion measuring 65x23 mm was seen in both submandibular regions, related to each other in the midline. MRI showed a bilobe mass measuring 49x56x64 mm, located in the submandibular space, and it passes through the mylohyoid muscle in the neck region and extends into the mouth (Figures c 1, 2). There were cystic collections and edema in the left and right parotid glands, except ranula. Tumor markers (b-HCG, CEA, VMA, AFP) were found normal ranges.

The patient was re-evaluated with the otolaryngologist; and it was decided to operate with together. Under endotracheal general anesthesia, a suprahyoid 10 cm collar incision was made, and bilateral submandibular cystic lymphangioma was excised almost completely with the partial excision of the left submandibular salivary gland. Only, 1 cm deep cyst wall, which is tightly adhered to the parotid gland and neurovascular bundle of neck only on the left, could not be completely removed; therefore bleomycin and 30% dextrose were injected into the cyst wall remaining in the deep parotid area on the left (Figures d 1, 2, 3). The operation was terminated without complications; The patient was discharged on the fifth day. Histopathological examination was consistent with a lymphangioma.

In the physical examination three months after the operation, a mild palpable mass on the left parotid was detected. On ultrasound reported cystic lesions of 27x9.5 mm in size located in the right submandibular area and 17x10 mm in size with septation located in the left submandibular area. Follow ups is normal in the 1st year postoperatively.

Discussion and Conclusion: Cystic lymphangioma is seen in 80-90% at birth, in 30% of infants within one year of birth in 50-60% within two years (6). The most sign or symptom of lymphangiomias is the presence of a mass. Most lesions are recognized early because of their size and associated symptoms of respiratory obstruction and problems with feeding, which are the another common symptoms (7). Cystic lymphangioma of neck usually enlarge rapidly because of an upper respiratory infection (8).

Imaging is very important for clinical diagnosis and for surgical planning of cystic lymphangioma.

Ultrasound is commonly used to investigate a neck mass. Ultrasound enables differentiation between cystic and solid masses and identifies the anatomic location, association to other structures, and allows

accurate needle aspiration or biopsy (9,10). Imaging findings of plunging ranula contain a unilocular large mass, lack of internal septations, a smooth capsule and location extrinsic to the submandibular gland (11). Cervical US and Doppler US can distinguish between cystic and solid masses and show whether there is vascular circulation. So that the differential diagnosis of cystic lymphangioma from hemangioma can be made. Ultrasound, Doppler US, and ultrasound with fine-needle aspiration cytology, computed tomography or magnetic resonance imaging (MRI) may be used for diagnosis and differential diagnosis all cystic lesions (12,13); however, MRI is the ideal examination in neck cystic lymphangiomas to imaging its association with the adjacent organ and neck vascular nerve bundle (14).

In our case who was followed up for bilateral submandibular cystic swelling in the prenatal period, our first diagnosis was left cystic lymphangioma because of the presence of a left submandibular 47x22 mm lesion on the first postnatal US and the absence of a ranula. However, sporadic coexistence of ranula and left cystic lymphangioma was considered in the patient, since the left ranula developed first in the following months and remained uneventful until the age of two after ranula incision and marsupialization. Therefore, until the age of two, follow-up was done with US and Doppler US.

First line treatment for cystic lymphangioma is complete cystectomy and injection of a sclerotic agent such as bleomycin and or radiotherapy (15,16,17,18). Local recurrence is possible if there component is incomplete. Large and complex lesions are usually related with vital structures such as cranial nerves and major vessels of the neck. Multiple-staged excisions and debulking procedures are often needed (8).

Many methods of treatment for ranula has been suggested and include aspiration of cystic fluid, sclerotherapy, marsupialisation, excision of the ranula only, excision of the ranula and the ipsilateral sublingual gland (19). The lingual nerve and submandibular duct will be at risk for injury particularly in infant patients because of near to the sublingual gland (20). In plunging ranula, the mucus collection is in the submandibular and submental area of the neck with or without an connected intraoral collection (20).

Cases which clinical evaluation and MRI can not differentiate a plunging ranula from other lymphatic lesions; fine needle aspiration and amylase measurement are important. Elevated levels of salivary amylase are characteristic to plunging ranula fluid (21). Diagnosis is definitely established with fine-needle aspiration and demonstration of mucus and high amylase content (11). In our case, during the first bleomycin injection for cystic lymphangioma, no characteristic was detected in the intracystic aspiration fluid; however, since there was no ranula in the first application, amylase was not tested in the cyst fluid.

When the sublingual gland is completely excised, recurrence rate is 1% and if complete excision is not achieved it can be higher than 50% (5). Complete cystectomy is difficult in children when the cyst wall is thin and the lesion has infiltrated deeply into areas surrounding important cervical organs or has adhered them; this causes severe complications and recurrence (9,22,23).

In our case, the shrinkage and re-growth of the cyst after the first bleomycin injection suggested that there was a recurrence. When the two-year-old presented with bilateral prominent submandibular swelling and bilateral ranula, it was thought that our patient may have cystic lymphangioma with plunging ranula; this time not only US and Doppler US; at the same time, MRI was performed to show the borders of the cystic lesion, its neighborhoods, salivary glands and its relationship with the neck vascular nerve bundle. Indeed, in our case, it was detected that plunging ranula and cystic lymphangioma were bilateral, and she was operated with a multidisciplinary approach.

In conclusion; having plunging ranula with cystic lymphangioma and bilateral presence is a very rare condition. It should always be kept in mind that ranula or cervical cystic lymphangioma, which appears simple at first attempt, may recur or develop into plunging ranula. In all cystic lesions in close proximity to all cervical submandibular salivary glands; whether or not cystic lymphangioma or plunging ranula is considered; determination of amylase into the cystic aspiration fluid may be helpful in planning follow-up and treatment in cases with a complicated course.

Figure Legends:

Figure a: A cystic mass are seen in sublingual left side.

Figures b 1, 2: Bilateral submandibular swelling happened in last 15 days.

Figures c 1, 2: MRI showed a bilobe mass measuring 49x56x64 mm, located in the submandibular space, and it passes through the mylohyoid muscle in the neck region and extends into the mouth.

Figures d 1, 2, 3: 1: Bilateral submandibular cystic lymphangioma was excised almost completely with the partial excision of the left submandibular salivary gland. 2: 1 cm' deep cyst wall could not be completely removed. 3: Excised cyst was seen.

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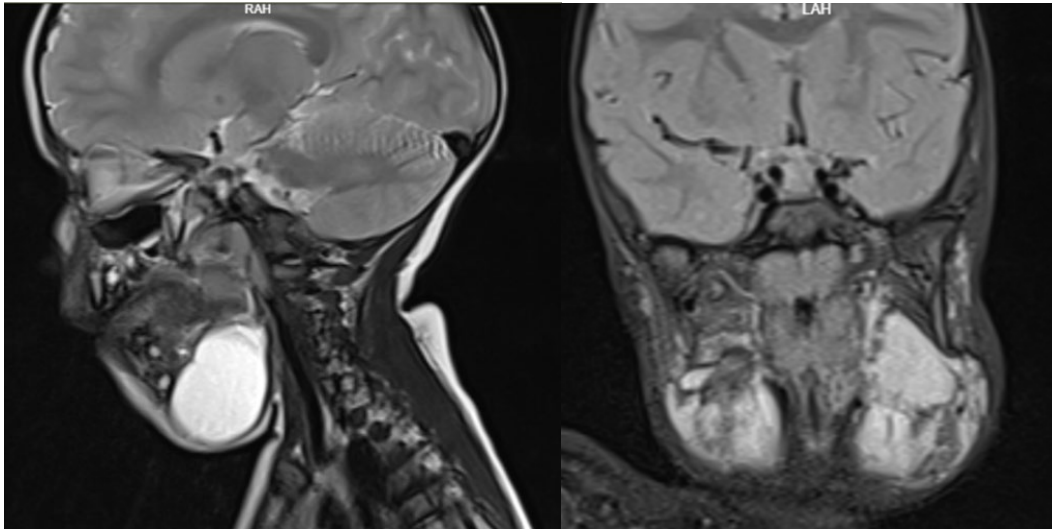
Figures



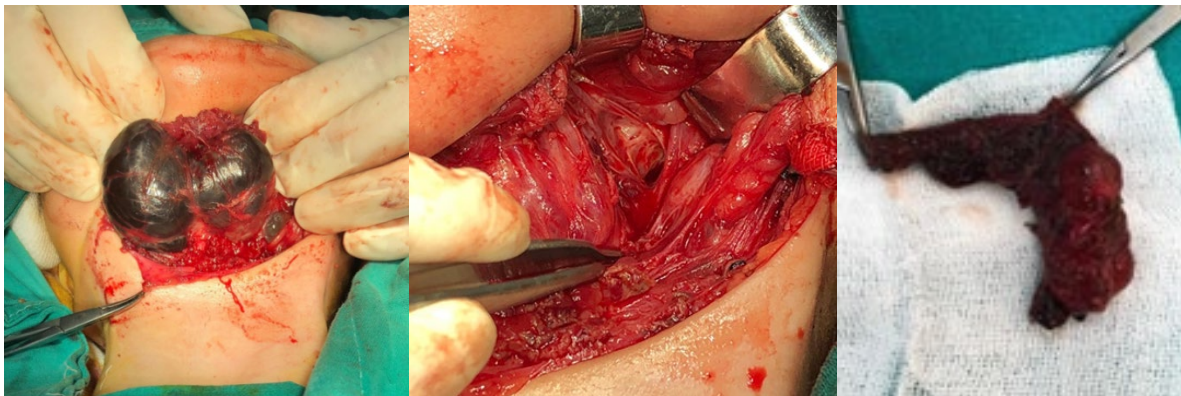
Figure A



Figures B1, B2



Figures C1, C2



Figures D1, D2, D3

ID-121 / OP: “Single Stage Treatment of Rectal Atresia by Trans-Anal Approach: No Need for Stoma.”

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Abstract (ID-121)

Introduction: Rectal atresia is a very rare condition among the all anorectal anomalies and it is predominantly seen in males. The anal opening is normal, anal sphincter is well developed and there is an atretic rectal segment between the anorectal channel. Many operative procedures have been reported and most cases have been managed with staged procedures.

Materials and Methods: We reported here successful treatment of rectal atresia in a neonate of rectal atresia with left renal agenesis and hypospadias by single stage endo anal approach, without stoma. On rectal examination, anal opening was normal and there was no meconium. However, a firm catheter could not be passed more than 25 mm into the anal canal. Abdominal X-ray showed massively dilated bowel loops. The length between the anus and blind rectal pouch was measured 5 mm at the postnatal 24th hour by the cross table lateral X-ray.

The tip of the anus was demonstrated with baby retractors; and a cross-shaped incision was made with a needle cautery in the most proximal mucosa of the anal canal, which ends bluntly above the dentate line, and was reached to the rectal canal by dissection. The rectum mucosa in proximal and dentate line's mucosa in distal were anastomosed with 4/0 absorbable sutures mutually

Discussion and Conclusion: Rectal atresia is a very rare condition with an incidence of 1%-2% in all anorectal anomalies and it is predominantly seen in males.

Clinical presentation in rectal atresia include failure to pass meconium, inability to insert a firm rectal tube or thermometer to anal verge and when the diagnosis is delayed, abdominal distention or bilious vomiting.

The rectal atresia is diagnosed when a firm tube fails to pass into the rectum, failure to passage meconium or when the diagnosis delayed abdominal distention and bilious vomiting. Plain X-ray and invertogram, pelvic and abdominal ultrasound, echocardiography (and/or pelvic MRI) have been used to scanning preoperatively.

Many operative approaches have been described for the treatment of rectal atresia but there is no clear consensus on best management.

Rectal atresia is very rare condition and it is usually associated with other anomalies. The association of renal agenesis, glanuler hypospadias and rectal atresia has not been previously reported in English Literature. Trans-anal anorectal anastomosis without stoma offers a safe, effective and comfortable techniuqe for treatment of rectal atresia and decreases the chance of injury.

Keywords: Rectal atresia, Transanal aprochach, Single stage, Treatment, Childeren

Full text (ID-121)

Introduction: Rectal atresia is a very rare condition in all anorectal anomalies and it is predominantly seen in males (1,2). The anal opening is normal, external and internal sphincters are well developed and there is an atretic rectal segment between anal canal and rectum. The classification of rectal atresia divided five types (1). Complete fibrous membrane or severe stenosis between distal rectum and anal canal are the prevalent types (3). Typically the rectal atresia is diagnosed when a firm tube fails to pass into the rectum. Diagnosis can be delayed in cases of rectal stenosis because of meconium may pass.

Various operative procedures for treatment of rectal atresia have been reported. Most cases have been managed with a staged procedure with covering sigmoid colostomy (1,4,5,6). Performing a colostomy in rectal atresia ensures the patient's fecal discharge and anastomosis safety during the repair of rectal atresia. The cases reported so far have generally been treated by opening a colostomy.

Here, successful treatment of rectal atresia in a neonate of rectal atresia with left renal agenesis and hypospadias was reported by single stage endo anal approach without stoma.

Materials and Methods: A 1 day old male neonate who was born at 39 gestational weeks with a birth weight of 2770 gram transferred to our department, because a firm tube was not passed into the rectum during the routine examination of baby. On inspection of the perineum the anal opening were normal; and external genitalia has hypospadias with skin hood prepuce (Figure: a1, 2).

On rectal examination, anal opening was normal and there was no meconium. However, a firm catheter could not be passed more than 25 mm into the anal canal. Abdominal X-ray showed massively dilated bowel loops (Figure b). The length between the anus and blind rectal pouch was measured 5 mm at the postnatal 24th hour by the cross table lateral X-ray (Figure c). Urinary ultrasound revealed left renal agenesis; and there was no presacral mass on spinal ultrasound. Echocardiography was normal. There was no meconium in the urine.

At the beginning of the operation, good muscle contractions around the anus were observed on four quadrants by a muscle stimulator. The tip of the anus was demonstrated with baby retractors; and a cross-shaped incision was made with a needle cautery in the most proximal mucosa of the anal canal, which ends bluntly above the dentate line, and was reached to the rectal canal by dissection. The rectum mucosa in proximal and dentate line's mucosa in distal were anastomosed with 4/0 absorbable sutures mutually (Figure d1). Number 11 hegar dilatator was passed into the rectum (Figure d2). Thus, type II rectal atresia has been repaired primarily and successfully without stoma by trans-anal route performed on single stage.

On 7th day, patient was discharged with normal gastrointestinal passage. First rectal examination with number 11 hegar dilatator was performed in postnatal 21th day old; on monthly follow-ups was uneventful for 3 months.

Discussion and Conclusion: Rectal atresia is a very rare condition with an incidence of 1%-2% in all anorectal anomalies and it is predominantly seen in males (1,2). The anal opening and anal canal is normal and ends blindly at 1.5–3 cm from the anal verge, external and internal sphincter are well developed and there is an atresia in the junction of anus and rectum.

The embryogenesis process of development rectal atresia is unknown. But some theories have been postulated such as embryological theory (vasculer accident between 13th-14th gestasional week), genetic theory (especially high incidans in Southern India) and infective theory (intrauterine infection causing thrombosis of the vessels and atresia) (1,7).

Rectal atresia has been classified as type IV using the Ladd-Gross classification, and as a separate high or intermediate variety using the International classification of ARM and under the group of rarities by the Wingspread classification. Depending upon the distance between the proximal rectum and distal anorectum, four grades have been described (8): grade 1: rectal atresia with a short gap between each (most common); grade 2: rectal atresia with a long gap; grade 3: membranous septal type, and grade 4: rectal stenosis. Grade 2 rectal atresias have not been found in clinical practice, even in areas with a very high incidence of this anomaly. Moreover, a few cases of double rectal atresia (multiple) have been reported recently (9,10,11,12). There is neither a mesentery to the rectum nor a fistula described with this anomaly. Revised classification of rectal atresia was made by Devendra K. Gupta and Shilpa Sharma. Type I, rectal stenosis (rare); Type II, rectal atresia with a septal defect; Type III, rectal atresia with a fibrous cord between the two atretic ends (common); Type IV, rectal atresia with a gap; Type V, multiple rectal atresia with stenosis (A), and multiple atresia (B; only four cases reported) (Modified from Gupta and Shilpa) (1,13,14).

Clinical presentation in rectal atresia include failure to pass meconium, inability to insert a firm rectal tube or thermometer to anal verge and when the diagnosis is delayed, abdominal distention or bilious vomiting. Rectal atresia is usually diagnosed with a firm tube fails to pass into the rectum after routine

control at birth. Diagnosis can be delayed in cases of rectal stenosis because of meconium may pass. In our hospital, all newborns are screened by placing a wide nasogastric tube into the anal canal to confirm openness. Therefore, all congenital anorectal malformations, including rectal atresia, are noticed during the first examination.

Imaging is important for planning surgery, confirm the exact anatomy and investigate associated anomalies. Plain X-ray and cross table X-ray (invertogram), abdominal and pelvic ultrasound, cranial and spinal ultrasound, echocardiography (and MRI) have been used to scanning preoperatively (15,16). Because of possibility of association presacral mass (29% patients in Pena's series (5), some authors (15,17) suggested spinal ultrasound and/or pelvic MRI in the newborn period. An invertogram after 18 hours of birth with a radio opaque marker put in the anal canal may help to determine the length between the pouches (4). The gap between the pouches in our case was measured 5 mm by an invertogram in postnatal 24th hour.

Associations with congenital cardiac and urogenital anomalies, skeletal anomalies, presacral masses in cases with rectal atresia were reported in the literatures (1,5,6,15,18,19). Glanuler hypospadias was reported in one case with combined VSD (18). Rectal atresia and assosiations of the congenital anomalies such as congenital cardiac and renal diseases, skeletal anomalies, presacral masses, pouch colon anomalies, vaginal atresia and vesical, urethral, vestibular fistulas of the rectum was reported previously in literature (1,5,6,15,18,19). More than 50% of patients with anorectal malformations have other concurrent congenital anomalies (20). In our case, left renal agenesis was determined in abdominal US, and cranial and spinal ultrasound were found normal, and echocardiography were normal; also, he had hypospadias with skin hood prepuce.

Many operative approaches have been described for the treatment of rectal atresia but there is no clear consensus on best management. Operative techniques include posterior sagittal anorectoplasty, transanal endorectal pull-through, transanal end-to-end rectorectal anastomosis, Y-V anorectoplasty, abdominoperineal pull-through, single-stage sacral approach, magnamosis, transanal membranotomy, endoscopic transanal approach, soave pull-through, Duhamel's procedure (1,3,9,21,22,23). Each surgical technique has its own advantages and disadvantages. The main objective of the surgical repair in rectal atresia is to preserve the sphincter complex, anal canal and dentate line for good continence (4,17,24). Total mobilization and resection of the anal canal should be avoided in order not to disrupt the sphincter mechanism. Preservation of anal canal offers a safe, easy and effective technique to rectal atresia and decreases the chance of injury. In addition, depending on the type of rectal atresia and associated anomalies, opening a stoma may be advised generally. Colostomy may not be required in the first 4 types of rectal atresia; however, performing a colostomy in type 5 atresia ensures the patient's fecal discharge and anastomosis safety during the repair of rectal atresia. Colostomy was not initially

considered in our case, since the gap length was very short, such as 5 mm, and type II rectal atresia; it was decided to start the surgery with the primary trans-anal approach.

Rectal atresia is very rare condition and it is usually associated with other anomalies. The association of renal agenesis, glanuler hypospadias and rectal atresia has not been previously reported in English Literature. Trans-anal anorectal anastomosis without stoma offers a safe, effective and comfortable techniuqe for treatment of rectal atresia (especially Types I,II, III, IV) and decreases the chance of injury.

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Figure Legends:

Figures



Figure A1, A2: A1-Perineum, A2-Glanular hypospadias



Figure B: Abdominal radiography showed massively dilated bowel loops



Figure C: An invertogram after 24 h of birth

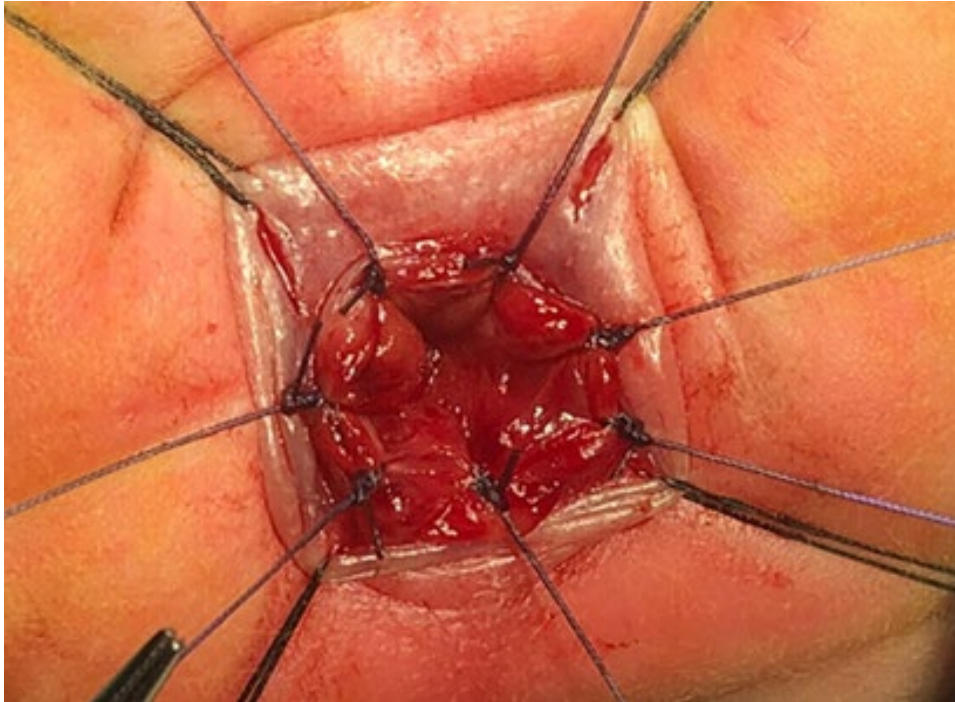


Figure D1, D2: Endoanal anorectal anastomosis

ID-122 / OP: “Tracheostomy Experiences in 37 Children During 12 Years”

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Abstract (ID-122)

Introduction: The most important indication for tracheostomy in children is long term intubation due to cardiopulmonary and neurological diseases. Pediatric tracheostomy reveals high rates of complication and mortality. Here, to discuss of our tracheostomy experiences in children was aimed.

Materials and Methods: All medical records of children who underwent tracheostomy in our department between 2009 and 2021 were analysed retrospectively.

Results: During 12 years, the tracheostomy was performed in 37 children. Seventeen of were male (45.9%), and 20 of were female (54.1%). The median age of tracheostomy was 5-month old (min:2months-max:14years).

Results: 73% of delivered by C/S. The mean birth weight was 2047±809.1 gr (min:560gr-max:3280gr). 10-case had 30gws/less, 14-case had between 31-37gws, and 5-case had 38gws/over. While 23-neonate (62.2%) were intubated after delivery, and emergency tracheostomy was performed in 3-neonate (8.1%) in the delivery room due to 2-tracheal atresia and 1-mandibular agenesis. The tracheostomy underwent in 6-neonate within the first 2-day; the tracheostomy underwent over the 2-month-old in 28-case (%75.7). Primary diseases as 9-bronchopulmonary dysplasia (BPD), 8-respiratory distress syndrome(RDS), 5-severe tracheomalacia, 4-oesophageal atresia(OA+TEF), 3-subglottic stenosis, 2-tracheal atresia, 2-narrow thorax, 1-congenital laryngeal polip, 1-congenital central alveolar hypoplasia, 1-acute bronchiolitis due to syncytial, 1-meconium aspiration syndrome(MAS), 1-CDH with unilateral lung agenezis were determined. While 12-patient had major cardiologic anomalies, 10-patient were syndromic. The additional pathologies were 9-epilepsy, 6-congenital hypotonia, 4-cerebral palsy, 4-urinary system anomaly, 3-spinal muscular atrophy, 2-cystic fibrosis, 1-hydrocephalus+meningomyelocele, 1-osteogenesis imperfecta, 1-Hirschsprung disease, 1-anal atresia, 1-omphalocele, and 1-hypothyroidism. 24-patient(64.9%) did not have history of any operation before the tracheostomy, while some cases had as 4-TEF repair, 3-primary OA repair, 3-gastrostomy opening, 3-bronchoscopy, 2-ileostomy opening, 1-esophagostomy. Emergency tracheostomy was in 8 (21.6%),

while planned tracheostomy was in 29 (78.4%). Except for 14-year-old and 7-month-old patients, the mean intubation time of 35-patient until the tracheostomy was 80.14 ± 74.12 days (min:1-max:300days). The mean operative weight was $3580 \pm 1795,7$ gr (min:560gr-max:7000gr). Simultaneous operation wasn't performed in 21-patient (56.8%); but in 8-bronchoscopy, 4-catheter insertion, 4-Nissen antireflux with gastrostomy, 1-recurrent TEF, 1-esophagoscopy(suspected foreign body obstruction), 1-inguinal hernia, 1-granulation excision from the esophagotomy margin and 1-muscle biopsy were performed. During the operation and early postoperative days, there was no problem in 34-patient(91.9%), 2-neonate(5.4%) with tracheal atresia were lost in first and second days. One patient was desaturated (2.7%) due to cannula misplaced during the dressing, the cannula was safely inserted again after intubation. 2-cannula removal, 1-granulation, 2-cannula occlusion (one on the postoperative 2ndday and second on the postoperative 10thday) were seen as complications of tracheostomy. 23-patient (62%) transferred to the intensive care unit of our hospital, 8-patient (22%) transferred other hospitals (which referred for tracheostomy us from their external center) between 1-day and 150-day. 33-case (62.2%) survived, and 14-case (37.8%) died. Among the surviving patients, two tracheostomy were closed in a boy with CDH and in a girl with EA+Distal TEF+Severe Tracheomalasia+Fallot Tetralogy 3-year later.

Discussion and Conclusion: Patients must be consulted with neonatal or pediatric intensive care unit physicians for tracheostomy indication. Pediatric tracheotomy can be successfully performed with minimal children rates through appropriate surgical technique and adequate postoperative care. Tracheostomy care is as important as opening it.

Keywords: tracheostomy, children, complication, mortality

ID-123 / OP: “GBM Grade 4 Radyoterapi Tedavi Alan Olgularda Ki-67 belirteç ve Uzatılmış Temozolomidin Sağkalıma Etkisi”

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Abstract (ID-123)

Giriş ve Amaç: GBM (Glioblastome multiforme) Grade 4 tanılı standart tedavi alan olgularda klinik tedavi yöntemlerinin, Ki-67 ve IDH1 mutasyon immünohistokimyasal belirteçlerin sağkalım üzerine etkilerini inceledik.

Gereç ve Yöntem: Pamukkale üniversitesi radyasyon onkolojisi'nde Temmuz 2011- mayıs 2020 tarihleri arasında total ya da subtotal rezeke edilen GBM tanılı postop radyoterapi alan adjuvan temozolomid ile tedavi edilen ya da temozolomid alamayan 90 olgu değerlendirildi. Opere edilen post-opere eksternal radyoterapi ile birlikte eşzamanlı temozolomid tedavi sonrasında temozolomid tedavisi 6 kür ve üstünde alabilen 33 olgu çalışmaya dahil edildi. Klinik tedavi yöntemlerinin, Ki-67 ve IDH1 mutasyon immünohistokimyasal belirteçler Kaplan Meier yöntemi Log-rank testi ile sağkalım analizi yapıldı.

Bulgular: Standart tedavi alamayan çalışmaya dahil edilemeyen 67 olgu operasyondan birkaç ay içinde genel durum bozukluğu nedeniyle eks olduğu görüldü. Çalışmaya dahil edilen 33 olgunun median sağkalımı 14 aydı. Median yaş 59 min 37-maks 74'tür. IDH wild 2 kişi, IDH1 mutant 2 kişi vardı. IDH wild ve IDH1 mutasyonlu kişilerin sayıları az olması nedeniyle istatistiksel analiz yapılamadı. 60 yaş ve üstü olgular ile 60 yaş altı olgular, erkek ve kadın cinsiyet arasında, Ki-67 % 40 ve üstü olanlar ile düşük olanlar arasında sağkalım farkı yoktu. Gros total rezeke olan olguların sağkalımı median 20 ay, subtotal rezeke edilen olguların sağkalımı median 13 aydı (p=0,007). Adjuvan temozolomid 6 kür alanlar ile 6 kürden yüksek alan olgular arasında anlamlı sağkalım farkı yoktu (p=0,66). Nüks eden olgulara rezeksiyon yapılması mean 21,6 ay ile sağkalım yüksekken median sağkalımda farklılık yoktu (p=0,81). Nüks eden olgulara adjuvan radyoterapi / steriotaktik radyocerrahi yapılması sağkalım median 21 aya yükseltti (p=0,84). Nüks eden olgulara bevasizumab+irinotekan kemoterapi verimesi ile sağkalım median 24 aya yükseldi (p=0,12).

Tartışma ve Sonuç: GBM Grade 4 beyin tümörlü olgularda yaşlılar ile gençler arasında sağkalım farkı yoktur. İmmünohistokimyasal Ki-67 yüksek olması sağkalımda farklılık yaratmadı. Gros total rezeksiyon yapılması sağkalımı artırır. Adjuvan temozolomid 6 kürden fazla yapılması sağkalımda fark

yaratmadı. Nüks eden olgulara reeksizyon sağkalımı arttırmazken eksternal radyoterapi ya da radyocerrahi yapılması ve kemoterapi verilmesi sağkalımı arttırdı.

Keywords: Glioblastome multiforme, Ki-67immünohistokimyasal belirteç, Temozolomid, Nüks Glioblastome multiforme tedavi

ID-124 / OP: “Scabies Outbreak at the Internet: Is It Possible to Predict from Google Trends Data?”

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Abstract (ID-124)

Introduction: Scabies is a neglected public health issue in both resource-poor and developed countries. Overcrowding is reported as the main predisposing factor for scabies (5). Ideally, scabies is diagnosed by the evaluation of both the clinical features such as the patient’s history of contact, rashes due to pruritus, increased itching at night and the data obtained by dermatoscopy and laboratory diagnostic methods. However, in daily practice, the diagnosis of scabies is delayed or missed due to the lack of coordination in the diagnostic stages. Delayed diagnosis usually causes outbreaks and are difficult to control. Therefore, early diagnosis is crucial. According to 2019 data from the Turkish Statistical Institute, 69.3% of internet subscribers use the internet to search for health-related information. In this study, it was aimed to investigate the relationship between google queries and hospital admissions due to scabies in our country.

Materials and Methods: The number of scabies cases was increased significantly in our hospital in the year 2018. For this reason, the relationship between the number of admissions to the laboratory for the diagnosis of scabies in 2017 and 2018 and the google trends query numbers associated with scabies symptoms was investigated. The data of admissions to the laboratory was obtained from the laboratory information system of the University Faculty of Medicine Parasitology Direct Diagnosis Laboratory retrospectively. Google Trends Turkey data was obtained for the two main symptoms of scabies (night itching and constant itching) with queries “gece kaşıntısı” and “geçmeyen kaşıntı”. Spearman’s correlation analysis was done using SPSS software.

Discussion and Conclusion: A total of 280 patients (46 in 2017, 234 in 2018) were admitted to our laboratory for the diagnosis of scabies. *Sarcoptes scabiei* was detected in 4 patients (8.7%) in 2017 and 78 patients (33.3%) in 2018. In two years, “gece kaşıntısı” was searched 1457 times and “geçmeyen kaşıntı” was searched 982 times. A significant relationship was found between the total number of queries and the total number of laboratory admissions, according to monthly data ($p=0.035$, $R=0.431$). When evaluating according to query subgroups, a significant relationship was found between “gece kaşıntısı” and the total number of laboratory admissions ($p=0.022$, $R=0.466$) but no relationship was found for “geçmeyen kaşıntı” ($p=0.567$).

Discussion: The World Health Organization designated scabies as a neglected tropical disease in 2017. In the fight against scabies, early diagnosis and treatment of patients are critical to prevent the spread of the disease. Due to the social stigma caused by scabies, patients often try to make their own diagnosis and hesitate to admit to the hospital. It is important to detect scabies cases with a proactive approach before they turn into a major epidemic. We think that the epidemiology of scabies is a suitable field for the application of technological approaches such as machine learning and artificial intelligence methods. Conclusion: According to the results of our study, Google Trends query data for night itch can be used to predict scabies outbreaks.

Keywords: Google Trends, Scabies, Machine Learning, Prediction

ID-125 / OP: “Prevalance and Distrubution of Congenital Heart Defects in Prenatal Period; The 6-year Experience at a Single Center.”

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Abstract (ID-125)

Introduction: Congenital heart defect (CHD) is the most common congenital malformation (1). Accurate prenatal diagnosis of the CHD subtype is important to enable better clinical decision making, including prenatal management, recommendations for termination of the pregnancy, postnatal management of the patient, and for early referral to pediatric cardiology and cardiovascular surgery centers (2). Fetal echocardiography (FE) remains the gold standard for identification of at risk pregnancies. In various low-risk as well as unselected groups, FE has excellent sensitivity at picking up major defects (3) . We aimed to evaluate congenital heart defect cases, prevalence and distrubution that were diagnosed during the prenatal period in our center.

Materials and Methods: Our study was retrospectively designed at Democracy University Medical Faculty, Buca Seyfi Demirsoy Training and Research Hospital. Echocardiography results of the patients who underwent fetal echocardiography in the pediatric cardiology unit were recorded. Fetal hearts were examined by two-dimensional, pulsed wave and color Doppler echocardiographic methods. This process took place utilizing the standard transabdominal approach. Two-dimensional imaging was performed for four-chamber, five-chamber, three vessels, ductal arch, aortic arch positions, short and long axis views of great vessels. Cardiac situs, rhythm, venous inflow, atrial and ventricular chambers, atrioventricular and semilunar valves, ventriculo-arterial connections, aortic and the ductal arches were visualized in all cases.

Results

A total of 4448 cases of fetal echocardiograms performed over a period of 6 years (February 2014 - July 2020) were compiled and analyzed. After the analysis of all cases, it was observed that CHD was present in 98 (2.2 %) patients. Various types of CHD were seen as shown in Table 1. The most common anomaly among minor cardiac anomalies was Ventricular septal defect (VSD). Hypoplastic left heart syndrome (HLHS) was the most common among complex cardiac anomalies.

Discussion and Conclusion: Fetal echocardiography plays a major role in the prenatal diagnosis of CHD. It also helps to improve the pregnancy outcome of fetuses with selected CHD and there is clinical benefit with regard to infant outcomes.

The incidence of CHD as seen in our study is 2.2 % . In a previous similar study by Stümpflen et al , they also reported incidence of CHD detected by fetal echocardiography (14.9 per 1,000 pregnancies) (4) . In another study conducted by Özbarlas N et al. the frequency of structural cardiac anomaly was found to be 5.6% in all pregnant women (5). In a comprehensive study conducted by Tegnander et al. 29460 non-selected fetuses that had been assessed in a prenatal period were followed-up in the prenatal and postnatal periods. Of these, 430 (14.6/1000 prenatal and/or live birth) had CHD (6). Similarly, non-selected fetuses were evaluated in our study. The distribution of CHD in the intrauterine period is different from that of the postnatal period. In large series of non-selected pregnant women, the distribution of CHD was found to be ventricular septal defect (VSD) , atrioventricular septal defect (AVSD), transposition of great arteries (TGA) and HLHS in decreasing order of frequency (6) . In our study, VSD, HLHS , TGA, tetralogy of fallot (TOF) and AVSD were observed most frequently in decreasing rates. In conclusion, prenatal diagnosis of a CHD and subgroup classification is very important for clinical decision making, including prenatal management, recommendations for termination of the pregnancy, postnatal management of the patient, and for early referral to pediatric cardiology and cardiovascular surgery centers.

Keywords: Congenital heart defect; fetal echocardiography; prenatal diagnosis

Full text (ID-125)

Introduction: Congenital heart defect (CHD) is the most common congenital malformation (1).

Accurate prenatal diagnosis of the CHD subtype is important to enable better clinical decision making, including prenatal management, recommendations for termination of the pregnancy, postnatal management of the patient, and for early referral to pediatric cardiology and cardiovascular surgery centers (2). Fetal echocardiography (FE) remains the gold standard for identification of at risk pregnancies. In various low-risk as well as unselected groups, FE has excellent sensitivity at picking up major defects (3) . We aimed to evaluate congenital heart defect cases, prevalence and distribution that were diagnosed during the prenatal period in our center.

Materials and Methods: Our study was retrospectively designed at Democracy University Medical Faculty, Buca Seyfi Demirsoy Training and Research Hospital. Echocardiography results of the patients who underwent fetal echocardiography in the pediatric cardiology unit were recorded. Fetal hearts were examined by two-dimensional, pulsed wave and color Doppler echocardiographic methods. This process took place utilizing the standard transabdominal approach. Two-dimensional imaging was performed for four-chamber, five-chamber, three vessels, ductal arch, aortic arch positions, short and long axis views of great vessels. Cardiac situs, rhythm, venous inflow, atrial and ventricular chambers,

atrioventricular and semilunar valves, ventriculo-arterial connections, aortic and the ductal arches were visualized in all cases.

Results: A total of 4448 cases of fetal echocardiograms performed over a period of 6 years (February 2014 -July 2020) were compiled and analyzed. After the analysis of all cases, it was observed that CHD was present in 98 (2.2 %) patients. Various types of CHD were seen as shown in Table 1. The most common anomaly among minor cardiac anomalies was Ventricular septal defect (VSD). Hypoplastic left heart syndrome (HLHS) was the most common among complex cardiac anomalies.

Table 1. Types of congenital heart diseases diagnosed on fetal echocardiography

CHD types	n
Left –to-right shunt	
AVSD	4
VSD	22
Small VSD	44
Transposition of the great arteries(TGA)	
TGA	3
Pulmonary outflow tract obstruction	
TOF	4
Pulmoner atresia/ PS	1
Left ventricular outflow tract obstruction	
HLHS	9
Aortic valve stenosis	1
CoA (coarctation of aorta)	2
Condition with intracardiac mixing	
Truncus arteriosus	1
Others	
Rabdomyom	1
Atrial isomerism+AVSD	1

Triküspit atresia	1
Single ventricle	1
Pericardial efusion	1
TAPVR	2

AVSD: atrioventricular septal defect , VSD (ventricular septal defect), TGA: transposition of great vessels; TOF: tetralogy of Fallot; HLHS: hypoplastic left heart syndrome; TAPVR: total anomalous pulmonary venous return;

Discussion and Conclusion: Fetal echocardiography plays a major role in the prenatal diagnosis of CHD. It also helps to improve the pregnancy outcome of fetuses with selected CHD and there is clinical benefit with regard to infant outcomes.

The incidence of CHD as seen in our study is 2.2 % . In a previous similar study by Stümpflen et al , they also reported incidence of CHD detected by fetal echocardiography (14.9 per 1,000 pregnancies) (4) . In another study conducted by Özbarlas N et al. the frequency of structural cardiac anomaly was found to be 5.6% in all pregnant women (5). In a comprehensive study conducted by Tegnander et al. 29460 non-selected fetuses that had been assessed in a prenatal period were followed-up in the prenatal and postnatal periods. Of these, 430 (14.6/1000 prenatal and/or live birth) had CHD (6). Similarly, non-selected fetuses were evaluated in our study.

The distribution of CHD in the intrauterine period is different from that of the postnatal period. In large series of non-selected pregnant women, the distribution of CHD was found to be ventricular septal defect (VSD), atrioventricular septal defect (AVSD), transposition of great arteries (TGA) and HLHS in decreasing order of frequency (6). In our study, VSD, HLHS, TGA, tetralogy of fallot (TOF) and AVSD were observed most frequently in decreasing rates.

In conclusion, prenatal diagnosis of a CHD and subgroup classification is very important for clinical decision making, including prenatal management, recommendations for termination of the pregnancy, postnatal management of the patient, and for early referral to pediatric cardiology and cardiovascular surgery centers.

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**ID-126 / OP: “A Comparative Study of Children with MIS-C and Acute COVID-19
Admitted to A Tertiary Pediatric Hospital”**

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Abstract (ID-126)

Introduction: Initial studies reported that children with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection generally present with mild symptoms or are asymptomatic. However, after the onset of the coronavirus disease 2019 (COVID-19) pandemic, multisystem inflammatory syndrome (MIS-C), a novel clinical entity that causes morbidity and mortality, has been defined. In this study, we aimed to evaluate the demographic characteristics and hospitalization durations of the patients with MIS-C and COVID-19.

Materials and Methods: This study included a retrospective analysis of 410 MIS-C and COVID-19 patients confirmed by RT-PCR or antibody test, from March 2020 to November 2021. The age, gender, length of stay, and underlying chronic medical conditions of the patients were obtained from the electronic medical system and recorded.

Results: A total of 410 patients was included in the study. Of these patients, 90 were hospitalized with the diagnosis of MIS-C, and 320 were with the diagnosis of COVID-19. Among MIS-C patients, 60 patients were male (66,7%), and 30 were female (33,3%) and among COVID-19 patients, 170 patients were male (53,1%), and 150 were female (46,9%). The median age of the patients with MIS-C and COVID-19 were 75 months (range from 5 to 204 months) and 60 months (range from 1 to 204), respectively. There was no significant difference between the two groups in terms of age. The median length of stay (LOS) of the patients with MIS-C and COVID-19 were 9 days (range from 2 to 20 days) and 4 days (range from 1 to 55 days), respectively. The mean LOS was found to be statistically longer ($9,6\pm3,83$ days) in patients with MIS-C compared to COVID-19 patients ($5,5\pm5,42$ days) ($p < 0.001$). Among patients with MIS-C, the mean LOS was longer in male patients ($10,2\pm4,3$ days) compared to female ($8,6\pm2,3$ days) patients. ($p=0.02$) Among patients with COVID-19, there was no significant difference between female and male patients in terms of LOS. Only 4/90 (%4,4) patients had underlying chronic medical conditions in the MIS-C group. In the COVID-19 group, there were 99/320 (%30,9) patients with underlying chronic medical conditions. The most frequent underlying medical conditions were asthma (%18,2) and obesity (%15,2).

Discussion and Conclusion: While COVID-19 infection creates a greater hospitalization burden, MIS-C causes a longer length of stay. Asthma and obesity are common risk factors for hospitalization in children with COVID-19 as in adults. Male gender may be a factor affecting hospitalization, length of stay, and thus the severity of the disease both for MIS-C and COVID-19 in children. There is a need for further studies on this subject in larger patient groups.

Keywords: COVID-19, length of stay, MIS-C, children

Full text (ID-126)

Introduction: Initial studies reported that children with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection generally present with mild symptoms or are asymptomatic. However, after the onset of the COVID-19 pandemic, multisystem inflammatory syndrome (MIS-C), a novel clinical entity that causes morbidity and mortality, has been defined. (1-3) As of November 30, 2021, 5973 MIS-C cases and 52 MIS-C deaths have been reported by CDC. (4) Therefore, SARS-CoV-2 infection remains menacing for children. In this study, we aimed to evaluate the demographic characteristics and hospitalization durations of the patients with MIS-C and COVID-19.

Materials and Methods: This study included a retrospective analysis of 410 MIS-C and COVID-19 patients confirmed by RT-PCR or antibody test, from March 2020 to November 2021. The age, gender, length of stay, and underlying chronic medical conditions of the patients were obtained from the electronic medical system and recorded. All statistical analysis was performed using SPSS v. 22.0.

Results: A total of 410 patients was included in the study. Of these patients, 90 were hospitalized with the diagnosis of MIS-C, and 320 were with the diagnosis of COVID-19. Among MIS-C patients, 60 patients were male (66,7%), and 30 were female (33,3%) and among COVID-19 patients, 170 patients were male (53,1%), and 150 were female (46,9%). The median age of the patients with MIS-C and COVID-19 were 75 months (range from 5 to 204 months) and 60 months (range from 1 to 204), respectively. There was no significant difference between the two groups in terms of age. The median length of stay (LOS) of the patients with MIS-C and COVID-19 were 9 days (range from 2 to 20 days) and 4 days (range from 1 to 55 days), respectively. The mean LOS was found to be statistically longer ($9,6\pm3,83$ days) in patients with MIS-C compared to COVID-19 patients ($5,5\pm5,42$ days) ($p < 0.001$). Among patients with MIS-C, the mean LOS was longer in male patients ($10,2\pm4,3$ days) compared to female ($8,6\pm2,3$ days) patients. ($p=0.02$) Among patients with COVID-19, there was no significant difference between female and male patients in terms of LOS. Only 4/90 (%4,4) patients had underlying chronic medical conditions in the MIS-C group. In the COVID-19 group, there were 99/320 (%30,9) patients with underlying chronic medical conditions. The most frequent underlying medical conditions were asthma (%18,2) and obesity (%15,2).

Discussion and Conclusion: Rates of COVID-19-associated hospitalizations are reported to be lower in children of all ages compared to adults, but some children develop acute COVID-19 symptoms requiring hospitalization. (5) Although it is rare, some children who have had COVID-19 may later develop MIS-C, a rare but serious condition. (1-3) According to CDC data, the median age of hospitalized COVID-19 patients is 8 years (interquartile range [IQR] = 9 months–15 years), the median duration of hospitalization is 2.5 days (IQR = 1–5 days), and 50.7% of the patients are male. (5) The most prevalent underlying conditions of hospitalized COVID patients include obesity (37.8%), chronic lung disease (18.0%), and prematurity (15.4%). (5) In our study, asthma and obesity are the most common risk factors for hospitalization consistent with the existing data. It suggests that understanding the underlying pathophysiologic association between obesity and SARS-CoV-2 infection may be crucial to identifying possible clinical interventions and preventive strategies to reduce the risk for hospitalization.

In a review that included 39 observational studies, the mean age of MIS-C patients was 9.3 ± 0.5 years, the average length of hospital stay was 7.9 ± 0.6 days, and 52.3% of children were male. (6) According to CDC data, the median age of patients with MIS-C was 9 years and half of the children with MIS-C were between the ages of 5 and 13 years. Of reported patients, 60% were male. (5) Male gender dominance is noteworthy for both MIS-C and acute COVID-19 infection. It is speculated that disparities in sex-specific disease outcomes may be due to sex-specific steroids and the activity of X-linked genes, which modulate the innate and adaptive immune response to virus infection and affect the immune response. (7) In addition, hormonal and genetic factors can affect the expression of ACE2 (the receptor of SARS-CoV-2), microRNA expression and transcription, and vitamin D3 activity. (8-11) However, in the pediatric population, whether or not such differences are present in terms of gender has not yet been the subject of any analysis.

While COVID-19 infection creates a greater hospitalization burden, MIS-C causes a longer length of stay. Male gender may be a factor affecting hospitalization, length of stay, and thus the severity of the disease both for MIS-C and COVID-19 in children. There is a need for further studies on this subject in larger patient groups.

ID-127 / OP: “Hemodynamic Changes and Recovery in Unilateral Spinal Anesthesia Using Bupivacaine and Bupivacaine + Fentanyl Combinations in Outpatient Inguinal Hernia Surgery”

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Abstract (ID-127)

Introduction: The important thing for day surgery anesthesia is to stand up early, the side effects are minimal and the recovery time after the operation is short. We aimed to compare the hemodynamic changes and the differences in recovery after bupivacaine and bupivacaine + fentanyl combinations in unilateral spinal anesthesia in patients who will undergo outpatient inguinal hernia surgery.

Materials and Methods: Sixty ASA I-II group patients who were scheduled for outpatient inguinal hernia surgery were included in the study. No patient was premedicated. 30 minutes from the operation to all patients. 7 ml/kg of Ringer Lactate solution was given first. Group I 7.5 mg 0.5% hyperbaric bupivacaine (1.5 ml) + 0.5 ml isotonic (0.5 ml), Group II 7.5 mg 0.5% hyperbaric bupivacaine (1.5 ml) + 25 mcg fentanyl (0.5 ml), Group II 10 mg of 0.5% hyperbaric bupivacaine (2 ml) was given within 90 seconds. Sensory block levels of the patients in both groups were evaluated with pin-prick test and motor block levels were evaluated with Bromage scale.

Results: Age, height, weight, operation time, ASA physical status, systolic arterial pressure (SAP), Diastolic arterial pressure (DAP), mean arterial pressure (MAP), peak heart rate (HR), oxygen saturation (SP02) among the groups. no significant difference was found in terms of The maximum level of sensory block on the side to be operated, the regression time of 2 dermatomes of sensory block were found to be significantly lower in Group I compared to Groups II and III. No significant difference was found in terms of maximum sensory block level and motor block level in the contralateral side in all three groups. The time to disappearance of motor block was significantly longer in Group III compared to Groups I and II. In all 3 groups, there was no significant difference in hemodynamic effects. No difference was found. Group I was inadequate in terms of peroperative anesthesia quality. During the operation, additional i.v. Analgesia and sedation support was provided. The perioperative anesthesia quality of Group II and Group III was sufficient. Although recovery and standing time was shorter in group II than group III, urinary retention was found to be higher.

Discussion and Conclusion: In daily inguinal hernia surgery, Group I with 7.5 mg 0.5% hyperbaric bupivacaine should not be preferred due to insufficient anesthesia quality, Group II with 25 mcg fentanyl added to 7.5 mg 0.5% hyperbaric bupivacaine and Group II with 10 mg 0.5% hyperbaric bupivacaine are alternatives to each other. However, we concluded that Group III was more advantageous because urinary retention was higher in the group with fentanyl supplementation

Keywords: Bupivacaine, Fentanyl, Hemaodynamic change

Full text (ID-127)

Giriş ve Amaç: Son yıllarda sağlık hizmetlerindeki en dramatik değişimlerden biri uzun süreli hastane bakımı gerektiren cerrahi işlemlerden, gününbirlik cerrahiye doğru bir yönelim olmasıdır. Bu aynı zamanda ambulator cerrahi olarak da anılır. Ayaktan cerrahi için uygun ağrı kontrolü çok önemlidir. Kontrolsüz postoperatif ağrı, iyileşmeyi geciktirebilir, fiziksel aktiviteyi engelleyebilir ve cerrahi sonrası ağrı riskini artırabilir (1).

Bölgesel anestezinin, genel anestezie nazaran santral sinir sistemi fonksiyonlarında daha az değişiklik yapması, operasyon sonrası ağrının azalması ve bulantı, kusma, sersemlik gibi komplikasyonların daha az görülmesi gibi avantajları mevcuttur. Dezavantajları ise; uzamış motor blok veya duysal blok, ortostatik hipotansiyon, idrar retansiyonu ve baş ağrısıdır (2).

Gününbirlik cerrahinin daha popüler hale gelmesi anestezî pratiğinin de etkilemektedir. Bu tür müdahalelerin anestezisi için, birçok çalışma, yeni teknikler, anestezik ajanlar denenmekte ve en ideali bulunmaya çalışılmaktadır. Spinal anestezî için yaygın olarak hiperbarik bupivakain %0.5 kullanılır. Bununla birlikte, bazen bupivakain, peritonyumun traksiyonu sırasında indüklenen ağrıyı önlemede başarısız olabilir (3). Bir lipofilik opioid olan fentanil, intratekal uygulamayı takiben hızlı etki başlangıcına sahiptir. İntratekal opioidlerin viseral ağrıyı hafifletmedeki klinik etkinliği iyi gösterilmiştir. Nöroaksiyel opioidler postoperatif dönemde uzun süreli analjezi ve spinal anesteziden daha hızlı iyileşme sağlar (4-6).

Çalışmamıza gününbirlik inguinal herni cerrahisi geçirecek olgularda spinal anestezide bupivakain ya da bupivakain/fentanil kombinasyonu uygulanan hastalardaki hemodinamik değişiklikleri ve sonrasında oluşan yan etkileri saptamayı amaçladık.

Gereç ve Yöntem: Bu çalışma Haydarpaşa Numune Eğitim ve Araştırma Hastanesi Anesteziyoloji ve Reanimasyon Kliniğinde, gününbirlik inguinal herni cerrahisi uygulanacak, ASA I-II grubuna dahil 60 hasta üzerinde uygulandı. Hastalar rastgele 20'şer kişilik 3 gruba ayrıldı. Hiçbir hastaya premedikasyon uygulanmadı. Bütün hastalara operasyondan 30 dk. önce 7 ml/kg Ringer Laktat solüsyonu verildi.

Hastalar, opere edilecek taraf altta kalacak şekilde yan yatırıldı. L3-4 veya L4-5 aralığından 26 G Atraucan (B Braun medical) spinal iğne ile orta hattan girişim yapıldı.

Grup I'e: 7.5 mg % 0.5 hiperbarik bupivakain + 0.5 ml izotonik 2 ml volüm içinde, Grup II'ye: 7.5 mg %0.5 hiperbarik bupivakain + 25 mcg fentanil 2 ml volüm içinde, Grup IH'e: 10 mg % 0.5 hiperbarik bupivakain 2 ml volüm içinde verildi.

Hastalar 15 dk. yan pozisyonda yatırıldıktan sonra sırt üstü pozisyona çevrildi. Hastalar sırt üstü pozisyona çevrilene kadar, opere edilecek taraftaki maksimum duyusal blok seviyesi, T-10 duyusal blok oluşma süresi, 3., 5., 10., 15. dk.'lardaki duyusal ve motor blok seviyeleri kaydedildi. Operasyon boyunca oluşan yan etkiler (bulantı, hipotansiyon, bradikardi, kaşıntı) kaydedildi. Hastalar, spinal bloktan sonra 6.ve 24. saatte ve 1 hafta sonra telefonla aranarak idrar retansiyonu, baş ağrısı ve nörolojik sekel gibi komplikasyonlar kaydedildi.

Çalışmada elde edilen bulgular değerlendirilirken; istatistiksel analizler için SPSS (Statistical Package For Social Sciences) for windows 10.0 programı kullanıldı. Sonuçlar % 95Tik güven aralığında; $p > 0.05$ anlamsız $p < 0.05$ anlamlı $p < 0.01$ ileri derecede anlamlı $p < 0.001$ çok ileri derecede anlamlı kabul edilmiştir.

Bulgular: Gruplar yaş, boy, ağırlık, kilo, cinsiyet, arasında yaş, boy, ağırlık, kilo, cinsiyet, American Society of Anesthesiologists skoru (ASA) ve operasyon süreleri açısından karşılaştırıldı. İstatistiksel olarak anlamlı fark bulunmadı (Tablo 1). Sistolik arter basıncı (SAB), diastolik arter basıncı (DAB), ortalama arter basıncı (OAB), kalp tepe atımı((KTA) incelendiğinde; gruplar arasında anlamlı fark bulunmadı.

Tablo 1. Gruplara göre demografik özelliklerin karşılaştırılması

		Grup I (n=20)		Grup II (n=20)		Grup III (n=20)		p
		Ortalama±S.D		Ortalama±S.D		Ortalama±S.D		
Yaş		48,05±14,84		40,2±16,73		49,5±15,98		0,146
Boy		173,35±6,48		171,4±7,01		168,8±7,63		0,133
Kilo		74,45±12,66		71,25±8,94		74±13,56		0,656
Operasyon Süresi		65,7±20,24		82,4±34,13		82,65±21,48		0,07
		Sayı(n)	%	Sayı(n)	%	Sayı(n)	%	
Cinsiyet	Erkek	19	95	19	95	19	95	1,000
	Kadın	1	5	1	5	1	5	
ASA	I	7	35	7	35	7	35	1,000
	II	13	65	13	65	13	65	

Tablo 2: Gruplara göre duyusal blok değişimleri

<i>Duyusal blok</i>	Grup I	Grup II	Grup III	<i>p</i>
	Ort.±S.D.	Ort.±S.D.	Ort.±S.D.	
3. dk.	L2±1 (L1-L3)	T12±2 (T10-L4)	L1±1 (T11-L4)	0,001*
5. dk.	T12±1(T11-L1)	Tl 1±1 (T8-L2)	Tl 1±1 (T9-L2)	0,002*
10. dk.	Tl 1±1 (T8-T12)	Tl 0±1 (T8-T12)	T10±1 (T8-T12)	0,006*
15. dk.	T10±1 (T7-T11)	T9±1 (T6-T10)	T9±1 (T6-T10)	0,001*

*p<0,05 anlamlı

Tablo 3: Bloğun ortadan kalkma süresinin gruplara göre dağılımı

	Grup I	Grup II	Grup III	P
	Ort.±S.D.	Ort.IS.D.	Ort.IS.D.	
T10 blok oluşma süresi (dk.)	11,9312,95	8,2514,01	8,7812,46	0,003*
Duyusal blok 2 dermatom gerileme süresi (dk.)	78,30 ± 6,79	95,301 13,95	87,8 17,99	0,001*
Motor bloğun ortadan kalkma süresi (dk.)	172,50122,21	178,35122,36	200,75 128,25	0,001*

*p<0,05 anlamlı

Tablo 4: İlk altı saatte komplikasyonlar ve yan etkilerin gruplara göre dağılımı

	Grup I		Grup II	Grup III		P
	n	%	n %	n	%	
Bulantı	2	10,0	1 5,0	1 5,0		$X^2=0,536$ $p=0,765$
Hipotansiyon	2	10,0	1 5,0	4 20,0		$X^2=2,264$ $p=0,322$
Bradikardi	-		-	2 100		$X^2=4,138$ $p=0,126$
İdrar retansiyon	-		5 25,0	-	-	$X^2=10,909$ $p=0,004^*$
Baş ağrısı	-		1 5,0	-	-	$X^2=2,034$ $p=0,362$
Kaşıntı	-		2 10,0	-	-	$X^2=2,105$ $p=0,349$

* p<0,05 anlamlı

Tartışma ve Sonuç: Günübirlilik inguinal herni cerrahisinde genel anesteziye alternatif bölgesel anestezi teknikleri uygulanmaktadır. Çalışmamızda inguinal herni cerrahisi geçirecek olgularda, 7.5 mg % 0.5 hiperbarik bupivakain + 25 mg fentanil (0.5 ml) ile elde ettiğimiz tek taraflı spinal bloğun, hemodinami ve operasyon sonrası derleme açısından 7.5 mg % 0.5 hiperbarik bupivakain + izotonik 0.5 ml ve 10 mg % 0.5 hiperbarik bupivakain ile karşılaştırdık.

Bizim çalışmamızda, blok öncesi her 3 gruba 7 ml/kg Ringer Laktat solüsyonu verildi. Grup I'de 2 hastada (%10), Grup II'de 1 hastada (%5), Grup III'de 4 hastada (%20) hipotansiyon gelişti. Bu değerler, Casati ve Fanelli, Esmaoğlu ve arkadaşlarının bulduğu sonuçlar ile uyumlu bulundu (7-10)

Çalışmamızda, gruplar arasında KTA değerleri açısından istatistiksel anlamlı fark bulunmadı. Sadece Grup III'de 2 hastada bradikardi gelişti (%10). Bu değerler, Casati ve Arkadaşlarının bulduğu sonuçlar ile uyumlu bulundu. Fakat operasyonun 40. dk.'dan sonra her 3 Grup da kalp tepe atımları başlangıca göre, anlamlı düşüş gösterdi, bu durumu operasyondaki periton çekilmesi nedeniyle oluşan vagal reflekse bağladık.

Casati ve arkadaşları, benzer hasta grubunda tek taraflı spinal anestezi yönteminde 8 mg % 0.5 hiperbarik bupivakin kullanarak yaptığı çalışmada; opere edilecek tarafta maksimum duyusal blok seviyesini T10 (L1-T2), maksimum duyusal blok oluşma süresini 20 dk. (5-30), duyusal bloğun 2 dermatom gerileme süresini 80 dk. (30-135) bulmuşlar (7,8). Bizim çalışmamızda tek taraflı spinal anestezi, opere edilecek taraftaki, maksimum duyusal blok seviyesi ve duyusal bloğun 2 dermatom gerileme süresi sırasıyla; Grup I'de $T_{10} \pm 1$, 78.30 ± 6.79 dk., Grup III'te $T_9 \pm 1$, 87.8 ± 79.9 dk. olarak bulundu. Bu değerler Fanelli, Casati ve arkadaşlarının bulduğu sonuçlar ile uyumlu bulundu (7,8). Çalışmamızdaki duyusal bloğun gerilemesinin geciktiği fentanil grubunda, postoperatif analjeziye başlama süresinin daha uzun olacağı kanaatindeyiz.

Vincent ve arkadaşlarının % 0.75' lik hiperbarik bupivakain kullanarak yaptıkları çalışmada, % 7 oranında idrar retansiyonu gelişmiş ve bunlara idrar sondası takılmış (11). Casati ve arkadaşlarının 8 mg % 0.5 hiperbarik bupivakain kullanılarak yaptığı tek taraflı spinal anestezi çalışmasında, sadece 1 hastada (% 3.33) idrar retansiyonu gelişmiş (7,8). Gupta A. ve arkadaşları inguinal herni cerrahisinde spinal anestezi tekniğinde, 40 hastada 6 mg ve 7.5 bupivakaine, 25 mcg fentanil ekleyerek yaptıkları çalışmada, idrar retansiyonu 7 hastada (% 17) gelişmiş ve bunlara idrar sondası takılmış (12).

Çalışmamızda, fentanilli Grup II'de 5 hastada (% 25) idrar retansiyonu gelişti ve idrar sondası takıldı. Altıncı saatte idrar sondasını çektiğimiz hastaların, idrar retansiyonun düzelmiş olduğu görüldü.

Günübirlik inguinal herni cerrahisinde, 7.5 mg % 0.5 hiperbarik bupivakainli Grup I'in yetersiz anestezi kalitesi nedeniyle tercih edilmemesi gerektiğine, 7.5 mg % 0.5 hiperbarik bupivakaine, 25 mcg fentanil eklenen Grup II ile 10 mg % 0.5 hiperbarik bupivakainli Grup III'ün birbirine alternatif olabileceği, ancak fentanil eklenen grupta idrar retansiyonunun fazla olması nedeniyle, Grup III'ün daha avantajlı olduğu sonucuna vardık.

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**ID-128 / Oral Presentation: “2015-2019 Yılları Arasında İstanbul’da Otopsilere Yapılan
İstanbul İl Sınırları İçerisinde Meydana Gelen İş Kazaları Vakalarının
Değerlendirilmesi”**

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Abstract (ID-128)

Introduction: İstanbul, Trkiye’nin nfus bakımından en yođun ve ekonomik aıdan ise en önemli kenti olmakla lkemizin retim ve ticaret hacminin önemli bir blmne sahiptir. Bu sebeple; İstanbul’da iş kazası nedeniyle meydana gelen lmler, lkemizin iş sađlıđı ve gvenliđi uygulamalarındaki verimliliđi ortaya koymak aısından bir gsterge olarak deđerlendirilebilir.

Materials and Methods: Bu alıřmada; Adli Tıp Kurumu Bařkanlıđı Morg İhtisas Dairesi’nde 20152019 yılları arasındaki 5 yıllık zaman diliminde yapılmıř olan otopsilere ait rapor ve l muayene tutanakları iş kazaları aısından retrospektif olarak incelenmiř , iş kazası olduđu bildirilen vakalar deđerlendirmeye alınarak; 2015-2019 yılları arasında Adli Tıp Kurumu Bařkanlıđı Morg İhtisas Dairesi’nde otopsisı yapılan İstanbul il sınırları iinde meydana gelmiř iş kazalarının; sıklıđı ve zelliklerinin ortaya konulması ile iş sađlıđı ve gvenliđi uygulamalarına ışık tutulması amalanmaktadır.

Discussion and Conclusion: Bu alıřmada incelenen 26.604 vakanın %3,15’inin (n:839) iş kazası sebebiyle ldđ tespit edilmiřtir. 839 vakanın; 821’i (%97,9) erkek, 18’i (%2,1) kadın olarak saptanmıřtır. En sık iş kazası 41-50 (n:202, %24,1) ve 51-60 (n:194, %23,1) yař gruplarında meydana gelmiřtir. Ayrıca; vakaların en gencinin 11, en yařlısının 86 yařında olduđu tespit edilmiřtir. 839 vakanın %89,7’sinin (n:753) Trk, %10,3’nn (n:86) yabancı uyruklu olduđu saptanmıřtır. İş kazası sonucu lmler; en sık 2018 (n:243, %29,0) yılında, en sık kış mevsiminde (n:286, %34,1), 85’er (%10,1) vaka ile en sık Mart ve Temmuz aylarında, en sık Cuma gn (n:142) meydana gelmiřtir. En fazla iş kazasının %7,5 (n:63) oranla Kkekmece ilesinde meydana geldiđi grlmřtir. En sık lml iş kazaları %45,4’lk (n:381) oranla yapı-inřaat sektrnde grlmřtir. Vakalar lm trlerine gre; 418 (%49,8) vakayla en sık travmatik lmlerin grldđ, bunu 302 vakayla (%36,0) dođal nedenlerle meydana gelen lmlerin takip ettiđi, ayrıca elektrik akımına maruziyetin sz konusu olduđu 38 (%4,5) vaka tespit edilmiřtir. En sık kaza tr 264 (%31,4) vakayla yksekten dřmeler olarak tespit edilmiřtir.

Keywords: İş kazası, otopsi, İstanbul

Full text (ID-128)

Giriş ve Amaç: İş sağlığı ve güvenliği, iş kazalarının olumsuz sonuçları itibariyle hem ülkemizde hem de dünyada önemli bir konu olarak görülmektedir. Engellenebilir nitelikte olan iş kazaları nedeniyle her yıl çok sayıda insan yaralanmakta hatta hayatını kaybetmektedir. Kazazedenin yanı sıra kazazedenin yakın çevresini maddi ve manevi açılardan etkileyebilen iş kazalarının, ülke ekonomisi üzerindeki olumsuz etkileri de dikkate alındığında önemli bir halk sağlığı sorunu olduğunu düşünmek hiç de yanlış olmaz (1).

İstanbul, Türkiye'nin nüfus bakımından en yoğun ve ekonomik açıdan ise en önemli kenti olmakla ülkemizin üretim ve ticaret hacminin önemli bir bölümüne sahiptir. Bu sebeple; İstanbul'da iş kazası nedeniyle meydana gelen ölümler, ülkemizin iş sağlığı ve güvenliği uygulamalarındaki verimliliği ortaya koymak açısından bir gösterge olarak değerlendirilebilir.

Bu çalışmada; Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesi'nde 2015- 2019 yılları arasındaki 5 yıllık zaman diliminde yapılmış olan otopsilere ait rapor ve ölü muayene tutanakları iş kazaları açısından retrospektif olarak incelenmiş, iş kazası olduğu bildirilen vakalar değerlendirmeye alınarak; 2015-2019 yılları arasında Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesi'nde otopsi yapılan İstanbul il sınırları içinde meydana gelmiş iş kazalarının; sıklığı ve özelliklerinin ortaya konulması ile iş sağlığı ve güvenliği uygulamalarına ışık tutulması amaçlanmaktadır.

Gereç ve Yöntem: Bu çalışmada; 2015-2019 yılları arasındaki 5 yıllık sürede İstanbul il sınırları içerisindeki Cumhuriyet Savcılıklarından Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesine otopsi yapılmak üzere gönderilen 26.604 adli vakaya ait otopsi raporları retrospektif olarak incelenmiştir.

Savcılıklar tarafından gönderilen üst yazılarda iş kazası olduğu bildirilen vakalar çalışma kapsamına alınmış olup, vakaların arşiv zarflarından elde edilen ölü muayene tutanakları, diğer adli evraklar ve ölüm öncesinde tıbbi tedavi görmüş vakaların tıbbi belgeleri ile otopsi raporları değerlendirmeye alınmıştır.

Ölü muayene tutanakları ve diğer adli belgeler değerlendirilirken; Cumhuriyet Savcılarının meydana gelen iş kazası olaylarıyla ilgili kayıt altına aldıkları bilgiler, söz konusu adli belgelerde bulunan kimlik, görgü ve bilgi tanıklarının gerçekleşen olaylarla ilgili ifadeleri ve tıbbi belgelerden olaya ilişkin elde edilebilecek diğer bilgiler ve tutanaklar değerlendirilmiştir.

Veriler kayıt altına alınırken; vakaların, kaza tarihlerindeki yaşları, cinsiyetleri, doğum yerleri, doğum yerlerine göre bölgesel durumları, uyrukları, kazaların gün, ay ve yıllara göre durumları ile meydana geldiği tarihlere göre mevsimsel özellikleri, kazaların meydana geldiği İstanbul ilçesi, kazaların meydana geldiği yerler (işyerleri/işin görüldüğü yerler/diğer yerler), kazaların meydana geliş şekilleri (kaza türleri), vakaların yaptıkları görevler doğrultusunda mesleki nitelikleri, kazaların meydana geldiği sektörler/iş veya sanayi kolları, kazaların meydana geldiği yerlerin özellikleri, vakaların otopsi

sonuçlarına göre ölüm nedenleri, toksikolojik inceleme sonuçları ve travmatik ölümlerin öldürücü nitelikleri açısından özellikleri değerlendirilmeye alınmıştır.

Morg İhtisas Dairesince yapılan otopsi işlemi neticesinde Adli Tıp Birinci İhtisas Kurulundan görüş istenen vakaların raporları bu kuruldan temin edilerek, yukarıda belirtilen çalışma yöntemler doğrultusunda çalışmaya dahil edilmiştir.

Elde edilen veriler önce Microsoft Excel 2007 programına aktararak kayıt altına alınmıştır. Sonraki aşamada veriler SPSS 21.0 (Statistical Package for Social Science) programına aktarılmıştır. Vakalara ait frekans, aritmetik ortalama, standart sapma, medyan, mod ve karşılaştırmalı analiz yöntemleri kullanılarak istatistiksel değerlendirmeler yapılmıştır.

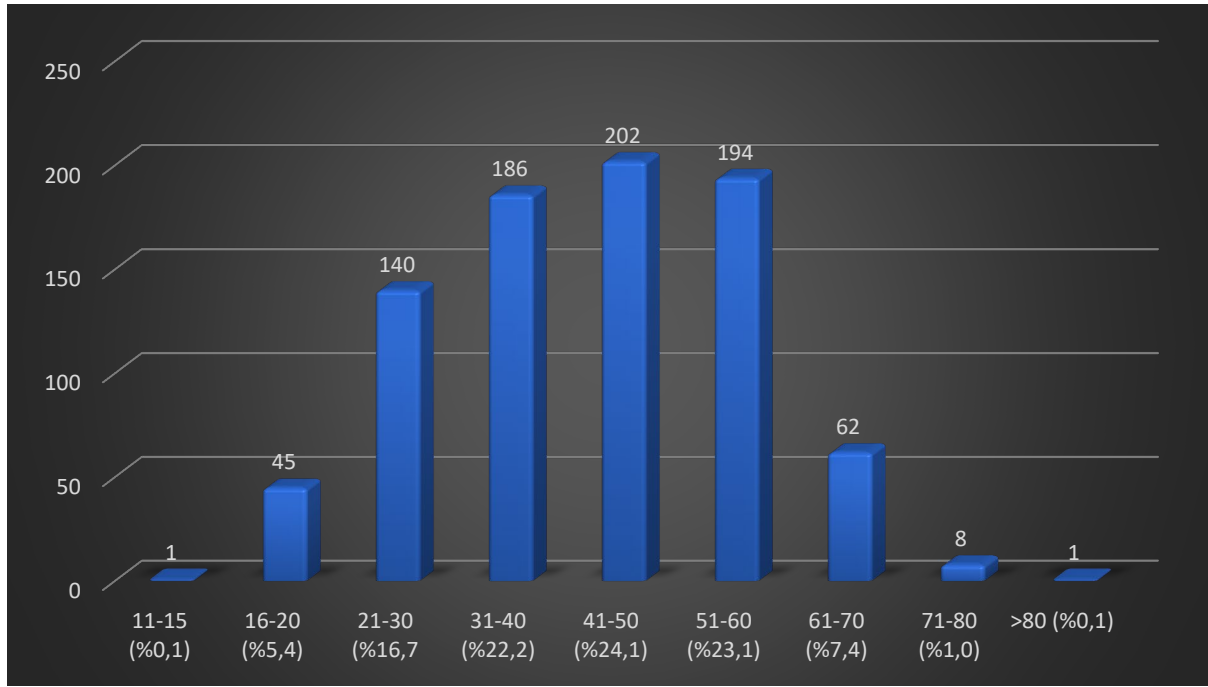
Bulgular/Beklenen Bulgular: Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesinde 01/01/2015-31/12/2019 tarihleri arasındaki 5 yıllık sürede toplam 26.604 otopsi yapılmıştır. Tablo 1’de yıllara göre yapılan otopsi sayıları, bu otopsilerin kaçının iş kazası olduğu ile oranlar yer almaktadır.

Tablo 1: Yıllara Göre Otopsi ve İş Kazalarına Bağlı Ölüm Sayıları

YIL	OTOPSİ (n)	İŞ KAZASI (n)	%
2015	4.962	161	3,24
2016	5.768	192	3,32
2017	5.793	117	2,01
2018	5.302	243	4,58
2019	4.779	126	2,63
TOPLAM	26.604	839	3,15

Bu çalışmada değerlendirmeye alınan 839 vakanın cinsiyet dağılımına bakıldığında; 821’inin (%97,9) erkek, 18’inin (%2,1) ise kadın olduğu bulundu.

Vakaların yaş dağılımına bakıldığında; en genç olanının 11 yaşında, en yaşlı olanının 86 yaşında olduğu, en fazla vakanın ise 201(%24,1) vakayla 41-50 yaş grubunda olduğu görüldü.

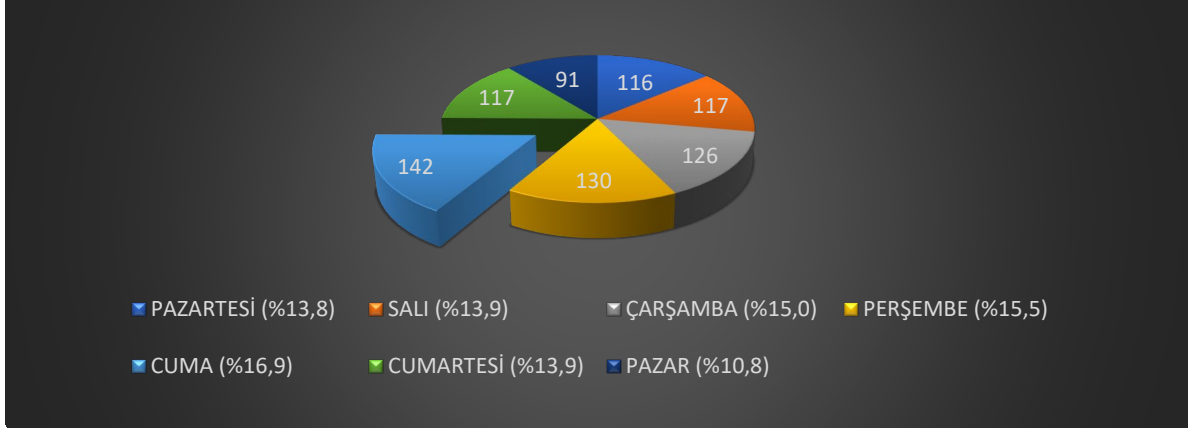


Şekil 1: Yaş Gruplarına Göre İş Kazasına Bağlı Ölüm Sayıları ve Yüzdeleri

Vakaların 753'ü (%89,7) Türkiye Cumhuriyeti vatandaşı olup 86'sının (%10,3) yabancı uyruklu olduğu görüldü. Yabancı uyruklu 86 vakanın 35'i Suriyeli, 15'i Afganistanlı, 9'u ise Türkmenistanlı olarak bulundu. Ayrıca 753 Türkiye Cumhuriyeti vatandaşı olan vakanın ülkemizin coğrafik bölgelerine göre yapılan dağılımında; Karadeniz Bölgesi'nin %33,9'luk oranla ilk sırada olduğu görüldü.

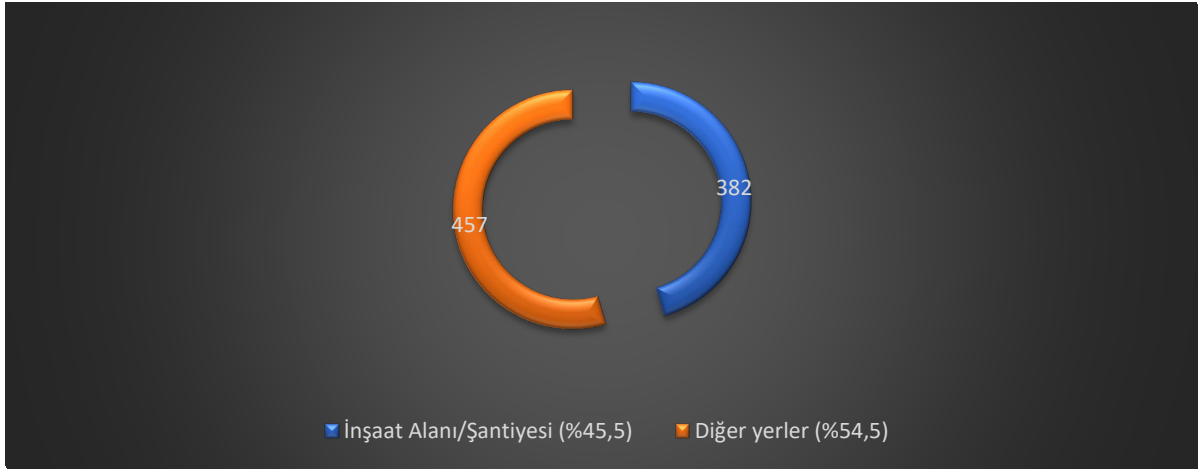
Bu çalışmada; kazaların İstanbul'un hangi ilçesinde meydana geldiği hakkında yapılan dağılımda en fazla vakanın (n:63, %7,5) Küçükçekmece ilçesinde olduğu görüldü.

Vakaların mevsimsel dağılımları incelendiğinde; en fazla vakanın kış mevsiminde (n:286, %34,1) diğer mevsimlerin ise sırasıyla ilkbahar (n:228, %27,2), yaz (n:220, %26,2), sonbahar (n:105, %12,5) olarak bulundu. Haftanın günlerine göre yapılan dağılımda ise en fazla ölümlü iş kazasının 142 (%16,9) vaka ile Cuma günleri meydana geldiği sonucuna varıldı.



Şekil 2: Vakaların kazaların meydana geldiği günlere göre dağılımı

Ölümlü iş kazalarının meydana geldiği yerler açısından yapılan değerlendirmede; kazaların yaklaşık yarısının (n:382 %45,5) inşaat alanı ve şantiyelerinde meydana geldiği, 84'ünün (%10,0) imalathane/atölye, 45'inin (%5,3) ise fabrika türü iş yerlerinde meydana gelmiş olduğu sonucuna varıldı.



Şekil 3: İş kazalarının meydana geldiği yerlerin dağılımı

İnşaat alanlarında meydana gelen ölümlü iş kazalarının hangi tür inşaatlarda meydana geldiği hakkında yapılan dağılımda %32,5'lik oranla en fazla konut binaları inşaatlarında ölümlü iş kazalarının meydana geldiği görüldü.

Vakaların kaza türleri dikkate alındığında; Yüksekten düşmelerin %31,4'lük (n:264) oranla fazla kaza türü olduğu görüldü. Bu çalışma kapsamında olan 839 ölümlü iş kazası vakasının mesleki dağılımları incelendiğinde; inşaat işleri çalışanlarının 329 (%39,2) vakayla ilk sırada olduğu görüldü.

Bu çalışma kapsamında olan 839 ölümlü iş kazası vakasının ölümün meydana geldiği yerler dikkate alınarak yapılan dağılımda; 550 (%65,6) vakanın hastanede, 7 (%0,8) vakanın ambulansa, 282 (%33,6) vakanın ise işyeri/iş için gidilen yer/iş için kullanılan araç içi gibi iş yeri sayılan yerlerde öldüğü sonucuna varıldı. Ayrıca vakaların 750'ine kaza yerinde, ambulansa ya da bir sağlık kuruluşunda tıbbi müdahale yapılmışken 89'una tıbbi müdahale görmeden kaza yerinde hayatını kaybetmiştir. Tıbbi müdahale gören 750 vakanın 566'sının hastane yatışının olmadığı, 160'ının 1 ile 30 gün arasında hastanede yatarak tedavi gördüğü, 24'ünün ise 1 aydan fazla hastanede yatarak gördüğü tedavi sonrasında hayatını kaybetmiştir.

Bu çalışma kapsamında olan 839 vakanın 418'inin (%49,8) travmatik sebeplerle (genel beden travması, künt kafa travması vs.) 302'sinin (%36,0) ise doğal nedenlerle hayatını kaybettiği bulundu. Doğal nedenlerle hayatını kaybeden vakaların büyük %87,4 'ünün (n:264) kalp damar hastalıkları sonucu öldüğü görüldü.

Doğal nedenlerle hayatını kaybeden vakaların (n:302) %33,4'lük (n:101) oranla en fazla 51-60 yaş aralığında, doğal sebeplerle ölen vakaların %73,8'inin (n:223) 41 yaş ve üzerinde olduğu bulundu. Doğal nedenlerle hayatını kaybeden vakaların %34,4 (n:104) oranla en fazla kış mevsiminde öldüğü bunu %29,8'lik (n:90) oranla ilkbahar mevsiminin takip ettiği bulundu. Ayrıca, doğal nedenlerle meydana gelen ölümlerin %18,2'lik (n:55) oranla en fazla cuma günleri meydana geldiği bulundu.

Tartışma ve Sonuç: İstanbul Adli Tıp Kurumu Başkanlığı Morg İhtisas Dairesinde 01/01/2015-31/12/2019 tarihleri arasındaki 5 yıllık sürede toplam 26.604 otopsi yapılmış olup bu vakalar içerisinde İstanbul il sınırları içinde meydana gelmiş iş kazalarının oranı %3,15 bulunmuştur. Türkmen ve arkadaşlarının yaptığı İstanbul'da 1994-2003 yılları arasında otopsisi yapılan vakaların incelendiği bir çalışmada; tüm vakalar içerisinde iş kazası sonucu ölenlerin oranı %1,7 bulunmuş olup bu çalışmaya kıyasla artış olduğu görülmektedir. Ayrıca çalışmamızda baz alınan yılların bir önceki yıla nazaran artış eğiliminde olması da iş kazalarının artma eğiliminde olduğunu ortaya koymaktadır (2).

Cinsiyet dağılımı dikkate alındığında çalışma kapsamındaki 839 821'inin (%97,9) erkek, 18'inin (%2,1) ise kadın olduğu görülmektedir; Türkmen ve arkadaşlarının İstanbul'da 1994-2003 yılları arasında otopsisi yapılan vakaların incelendiği çalışmada %99,8 erkek, %0,2'sinin kadın, Kocaeli'de 1990-1999 yılları arasında iş kazaları nedeniyle ölen 387 vakanın değerlendirildiği başka bir çalışmada; erkek vakaların oranı %99,2, Tayvan'da 1994-2005 yıllarını kapsayan diğer bir çalışmada ise 12 yıllık sürede 2994 çalışanın iş kazaları nedeniyle hayatını kaybettiği ve bu çalışanlardan 357'sinin (%12) kadın, İspanya'da ölümlü iş kazalarının konu edinildiği bir çalışmada ise %1,1 kadın, %98,9 erkek olduğu görülmektedir. Bu durum ülkemizde aktif çalışma hayatında erkeklerin daha fazla yer alması ile ağır ve riskli işlerde daha çok erkeklerin çalıştırıldığı ile açıklanabilir. Ayrıca bu çalışmada %2,1 oranda kadın bulunması geçmiş yıllara nazaran kadınların günümüzde aktif çalışma hayatına girdiğini göstermektedir. Ayrıca 1994-2005 yılları arasında yapılan çalışmada kadın oranının %12 bulunması yönüyle de

ülkemizde kadınların yurtdışı ülkelere göre daha az aktif iş hayatında yer aldığı ile ilgili olabilir (2, 3, 4,5).

Bu çalışmada yaş dağılımına göre en fazla vakanın ise 201(%24,1) vakayla 41-50 yaş grubunda olduğu, Türkmen ve arkadaşlarının 1994-2003 yılları arasında yaptığı çalışmada en fazla 21-30 yaşları arasında vakalara rastlanmıştır. Çalışmamızda iş kazası sonucu ölenlerin görece daha ileri yaş grubunda olması; ülkemizin içinde bulunduğu ekonomik sorunların ağır ve riskli işleri kabul etme eğilimini arttırdığını düşündürmektedir. Çalışmamızda; 11-20 yaş grubundan toplam 46 (%5,4) vaka saptanmıştır. Bu yönüyle İstanbul il sınırlarında ölen her 100 kişiden yaklaşık 6'sının çocuk denilebilecek yaş gruplarında olması, ülkemizdeki iş sağlığı ve güvenliği uygulamalarının yetersiz olduğunun bir göstergesi olarak değerlendirilebilir (2).

Mevsimsel özelliklere göre bu çalışmada en fazla vakanın kış mevsiminde (n:286, %34,1) meydana geldiği, Türkmen ve arkadaşlarının yaptığı çalışmada ilk sırayı Temmuz, Manisa'da bir hastanenin acil servisine başvuran 132 iş kazası vakasının ise yoğun olarak yaz aylarında meydana geldiği, mevsimsel özellikler bakımından çalışmamızda kış mevsiminde daha fazla vaka görülmesi, kış mevsiminin zorlu çalışma şartları, İstanbul'un arz talep dengesine göre riskli işlerin kış mevsiminde azalmaması ile ilgili olduğu düşünülmektedir (2, 6).

Bu çalışma kapsamındaki vakaların %89,7 Türkiye Cumhuriyeti vatandaşı olup %10,3'si yabancı uyruklu bulundu. 2004-2010 yılları arasında İstanbul'da yapılan benzer bir çalışmada yabancı uyruklu vaka oranının %3,4 olduğu, kıyas yapıldığında bir artış olduğu ve bu artış; komşu ülkelerdeki savaş ve kötü sosyoekonomik düzey nedeniyle ülkemize olan göçler ile bu kişilerin riskli iş gruplarını diğer insanlara göre daha kabullenebilir bir ruh halinde olmaları ile ilgili olduğu düşünülmektedir (7).

Bu çalışmada en fazla iş kazasının Küçükçekmece (%7,5) ilçesinde meydana geldiği, 2004-2010 yılları arasında İstanbul'da yapılan benzer çalışmada yine Küçükçekmece'nin %10,5'luk oranla en fazla ölümlü iş kazasının meydana gelmesi yönüyle çalışmamız literatürle uyumlu bulunmuştur. Bu durumun; Küçükçekmece'nin TÜİK 4 Şubat 2020 verilerine göre nüfus bakımından İstanbul'un en kalabalık ikinci ilçesi olması, bu ilçede İstanbul Ticaret Odası'nın verilerine göre ticaret siciline kayıtlı 20.037 gibi yüksek sayıda firma bulunması ve nüfus yoğunluğundan kaynaklı riskli bir iş kolu olan inşaat sektöründeki faaliyetleri hızlandırmış olabileceği ile açıklanabilir (7, 8, 9).

En fazla ölümlü iş kazalarının %45,5'lik oranla inşaat alanı/şantiyelerde meydana geldiği, en fazla ölümün %39,2 ilk sırada inşaat işleri çalışanlarının olduğu yapı/ inşaat sektöründe meydana geldiği ve kaza türleri içerisinde 264 (%31,4) vaka ile en fazla yüksekten düşme olaylarının olduğu sonucunda varılmıştır.

İstanbul'da 2004-2010 yılları ve 1994-2003 yılları arasında yapılmış olan benzer çalışmalarda en fazla ölümün inşaat alanlarında olması ve en fazla ölümün görüldüğü meslek grubunun inşaat işleri

alışanlarının olduėu ve yksekte dřme vakalarının en sık rastlanan kaza tr olması hususlarında bir deėiřiklik olmaması dikkati eken nemli hususlardan biridir (2, 7).

İnřaat sektrnn, iř kazaları aısından olduka riskli zelliklere sahip olması, inřaat sektrndeki tařeronlařmanın ve buna baėlı olarak da denetimsizliėin bu sektrde daha fazla bulunması, İstanbul’daki yapılařmanın son yıllarda giderek artması ile bu sektrde alışan sayısının artışı, İstanbul’da yapı/inřaat sektrndeki yksek oran ve sayıları aıklayabilir. Ayrıca risk faktrlerinin yksek olduėu yapı/inřaat sektrnde iř saėlıėı ve gvenliėi uygulamalarının zorlukları da bu sektrdeki lmle sonulanan iř kazaları oranlarının yksek olmasının diėer bir sebebi olabilir (10).

Bu alıřmada; lm sebepleri dikkate alındıėında vakaların %36,0’sının (n:302) doėal nedenlerle (kendisinde nceden mevcut olan bir hastalık veya henz tanı almadıėı aniden ortaya ıkan bir hastalık) iř yerinde hayatını kaybeden vaka bulunmaktadır. Doėal nedenlerle len vakaların kendi iinde yapılan deėerlendirmesinde; ilk sırayı 238 vaka ile (%78,8) kalp ve damar hastalıklarının aldıėı sonucuna varıldı.

2016/21 Sayılı SGK Genelgesi “Sigortalının iř yerinde kalp krizi geirmesi veya bařka bir hastalık nedeniyle ruhen veya bedenlen, hemen veya sonradan engelli hale gelmesi, iř kazası olarak kabul edilecektir” řeklinde ifade edilmiř ve kalp krizi haricinde diėer hastalıklar hakkında herhangi bir ek tanımlama yapılmayarak iř yerinde bu hastalıklar sebebiyle meydana gelen lmler iř kazası sayılmaya bařlanmıřtır (11, 12, 13).

Kardiyovaskler hastalıkların, tm dnyada gerekleřen lmlerin en sık sebebi olduėu, Amerika’da meydana gelen lmlerin %50,0’sinin kardiyovaskler hastalıklar nedeniyle olduėu, ani ve beklenmedik lmlere de en sık kardiyovaskler hastalıkların sebep olduėu bilinmektedir. Bunu santral sinir sistemi hastalıklarının takip ettiėi bildirilmektedir (14,15). Dnya Saėlık rgt verilerinde; her yıl 17,9 milyon insanın kardiyovaskler hastalıklar nedeniyle ldėu ve bu sayının meydana tm lmlerin yaklařık %31’i olduėu, kardiyovaskler nedenli lmlerin %75’ten fazlasının az ve orta geliřmiř lkelerde grldėu, %85’inde lmlerin myokard enfakts ve fel nedenlerinden ileri geldiėi bildirilmektedir (16). Ayrıca iř hayatındaki stresr faktrler, alıřma ortamında bulunabilecek kimyasal ve fiziksel etmenler zellikle kardiyovaskler hastalıkları tetikleyebilmektedir (11). alıřmamızda en sık lmn kiř mevsiminde olması, pazartesi gnnde Cuma gnne doėru artıř eėiliminde olması ve en sık 41-50 yař aralıėında olması; soėuk kiř aylarının kardiyak kkenli lmleri tetiklediėi, haftanın ilerleyen gnlerinde artan fiziksel yorgunluk ve alıřma kapsamında olan vakaların yař ortalamasının yksekliliėi doėal nedenlerle lenlerin sayıca yksekliliėini ve doėal nedenler iinde en yksek lmlerin kardiyak kkenli lmler olduėu sonucunu desteklemektedir.

İleri yařtaki alışanların rutin saėlık taramalarından gemesi, yrtlen iřlerin alışanın yařına, varsa ek hastalıklarına gre birtakım dzenlemeler yapılması, yař ve mevcut hastalıkları itibariyle alıřmaları,

hayati risk oluşturacak kişilerin zorunlu emekliliği konusunda yapılabilecek bazı düzenlemeler ile iş yerlerinde meydana gelen doğal ölümlerin azaltılabileceği düşünülmektedir.

Çalışma şartlarının, devlet güvencesiyle ve uluslararası sözleşmelere uygun olarak çalışanlar için idealleştirilmesi, bölge ve sektör özellikleri dikkate alınarak iş sağlığı ve güvenliği uygulama ve denetimlerinde tarafsızlık ilkesi ve bilimin merkeze konulduğu, sürekli ve aralıklı eğitim faaliyetleriyle çalışanların bilinçlendirilmesi, risklerin azalmasına; risklerin azalması iş kazalarının azalmasına, bu da ülkemizin kalkınmasına ışık olacaktır.

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ID-129 / OP: “Prognostic Significance of Hemoglobin, Serum Albumin Level, Erythrocyte Sedimentation Rate, C-Reactive Protein, Cea, Ca19-9 And Serum Lipid Profile At Time of Diagnosis in Patients with Metastatic Gastrointestinal System Cancers and Association with Respo”

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Abstract (ID-129)

Introduction: Gastrointestinal cancer is one of the most common causes of cancer-related death.

Recently, some studies have found relationship between prognosis, distant metastasis, stage of tumor and the level of preoperative Carcinoembryonic antigen (CEA), Carbonhydrateantigen (CA19-9), acute phase reactants, albumin and fasting lipid profile. In our study, we aimed to detect the level of CEA, CA 19-9, C-reactive protein (CRP), serum lipid profile, hemoglobin, serum albumin, erythrocyte sedimentation rate (ESR) in the patients with metastatic gastrointestinal cancer at the time of diagnosis and follow-up and their impact on prognosis and response to treatment.

Materials and Methods: For our study, we scanned the patients' record archive systems of Ankara University Faculty of Medicine İbn-iSina Hospital and Cebeci Hospital, and chose patients from the patients with gastrointestinal system cancers; who had been diagnosed, followed and treated in Internal Medicine and Medical Oncology polyclinics and services. We analysed 50 patients in this study; 25 patients for research group and 25 patients with non-metastatic gastrointestinal system cancers for control group, were chosen. We paid attention to the similarity between the diagnosis of the control group and research group. The patients were divided into two groups as metastatic and non-metastatic patients with gastrointestinal system cancers. First, the basal hemoglobin, serum albumin, erythrocyte sedimentation rate, C-reactive protein, CEA, CA19-9 and serum lipid profile were compared between the two groups. Then, in metastatic group, these laboratory parameters before chemotherapy and after chemotherapy were compared. In metastatic patients, hemoglobin, serum albumin, erythrocyte sedimentation rate, C-reactive protein, CEA, CA19-9 and serum fasting lipid profile were assessed at time of diagnosis and after at least two cures of chemotherapy. Results: There was no statistically significant difference in basal hemoglobin, serum albumin, erythrocyte sedimentation rate, C-reactive protein and serum lipid profile between the metastatic and non-metastatic groups. Basal CEA levels in metastatic patients were significantly higher ($p=0.006$).

CA19-9 levels were higher in metastatic patients without statistical significance ($p=0.641$). After chemotherapy, objective response was achieved in 20 %of metastatic patients; while the disease was stable or progressive in 80%of the metastatic group. From the five patients who had objectively responded to chemotherapy, four patients had colorectal cancer and one patient had cholangiocellular cancer. There were no significant difference between hemoglobin, serum albumin, erythrocyte sedimentation rate and CA19-9 values before and after chemotherapy. In the chemotherapy-responder group ($n=5$), basal CRP values were lower ($p=0.297$); basal CEA and CA19-9 levels were higher ($p=0.06$ and $p=0.668$ respectively) when compared with the chemotherapy non-responder group ($n=20$). There were no significant difference in basal total cholesterol, HDL-cholesterol, LDL-cholesterol, VLDL-cholesterol, triglyceride and total cholesterol/HDL-cholesterol ratio parameters between the chemotherapy-responder and non-responder patients. On follow-up, CRP values of the objective chemotherapy-responder patients ($n=5$) reached lower levels; the mean CRP value regressed to 1.1 from 3.0. In the chemotherapy non-responder group, the CRP values were stable; basal mean CRP value was 4.32 and after chemotherapy it was 4.1. After chemotherapy, there was significant difference in the CRP values between chemotherapy responder and non-responder groups ($p=0.019$). After chemotherapy, CEA and CA19-9 levels were found lower in the chemotherapy-responder group; while they were found higher in non-responder patients. HDL-cholesterol levels increased and total cholesterol/HDL-cholesterol ratio decreased in both groups after chemotherapy. After oxaliplatin and fluorouracil infusion regimens, we determined an increase of HDL and a decrease of TK/HDL ratio in patients with metastatic colon cancer, Among the five patients who were treated with FOLFOX regimen, three patients responded to chemotherapy; while the other two patients' disease remained stable.

Discussion and Conclusion: In our study, there was no significant difference in basal parameters except basal CEA levels between the groups of patients with and without metastasis. The level of HDL-K increased and the ratio of TK/HDL-K decreased after chemotherapy in all of the patients who responded to chemotherapy. The increase in HDL-K level and decrease in TK/HDL-K ratio in chemotherapy responder patients, were first shown in our study for assessment of chemotherapy response in patients with metastatic colorectal cancer. There was significant correlation between the results of CEA levels and lipid profile. The prolongation of this study is thought to be appropriate in patients with colorectal cancer.

Keywords: Gastrointestinal cancers , Prognostic factors, Acute phase reactants, Serum lipid profile

Full text (ID-129)

Giriş ve Amaç: Gastrointestinal kanserler kansere bağlı ölümlerin önde gelen sebeplerindendir. Sık görülmeleri ve öldürücü olmaları nedeniyle hastalığın prognozu ve tedaviye yanıtla ilişkilerini saptayacak yeni prognostik göstergelere ihtiyaç vardır. Bu çalışmada, “metastatik gastrointestinal sistem

kanserli hastalarda” tanı anında ve takiplerinde hemoglobin (Hb), serum albümin, eritrosit sedimentasyon hızı (ESH), C-reaktif protein (CRP), karsinoembriyonik antijen (CEA), karbohidrat antijen 19-9 (CA 19-9) ve serum lipid profiline bakılarak hastalığın prognozu ve tedaviye yanıtla ilişkilerinin araştırılması amaçlanmıştır.

Gereç ve Yöntem: Bu çalışma için, hastane bilgisayar arşivi kayıt sistemi taranarak, Nisan 2010 - Eylül 2012 tarihleri arasında, Ankara Üniversitesi Tıp Fakültesi İç Hastalıkları Anabilim Dalı, Tıbbi Onkoloji Bilim Dalı poliklinik ve servisinde, takip ve tedavisi yapılan gastrointestinal sistem kanseri tanısı almış hastalar seçildi. Eritrosit süspansiyonu ve albumin replasmanı yapılan, antihiperlipidemik tedavi alan ve tanıda enfeksiyon bulgusu olan hastalar çalışmaya dahil edilmedi.

Bu araştırmada toplam 50 hasta incelendi. Araştırma grubuna 25 hastanın girebildiği görüldüğü için, metastazı olmayan 25 gastrointestinal sistem kanserli hasta da kontrol grubu olarak seçildi. Araştırma metastazlı grubunun erkek/kadın oranı 17/8 iken, kontrol grubunda erkek/kadın oranı 13/12 idi (Tablo 1). Kontrol grubuna seçilen hastaların primer malignite açısından “araştırma grubu hastalarına” benzer özellikte olmalarına dikkat edildi. Hastalar “metastazlı” ve “metastazı olmayan” olmak üzere 2 gruba ayrıldı. Gruplar önce bazal değerlerine göre kendi aralarında karşılaştırıldı. Daha sonra metastatik grupta kemoterapi öncesi ve kemoterapi sonrası kan değerleri karşılaştırıldı. Metastatik hastalarda tanı anında ve en az 2 kür kemoterapi sonrası hemoglobin, albumin, eritrosit sedimentasyon hızı (ESH), C-reaktif protein (CRP), karsinoembriyonik antijen (CEA), karbohidrat antijen 19-9 (CA19-9) ve açlık serum lipid profili değerlerine bakıldı. Bu testler, hastalardan rutin tetkikleri sırasında istendiği için ayrı bir bütçe oluşturulması gerekmedi. Metastatik hastaların 2-3 ay sonraki kontrollerinde, hemoglobin, albümin, ESH, CRP, CEA, CA19-9 ve açlık serum lipid profili tetkiklerinin tekrar istenmesi dosyalarına kaydedildi.

İstatistiksel değerlendirme: Metastatik olan ve olmayan grupların yaş ve bazal değerler bakımından karşılaştırılması, verilerin normal dağılım gösterip göstermemesine göre bağımsız gruplar için ‘Student’s t testi’ ya da ‘Mann Whitney U’ testi ile yapıldı. Metastatik grubun bazal ve kemoterapi sonrası değerlendirmesi, bağımlı gruplarda Student’s t testi ya da Wilcoxon testi ile gerçekleştirildi. Cinsiyet ve PS değerlerinin metastatik olan ve olmayan gruplar arasında karşılaştırılması sırası ile Ki-Kare ve ‘Fisher’s Exact ki-kare’ testleri ile yapıldı. Ölçümle elde edilen veriler, ortalama±standart sapma ya da ortanca (minimum-maksimum) biçiminde, kategorik veriler ise frekans ve yüzde biçiminde özetlendi. Bütün analizler SPSS15.0 for Windows paket programı ile yapıldı. $P<0.05$ istatistiksel olarak anlamlı kabul edildi.

Bulgular: Çalışmaya, 30 metastazlı ve 25 metastazı olmayan hasta olmak üzere toplam 55 hasta dahil edildi. Metastazlı grupta, tanıda PS:2-3 olan hastalardan 4 tanesi (2 kolon, 1 pankreas, 1 özofagus kanseri tanılı) 1 kür kemoterapi sonrası ex oldu. Metastatik mide kanseri tanılı 1 hasta ilk kemoterapisini aldıktan sonra takip ve tedavisini bulunduğu merkezde devam ettirdi. Takibi yapılabilen 25 metastazlı

hasta “araştırma grubunu” oluşturdu. Neticede 25 metastazlı, 25 metastazı olmayan (kontrol grubu) hasta ile çalışma tamamlandı.

Araştırma (metastazlı) grubunun üçte ikisi erkekti. Kontrol grubunda ise erkek/ kadın oranı bire yakın olduğu halde iki grup arasında cinsiyet dağılımı açısından istatistiksel fark bulunmadı. Yaş ortalaması araştırma grubunda $61 \pm 8,73$, kontrol grubunda $58,8 \pm 11,6$ yıldır. Yaş açısından da gruplar arasında anlamlı fark yoktu ($p > 0.05$). Hasta ve kontrol gruplarının yaş-cinsiyet dağılımları Tablo 1’de sunulmuştur. Her iki grupta da çoğunluğu kolon kanseri oluşturmaktaydı. En fazla karaciğer metastazı vardı. Diğer metastaz bölgeleri arasında akciğer, periton, kemik ve beyin yer alıyordu.

Tablo 1. Gruplar arası yaş-cinsiyet ve kanser dağılımları

	Metastazlı grup (n=25)	Metastazı olmayan grup (n=25)
Yaş (Yıl)	$58,84 \pm 11,65$	$61 \pm 8,73$
Erkek/Kadın	17/8	13/12
Özofagus	2	0
Mide	7	9
Kolorektal	10	12
Pankreas	5	3
Kolanjiosellüler	1	1

Gruplar arasında, hemoglobin, serum albümin, ESH ve CRP düzeyleri açısından anlamlı fark saptanmadı. Bazal CEA düzeyleri, istatistiksel olarak metastazlı hasta grubunda daha yüksek saptandı ($p=0,006$). CA19-9 düzeyi istatistiksel olarak anlamlı olmasa da metastazlı grupta daha yüksek saptandı ($p=0,641$). Her iki gruptaki hastaların “bazal değerleri” Tablo 2’ ve 3’de verilmiştir. Tablo 2’de verilen değerler non-parametrik testle, Tablo 3’de verilen değerler ise parametrik testle hesaplandı.

Tablo 2. Metastazlı ve metastazı olmayan grupta bazal parametrelerin karşılaştırılması-1

	Metastazlı grup			Metastazı olmayan grup			P
	Median	Minimum	Maksimum	Median	Minimum	Maksimum	
VLDL (mg/dL)	27	7	64	23	6	76	0.232
TG (mg/dL)	136	35	322	115	31	381	0.240
ESH (mm/saat)	18	2	84	26	12	77	0.052
Bazal CRP (mg/L)	3.65	0.1	59.4	4.64	0.8	111	0.379
Bazal CEA (ng/mL)	11.67	0.9	999	2.07	0.47	23.4	0.006
Bazal CA 19-9 (U/mL)	25.2	0.8	1917.8	11.8	1	306.2	0.641
Bazal TK/ HDL-K	5.12	2.63	19.54	4.83	2.7	7.9	0.869

VLDL: Very Low Density Lipoprotein, TG: Triglyceride, ESH: eritrosit sedimentasyon hızı, CRP: C-reaktif protein CEA: Karsinoembriyonik antijen, CA 19-9: Karbohidrat antijen 19-9, TK: Total Kolesterol, HDL: High Density Lipoprotein

Metastazlı ve metastazı olmayan gruplar arasında kemoterapi öncesi bakılan bazal HDL-K ve TK/HDL-K açısından istatistiksel olarak anlamlı fark saptanmadı ($p=0,69$ ve $p=0,869$). Yine gruplar arasında TK, LDL-K ve TG açısından fark istatistiksel olarak anlamlı değildi (sırasıyla $p=0,867$, $p=0,977$, $p=0,24$).

Tablo 3. Metastazlı ve metastazı olmayan grupta bazal parametrelerin karşılaştırılması-2

	Metastazlı	Metastazı olmayan	P
Bazal Hb (g/dL)	11,96±1,94	12,00±1,98	0.931
Bazal Albumin (g/dL)	3,44±0,60	3,52±0,46	0.620
Bazal T.Kolesterol (mg/dL)	174,28±50,17	171,96±46,90	0.867
Bazal LDL (mg/dL)	111,17±40,77	111,50±39,72	0.977
Bazal HDL (mg/dL)	34,08±11,62	35,3±9,74	0.690

Hb: Hemoglobin, LDL: Low Density Lipoprotein, HDL: High Density Lipoprotein

Araştırma grubundaki hastaların %20'sinde kemoterapi sonrası objektif yanıt, %80'inde ise stabil veya progresif hastalık saptandı. Kemoterapi yanıtı alınan toplam 5 hastadan 4'ü kolorektal kanser, bir tanesi ise kolanjiyosellüler kanserliydi.

İlk kür kemoterapi sonrası eritrosit süspansiyonu ve albumin replasmanı yapılan 1 hasta, hemoglobin ve albumin açısından yanıt değerlendirmesine dahil edilmedi. Yine 5 hasta çeşitli enfeksiyon odakları (cerrahi suture enfeksiyonu, intraabdominal apse, pnömoni, İYE) nedeniyle ESH ve CRP açısından kemoterapi sonrası yanıt değerlendirilmesine dahil edilmedi.

Kemoterapi öncesi ve kemoterapi sonrası bakılan hemoglobin, albumin, ESH değerlerinde anlamlı fark saptanmadı (Tablo 4).

Tablo 4. Metastazlı grupta kemoterapi öncesi ve kemoterapi sonrası parametrelerin karşılaştırılması

	Kemoterapi öncesi	Kemoterapi sonrası	P
Hb (g/dL)	12.08±1.88	11.77±1.17	0.451
Albumin (g/dL)	3.44±0.6	3.41±0.58	0.822
ESH (mm/saat)	28.1±25.2	25.7±20	0.632

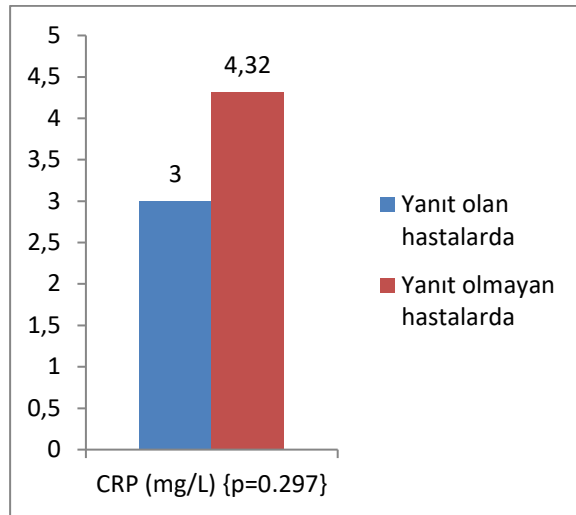
Hb: Hemoglobin, ESH: Eritrosit Sedimentasyon Hızı

Objektif kemoterapi yanıtı olan (n=5) hastaların, istatistiksel olarak anlamlı olmasa da bazal CRP düzeylerinin daha düşük olduğu (p=0.297), bazal CEA (p=0.06) ve CA 19-9 (p=0.668) düzeylerinin ise, kemoterapi yanıtı olmayan (n=20) hastalara oranla daha yüksek olduğu saptandı (Tablo 5).

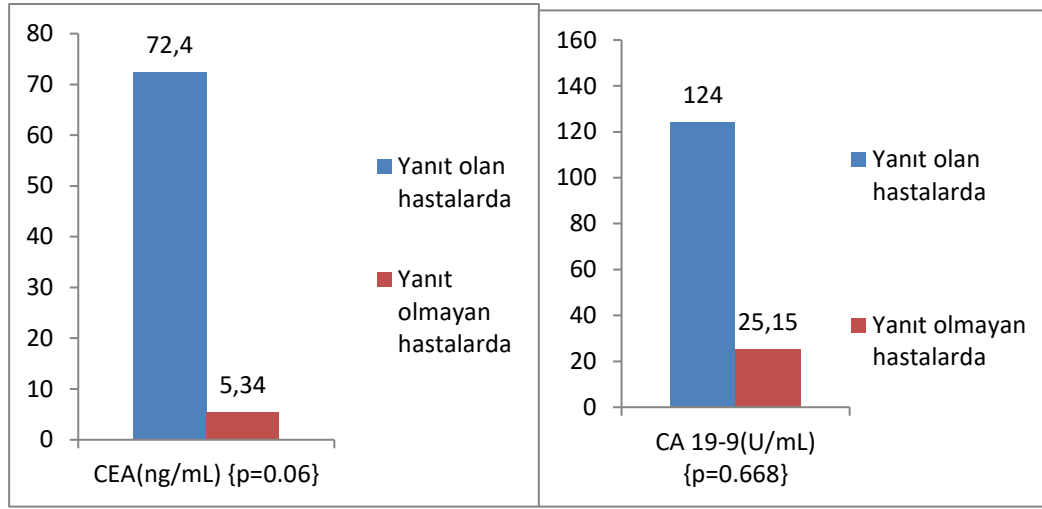
Tablo 5. Kemoterapi yanıtı olan ve olmayan metastazlı hastaların bazal parametrelerinin karşılaştırılması-1

	Kemoterapi yanıtı olanlar (n=5)			Kemoterapi yanıtı olmayanlar (n=20)			
	Median	Minimum	Maksimum	Median	Minimum	Maksimum	P
CRP (mg/L)	3	0.8	5.1	4.32	0.1	59.4	0.297
CEA (ng/dL)	72.4	3.49	192.1	5.34	0.9	999	0.06
CA 19-9 (U/dL)	124	0.8	912.2	25.15	0.8	1917.8	0.668

CRP: C-reaktif protein, CEA: Karsinoembriyonik antijen, CA 19-9: Karbohidrat antijen 19-9



Şekil 1. Kemoterapi yanıtı olan ve olmayan hastalarda bazal CRP düzeylerinin karşılaştırılması



Şekil 2. Kemoterapi yanıtı olan ve olmayan hastalarda bazal CEA ve CA19-9 düzeylerinin karşılaştırılması

Objektif kemoterapi yanıtı olan (n=5) ve olmayan (n=20) hastaların, bazal T.Kolesterol, HDL, LDL, VLDL, TG ve TK/HDL-K oranları arasında istatistiksel olarak anlamlı fark saptanmadı (Tablo 6).

Tablo 6. Kemoterapi yanıtı olan ve olmayan metastazlı hastaların bazal parametrelerinin karşılaştırılması-2

	Kemoterapi yanıtı olanlar (n=5)	Kemoterapi yanıtı olmayanlar (n=20)	p
T.Kolesterol (mg/dL)	219 ± 17.5	163.1 ± 49.5	0.12
HDL (mg/dL)	39.3 ± 14.6	32.7 ± 10.7	0.408
LDL (mg/dL)	143 ± 14	103.2 ± 41.5	0.51
VLDL (mg/dL)	36.8 ± 18.4	27.1 ± 14.3	0.371
TG (mg/dL)	184 ± 92	135.4 ± 72.1	0.371
TK/HDL-K (mg/dL)	6.4 ± 2.9	5.6 ± 3.5	0.717

TK: Total Kolesterol, HDL: High Density Lipoprotein, LDL:Low Density Lipoprotein, VLDL: Very Low Density Lipoprotein, TG: Triglyceride

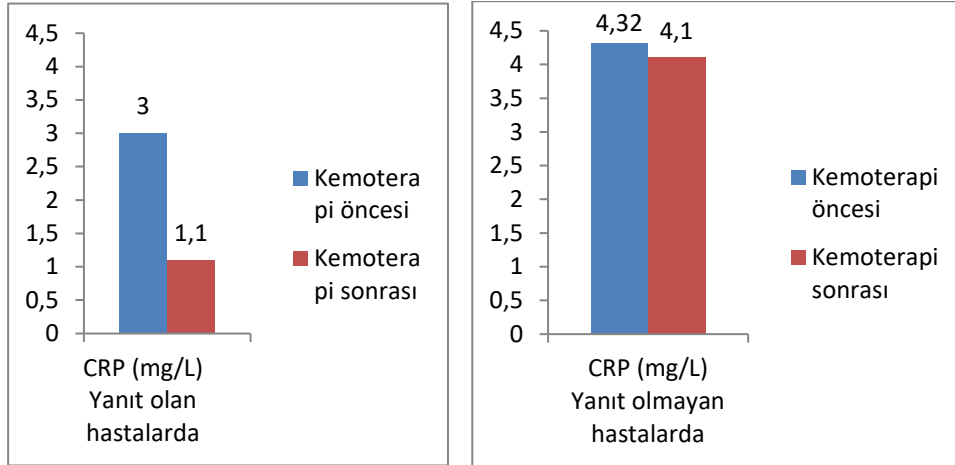
Objektif kemoterapi yanıtı olan (n=5) hastaların, CRP değerinin bazal değerlerine göre daha da düştüğü saptandı (3.0 dan 1'e düştü). Kemoterapi yanıtı olmayan hastaların CRP düzeylerinin ise pek değişmediği (bazal 4.32 den 4.1'e düştüğü) gözlemlendi. Kemoterapi yanıtı olan ve olmayan gruplarda, kemoterapi sonrası bakılan CRP düzeylerinin, anlamlı olarak farklı olduğu saptandı (p=0.019). Yine

kemoterapi yanıtı olan hastalarda, kemoterapi sonrası CEA ve CA 19-9 düzeyleri düşerken, kemoterapi yanıtı olmayan hastalarda bu değerlerin arttığı gözlemlendi (Tablo 7).

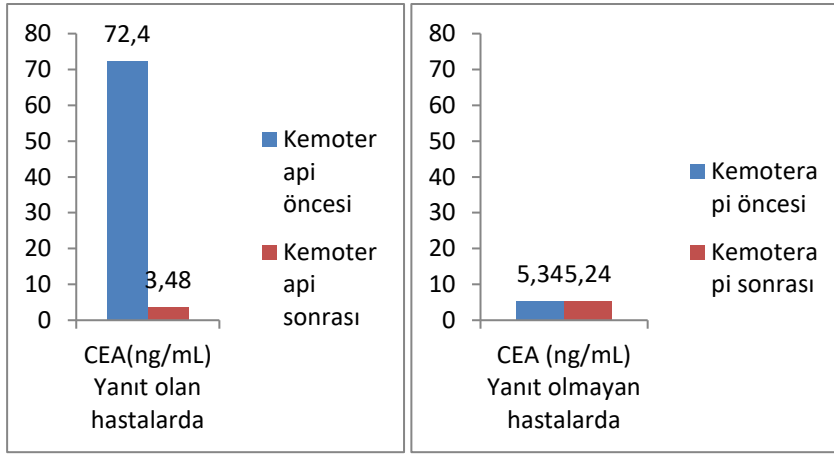
Tablo 7. Kemoterapi yanıtı olan ve olmayan metastazlı hastaların kemoterapi sonrası parametrelerinin karşılaştırılması-1

	Kemoterapi yanıtı olanlar (n=5)			Kemoterapi yanıtı olmayanlar (n=20)			
	Median	Minimum	Maksimum	Median	Minimum	Maksimum	P
CRP (mg/L)	1.1	0.8	2.8	4.1	1	212.9	0.019
CEA (ng/dL)	3.48	1.4	11.39	5.24	0.49	433	0.53
CA 19-9 (U/dL)	18.8	0.8	39.4	36.45	0.8	1983	0.112

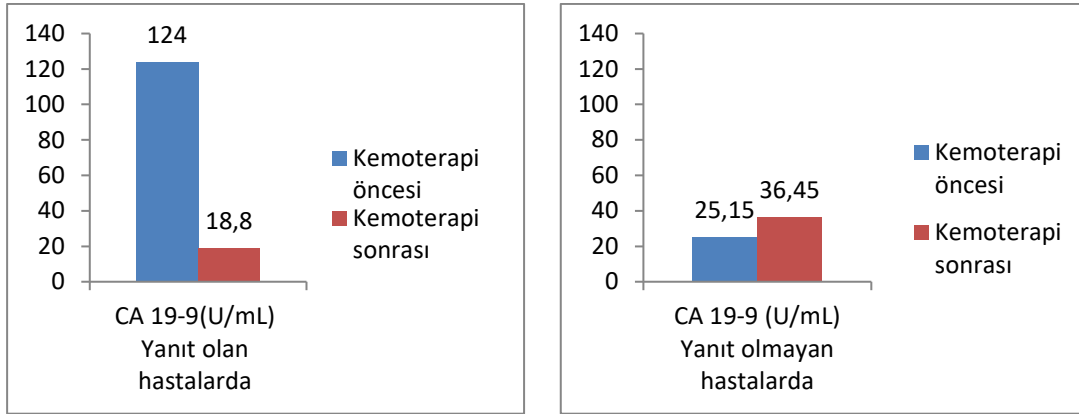
CRP: C-reaktif protein, CEA: Karsinoembriyonik antijen, CA 19-9: Karbohidrat antijen 19-9



Şekil 3. Kemoterapi yanıtı olan ve olmayan hastalarda kemoterapi sonrası CRP düzeylerinin karşılaştırılması



Şekil 4. Kemoterapi yanıtı olan ve olmayan hastalarda kemoterapi sonrası CEA düzeylerinin karşılaştırılması



Şekil 5. Kemoterapi yanıtı olan ve olmayan hastalarda kemoterapi sonrası CA 19-9 düzeylerinin karşılaştırılması

Objektif kemoterapi yanıtı olan (n=5) ve olmayan (n=20) hastalar arasında kemoterapi sonrası T.Kolesterol, HDL, LDL ve TK/HDL-K arasında istatistiksel anlamlı fark saptanmadı. Ancak KT yanıtı olan hastalarda, TG ve VLDL düzeylerinin istatistiksel olarak daha yükselmiş olduğu saptandı (sırasıyla $p= 0.029$, $p= 0.024$). Her iki grupta da kemoterapi sonrası HDL düzeyinin arttığı, TK/HDL-K oranının azaldığı görüldü (Tablo 8).

Tablo 8. Kemoterapi yanıtı olan ve olmayan metastazlı hastaların kemoterapi sonrası parametrelerinin karşılaştırılması-2

	Kemoterapi yanıtı olanlar (n=5)	Kemoterapi yanıtı olmayanlar (n=20)	P
T.Kolesterol (mg/dL)	210.4±12.6	178.7±43.1	0.83
HDL (mg/dL)	44.4±15	44.8±17.5	1.00
LDL (mg/dL)	127.1±21.6	108.9±38.3	0.243
VLDL (mg/dL)	39±13.1	24.9±13.2	0.024
TG (mg/dL)	194.2±65.9	122.7±67.9	0.029
TK/HDL-K (mg/dL)	5.2±1.7	4.3±1.6	0.243

TK: Total Kolesterol, HDL: High Density Lipoprotein, LDL:Low Density Lipoprotein, VLDL: Very Low Density Lipoprotein, TG: Triglyceride

FOLFOX tedavisi alan 5, XELOX tedavisi alan 3 hastanın tamamında TK/HDL oranının azaldığı saptandı. FOLFOX alan 5 hastanın 3'ünde kemoterapi yanıtı alınırken, 2 hastada stabil hastalık saptandı. XELOX alan 3 hastadan 2'sinde stabil, 1 hastada ise progresif hastalık gelişti. KT protokollerine göre hastaların TK/HDL oranındaki değişim Tablo 9'da gösterilmiştir.

Tablo 9. Kemoterapi protokollerine göre TK/HDL oranının değişimi

	TK/HDK oranı düşen	TK/HDL oranı artan	Total
Cisplatin+5FU	1	1	2
Cisplatin+Gemsitabin	2	2	4
DCF	3	3	6
FOLFOX	5	0	5
FOLFIRI	1	0	1
FUFA	0	1	1
Gemsitabin	0	1	1
Carboplatin+Gemsitabin	1	0	1
XELODA	0	1	1
XELOX	3	0	3
TOPLAM	16	9	25

DCF: Dosetaksei,Cisplatin,5-Fluorourasil, FOLFOX: Folinik asit,5- Fluorourasil, Oksaliplatin, FOLFIRI: Folinik asit,5- Fluorourasil, İrinotekan FUFA: Folinik asit,5- Fluorourasil,

XELODA: Capecitabine XELOX: Capecitabine, Oksaliplatin,

Tartışma ve Sonuç: Kemoterapiden yarar görebilecek hastaların önceden belirlenebilmesine yönelik olarak prediktif faktörler az sayıdadır. Bu hastalarda kemoterapi yanıtını öngörmede genel olarak hastaların ‘performans durumu’ iyi bir gösterge olarak kabul edilmektedir ve performans durumu 3-4 olan hastalara palyatif kemoterapilerin verilmesi önerilmemektedir. Bununla birlikte hangi hastanın kemoterapiye iyi yanıt verebileceğinin belirlenmesi ve prognozun saptanmasında klinikte kullanılabilecek bir parametre belirlemeye yönelik değişik çalışmalar yapılmıştır (1,2).

Çalışmamızda, metastazlı hasta grubunun median bazal CEA değerlerinin, metastazlı olmayan hastaların preoperatif bazal CEA düzeylerinden istatistiksel olarak daha yüksek olduğu saptandı (p=0,006). Serum CEA düzeyleri yüksek olan metastazlı hastaların, CEA düzeyi daha düşük olanlara göre ‘neden daha iyi kemoterapiye yanıt verdikleri’ konusunda başka benzer bir çalışma ile karşılaşılmadı. Metastazlı gupta objektif kemoterapi yanıtı olan 5 hastanın tamamında kemoterapi sonrası CEA ve CA 19-9 düzeyleri düşerken, kemoterapi yanıtı olmayan grupta bu tümör belirteçlerinin bazale göre kemoterapi sonrası daha da arttığı görüldü.

Boonpipattanapong T ve arkadaşlarının, kolorektal karsinomlu hastalarda yaptığı retrospektif çalışmada, preoperatif CEA ve albümin seviyelerinin sağkalım ile ilişkisi araştırılmış ve iyi diferansiye, düşük CEA düzeyli tümörler ile kötü diferansiye, yüksek CEA düzeyli tümörler arasında istatistiksel olarak anlamlı fark elde edilmiştir (p:0,115). Kolorektal karsinomlu hastalarda preoperatif CEA $\geq$ 5 ng/mL, albümin $\leq$ 3.5 g/dL olmasının sağkalımı kötü yönde etkilediği bildirilmiştir (3). Ancak bizim araştırmamızda ise bazal albümin değerleri açısından fark istatistiksel olarak anlamlı değildi (p=0,620).

Kanser gelişimi ile serum lipid seviyesi arasında çeşitli mekanizmalar araştırılıp bazı hipotezler öne sürülmüştür. Lipoproteinlerin serbest radikaller tarafından peroksidasyonu sonucu oluşan lipid peroksidlerin, hücre hasara ve inflamatuvar yanıtı neden olduğu bilinmektedir. Bu şekilde, normal hücrelerde malign transformasyona yol açmaktadırlar (4). LDL seviyesinde artışla beraber HDL seviyesindeki azalmanın, TNF-alfa ve IL-6 gibi proinflamatuvar aktivitenin artışına yol açtığı ileri sürülmüştür (5). Yaygın olarak kullanılan, HMG-KoA redüktaz inhibisyonu yaparak etki gösteren statinlerin, kolorektal ve gastrik kanser riskini azalttığına dair çok sayıda çalışma vardır (6,7). Wulaningsih ve ark. yaptığı çalışmada, yüksek TG, düşük HDL ile özofagus kanseri arasında pozitif (p<0,001), diğer lipid parametreleri (LDL, LDL/HDL, TK/HDL, ApoB/ApoA) ile negatif korelasyon saptanmıştır. İstatistiksel olarak anlamlı olmasa da düşük HDL düzeyi olanlarda mide kanseri riskinin arttığı saptanmıştır. Yüksek TG değeriyle kolon kanseri riskinin (p<0,001), yüksek TK düzeyi ile de rektum kanseri riskinin (p<0,001) arttığı tespit edilmiştir (8).

Çalışmamızda kemoterapi öncesi bakılan bazal HDL-K ve TK/HDL-K açısından istatistiksel olarak anlamlı fark saptanmadı (p=0,69 ve p=0,869). Yine gruplar arasında TK, LDL-K ve TG açısından fark istatistiksel olarak anlamlı değildi (sırasıyla p=0,867, p=0,977, p=0,24). Metastatik grupta, TK/HDL ve TG düzeylerinin istatistiksel olarak anlamlı olmasa da daha yüksek olduğu görüldü. Bu durumun, gastrointestinal kanserli hastaların lipid profilleriyle tümör yükleri arasında bir ilişki olmadığını gösterebileceği veya çalışmadaki hasta sayımızın yetersizliğinden kaynaklanabileceği düşünüldü.

Objektif kemoterapi yanıtı olan (n=5) ve olmayan (n=20) hastaların, bazal T.Kolesterol, HDL, LDL, VLDL, TG ve TK/HDL-K oranları arasında istatistiksel olarak anlamlı fark saptanmadı. Ancak KT yanıtı olan hastalarda, kemoterapi sonrası TG ve VLDL düzeylerinin istatistiksel olarak daha yükselmiş olduğu saptandı ise de hasta sayısının azlığı nedeniyle daha ileri bir yorum yapmak mümkün görünmemektedir. Objektif kemoterapi yanıtı alınan 5 hastanın tamamında kemoterapi sonrası HDL düzeyleri arttı, T.kolesterol/HDL oranının azaldığı saptandı. CEA düzeyindeki düşüş ile bu değişikliğin korele olduğu görüldü. Önceki çalışmalarda yüksek HDL, düşük TK/HDL-K oranının, lipoproteinlerde peroksidasyonu engelleyerek lipid peroksidlerin yol açtığı hücre hasarını önüne geçtiği, böylece normal hücrelerde malign transformasyon engellediği belirtilmiştir. Ancak çalışmamızda, objektif kemoterapi yanıtı olmayan grupta da kemoterapi sonrası HDL düzeyinin arttığı,

TK/HDL-K oranının azaldığı saptandı. Bizim çalışmamızda bu durumun prognozla ilişkisi gösterilememiştir.

Çalışmamızda metastatik kolon kanseri nedeniyle oxaliplatin ve fluorourasil infüzyonu uygulanan kemoterapi rejimlerinde, HDL kolesterolün arttığı, TK/HDL-K oranının azaldığı saptandı. Bu durum bize, oxaliplatin ve fluorourasilin birlikte kullanıldığı rejimlerde, HDL'yi artırıcı, TK/HDL-K oranını düşürücü etkisinin olabileceğini düşündürdü. Ancak FOLFOX uygulanan 5 hastanın 3 ünde kemoterapi yanıtı alınırken, 2 hastada stabil hastalık görüldü. Bu kemoterapötiklerin lipid profili üzerine etkileriyle ilgili literatürde daha önce yapılmış herhangi bir çalışma bulunamadı. Hasta sayısının yetersizliği nedeniyle bu konuda bir yorum yapılamadı. Bu etkiyi kanıtlamak için daha fazla hastanın alınacağı çalışmalara ihtiyaç olduğu düşünüldü.

Bu çalışmada lipid profili yanısıra gastrointestinal kanserli hastalarda CRP ile prognoz ilişkisi de incelenmişti. İnflamatuvar barsak hastalıkları olarak bilinen ülseratif kolit ve Crohn hastalığında, kolorektal kanser riskinin arttığına, uzun dönem anti-inflamatuvar tedavi alanlarda (ASA ve diğer NSAI ilaçlar) bu riskin azaldığına, bu nedenle de kolorektal kanser gelişiminde inflamasyonun rol alabileceğine dair birçok çalışma yapılmıştır (9,10) Aynı zamanda birçok çalışmada, kolorektal kanserli hastalarda preoperatif serum CRP düzeyinin kanserin evresiyle korele olduğu belirtilmiştir. İleri evre hastalarda CRP düzeyinin çok daha yüksek olduğu saptanmıştır (11,12). Çalışmamızda ise metastazlı grupta median CRP: 3,65 mg/L, metastazı olmayan grupta median CRP: 4,64 saptandı. İstatistiksel olarak anlamlı fark yoktu ($p=0,379$). Çalışmamız, Yüceyar S. ve arkadaşlarının yaptığı çalışma ile uyumluydu. Ancak literatürde CRP düzeyinin, kolorektal kanser başlangıcından sonra, özellikle ilk 2 yılda arttığına dair hipotezler de mevcuttur (13,14). Dolayısıyla tümör yükünün artışıyla beraber immün sistemin oluşturduğu inflamatuvar yanıt da artacaktır. Bu nedenle metastatik grupta, takipte CRP düzeyi daha fazla artabilir. Nitekim çalışmamızda, objektif kemoterapi yanıtı olan ($n=5$) hastaların, kemoterapi sonrası CRP düzeylerinin, kemoterapi yanıtı olmayan ($n=20$) hastalara oranla anlamlı derecede daha düşük olduğu saptandı. Ayrıca kemoterapi yanıtı olan hastaların tamamında, kemoterapi sonrası CRP düzeylerinin bazale göre düştüğü saptanırken, kemoterapi yanıtı olmayanlarda CRP düzeylerinin bazale göre arttığı saptandı. Kemoterapi ile tümör yükünün azaldığı hastalarda inflamasyonu yansıtan CRP düzeylerinin de düşeceği, bunun kemoterapiye yanıtın ve hastalık prognozunun değerlendirilmesinde yeni bir belirteç olarak kullanılabileceğini düşünmekteyiz.

Sonuç olarak; çalışmamızda, metastazlı ve metastazı olmayan gruplar arasında, bazal parametrelerde CEA düzeyi dışında anlamlı fark saptanmadı. Ancak bazal CEA düzeyi yüksek olan hastaların kemoterapiye daha iyi yanıt verdikleri görüldü. Kemoterapi yanıtı olan hastaların tamamında kemoterapi sonrası HDL-K 'ün arttığı, TK/HDL-K oranının azaldığı saptandı. Kolorektal kanserli metastatik hastalarda kemoterapi yanıtını değerlendirirken, yanıt veren hastalarda HDL-K'ün arttığı ve TK/HDL-K oranının azaldığı ilk defa bu çalışmada gösterildi. Lipid parametrelerindeki bu değişiklikler

CEA değışiklikleri ile korele bulundu. Bu alıřmanın, kolorektal kanserli hastalarda sürdürölmesinin uygun olacağı kanısına varılmıştır.

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ID-130 / PP: “A Rare Cause of Dysmenorrhea in Adolescents: Unicornuate Uterus with Noncommunicating Rudimentary Horn”

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Abstract (ID-130)

Introduction: Congenital uterine anomalies are caused by abnormal development of müllerian ducts during embryogenesis. Patients with an obstructive uterine anomaly have a higher risk of developing gynecological and obstetric complications that may present at menarche or later in life. We present a case of severe dysmenorrhea in the middle adolescent age group due to the obstructive hematometra in a noncommunicating rudimentary horn of the unicornuate uterus.

Materials and Methods: A-16 year old girl who had dysmenorrhea was referred to our department for ultrasonographic examination. On ultrasound, there was a hypoechoic, smooth-walled mass-like lesion adjacent to the uterus. The center of the lesion was seen as slightly hyperechoic and heterogeneous. MRI confirmed the presence of a uterine anomaly. The left uterine cavity had normal signal intensity in each zone. On the right side of the left uterine cavity, the lesion which was compatible with the rudimentary horn was seen as hypointense on T2-weighted images. Rudiment horn was not communicating the cervix or normal endometrial cavity. Intracavitary fluid with high T1 and T2 signal intensity indicated hematometra in the rudimentary horn.

Discussion and Conclusion: Unicornuate uterus has been classified into four subtypes. If the presence of functional endometrial tissue within a rudimentary horn, patients are at higher risk for endometriosis, hematometra, and adenomyosis. In addition, fetal implantation can occur in a noncommunicating rudimentary horn, but it will generally result in a life-threatening uterine rupture. MRI can allow accurate diagnosis of all subtypes of unicornuate uterus. The correct diagnosis of this entity has important to prevent complications.

Keywords: uterine; anomaly; unicornuate; dysmenorrhea

Full text (ID-130)

Introduction: Congenital uterine anomalies are caused by abnormal development of müllerian ducts during embryogenesis. Patients with an obstructive uterine anomaly have a higher risk of developing gynecological and obstetric complications that may present at menarche or later in life. We present a case of severe dysmenorrhea in the middle adolescent age group due to the obstructive hematometra in a noncommunicating rudimentary horn of the unicornuate uterus.

Materials and Methods: A-16 year old girl who had dysmenorrhea was referred to our department for ultrasonographic examination. On ultrasound, there were two uterine cavities. On the right side, the right uterus was seen as a hypoechoic, smooth-walled mass-like lesion adjacent to the left uterus (Fig. 1). The center of the lesion was seen as slightly hyperechoic and heterogeneous. A cervix was not demonstrated for the right uterine cavity. MRI confirmed the presence of a uterine anomaly. The left uterine cavity had normal signal intensity in each zone. On the right side of the left uterine cavity, the lesion which was compatible with the rudimentary horn was seen as hypointense on T2-weighted images (Fig. 2). Rudimentary horn was not communicating the cervix or normal endometrial cavity. Intracavitary fluid with high T1 and T2 signal intensity indicated hematometra in the rudimentary horn (Fig. 3).

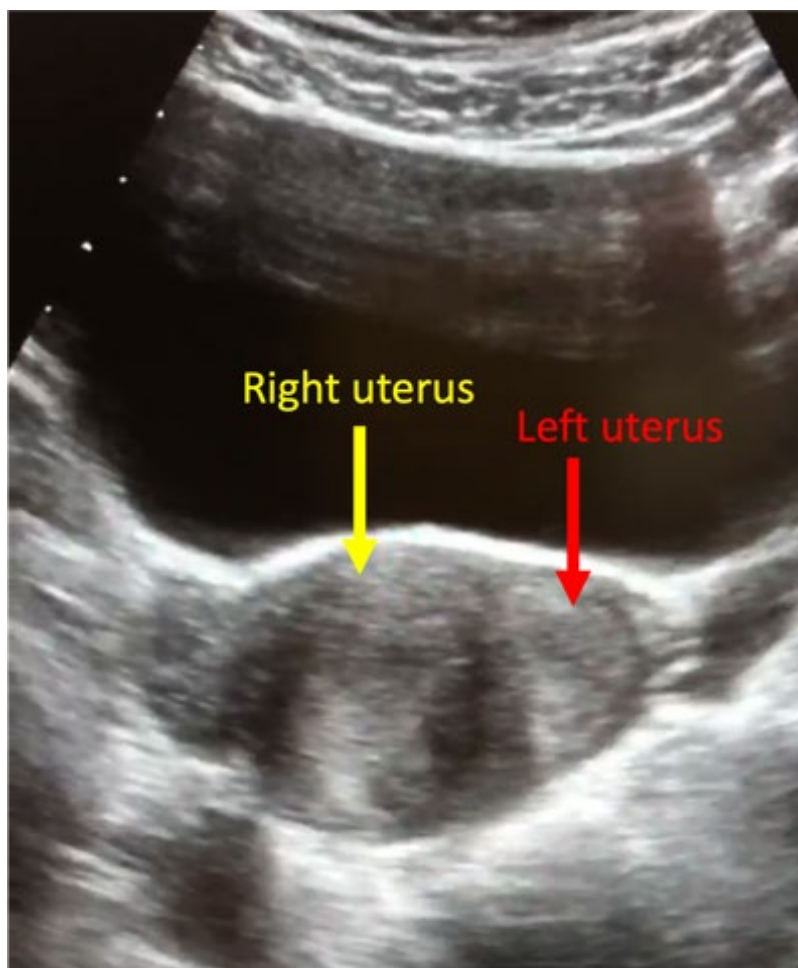


Fig.1 Axial plan ultrasound image shows the right and left uterine cavity



Fig. 2 T2-weighted coronal plan image demonstrates the right and left uterine cavity. The right uterus has hypointense myometrium due to recurrent obstructed hemorrhage

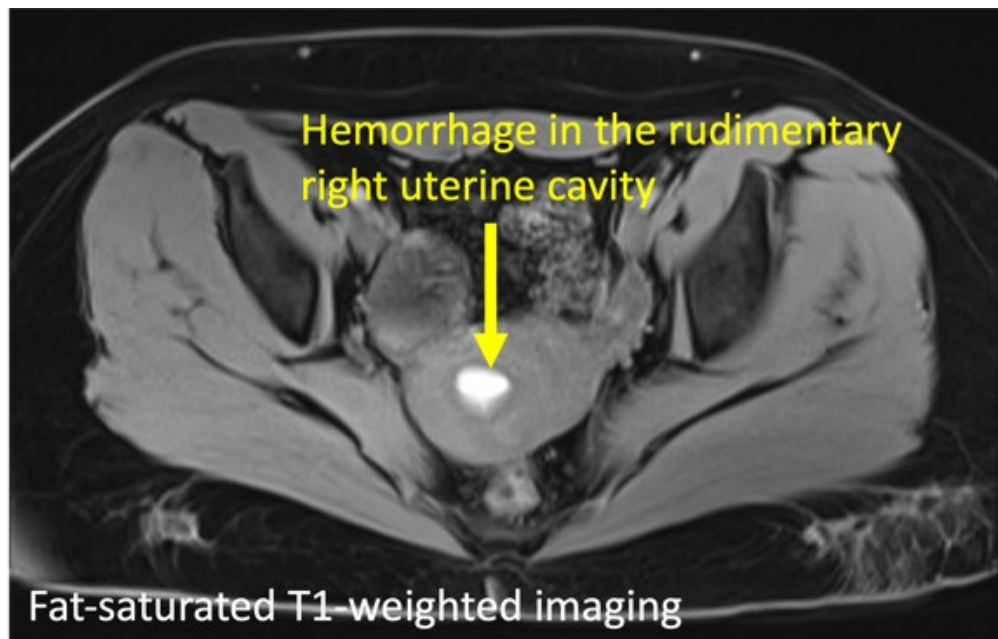


Fig. 3. T1-weighted fat-saturated axial plan image shows the hemorrhage in the right uterine cavity

Discussion and Conclusion: A unicornuate uterus, occurs with a frequency that ranges from 1 in 1000 to 1 in 5400 women and 74–90 % of those women with a unicornuate uterus will have an associated rudimentary uterine horn that may or may not communicate with the unicornuate uterus. Most patients present with pelvic pain, dysmenorrhea, or dyspareunia. They may or may not have an associated pelvic mass.

Unicornuate uterus has been classified into four subtypes. If the presence of functional endometrial tissue within a rudimentary horn, patients are at higher risk for endometriosis, hematometra, and adenomyosis. In addition, fetal implantation can occur in a noncommunicating rudimentary horn, but it will generally result in a life-threatening uterine rupture.

MRI is currently the gold standard for diagnostic imaging. MRI can allow accurate diagnosis of all subtypes of unicornuate uterus. The T2 weighted images are helpful for the diagnosis of uterine anomalies; images on the sagittal and coronal sections can be used to evaluate the cervical anatomy. T1 weighted images are helpful in diagnosing functional endometrium and endometriomas that may be associated findings in cases of obstructive Mullerian anomalies.

The treatment for noncommunicating rudimentary uterine horns is resection—with the goals of treatment being resolution of pain symptoms and the optimization of fertility. The correct diagnosis of this entity has important to alleviation of symptoms and conserving and optimizing fertility

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**ID-131 /OP: “ Macroscopic and Microscopic 2 Years Retrospective Analysis of Gall
Bladder Specimens with the Prediagnosis of Cholecystitis”**

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Abstract (ID-131)

Introduction: Gall bladder (GB) diseases are common among gastrointestinal diseases and the most common cause is GB stones. Displasia, adenoma and carcinoma may be encountered incidentally in the cases that were operated due to GB stones. Most of malignancy are asymptomatic and detected postoperative histopathologic evaluation. Early diagnosis of carcinoma is extremely difficult. Chronic cholecystitis, cholelithiasis and obesity are related with the occurrence of carcinoma. Non neoplastic diseases are the most common diseases in the histopathologic evaluation of GB. In the current study we aimed to evaluate the cases of cholecystitis retrospectively.

Materials and Methods: The hospital database was reviewed for GB specimens between January 2020 and October 2021 retrospectively. Data including age, gender, macroscopic data: thickness of the wall, presence of stone, number and diameter of the stones, appearance of serosal surface, accompanying conditions, evaluation of mucosa were collected. All Hematoxylin&Eosin sections were reviewed. Cholecystitis, adenomyoma, cholesterolosis, cholesterol polyp, presence of displasia, intestinal metaplasia and malignancy were noted.

Results: Mean age was 52±12. 71.4% of the study population was female. Cholesterolosis was encountered in 21.4% of the patients. Granular, straight, irregular, necrotic mucosa was prominent in 65.4%, 25%, 7.1%, 2.4% of the cases respectively. Mean number of the stone was 2.5. Mean diameter of the stone was 1.3 cm. Chronic cholecystitis, adenomyoma, low grade displasia, polyp, adenocarcinoma, acute cholecystitis, xanthogranulomatous cholecystitis was encountered in 84.5%, 2.4%, 7.1%, 1.2%, 1.2%, 1.2%, 2.4% respectively. Serosal surface was hyperemic, edematous, ischemic, and hemorrhagic in 53.6%, 26.2%, 8.3%, 1.2% of the cases. Diameter of stones was significantly higher in low grade displasia group compared to no-displasia group. Hyperemia in serosal surface was significantly higher in no-displasia group.

Discussion and Conclusion: Cholelithiasis is encountered frequently and mostly in women. Cholelithiasis was more frequent in women in the current study. Risk factors for cholecystitis are obesity, age, genetic factors, lower physical activity. Thickness of mucosa and wall of GB, severity of inflammation and fibrosis varies according to level of

blockage. In the current study macroscopic evaluation revealed different level of thickness of GB. Metaplasia often accompany to carcinoma and dysplasia. Low grade dysplasia was detected in cases that were previously intestinal metaplasia. Volume of stones was reported be related to the frequency of malignancy. GB stone was found to be as high as 95% in cases with malignancy. We found a higher number of stones in cases with low grade dysplasia compared to no-dysplasia. There is no symptom specific for GB carcinoma and the prognosis is poor. Incidental detection of malignancy is around 0.3%-2%. The frequency of adenocarcinoma in the current study was 1.2%. Stone is the most frequent cause of acute cholecystitis. Necrosis, diffuse hemorrhage increase in the GB wall can be observed macroscopically. Acute cholecystitis was observed in 1.2% of the cases in the current study.

Conclusion: A meticulous investigation of especially fundus, neck and side wall and mucosa of GB has great importance even in cases without any macroscopic lesion not to overlook a possible malignancy in cases with stone.

Keywords: Gall bladder, Cholecystitis, Cholesterolosis, Cholelithiasis, Dysplasia

Full-text (ID-131)

Introduction and Purpose: Gall bladder (GB) diseases are common among gastrointestinal diseases and the most common cause is GB stones (1, 2). Dysplasia, adenoma and carcinoma may be encountered incidentally in the cases that were operated due to GB stones (3). Most of malignancy are asymptomatic and detected postoperative histopathologic evaluation (4). Early diagnosis of carcinoma is extremely difficult. Chronic cholecystitis, cholelithiasis and obesity are related with the occurrence of carcinoma (3, 5).

The first method in the treatment of cholelithiasis is cholecystectomy, and one of the routinely visited materials in the pathology laboratory is the GB (2). Non neoplastic diseases are the most common diseases in the histopathologic evaluation of GB (2). In the current study we aimed to evaluate the cases of cholecystitis retrospectively.

Materials and Methods: The hospital database was reviewed for GB specimens between January 2020 and October 2021 retrospectively. Data including age, gender, macroscopic data: thickness of the wall, presence of stone, number and largest size of the stones, appearance of serosal surface, accompanying conditions, evaluation of mucosa were collected (Figure1). All Hematoxylin&Eosin sections were reviewed. Cholecystitis, adenomyoma, cholesterolosis, cholesterol polyp, presence of dysplasia, xanthogranulomatous cholecystitis, intestinal metaplasia and malignancy were noted (Figure2).

Results: Mean age was 52 ± 12 . 71.4 % of the study population was female. Cholesterolosis was encountered in 21.4% of the patients. Granular, straight, irregular, necrotic mucosa was prominent in

65.4%, 25%, 7.1%, 2.4% of the cases respectively. Mean number of the stone was 2.5. Mean diameter of the stone was 1.3 cm (Table 1). Chronic cholecystitis, adenomyoma, low grade dysplasia, cholesterol polyp, adenocarcinoma, acute cholecystitis, xanthogranulomatous cholecystitis was encountered in 84.5%, 2.4%, 7.1%, 1.2%, 1.2%, 1.2%, 2.4% respectively. Serosal surface was hyperemic, edematous, ischemic, and hemorrhagic in 53.6%, 26.2%, 8.3%, 1.2% of the cases. Diameter of stones was significantly higher in low grade dysplasia group compared to no-dysplasia group. Hyperemia in serosal surface was significantly higher in no-dysplasia group (Table2).

Discussion and Conclusion: Cholelithiasis is encountered frequently and mostly in women. Cholelithiasis was more frequent in women in the current study. Risk factors for cholecystitis are obesity, age, genetic factors, lower physical activity (6).

Thickness of mucosa and wall of GB, severity of inflammation and fibrosis varies according to level of blockage (7, 8). In the current study macroscopic evaluation revealed different level of thickness of GB.

Metaplasia often accompany to carcinoma and dysplasia. Low grade neoplasia was detected in cases that were previously intestinal metaplasia. Malignant transformation and dysplasia were reported to be caused by genetic factors and chronic irritation of cholelithiasis (9, 10). Similarly all cases that had dysplasia and carcinoma had also GB stone. Volume of stones was reported be related to the frequency of malignancy (11). GB stone was found to be as high as 95% in cases with malignancy (11). We found a higher number of stones in cases with low grade dysplasia compared to no dysplasia.

Gall bladder carcinoma is the 6th cancer among all gastrointestinal malignancies. There is no symptom specific for GB carcinoma and the prognosis is poor (5). Incidental detection of malignancy is around 0.3%-2%. The frequency of adenocarcinoma in the current study was 1.2%.

Stone is the most frequent cause of acute cholecystitis. Necrosis, diffuse hemorrhagia increase in the GB wall can be observed macroscopically. Acute cholecystitis was observed in 1.2% of the cases in the current study. Similar cholesterol polyp was encountered in 1.2% of the cases.

A meticulous investigation of especially fundus, neck and side wall and mucosa of GB has great importance even in cases without any macroscopic lesion not to overlook a possible malignancy in cases with stone.

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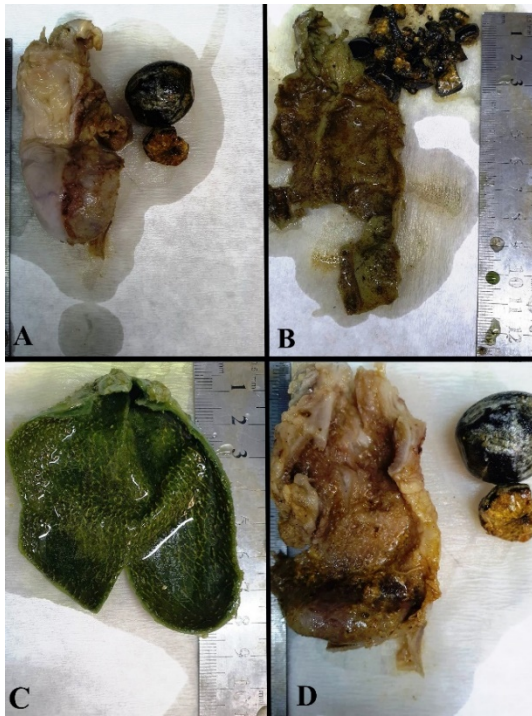


Figure 1 Macroscopic findings

- A. Edematus and fatty focus on serosal surface
- B. Stones and granular image on mucosal surface
- C. Yellow granular image in mucosal surface
Flatten focuses secondary to Stones

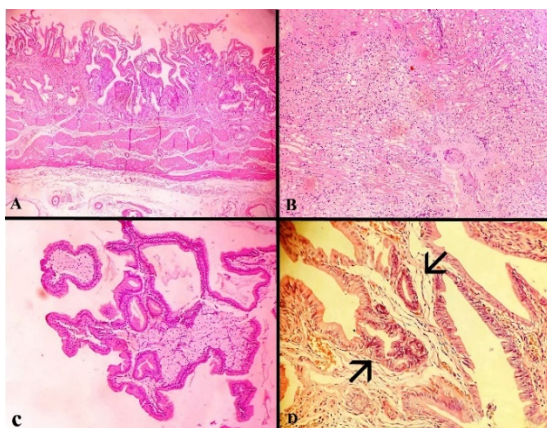


Figure 2. H&E sections

- A. Chronic cholecystitis with lymphocytes in single layer columnar epithelium
- B. A focus of, xanthogranulomatous cholecystitis with accompanying lymphocytes and histiocytes
- C. Cholesterol polyp protruding into lumen with numerous histiocytes in stroma
- D. Low grade dysplasia next to single layer columnar epithelium with increased stratification, loss of polarity, prominent nucleoli.

Table. 1. Demographic data and pathologic data of study population

Age	52±12
Gender (n)	
<i>Female</i>	60 (71.4)
<i>Male</i>	24 (28.6)
Cholesterolosis (n)	
<i>No</i>	66 (78.6)
<i>Yes</i>	18 (21.4)
Mucosa (n)	
<i>Yellow Granular</i>	17(20.2)
<i>Coarse Granular</i>	38 (45.2)
<i>Straight</i>	21 (25)
<i>Irregular</i>	6 (7.1)
<i>Necrosis</i>	2 (2.4)
Number of Stones (n)	2.5±2.2
The Largest Diameter of Stones (cm)	1.3±0.9
Color of Stones (n)	
<i>Black</i>	13 (15.5)
<i>Yellow</i>	45 (53.6)
<i>Green</i>	10 (11.9)
<i>Brown</i>	1 (1.2)
Histopathological diagnoses (n)	
<i>Chronic Cholecystitis</i>	71 (84.5)
<i>Adenomyoma</i>	2 (2.4)
<i>Low Grade Displasia+ Intestinal Metaplasia</i>	6 (7.1)
<i>Cholesterol Polyp</i>	1 (1.2)
<i>Adenocarcinoma</i>	1 (1.2)
<i>Acute Cholecystitis</i>	1 (1.2)

Table 2. Comparison of the cases with low grade displasia and no-displasia

	Low Grade Displasia	No-Displasia	P
Age	49±10	52±13	0.291
Number of Stones (n)	3.4±1.9	2.4±2.2	0.436
The Largest Diameter of Stones (cm)	1.8±1.4	1.3±0.8	0.042
Cholesterolosis (n)	7 (100)	0 (0)	0.337
Mucosa (n)			0.001
<i>Granular</i>	2 (28.6)	53 (68.9)	
<i>Straight</i>	1 (14.3)	20 (26)	
<i>Irregular</i>	3 (42.9)	3 (3.9)	
<i>Necrosis</i>	1 (14.3)	1 (1.3)	
Gender (n)			0.099
<i>Female</i>	3 (42)	57 (74)	
<i>Male</i>	4 (57)	20 (26)	
Serosal Surface (n)			
<i>Hypermia</i>	2 (28.6)	43 (55.8)	
<i>Edema</i>	0 (0)	27 (35.1)	
<i>Ischemic</i>	4 (57.1)	3 (3.9)	<0.001
<i>Normal</i>	1 (14.3)	3 (3.9)	
<i>Hemorrhagic</i>	0 (0)	1 (1.3)	

**ID-132 / OP: “The Assessment of Serological Tests for HIV Diagnosis in COVID-19
Pandemic Period”**

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Abstract (ID-132)

Introduction: Human Immunodeficiency Virus (HIV) infection that caused 33 million deaths globally is an important public health problem. We followed the algorithm of HIV diagnosis which is recommended currently by Turkish Ministry of Health and Centers for Disease Control and Prevention (CDC). We aimed to assess the results of HIV Ag/Ab and confirmation tests in Covid-19 pandemic period.

Materials and Methods: We evaluated the HIV Ag/Ab tests which performed from 11.03.2020 to 31.10.2021 (pandemic period) in Dokuz Eylul University Hospital, serology laboratory. Architect® HIV Ag/Ab Combo (Abbott, ABD) in which chemiluminescent microparticle enzyme Immunological (CMIA) technology used for HIV Ag/Ab tests. In this test p24 antigen and antiHIV-1/2 antibodies were measured qualitatively. Geenius™ (Geenius, Bio-Rad, France) which is a immunochromatographic test is used for repetitive reactivities and determination the type of HIV virus in samples which is detected by ELISA test. In this test, four antigens for HIV-1 (p31, gp160, p24, gp41) and two antigens for HIV-2 (gp36, gp140) were included.

Results: In the study period, 24.646 samples (54.9% were belonged to female and 45.1% were belonged to male patients) were tested for HIV Ag/Ab. Adult patients were 96.4% and pediatric patients were 3.6% of patients. ELISA detected repetitive reactivity in the 0.4% of the samples. There was no repetitive reactivity in the samples of pediatric patients. In 61.3% of the repetitive reactivities were confirmed by HIV1/2 confirmation tests. The new diagnoses were 68.4% (39/57) of confirmed HIV Ag/Ab tests. Eighty two percent of new diagnosis was (32/39) male and 18% (7/39) was female. The mean age was 42 (min 21-max 70). The rates of the reactive samples were same during pandemic period, although test numbers were increased during first 10 months of 2021. (Table 1)

Discussion and Conclusion: Current algorithm of HIV diagnosis resulted in the rapid diagnosis and early antiretroviral treatment for the patients. Patients with repetitive reactive samples by ELISA but had negative result of confirmatory test should be questioned for unprotected sex, if necessary HIV

Ag/Ab should be repeated after one or two weeks or HIV RNA should be performed. The increased numbers of the tests in last year can be due to normalization period.

Keywords: HIV, Serology

Table 1. Serological tests according to years

Years	HIV (n)	Ag/Ab Repetitive reactivity by ELISA	Test number (n / %)
	2018	10.949	80 / 0.7
	2019	15.652	78 / 0.5
	2020	12.528	42 / 0.3
	2021	16.165	63 / 0.4

**ID-133 / Oral Presentation: “Radikal Prostatektomi Sonrası Gleason Skor Artışı
Preoperatif Multiparametrik Prostat MRG ile Öngörülebilir mi?: ADC, K-trans,
Tümör boyutu, PI-RADS Skorunun Karşılaştırılması”**

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Abstract (ID-133)

Introduction: In patients with prostate cancer, there may be a mismatch between the radical prostatectomy and the TRUS-biopsy Gleason score. This mismatch causes high-risk patients with aggressive tumors to undertreatment, while low-risk patients are lacking in referring them to active surveillance. In this study, the relationship between MRI parameters and upgrade in Gleason score after radical prostatectomy was investigated.

Materials and Methods: Between November 2017 and July 2020, 112 patients who underwent multiparametric MRI with suspected prostate cancer, TRUS systematic and cognitive fusion biopsy and subsequent radical prostatectomy. The patients were evaluated in two groups as those with and without the Gleason score upgrade after surgery. These two groups were compared in terms of ADC, k-trans, tumor size and PI-RADS score. Radiological evaluation was consensus using PI-RADS version 2.1 by two radiologists who lacked clinical knowledge. ADC and k-trans were measured in the MR workstation. ISUP was used for pathological evaluation.

Results: Upgrade in Gleason score was found in 51/112 of the cases. Only 2/51 cases were PI-RADS1. The upgrade rates of Gleason score were 15,6% for PI-RADS score <4; and 84,3% for score ≥4. The most frequent upgrade was from ISUP 1 to ISUP 2. There was no significant difference in PSA, PSAd, tumor size, k-trans and ADC in comparing between two groups. Upgrade was significantly higher in cases with PI-RADS score ≥4 and the transitional zone involvement on MRI (p<0.05).

Discussion and Conclusion: mpMRI is an effective method of predicting upgrade in Gleason score after radical prostatectomy. PI-RADS score ≥4 or transitional zone involvement has an independent predictive value.

Keywords: Multiparametric MRI, PI-RADS, Gleason, prostate cancer, prostate biopsy

Full-text (ID-133)

Giriş ve Amaç: Prostat kanseri, tüm dünyada erkeklerde en sık görülen ikinci kanserdir. Kanser sebebiyle ölümlerde ise beşinci sırada yer almaktadır(1). Prostat kanserinde, lokalize hastalıkta 5 yıllık sağ kalım neredeyse %100 iken, metastatik hastalıkta ise bu oran %40'ın altındadır(2). Bu yüzden erken tanı ve tarama oldukça önemlidir. Taramada, geleneksel olarak, serum prostat-spesifik antijen (PSA) düzeyi, dijital rektal muayene (DRM) ve transrektal ultrasonografi (TRUS) eşliğinde 12 kadran sistematik biyopsi kullanılmaktadır. Geleneksel tarama yöntemlerinin kısıtlılıkları, biyopsi gibi invaziv bir yöntemin tarama amaçlı kullanılıyor olması, prostat kanser taramasında yeni arayışlara yol açmıştır.

Özellikle 3 Tesla tarayıcıların klinik kullanımının artması, difüzyon ağırlıklı görüntülemenin tümör tanısında duyarlılığının anlaşılmasıyla birlikte prostatın manyetik rezonans görüntülemesi (MRG) popüler olmuştur. Prostat görüntüleme-raporlama ve bilgi sistemi (PI-RADS) rehberinin yayınlanmasıyla görüntü eldesi ve radyolojik raporlamaya standardizasyon getirilmiş; multiparametrik prostat (mp) MRG kanser taramada, lokal evrelemede ve tedavi sonrası takipte kullanılmaya başlanmıştır. Bu yöntemin özellikle klinik anlamlı kanserin ayırımında başarılı olduğu gösterilmiştir. Bunun yanında, TRUS-füzyon biyopsi tekniğiyle hedefe yönelik biyopsiyi imkanı kılmış, bu sayede, gereksiz biyopsiler azaltılmıştır. Bu avantajları ile mpMRG günlük pratikte kendine geniş bir kullanım alanı bulmuştur(3).

Prostat kanserinin risk sınıflamasında Gleason skoru, serum prostat-spesifik antijen (PSA) değeri ve rektal muayene bulguları yer alır(4). Risk sınıfına göre hasta yönetimi değişmekte ve farklı tedavi seçenekleri gündeme gelmektedir. (5). Gleason skoru, biyopsi ile belirlendiğinden risk sınıflamasındaki en kritik parametredir. Ancak prostat biyopsisinin rastgele yapılıyor olması örneklemede eksikliklere neden olmaktadır. Bu nedenle RP sonucu elde edilen Gleason skoru ile RP öncesi TRUS biyopsi Gleason skoru arasında uyumsuzluk olabilmektedir. Öyle ki hastaların %50 sinde RP sonrası Gleason skorunda artış (upgrade) görüldüğünü bildiren bazı çalışmalar mevcuttur(6). Bu uyumsuzluk, agresif tümöre sahip yüksek riskli hastaların daha az tedavi almasına, düşük riskli hastaları ise aktif izlem seçeneğine yönlendirmede eksikliğe yol açmaktadır. Bu nedenle Gleason skor uyumsuzluğunun preoperatif tespiti önemlidir. Bu çalışmada, MRG parametreleri ile radikal prostatektomi sonrası Gleason skor artışı arasındaki ilişki araştırılmıştır.

Gereç ve Yöntem: Kasım 2017–Temmuz 2020 tarihleri arasında prostat kanseri şüphesi ile multiparametrik MRG yapılan olgulardan, TRUS eşliğinde sistematik ve kognitif füzyon biyopsi ve sonrasında radikal prostatektomi yapılan 128 hasta mevcut idi. Bu olgulardan tanısal olmayan artefaktlı görüntülere sahip olgular (4 olgu), kontrendikasyon nedeniyle biparametrik MRG yapılanlar (5 olgu), mpMRG ile RP arasında 6 aydan daha fazla süre geçen olgular (4 olgu), mpMRG veya RP öncesi hormonoterapi/radyoterapi gibi farklı tedavi almış olanlar (3 olgu) çalışmadan çıkarıldı. 16 hasta belirtilen kriterler nedeniyle dışlandı; sonuç olarak 112 olgu çalışma kapsamına alındı. Olguların RP

Gleason skoru ve TRUS biyopsi skoru karşılaştırıldı: RP sonrası Gleason skor artışı olanlar (upgrade) ve olmayanlar şeklinde iki grup oluşturuldu. Radyolojik değerlendirme, klinik bilgidan yoksun iki radyolog (1.okuyucu: 4 yıllık, >2000 mpMRG görmüş, 2.okuyucu: 3 yıllık, >1000 mpMRG görmüş) MR görüntülerini ayrı ayrı değerlendirdi. Bir aylık unutmama periyodu sonrası konsensüs ile PI-RADSV2.1 skorlaması yapıldı; istatistiksel analizde konsensüs PI-RADSV2.1 skorları kullanıldı. Multifokal lezyon varlığında istatistiksel analizde indeks lezyonun PI-RADSV2.1 skorları kullanıldı. Bu iki grup; ADC, k-trans, tümör boyutu ve PI-RADS skoru açısından karşılaştırıldı. PI-RADSV2.1 ile uyumlu olarak, transizyonel zon yerleşimli lezyonların boyutu T2A görüntülerden, periferik zon yerleşimli lezyonların boyutları ise ADC haritası üzerinden ölçüldü. ADC kantitatif ölçümleri ise iş istasyonunda Syngo.via (Siemens Healthineers, Erlangen, Germany) programı kullanılarak yapıldı. ADC'de en fazla difüzyon kısıtlılığı görülen 3 ayrı yere ROI (Region Of Interest) ile serbest çizim yapılarak kantitatif ölçümler yapıldı ve bu ölçümlerin ortalama değerleri kaydedildi. Normal görünümlü periferik zondan da benzer şekilde ADC değerleri ölçülerek kaydedildi. Lezyon ADC / normal ADC oranı hesaplandı. İş istasyonunda, aynı lezyon ve normal parankim alanından, benzer yöntemle, k-trans ölçümleri yapıldı. K-trans ölçümlerine ek olarak diğer perfüzyon parametreleri olan Kep, Ve, iAUC değerleri de kaydedildi. Ayrıca olguların yaşı, mpMRG öncesi son serum PSA düzeyi hastane sistemi üzerinden taranarak kaydedildi. Her hasta için PSA yoğunluğu (PSAd), son serum PSA değerinin aksiyal ve sagittal T2A görüntüler üzerinden hesaplanan prostat volümüne oranı ile hesaplanarak kaydedildi

Tüm olgulara standart olarak TRUS eşliğinde 12 kadran sistematik biyopsi yapıldı. MpMRG'de PI-RADS 3 ve üzeri skor alan lezyon varlığında, her lezyon için 2 kor olmak üzere, kognitif füzyon eklendi. Patolojik değerlendirmede ISUP skorlama sistemi kullanıldı. Bu sınıflamaya göre; Gleason 3+3 tümörler ISUP 1, Gleason 3+4 tümörler ISUP 2, Gleason 4+3 tümörler ISUP 3, Gleason 4+4, 3+5, 5+3 tümörler ISUP 4, Gleason 4+5, 5+4, 5+5 tümörler ISUP 5 olarak kategorize edildi.

MpMRG'den habersiz bir üropatolog, indeks lezyonun yeri ve Gleason skorunu raporladı. RP spesimen raporlarında tariflenmiş indeks lezyon lokalizasyonları MRG'deki lezyonlar ile eşleştirildi.

İstatistiksel analizde SPSS versiyon 20 (IBM incor., NY, ABD) kullanılarak yapıldı. $P < 0,05$ istatistiksel anlamlı sınır değer kabul edildi. Buna ek olarak T testi, Fisher exact testi, spearman korelasyon analizi ve okuyucular arası uyum açısından kappa analizi kullanıldı.

Bulgular: Çalışmaya dahil edilen 112 olgunun ortalama yaşı 67 (aralık; 47-80) idi. Ortanca serum PSA değeri 7,89 ng/ml (1,61-75,66 ng/ml), ortalama PSAd 0,166 ng/ml/cm³ (0,04-2,68 ng/ml/cm³) ve ortalama lezyon boyutu 15mm (0-51mm) idi.

On-dört olguda mpMRG'de lezyon görülmedi. MpMRG'de indeks lezyon 83 hastada PZ, 7 hastada TZ, 8 hastada ise hem PZ hem de TZ yerleşimliydi. mpMRG'de 37 hastada multifokal tümör izlenirken, 10 hastada tüm bezde tümöral infiltrasyon görüldü.

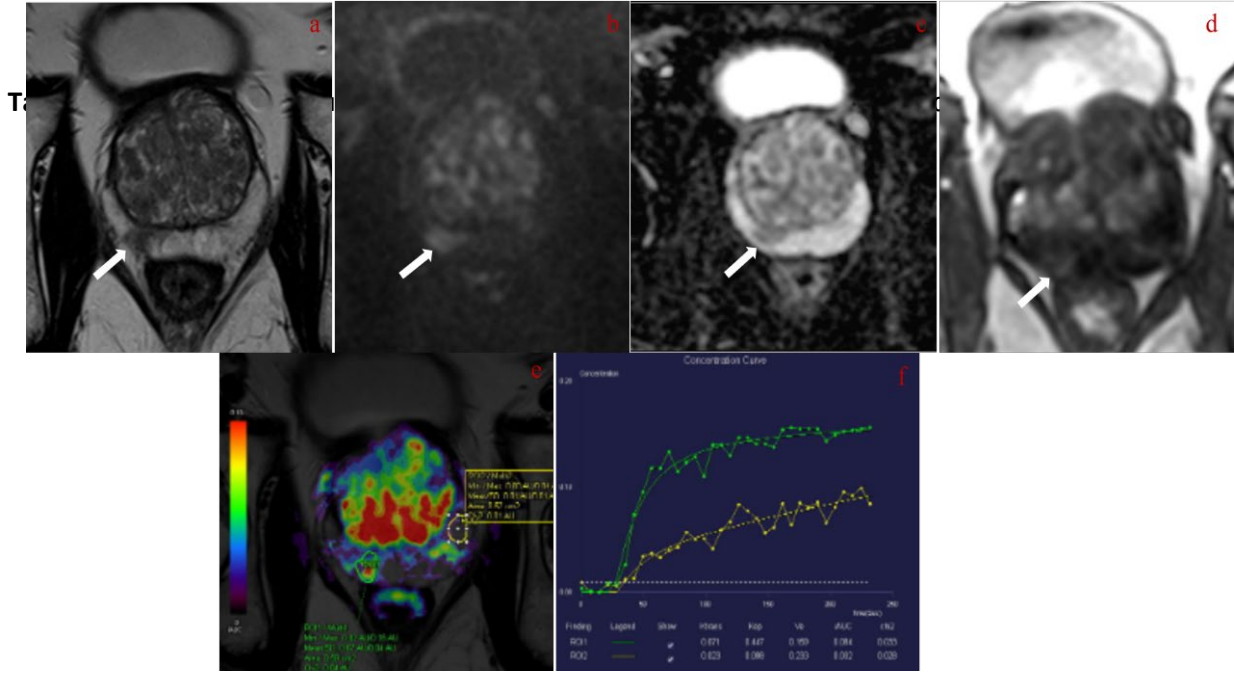
PI-RADSV2.1 skoru 1'den 5'e olan olgu sayısı sırasıyla, 14, 8, 7, 33 ve 50 idi. TRUS biyopside 1 olguda tümör görülmezken, ISUP skoru 1'den 5'e olan olgu sayısı sırasıyla, 60, 29, 14, 6 ve 3 idi. RP sonrası ISUP skoru 1'den 5'e olan olgu sayısı ise sırasıyla, 29, 37, 30, 10, 6 idi.

Çalışmaya dahil edilen 112 olgunun 51'inde RP sonrası Gleason skor artışı saptandı. Bu olguların yalnızca 2'si PI-RADS1 idi. Gleason skor artış oranı PI-RADS skor < 4 için %15,6; skor ≥ 4 için ise %84,3 olarak bulundu. En sık skor artışı ISUP 1'den, ISUP 2'ye görüldü. Skor artışı görülen ve görülmeyen grubun karşılaştırılmasında, PSA, PSAd tümör boyutu, k-trans ve ADC değerleri açısından anlamlı fark görülmeydi. PI-RADSV2.1 skoru ≥ 4 olanlar ile Gleason skor artışı arasında ise anlamlı ilişki saptandı ($p = 0,031$). Skor ≥ 4 'ün sensitivitesi %84,3 , spesifitesi %34,4 , pozitif öngörü değeri %51,8 , negatif öngörü değeri %72,4'tür. mpMRG'de TZ tutulumu ile Gleason skor artışı arasında da anlamlı fark görüldü ($p=0,026$).

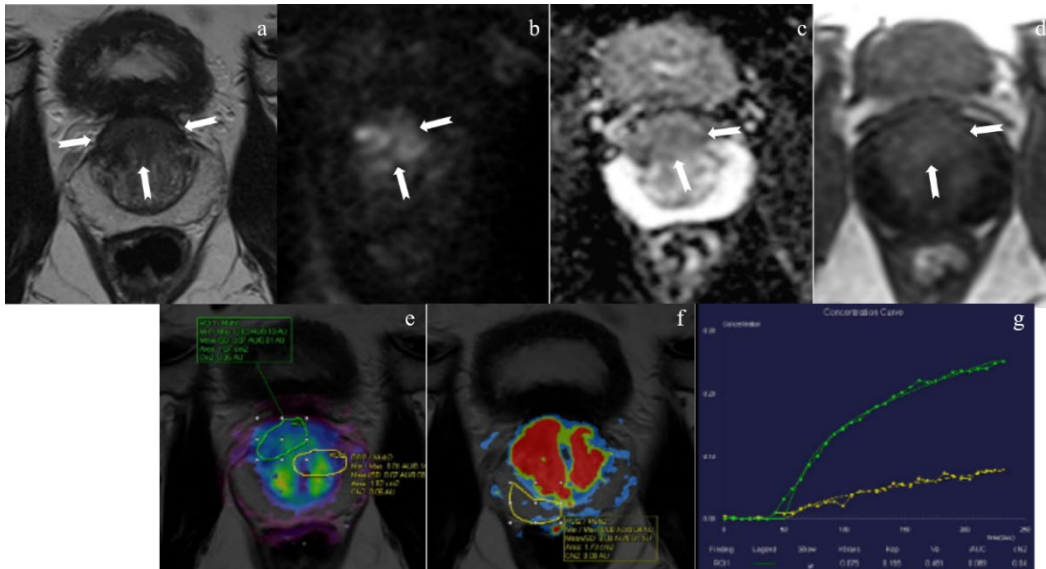
Olgu Sayısı	Biyopsi ISUP	RP ISUP
1	0	1
20	1	2
12	1	3
2	1	4
8	2	3
1	2	4
3	2	5
2	3	4
2	4	5

Tablo 1: Gleason Skor Artışı Olan Olguların TRUS Biyopsi ve RP ISUP Sonuçlarının Karşılaştırılması

PI-RADS	Gleason skor artışı var	Gleason skor artışı yok	Toplam
Skor<4	8	21	29
Skor ≥ 4	43	40	83
Toplam	51	61	112



Şekil 1: 72 yaşında, PSA 8,55ng/ml ve PSAd 0.09ng/ml/cm³ olan olgunun mpMRG görüntüleri; a'dan d'ye sırasıyla aksiyal T2A, DAG, ADC, DKİ ve e'den f'ye lezyon ve normal dokudan ölçüm yapılan perfüzyon haritaları. Okuyucu 1, okuyucu 2 ve konsensüs PI-RADS skorları sırasıyla 4, 4 ve 4 idi (beyaz oklar). TRUS kognitif biyopsi sonucu sağ mid PZ'de ISUP 1 idi. RP sonucu ise ISUP 2, %5 tutulum şeklindeydi; yani



Şekil 2: 71 yaşında, PSA 29.81ng/ml ve PSAd 0.64 ng/ml/cm³ olan olgunun mpMRG görüntüleri; a'dan d'ye sırasıyla aksiyal T2A, DAG, ADC, DKİ ve e'den g'ye lezyon ve normal dokudan ölçüm yapılan perfüzyon haritaları. Okuyucu 1, okuyucu 2 ve konsensüs PI-RADS skorları sırasıyla 5, 5 ve 5 idi (beyaz oklar). TRUS kognitif biyopsi sonucu mid anterior TZ'de ISUP 1 idi. RP sonucu ise, ISUP 3, %45 tutulum şeklindeydi; upgrade izlendi.

Tartışma ve Sonuç: Prostat kanseri, ortalama yaşam süresinin artmasıyla birlikte tüm dünyada daha önemli bir sağlık sorunu hale gelmektedir. Tarama yöntemleri bazı dezavantajıyla birlikte ölüm oranlarını düşürmüştür. Gleason skoru, prostat kanserinin davranışını ve seyrini tahmin etmek için kullanılan en önemli parametrelerden biridir(7). Gleason skorunun preoperatif doğru tahmin edilmesi, aktif izlem gibi bir tedavinin güvenle yapılabilmesi için kritik önem arz etmektedir(8). TRUS biyopside Gleason skoru 6 olan hastaların yaklaşık %20-60'ında RP sonrası skor artışı görülmektedir(6,9-12). Bu durum, preoperatif doğru tanının önemini artırmaktadır.

Bizim çalışmamızda skor artışı görülen ve görülmeyen grubun karşılaştırılmasında, PSA, PSAd tümör boyutu, k-trans ve ADC değerleri açısından anlamlı fark görülmedi. mpMRG, radikal prostatektomi sonrası Gleason skor artışını öngörmede etkin bir yöntemdir. Bu amaçla PI-RADS skoru ≥ 4 veya transizyonel zon tutulumu bağımsız bir öngörü değerine sahiptir.

Bu çalışmanın birçok limitasyonu bulunmaktadır. İlki, retrospektif, nispeten küçük hasta grubu ile tek merkezli bir çalışma olmasıdır. Bu durum, olguların taraflı seçilme riskini doğurmaktadır. Bu riski azaltmak için okuyucular, klinik, laboratuvar ve patolojik sonuçlardan yoksun değerlendirme yapmıştır. İkincisi, hedefli biyopsilerin kognitif füzyon tekniğiyle yapılmasıdır. Her ne kadar hedefli biyopsi olsa da tümör yeri optimum örneklenmemiş olabilir. MR-füzyon tekniği kullanılarak daha etkin bir hedefli biyopsi yapılabilir; ancak bu yazılım merkezimizde bulunmamaktadır. Üçüncüsü, konsensüs PI-RADS skoru istatistiksel incelemede esas alınmıştır. Konsensüs, iki okuyucu tarafından sağlanmış olup her iki okuyucunun da hata yaptığı durumlar söz konusu olabilir.

Anahtar Kelimeler: Multiparametrik MRG, PI-RADS, Gleason, prostat kanseri, prostat biyopsisi

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ID-134 / OP: “The Evaluation Of Growth Pain Knowledge Of Parents who applied to the Pediatric Emergency Service”

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Abstract (ID-134)

Introduction: Growing pains is the most common cause of recurrent musculoskeletal pain in children. First described in the 1800s, despite attracting the interest of many researchers, the etiology of this condition still remains unclear. Growing pains, though generally considered benign, can cause considerable anxiety in the parents. The present study was performed as a descriptive study to demonstrate the level of knowledge, attitudes and behavior patterns regarding growing pain among the parents of patients brought to our tertiary care pediatric emergency unit with any reason.

Materials and Methods: The researchers informed the parents in the emergency department about the study, and they applied a 5-questionnaire, reflecting the definition of growing pains. Results: A total of 1000 parents participated in the study and 93% of them were mothers. The mean age of the patients was 6.25 years (± 5.48) and the mean number of children in the family was 2.45 (± 1.22) children. 27.7% of the parents stated that they did not know the definition of growing pain. The research showed that 43.1% of parents took their child with growing pains to the doctor, while other parents preferred massage and analgesic as treatments.

Discussion and Conclusion: Management of growing pains generally consists of symptomatic care with massage and over-the-counter analgesics, as well as reassurance to children and parents about the benign, self-limited nature of this condition. Discussing the natural course of growing pains with parents can be helpful in decreasing anxiety and reduce the number of emergency department admissions.

Keywords: Growing Pains; Pediatric Emergency; Pediatrics

Full-text (ID-134)

Giriş ve Amaç: Büyüme ağrıları, okul çağındaki çocukların %3 ila %37'sini etkileyen, epizodik çocukluk çağı kas iskelet sistemi ağrılarının en yaygın nedenidir. İlk kez 1823'te Fransız doktor Duchamp tarafından tanımlanmış olup etiyolojisi halen bilinmemektedir (1) Kas-iskelet sistemi anatomik bozuklukları ve D vitamini eksikliği en çok suçlanan nedenlerdendir (2,3). Genel olarak, "büyüme ağrıları" terimi, günün geç saatlerinde veya geceleri ortaya çıkan ve kas-iskelet sistemi sorunlarının herhangi bir belirtisi olmayan uzuv ağrısı olan çocukları tanımlamak için kullanılır. Ancak

büyüme ağrıları terimi aslında yanlış bir isimlendirmedir, çünkü ağrı, büyümenin en fazla olduğu ergenlik döneminde olmayıp en yüksek insidansı 3 ila 12 yaşındaki çocuklardadır. (4-6)

Çocuklar tipik olarak öğleden sonra veya akşam saatlerinde başlayan uyluk, baldır veya kaval kemiğinde bacak ağrısı tanımlar. Bazen iki taraflı üst ekstremitte ağrısı bacak ağrısına eşlik edebilir, ancak izole üst ekstremitte ağrısı oluşmaz. Ağrı genellikle iki taraflıdır ve eklemleri etkilemez. Ağrı, çocuğu uykudan uyandırabilir ve birkaç dakikadan birkaç saate kadar sürebilir. Çocuklar gün boyunca ağrısızdır ve aktiviteleri etkilenmez, ancak günlük aktivitede artış, büyüme ağrı atakları ile ilişkili olabilir(7). Hastaların yaklaşık üçte birinde tekrarlayan karın ağrısı ve/veya baş ağrısı ile ilişkili şikayetler ortaya çıkar. Ailede büyüme ağrısı veya romatizmal rahatsızlık öyküsü yaygındır.

Büyüme ağrısının tanısı, klinik kriterlere dayanan bir dışlama tanısıdır. Birçok araştırmacı spesifik tanı kriterleri belirlemeye çalışsa da, en faydalı klinik kılavuzlar Peterson tarafından oluşturulmuş olup Russel ve Abu-Arafeh tarafından tamamlanmıştır (6,8,9). Ekstremitte ağrısı ile başvuran çocuklarda; ağrının yerleşimi, sıklığı, zamanı, süresi, egzersizle ilişkisi ve eşlik eden sistemik semptomları da içeren detaylı bir öykü alınmalıdır. Büyüme ağrısına bağlı ataklar sırasında ve sonrasında fizik muayene normaldir. Spesifik tanısal testler yoktur, laboratuvar ve radyografi normaldir(10).

Tedavide en temel şey çocuğun ağrısının tanınması ve ağrının kendi kendini sınırlayan, iyi huylu olduğunun anlaşılmasıyla aileleri gereksiz endişeden uzaklaştırmaktır. Analjezikler, masaj, pasif germe ve hipermobilitesi olan çocuklarda ortez, ağrı yönetimi için yardımcı olabilir. Bu nedenle ailelerin eğitimi, yönetim planının en önemli basamağıdır ve gereksiz doktor başvurularının önüne geçebilir (10-13).

Bu çalışmada; farklı sosyo-kültürel özellikte hastalara hizmet veren üçüncü basamak çocuk acil birimimize herhangi bir şikayetle getirilen çocukların ailelerine büyüme ağrısı farkındalığı ile ilgili kısa bir anket uygulanmıştır ve bilgi düzeyinin belirlenmesi amaçlanmıştır.

Gereç ve Yöntem: Çocuk acil birimimize 01.02.2021 – 01.07.2021 tarihleri arasında başvuran hastaların ebeveynlerine araştırmanın amacı ile ilgili bilgi aktarıldı ve kabul eden 1000 ebeveyne anket formu yüz yüze görüşme yöntemi ile dolduruldu. Ebeveynlerin eğitim durumu ile çocuk sayısını içeren ve büyüme ağrısı konusundaki bilgilerini saptamak için çoktan seçmeli 5 sorudan oluşan kısa bir anket formu uygulanmıştır. Anket örneği Resim 1’de incelenebilir.

Çalışma izni, İzmir Sağlık Bilimleri Üniversitesi Tepecik Eğitim ve Araştırma Hastanesi Girişimsel Olmayan Klinik Araştırmalar Etik Kurulu’nun 25.01.2021 tarihinde gerçekleştirilen toplantısında 2021/01-50 no’lu karar ile alınmıştır. Anket verileri SPSS for Windows, Version 24.0. (Statistical Packages for Social Sciences: SPSS Inc, Chicago, IL, ABD) programında değerlendirilerek sayı, ortalama $\pm$ standart sapma, ortanca, yüzdelik değerler olarak özetlendi. Kategorik ölçümlerin gruplar

arasında karşılaştırılmasında ki-kare testi kullanıldı, p değeri <0,05 istatistiksel olarak anlamlı kabul edildi.

Resim 1: Çalışma Anket Formu

ACİL SERVİSE BAŞVURAN ÇOCUKLARIN EBEVEYNLERİNİN BÜYÜME AĞRISI FARKINDALIK ANKETİ

Hastanın adı soyadı:

Anne eğitimi: a) ilkokul b) ortaokul c) lise d) üniversite

Baba eğitimi: a) ilkokul b) ortaokul c) lise d) üniversite

Kaç çocuğunuz var?

1) Büyüme ağrısı nedir?

a) Çocukların boy uzaması esnasında görülen normal bir durumdur

b) Çocuklarda büyüme sırasında görülen bir hastalık belirtisidir

2) Büyüme ağrısı en çok hangi kemikte olur?

a) Bacak kemikleri

b) Kalça kemikleri

c) Sırt kemikleri

3) Büyüme ağrısı ne zaman ortaya çıkar?

a) Sıklıkla geceleri

b) Sıklıkla gündüzleri

4) Büyüme ağrıları gelişim çağında tekrar tekrar görülür mü?

a) Evet tekrarlar

b) Hayır tekrarlamaz

5) Büyüme ağrısı olan çocuğunuza hangisi ya da hangilerini yaparsınız?

a) Doktora götürürüm

b) Bacaklarına masaj yaparım

c) Ağrı kesici veririm

Bulgular: Hastanemiz çocuk acil birimine çeşitli şikayetlerle başvuran 1000 gönüllü ebeveyne büyüme ağrısı farkındalık anketi uygulanmış olup katılımcıların %93'ü anne idi. Ailelerin etnik kökeni incelendiğinde, %87,9'u Türkiye vatandaşı iken %12,1'ini sığınmacı ailelerin oluşturduğu görüldü. Hastaların yaş ortalaması 6,25yıl ($\pm 5,48$) olup ailedeki çocuk sayısı ortalama 2,45 ($\pm 1,22$) (minimum: 1 çocuk, maksimum: 10 çocuk) çocuk idi. Katılımcıların %20,6' sı tek çocuklu aileler idi. Tek çocuğu olan

aileler ile iki ve daha fazla çocuğu olan aileler arasında büyüme ağrısı bilgi düzeyi açısından istatistiksel olarak anlamlı bir fark görülmedi (Tablo 1). Ebeveynlerin %27,7'si büyüme ağrısı kavramını hiç duymadıklarını, konu ile ilgili bilgisi olmadığını belirtti. Büyüme ağrısı ile ilgili bilgisi olmayan ebeveynlerin büyük çoğunluğunu (%72,7) sığınmacı aileler oluşturmaktaydı ve bu istatistiksel olarak anlamlı saptandı (Tablo 1). Okur yazar olmayan anne (%4,4) ve babaların (%3,5) büyüme ağrısı ile ilgili bilgi düzeyi eğitimi olan ebeveynlere göre daha azdı ve bu istatistiksel olarak anlamlı bulundu (Tablo 1). Katılımcıların yaklaşık yarısı (%50,6'sı) büyüme ağrılarının, çocukların boy uzaması esnasında görülen normal bir durum olduğu; ağrılarının çoğunlukla geceleri (%43,3) ve daha sık olarak bacak kemiklerinde (%43,8) olduğu kanaatindeydi. Ebeveynlerin %38,4'ü ağrılarının tekrarlayabileceğini belirtti. Araştırma, ebeveynlerin %43,1 gibi büyük çoğunluğunun büyüme ağrısı düşündüğü çocuğunu doktora götürme eğiliminde olduğunu, daha az sayıda ebeveynin tedavi olarak masaj (%13,2) ve ağrı kesicileri (%12,9) veya her ikisini (%2,9) birden tercih ettiğini gösterdi.

Tablo 1: Ebeveynlerin etnik köken, eğitim durumu ve ailedeki çocuk sayısı ile büyüme ağrısı bilgi düzeyi arasındaki ilişki

	Büyüme ağrısı ile ilgili bilgisi olmayan ebeveynler	Büyüme ağrısı ile ilgili bilgisi olan ebeveynler	P değeri
	N: 277(%27,7)	N:723(%72,3)	
Etnik köken ;			
Türkiye vatandaşı	189(%21,5)	690 (%78,5)	<0,05
Sığınmacı	88 (%72,7)	33 (27,3)	
Çocuk sayısı;			
Tek çocuk	52(%25,2)	154(74,8)	0,376
≥2 çocuk	225(%28,3)	569(%71,7)	
Anne eğitim durumu;			
Okur-yazar değil	27(%61,4)	17(%38,6)	
Eğitimi var	250(%26,2)	706(%73,8)	<0,05
Baba eğitim durumu;			
Okur-yazar değil	22(%62,9)	13(%37,1)	
Eğitimi var	255(%26,4)	710(%73,6)	<0,05

Tablo 2’de çalışmaya katılan ailelerin büyüme ağrısı ile ilgili genel bilgi düzeyleri incelenebilir.

Tablo 2: Ailelerin büyüme ağrısı ile ilgili anket cevapları

Sorular	Cevaplar	f (%)
Soru 1		
Büyüme ağrısı nedir?	Bilmiyorum	27,9
	Çocukların boy uzaması esnasında görülen normal bir durumdur	50,6
	Çocuklarda büyüme sırasında görülen bir hastalık belirtisidir	21,5
Soru 2	Bilmiyorum	28,6
Büyüme ağrısı en çok hangi kemikte olur?	Bacak kemikleri	43,8
	Kalça kemikleri	22,7
	Sırt kemikleri	4,9
Soru 3	Bilmiyorum	31,3
Büyüme ağrısı ne zaman ortaya çıkar?	Sıklıkla geceleri	43,3
	Sıklıkla gündüzleri	25,4
Soru 4	Bilmiyorum	29,2
Büyüme ağrıları gelişim çağında tekrar tekrar görülür mü?	Evet tekrarlar	38,4
	Hayır tekrarlamaz	32,4
Soru 5	Bilmiyorum	27,9
Büyüme ağrısı olan çocuğunuza hangisi ya da hangilerini yaparsınız?	Doktora götürürüm	43,1
	Bacaklarına masaj yaparım	13,2
	Ağrı kesici veririm	12,9
	Ağrı kesici veririm ve Masaj yaparım	2,9

Tartışma ve Sonuç: Büyüme ağrıları, küçük çocuklarda ağrı şikayetinin yaygın bir nedenidir. Tahmini sıklığı %3 ile %37 arasında değişmekte olup literatürdeki bu farkın nedenleri, örneklem büyüklükleri, yaş aralıkları ve çalışmalarda benimsenen objektif tanı kriterlerinin olmaması olarak yorumlanabilir. Evans ve ark., doğrulanmış bir anket kullanarak 4-6 yaş arası çocuklarda büyüme ağrısı prevalansının % 36.9 olduğunu tahmin etmiştir (6). Kaspiris ve Zafiropoulou tarafından yapılan bir çalışmada 4-12 yaş arası 532 çocuk arasında prevalans %24,5 olarak rapor edilmiştir (14).

Büyüme ağrılarının altında yatan nedenler tam olarak anlaşılmamış olsa da, hızlı iskelet gelişimi, çok hareketli çocuklarda kas ve kemik yorgunluğu, anatomik ve ortopedik sorunlar, baş ağrıları ve karın ağrısı ile bağlantılı daha genel bir ağrı sendromunun bileşeni gibi teoriler ortaya atılmıştır (14).

Kaspiris ve Zafiropoulou'nun akdeniz popülasyonunda büyüme ağrısı ile ilgili yapmış olduğu epidemiyolojik araştırmada, %78,5 gibi yüksek bir oranla ağrıların yoğun fiziksel aktivite ile ilişkili olduğunu saptamıştır (14). Seham ve Hilbert buna ek olarak yetersiz uykunun da büyüme ağrısı için bir faktör olabileceğini düşünmüşlerdir (15). Vehapoglu ve ark. 120 büyüme ağrısı olan çocuğun %61,6'sında 25-Hidroksi D vitamini düzeyinin düşük olduğunu, uygun tedavi ile ağrıların düzeldiğini rapor etmişlerdir. Ancak, bu ilişkiyi netleştirmek için daha fazla araştırmaya ihtiyaç olduğunu da belirtmiştir (3).

Haskes ve arkadaşları büyüme ağrısı olan çocukları, kontrol gruplarıyla karşılaştırdığında, bu çocuklarda ağrı eşiğinin azaldığını göstermiş ve büyüme ağrıların bir tür inflamatuvar olmayan ağrı amplifikasyon sendromunu temsil edebileceğini öne sürdüler (16). Büyüme ağrıları olan 115 çocuktan oluşan bir grubu inceleyen Hawksley, ağrıların hafif postural veya ortopedik kusurlarla ilişkili olduğunu gözlemledi (17). Çocuklarda büyüme ağrıların tedavisi hakkında çok az şey yazılmıştır ve kontrollü çalışma sayısı çok azdır. Tedavi, çocuğun ağrısının tanınmasını ve onun işlevselliği üzerindeki etkilerini içermelidir (18). Büyüme ağrısı olan çocuklarda tedavinin en önemli bileşeni, ailelere bu ağrıların iyi huylu olduğunu açıklamak, zamanla azalacağı ve herhangi bir ciddi organik hastalığa ilerlemeyeceği konusunda güvence vermektir (19). Çalışmamızda da saptadığımız gibi ebeveynlerin, bu durumun çocukların gelişim döneminde normal olabileceğini düşünmesine rağmen büyük bir kısmının tedavi için doktora başvurduğunu göstermiştir.

Ebeveynlere ağrıyı hafifletmek için analjeziklerin yanı sıra bacak masajı ve sıcak uygulama gibi farmakolojik olmayan yöntemleri kullanmaları önerilebilir (20). Büyüme ağrıların tedavisini içeren randomize kontrollü bir çalışmada kas germe egzersizlerinin ağrı ataklarını azalttığı gösterildi(21). Bu egzersizler ebeveynlere öğretilerek uzun süreli analjezik kullanımından kaçınılabilir. Hipermobilitesi, genu valgum, hafif ortopedik /veya postural bozukluğu olan çocuklar fizik tedavi ve/veya ayak ortezlerinden yararlanabilir (12). Genel olarak, klinik takip gerekli değildir. Bununla birlikte, sıklığı veya şiddeti artan ağrıları olan çocuklar ek değerlendirme gerektirebilir. Atipik öykü ve fizik muayene bulguları olan çocuklara ileri araştırmalar gerekir.

Çalışmamız sonucunda büyüme ağrısı konusunda farkındalık sağlayarak ebeveyn eğitiminin planlanması, ailelerin bilinçlendirilmesi, endişelerinin azaltılarak gereksiz acil başvurularının önüne geçilebileceği düşünülmüştür.

Çalışmanın Kısıtlılıkları

Çalışmanın tek merkezde yapılmış olması, katılımın gönüllülük esasına dayanması ve cevapların ailelerin söylemine bağlı olup, gözleme dayanmaması nedeniyle kısıtlı yanları bulunmaktadır.

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ID-136 / OP: “Can Level Of Elevated Ammonia Predict Prognosis In Acute Liver Failure?”

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Abstract (ID-136)

Introduction: Liver failure is a serious disease due to its high mortality rate. Liver failure can be associated with rapidly progressive multi-organ failure and devastating complications. Ammonia is predominantly produced in the gut by intestinal bacteria and enzymes and is primarily detoxified in the liver. In liver failure, this function is impaired and the serum ammonia level increases. In our study, we aimed to determine the relationship between serum ammonia level and prognosis in patients followed in the intensive care unit due to liver failure.

Materials and Methods: The records of 136 patients who were hospitalized in the Organ Transplantation and Hepatopancreatobiliary Surgery Intensive Care Unit of Başakşehir Çam and Sakura City Hospital between January 2021 and October 2021 were reviewed retrospectively. Sixteen patients (10 females, 6 males) who underwent liver failure were included in the study. The highest ammonia values measured during the patient's stay were recorded. Encephalopathy staging was done according to West Haven criteria. In addition to conventional treatment, plasmapheresis and continuous hemodiafiltration support were applied together in all patients. The data were analyzed in the SPSS 22.0 program and $p < 0.05$ was considered significant.

Results: The median age (range) of the patients was 33(5-67). The mean highest serum ammonia level measured was 145(353-48). One patient underwent cadaveric liver transplantation with an emergency notification, and 10 patients were transferred to the ward with regression of liver failure findings. One patient underwent cadaveric transplantation after emergency notification, but she died due to primary non-functioning liver. In four patients, a suitable liver for transplantation was not found and brain death occurred. The mean highest ammonia level measure in patients with brain death was found 242,4($\pm 120,58$), and 104,9($\pm 69,18$) in patients with regressed liver failure. The difference between the levels was found to be statistically significant ($p:0.031$).

Discussion and Conclusion: Elevated serum ammonia is one of the signs of liver failure. In our study; we found an association between continued high ammonia level and the prognosis of patients with acute liver failure. Although support was provided with extracorporeal therapy in addition to conventional treatment, the mean of the highest ammonia level in the group who could not receive liver

transplantation and who died was higher than the group that recovered without transplantation. The study we carried out in a small patient group; should be supported by larger patient groups and multicenter studies. relationship.

Keywords: acute liver failure, hyperammonemia, liver transplant

ID-137 / OP: “Role of Arthroscopy in Tibial Plafond Fractures”

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Abstract (ID-137)

Introduction: Fractures involving the tibiotalar joint of the tibia occurs 3-10% of all tibial fractures[1]. It has been shown that tibial plafond fractures may be accompanied by cartilage damage of the talus dome. [2]. This case report demonstrates the utility of ankle arthroscopy in addition to surgery for the evaluation of fracture reduction in fractures including to the joint and for the detection and treatment of additional injuries.

Materials and Methods: A 22-year-old female patient with a malleolar fracture caused by the mechanism of supination-adduction injury was prepared in the supine position under spinal anesthesia. A 4mm diameter scope was used for arthroscopy. The standard lateral and medial ankle arthroscopy portals used and the hematoma in the joint was evacuated with a drainage cannula. With the help of joystick wires which sent to the medial malleolus fragment, the fracture was reduced. The fracture fixed with k wires. Fracture reduction was confirmed by fluoroscopy and arthroscopy, and fixed with 3 partially threaded cannulated 4.5mm titanium screws. Later, the lateral malleolus avulsion fracture was fixed with a 6.5mm-thick partial threaded cannulated screw. All procedures were completed with limited surgical incisions and were completed without dissecting the fracture line. Chondral damage was found at the lateral of the talar dome. debridement and microfracture were performed.

Results: Soft tissue dissection was not performed during the surgical procedure and the periosteum was not damaged. Fracture reduction was found to be anatomical at the joint level. It was observed that there was cartilage damage in the talus. It was observed that the procedure could be completed with standard knee arthroscopy surgical instruments. There was no need for traction on the ankle. Total surgical time was measured as 75 minutes.

Discussion and Conclusion: Although the current literature does not recommend ankle arthroscopy as a standard in tibial plafond, we think that it is a valuable method for evaluating joint reduction and intervening for accompanying talus cartilage damage in selected cases [3].

Keywords: arthroscopy, tibia plafond, fracture

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ID-139 / OP: “Is Ursodeoxycholic Acid Effective in Dissolution of Gallstones in Children?”

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Abstract (ID-139)

Introduction: The aim of this study is to evaluate predisposing risk factors, demographic and clinical features in children diagnosed with gallstones, effectiveness of ursodeoxycholic acid therapy and relationship between risk factors and treatment success.

Materials and Methods: One-hundred-seven patients admitted to the outpatient pediatric gastroenterology clinic with echographic evidence of cholelithiasis were enrolled in the study. The data was collected on demographic features, predisposing risk factors and outcome from medical charts and compared by using convenient statistical methods.

Results: One-hundred-seven children 59 (55.1%) females and 48 (44.9%) males mean 6.9 ± 5.1 years with echographic evidence of cholelithiasis were enrolled in the study. Seventy two patients were treated with ursodeoxycholic acid (UDCA) for at least six months. In 20(27.7) children dissolution or decrease in diameter (more than 5 mm) of gallstones was observed, but the cholelithiasis endured the same size in 52 of them. The success of the treatment in males was significantly higher than females ($P=0.009$). Family history of gallstones was in 7 patients (6.5%). Use of ceftriaxone was in 21.5% of cases, total parenteral nutrition in 4.7%, obesity in 12.1%, hereditary spherocytosis in 10.3%, and dyslipidemia in 13.1%. Dissolution of stones was statistically higher in those aged younger than 2 years ($P=0.001$).

Discussion and Conclusion: Our study show that ursodeoxycholic acid treatment has no effect on gallstone dissolution in children; however, male gender and treatment at younger than 2 years of age are factors affecting dissolution.

Keywords: Ursodeoxycholic acid, gallstones, children

ID-140 / PP: “Is There A Relationship Between Substance Use and Crime?”

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Abstract (ID-140)

Introduction: Substance use pushes individuals not to recognize any rules, to harm themselves and the environment, and causes crime. Sometimes the substance is used to weaken the control mechanism of consciousness during crime. Extortion, theft, murder, prostitution and other crimes are also involved in order to obtain the money required to buy drugs due to addiction. Drugs don't just cause crime. One of the leading sources of violent behavior is drug abuse. It has been found that alcohol and substance use, aggression and acts of violence escalate each other (1). Amphetamines, cocaine and hallucinogens play a direct role in the emergence of aggressive behaviors and acts of violence with their chemical effects. As these substances weaken the control mechanisms on the human brain, individuals may behave more aggressively and uncontrolled (2).

Discussion and Conclusion: Many studies have been conducted investigating the relationship between drug use and crime, and it has been revealed that there is a relationship between drug use and crime. Three different theories on crime and drug use can be mentioned within the framework of causal link. According to the first theory, substance use causes crime or the crime causes substance use (3). Those who defend the thesis that crime causes substance use, argue that the characters in the criminal world are more prone to social environments and subculture in which drugs are used compared to normal people, and therefore committing crime causes substance use. Since the procurement and distribution of drugs take place within the criminal world, the close relations established with this world lead to drug use (3). Second theory; different variables such as sociological, environmental and psychological factors cause both crime and drug use. For example, it is stated that low internal control causes crime and drug use. In the third theory, drug use and crime are explained not as a cause and effect relationship, but rather as two different behavioral disorders. Accordingly, substance use or crime is a lifestyle that deviates from the general norms of the society and this situation has developed as a subculture. It is stated that social disorder causes both crime and drug use indirectly. There are some factors that cause both cases such as antisocial personality, genetic disorders, alcoholic parents, weak and unhealthy relationship with parents.

Conclusion: As a result, many studies in Europe and America have examined the relationship between drug addiction and crime / violent behavior, and many theoretical studies have been presented on the subject. However, there are very few studies examining this relationship in our country. The aim is to conduct studies that statistically examine the relationship between substance use and crime in our country.

Keywords: substance, crime, abuse, drug

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ID-141 / OP: “Effect of High Calorie Diet on Flow Mediated Dilatation of Brachial Artery and Carotid Intima Media Thickness in the Population with Constitutional Thinness”

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Abstract (ID-141)

Introduction: Constitutional thinness (CT) is a rare condition characterized with steady low body mass index (BMI) ($<18 \text{ kg/m}^2$) existing since childhood without any evidence of a chronic disease or hormonal disorder. Although it is considered to be a healthy state its association with cardiovascular disease is still uncertain.

Objective: The aim of this study is to investigate the relationship of this population with atherosclerosis.

Design: Classical risk factors, FMD (flow mediated dilatation) and CIMT (carotid intima media thickness) were examined for this purpose. Furthermore, the effects of overfeeding on vascular health of this population were analyzed as well.

Materials and Methods: 91 individual were screened and 60 of them were diagnosed with constitutional thinness. Mean age was 20 ± 2.8 and mean BMI was 17.4 ± 0.2 . They were given high calorie diet for 3 months and then investigated for the presence of any change in CIMT, FMD and cholesterol levels. 20 participants with constitutional thinness completed the study.

Results: After an overfeeding period of 3 months there was no significant change in FMD %, CIMT, BMI, fasting blood glucose, TSH and cholesterol levels. However postprandial insulin levels were significantly decreased (12.36 ± 10.87 to $6.86 \pm 1.47 \text{ } \mu\text{U/mL}$) while no significant change was observed in postprandial glucose (93.7 ± 17.1 to $95.9 \pm 22.3 \text{ mg/dl}$).

Discussion and Conclusion: Constitutional thinness might not be associated with cardiovascular events and should be differentiated from other underweight conditions.

Keywords: Intima media thickness; Vasodilation; Thinness; Diet; Coronary artery disease; Underweight

Full-text (ID-141)

Introduction: An accurate use of terminology for underweight (BMI lower than 18.5 kg/m^2) situations is still controversial [1-3]. Constitutional thinness (CT) is defined as a natural state with an ongoing stable low body weight since childhood and resistance to weight gain despite a desire and steady eating behavior. It is not associated with any chronic disease or hormonal disorder. In women with constitutional thinness menstruation periods are also reported as regular [1-4]. Normal body weight is a term associated with lower mortality rates by definition compared to others. Although the increased risk of death in obesity has been emphasized more, mortality has also increased in the underweight population. Low body weight as a risk factor for coronary heart disease event is reported rarely [5]. However other factors effecting survival in this population should be investigated.

We have investigated the effects of overfeeding on carotid intima media thickness (CIMT) and change in flow mediated dilatation (FMD) of brachial artery in individuals with constitutional thinness. We aimed to detect whether an endothelial dysfunction as a cardiovascular disease predictor will occur in response to dietary.

Materials and Methods: 91 individuals were included in the study. Underweight individuals without any prior chronic disease, inflammatory disease, malignancy and who demand putting some weight on were recruited. Patients who are smoker or with anorexia nervosa or amenorrhea were excluded.

Participants were recorded at first application and 3 months after.

Results: 20 participants completed the study and we did not find significant changes in FMD %, CIMT, BMI, fasting blood glucose, TSH and cholesterol levels. However postprandial insulin levels were significantly decreased while no significant change was observed in postprandial glucose. Mean pre-diet postprandial insulin level was $12.36 \pm 10.87 \text{ mIU/l}$ and post-diet level was $6.86 \pm 1.47 \text{ mIU/l}$. Mean ACTH level was $25.2 \pm 18.1 \text{ (pg/mL)}$ and peak cortisol responses to ACTH stimulating test were between 25-32 (mcg/dL). Weight gain was not observed following 3 months of high calorie diet.

Discussion and Conclusion: To our knowledge it is for the first time investigating both CIMT and FMD in individuals with constitutional thinness as a marker of atherosclerosis. Furthermore we also analyzed whether high calorie diet has an impact on endothelial function in this group.

Carotid intima media thickness (CIMT) which is pronounced as structural sign of coronary heart disease could be used if 1 mm cutoff value is applied for diagnosis with a higher specificity reaching 79% [6]. CIMT values of middle aged firefighters whom with cardiovascular risk factors but no coronary heart disease and with low cardiovascular risk but overweight were 0.74 mm and $0.72 \pm 0.18 \text{ mm}$ respectively in two different studies [7,8]. In another study comparing patients with and without diabetes reported higher CIMT in diabetes (0.754 mm vs 0.662 mm) [9]. Any cardiac risk factor, diabetes mellitus, age and weight appears to increase the thickness of carotid intima. Our study group comprising individuals who

are underweight and with no cardiovascular risk factors presents particular data to literature. In this context lower CIMT of 0.56 ± 0.15 mm in our study population is considered to be coherent with literature. Furthermore it might also reflect the positive correlation between bodyweight and CIMT.

Discrepancies between BMI and fat accumulation in body underestimate the metabolically unhealthy changes that cause morbidity and mortality in later life [10]. In a study in Sweden all-cause mortality was found higher among underweight individuals than normal weight people after 12 years of follow up [11]. There are some studies showing increased frequency of cardiovascular disease and myocardial infarction in underweight population. Presence of decreased FMD % as a cardiac risk factor was shown in some of these studies [5,12,13]. When it was firstly reported in 1992 the mean dilatation in non-atherosclerotic group was 10% while it was lower in high risk subjects [14]. However cardiovascular event as a cause of death in underweight population is still controversial. FMD which is an independent prognostic factor for cardiac event was found 13.7 ± 3.6 % in our participants. Moreover it has not changed after high calorie diet (18.2 ± 1.6 %) which might indicate that constitutional thinness is not a risk factor for coronary heart disease.

Although high calorie diet might have a negative impact for vascular health we applied an overfeeding protocol to achieve weight gain. Interestingly we did not see any change on FMD and CIMT as a predictor for cardiovascular disease in CT.

Resistance to weight gain in people with constitutional thinness is a challenge for clinicians to overcome when combined with person's desire for weight gain. An energy gap which is defined as presence of positive energy balance was reported in an overfeeding study in individuals with constitutional thinness. Multi-nutrient liquid Renutryl Booster was used in a study and weight gain was obtained [15]. In contrast high fat content diet was resulted with no weight increase in another study. Earlier and longer surge of peptide YY and GLP-1 and blunted ghrelin decrease following overfeeding was reported in CT [16]. Although presence of hypotrophy accompanying with lower triglyceride and glycogen contents in muscle tissues of individuals with CT, it is shown that overfeeding increases the intramuscular triglyceride amount [17]. Restriction in oxidative capacity and capillary flow of muscle is also revealed in the same study. Compatible with the definition of CT we did not see any increase in weight and BMI despite overfeeding.

An anorexigenic profile that is normal or low ghrelin and low leptin levels accompanying with high plasma peptide YY levels in constitutional thinness was reported. Moreover postprandial surge of GLP1 and peptide YY are higher in CT [4]. Lower postprandial insulin levels in our study could be an outcome of complex interactions of postprandial hormones in favor of satiety. This hormonal profile which provides stronger and earlier satiety in constitutional thinness results in an eating behavior of snacking [16].

Hypercortisolism in anorexia nervosa is shown in many studies and an over-activity of hypothalamus-pituitary –adrenal axis is thought to be playing a role. Adrenal sensitivity to ACTH as a factor for high cortisol was also considered but it is not shown with ACTH stimulation tests [18]. We found relatively higher cortisol responses to ACTH testing which could predict presence of an adrenal sensitivity in CT. No hormonal abnormalities including FSH, LH, 17 β estradiol, IGF-1, free T3 and cortisol were detected in constitutional thinness group in a study comparing anorexia nervosa (AN), CT and normal subjects. Moreover normal level of IL-7 is suggested as a diagnosing feature of CT in this study [4]. Additionally lower IGF-1, free T3, and leptin levels accompanying with higher ACTH and mean cortisol levels were found in AN compared to CT. It is also suggested that low free T3 levels could help distinguishing CT more accurately from AN [2]. Our participants did not show any hormonal abnormalities mentioned above.

Conclusion: Body fat percentages rather than BMI could predict morbidity and mortality not only in obese individuals but also lean people.

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ID-142 / PP: “Treatment of the Mandibular Anterior Area with Inadequate Keratinized Gingiva”

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Abstract (ID-142)

Introduction: A sufficient amount of keratinized gingiva is an important component in the maintenance of periodontal tissue health around the teeth and implants. If the amount of attached gingiva around the teeth is insufficient, the patient may not be able to fully control the plaque and as a result, inflammation in the periodontal tissues, tenderness in the teeth and gingival recession may occur. Free gingival graft (FGG) is a periodontal plastic surgery method and it can be used for increasing the attachment of gingiva, root coverage, eliminating the effects of abnormal frenulum attachment and forming an appropriate tissue contour for ideal oral hygiene procedures.

Materials and Methods: As a result of the clinical and radiological examination of a 34-year-old female patient who presented to our clinic with tooth sensitivity, discomfort during brushing and chewing, and at the same time with aesthetic concerns, Miller class 3 gingival recession and insufficient keratinized gingival tissue were detected in the vestibule of teeth 41 and 31. After the initial periodontal treatment, FGG was planned to increase the keratinized tissue band. FGG was taken from the palatinal region of the right premolar and molar teeth of the patient to the recipient bed and closed with 4.0 silk suture. The patient was prescribed chloroben oral spray and majezik SR 100 mg tablet. No complications were observed during the healing period. Sutures were removed on the 14th day after the operation. At the 6th month follow-up, it was observed that the amount of keratinized gingiva increased 4 mm at the beginning of treatment.

Discussion and Conclusion: As a result, it can be said that the keratinized gingiva around the teeth increases patient function and comfort and contributes to long-term success.

Keywords: attached gingiva, free gingival graft,

Full-text (ID-142): “Mandibular Anterior Bölgede Yetersiz Yapışık Diş Etinin Serbest Diş Eti Grefti İle Tedavisi : Olgu Sunumu”

Giriş ve Amaç: Serbest diş eti grefti (SDG) 1963 yılında Björn tarafından tanımlanan, keratinize diş eti genişliğinin yeterli olmadığı vakalarda, bu yetersizliği gidermek amacıyla uygulanan bir greft çeşididir. Yapışık diş eti genişliği miktarı ağız içinde farklılık göstermektedir. En geniş olduğu bölge üst ve alt

çene kesiciler bölgesidir (Maksilla anterior bölgede 3.5-4.5 mm, mandibular anterior bölgede 3.3-3.9 mm). Bu genişlik azılar bölgesine doğru daralır. Posterior bölgede 1.6-2 mm arasında değişmektedir ve en dar olduğu yer maksilla ve mandibulada premolar bölgelerdir (Maksilla 1.9 mm mandibula 1.8mm) ⁽¹⁾. Yapışık diş eti, kas lifleri tarafından uygulanan fizyolojik kuvvetlerin dağıtılmasına, dişeti marjininin stabilizasyonun sağlanmasına katkıda bulunur. Periodonsiyumu eksternal yaralanmalara karşı korunmasını sağlar. Yeterli yapışık diş eti genişliğinin olması ataşman kaybının ve diş eti çekilmesinin önlenmesinde, hastaların plak kontrolünü sağlamalarında önemli bir role sahiptir. Yapışık dişeti yetersizliğinde görülebilecek komplikasyonlar nedeni ile yapışık diş eti genişliğini arttırmak için birçok teknik denenmiştir. Günümüzde en yaygın olarak kullanılan tekniklerden biri serbest dişeti greftidir (SDG). SDG ile yapışık dişeti miktarı artırılırken, aynı zamanda belli ölçülerde kök kapanması da mümkün olmaktadır. SDG'nin doku stabilitesini sağlayarak periodontal sağlığın geliştirilmesine katkıda bulunma konusundaki yararlılığı, uzun dönem çalışmalar ile desteklenmiştir.

Sistemik olarak sağlıklı 34 yaşındaki kadın hasta İzmir Katip Çelebi Üniversitesi Diş Hekimliği Fakültesi, Periodontoloji Anabilim Dalı'na diş eti çekilmesi, diş hassasiyeti, fırçalama ve çiğneme sırasında rahatsızlık ve aynı zamanda estetik şikayetler sebebi ile başvurdu. Yapılan klinik ve radyolojik muayenesinde hastanın gingivitis hastası olduğu, 31 ve 41 numaralı dişlerinde Miller III diş eti çekilmesi ve yetersiz yapışık diş eti dokusu olduğu görüldü (Resim-1). Hastaya öncelikle ağız hijyen eğitimi verildi. Plak indeksi, gingival indeks ve periodontal cep derinliği ölçümünde sonra diştaşı temizliği ve kök yüzeyi düzleştirme işlemleri yapıldı. Yetersiz yapışık diş eti miktarını artırmak için serbest diş eti grefti operasyonu planlandı. Yapışık diş eti miktarı artırılması amaçlanan alt çene anterior bölgeye 1:100,000 konsantrasyonda epinefrin içeren lidokain ile lokal anesteziyi takiben 15C no bisturi ile mukogingival sınırın yaklaşık 1 mm koronalinden, yapışık dişetinde horizontal bir insizyon ile yarım kalınlıklı flap kaldırılmaya başlandı. Horizontal insizyonun mezyo-distal uzunluğu, 41 ve 32 nolu dişlerin distallerine uzayacak şekilde belirlendi. Yarım kalınlıklı flap mukogingival hattın 7mm apikaline kadar uzatıldı (Resim-2). Periost üzerinde ince bir bağ dokusu tabakası bırakıldı. Donör doku, palatinal bölgeye lokal anestezi yapıldıktan sonra üst dişlerin gingival marjinlerinin 2 mm apikalinde olacak şekilde 1- 1.5 mm kalınlığında 14 mm x 5 mm boyutlarında alındı. Alınan greft hemen nemli bir steril gazlı bezin üzerine aktararak yağ dokuları temizlendi (Resim-3). Donör bölgeden alınan SDG, alıcı yatağa koyulduktan sonra 6.0 PTFE sütürlerle mezyal ve distal kenarlardan sabitlendi son olarak 4.0 ipek periostal askı sütür ile sabitlendi (Resim-4). Greftin alıcı bölgeye sütürlarla sabitlenmesinden sonra 5 dakika boyunca basınç uygulandı. Böylece greft ile alıcı bölge arasında kan pıhtısının oluşumunun engellemesi ve greftin beslenmesi sağlandı. Ardından 5 mililitre intravenöz kan, 24 gauge kanal ile antekübiyal fossadan rutin yöntemle bir plastik kan tüpü içine alındı. Toplanan kan, santrifüj makinesinde 10 dakika boyunca 3.000 rpm'de hemen santrifüjlendi. Santrifüjden sonra, steril bir presel ile trombosit zengin fibrin (TZF) pıhtısı çıkarıldı, üstte trombosit fakir plazma ve alttaki kırmızı kan hücreleri atıldı. PRF, iki adet serum fizyolojik ile hafif ıslatılmış steril gazlı bez arasında

sıkıştırılarak membran haline getirildi. Elde edilen PRF membranı, donör bölgeye koyularak 4.0 ipek sutürlerle sabitlendi.

Post-operatif bakım için hastaya % 0,2'lik klorheksidin diğlukonat ile 2 hafta boyunca, günde 2 kez kullanılmak üzere gargara ve 100 mgr flurbiprofen reçete edildi. 2 hafta boyunca hastalardan fırçalama yapılmaması istendi. 14 gün sonra dikişler alındı ve hasta post-operatif düzenli kontrollere çağrılarak iyileşme süreci takip edildi. Hastanın 3 aylık kontrolünde alt anterior bölgede yeterli keratinize doku olduğu gözlemlendi (Resim-5).

Yapışık diş eti genişliğinin yetersiz olması diş eti hastalıkları için predispozan bir faktör olarak kabul edilmektedir ve diş eti çekilmesinin önemli bir sebebi olarak görülmektedir. SDG, keratinize dişeti miktarının artırılması, kök yüzeyinin kapatılması, hastanın oral hijyenini rahatlıkla sağlayabileceği bir doku oluşturulması ve yüksek frenulum etkisinden kurtulmak için kullanılabilir. ⁽²⁾ Ancak SDG'nin ikinci bir cerrahi alana ihtiyaç duyulması, donör sahanın sekonder iyileşmeye bırakılması, dokudaki renk uyumsuzluğu, verici bölgelerin sınırlı olması nedeni ile generalize diş eti çekilmelerinin tedavisinde kullanılamaması gibi dezavantajları bulunmaktadır. SDG operasyonlarından sonra oluşan komplikasyonlar genellikle donör bölge ile ilgilidir. Donör bölgenin sekonder iyileşmeye bırakılması hastalar tarafından zor tolere edilir. Bu olguda hastanın post-operatif donör bölgesinde kanamayı ve ağrıyı azaltmak, iyileşmeyi hızlandırmak için Trombositten zengin fibrin (TZF) kullanılmıştır. TZF, yapısında bol miktarda trombosit, lökosit, sitokin ve dolaşımdaki kök hücreleri içeren tetramolekül yapısında polimerize fibrin matriksinden oluşmuştur. TZF, iyileşme için gerekli olan parametreleri içerdiğinden, yara iyileşmesi üzerine olumlu etkileri bulunmaktadır. ⁽³⁾

Bu vaka raporu ile yetersiz yapışık diş eti miktarının SDG ile başarılı bir şekilde artırıldığı ve hastanın şikayetlerinin azaldığı gözlenmiştir.



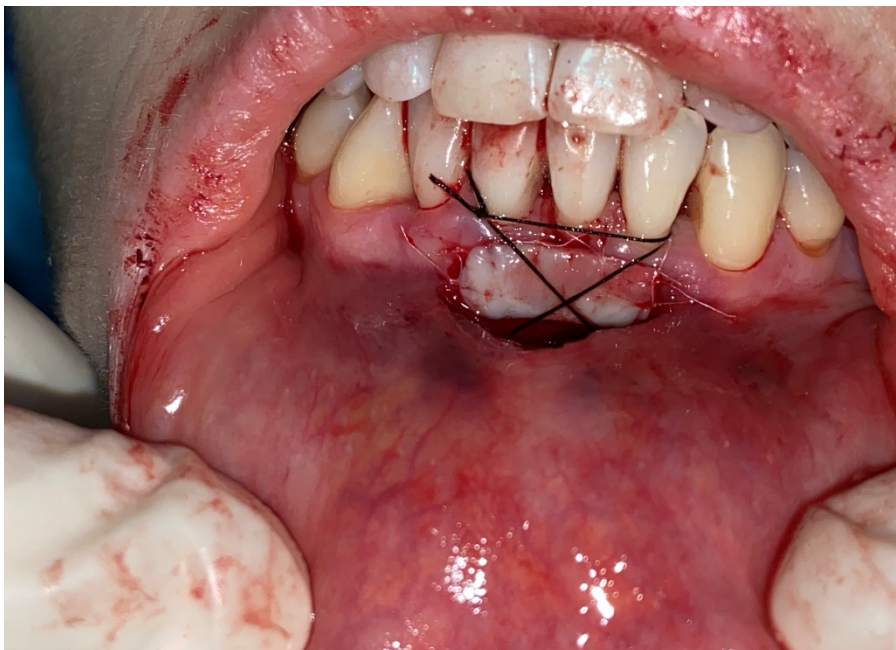
Resim-1



Resim-2



Resim-3



Resim-4



Resim-5

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ID-143 / PP: “The Role of Cannabis in Medical Usage”

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Abstract (ID-143)

Introduction: In this article, attention was drawn to the medical use of cannabis in patients with advanced cancer, during the palliative care period, and the possible consequences of the medical use of cannabis were discussed. Palliative care; It is an approach that aims to improve the quality of life of patients facing a life-threatening illness like end stage cancer patients. It aims to detect and treat physical, psychosocial and emotional problems, and provides relief from pain and other possible symptoms. Palliative care is life supportive, but it also makes death a natural process.

Discussion and Conclusion: One of the most intense negative symptoms experienced by cancer patients requiring palliative care is pain. Other end-of-life symptoms are known as anorexia, fatigue, cachexia, dyspnea, anxiety, agitation, delirium, and confusion. In the pharmacological treatment of cancer pain, non-opioid analgesics, weak opioids and strong opioids are used according to the response (1). However, some problems may be experienced in the management of neuropathic and chronic pain seen in cancer patients, which negatively affects the quality of life of the patients. Patients who have problems in response to opioid analgesics or who face serious side effects need innovative treatment methods. Medical use of cannabis has the potential to effectively manage pain in these patients (2). Studies have shown that cannabis increases the analgesic effect of opioids and lower doses are sufficient to provide relief. With the use of medical cannabis, opioid consumption is significantly reduced. One of the major problems with opioid use is that one in four people develops an opioid use disorder due to developing tolerance (3). The medical use of cannabis is mostly for pain management, as one of the first effects of cannabis to be discovered was its analgesic effect. It is more effective in difficult-to-treat pain types such as neuropathic pain and cancer pain. At the same time, it has been proven in studies that cannabis reduces nightmares and improves sleep quality in patients with chronic pain (4). In addition, other positive effects reported by patients are known as comfort mood (64%), state of being happy (54%) and relaxation (38%) (5). In advanced cancer patients, the ideal dose of cannabis should be one that provides effective pain management but does not produce intolerable side effects. Since the ideal dose varies from patient to patient and complex symptoms can be seen with cannabis treatment, concomitant drug

use is likely to occur. Although interpersonal differences are observed in cannabis use, deterioration in functionality, deterioration in motor skills, decrease in academic performance, loss of motivation, psychiatric disorders and addiction can be observed in overusage.

Conclusion: It is predicted that cannabis will have a positive effect in relieving many symptoms such as pain and fatigue in advanced stage cancer patients. For this reason, it is necessary to plan the introduction of cannabis into medical use with the necessary legal regulations and supervision.

Keywords: cannabis, palliative care, cancer, pain

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ID-145 / OP: “Comparison of Body Mass Index and Physical Activity Status in Patients with Hyperlipidemia and Healthy Individuals”

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Abstract (ID-145)

Introduction: Despite advances in the diagnosis and treatment, atherosclerosis-induced diseases are one of the leading cause of mortality and morbidity worldwide. Hyperlipidemia is the most important preventable risk factor that increases the risk of atherosclerotic cardiovascular disease. In this study we aimed to determine the effect of lifestyle changes on lipid profile by comparing physical activity status and Body Mass Index of hyperlipidemic individuals and normal lipid profile individuals.

Materials and Methods: After the ethics committee approval, the study was conducted with a total of 200 patients who were admitted to İzmir Bozyaka Training and Research Hospital Family Medicine outpatient clinic and who were 18 years and older volunteers; hyperlipidemic 100 patients included in study group and 100 healthy volunteers included in control group. This study was a controlled, analytical case-control study, and started on November 2018 and was completed in 2 months. International Physical Activity Questionnaire Short Form and sociodemographic data form were applied to volunteer participants. Data were analyzed with SPSS 24.0 program using Kolmogorov-Smirnov test, Levene test, Mann-Whitney U test, Kruskal-Wallis test, Spearman correlation coefficients.

Results: In this study, 17% of the study group and 8% of the control group were found to be obese. Smoking was statistically higher in the study group. In the categorical scoring obtained from International Physical Activity Questionnaire data, 41% of the study group and 12% of the control group were found to be inactive. Increased levels of physical activity was associated with decreased levels of TC, LDL-C in the study group and increased levels of HDL-C in the control group. Increased body mass index was associated with increased levels of TG, TC, LDL-C and decreased levels of HDL-C.

Discussion and Conclusion: The decrease in body mass index and increased levels of physical activity was associated with improvement in lipid profiles. The importance of lifestyle changes should be emphasized in the treatment of hyperlipidemia as in cardiovascular diseases.

Keywords: Hyperlipidemia, physical activity, body mass index

ID-146 / OP: “Retrospective Investigation of Poisoning Cases Applied to Izmir Democracy University Buca Seyfi Demirsoy Training and Research Hospital”

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Abstract (ID-146)

Introduction: Poisoning cases are patients with a wide range of symptoms, which make up the majority of emergency admissions to hospitals, require rapid diagnosis and treatment. The toxic effects that occur in the patient can go away with a few hours of intervention and observation, or they can end in a long and fatal way, including hospitalization in the intensive care unit and special antidote treatment. In this study, poisoning cases who applied to our hospital for three years before the pandemic were examined. It was determined that the annual number of applications was quite high (between 1313 and 1445) and the most common cause was drug poisoning. This is followed by inhalation poisoning, corrosive acid/alkali (caustic) substance poisoning and food poisoning.

Conclusion: Considering the population and socioeconomic class of the district where our hospital is located, alcohol poisoning was also common. Specific antidotes required for alcohol poisoning were obtained from external centers and their treatment was arranged. In recent years, toxicology centers and toxicology intensive care units are gaining importance in order to meet this increasing patient density and to start antidote treatment quickly. We think that it is important to gather these patients under one roof with a center to be opened in Izmir and to fill this gap.

Keywords: Poisoning, emergency admissions, toxicology.

Full-text (ID-146)

Giriş ve Amaç: Zehirlenme bir maddenin vücuda zarar verecek miktarda ağız, solunum, deri, göz, damar yolu gibi farklı yollardan vücuda alınması sonucunda toksik belirtilere yol açması ve bazen de yaşamı tehdit etmesidir. Acil servis başvurularının önemli bir kısmını oluşturan zehirlenmeler kazara

veya özkıym amalı olarak oral, inhalasyon ya da enjeksiyon yoluyla ila ve diğerkimyasal maddelerin alınmasıyla gerekleşir. Alım yoluyla bağılantılı olarak farklı disiplinler yaklaşım gerekebilmektedir. Tüm zehirlenmelerde erken ve doğru müdahale esastır. Farklı ülkelerin farklı merkezlerinde zehirlenme olgularının farklı paterne sahip oldukları ortaya konmuştur. Türkiye’deki çeşitli illerdeki epidemiyolojik alışmalar, tüm acil servis başvurularının %0,7–5,0’sini zehirlenme vakalarının oluşturduğunu ortaya koymuştur (1–3).

Zehirlenme olguları klinik olarak gastrointestinal sistem semptomlarından (bulantı, kusma, karın ağrısı, ishal), kardiyak (aritmı, göğüs ağrısı, kardiyak arrest) ve nörolojik semptomlara (şuur değışiklikleri, nöbet, koma) kadar değışken klinik özelliklere sahip olabilir. Bu semptom ve bulgular toksik maddenin yapısı, etkinliğı ve müdahaleye başlanma süresiyle değışkenlik gösterebilmektedir. Hastanelerin bulunduğu semtler zehirlenme vakalarının hangi profilde olabileceğini etkilemektedir. Bu araştırmanın amacı İzmir Buca ilçesinde bulunan hastanemize pandemi öncesindeki üç yıl içerisinde başvuran zehirlenme olgularının incelenmesi ve hastanemizin bu alandaki tecrübelerinin paylaşılmasıdır.

Gere ve Yöntem: İzmir Demokrasi Üniversite Buca Seyfi Demirsoy Eğıtim ve Araştırma Hastanesi, İzmir’in Buca ilçesinde hizmet veren bir hastanedir. 132 dönüm arazi üzerinde kurulu olan hastane, toplam 8 ayrı hizmet binasında 24.000 m² kapalı alana sahiptir. 2002 yılından beri hizmet veren hastane, 2020 yılında İzmir Demokrasi Üniversitesi ile birlikte kullanım protokolü imzalamıştır. ‘İzmir Demokrasi Üniversitesi Buca Seyfi Demirsoy Eğıtim ve Araştırma Hastanesi’ olarak isim değıştirmiştir. Hastanemiz 30 Ekim 2020 İzmir depreminde hasar görmüş ve ana bina tahliye edilmiştir. Bu nedenle deprem öncesi dönem araştırmaya dahil edilmiştir. Bu araştırma 1 Ocak 2017 ile 31 Aralık 2019 yılları arasındaki üç yıl içerisinde hastanemize başvuran hastalar içerisinde yapılmıştır. Yapılan inceleme sonucunda zehirlenme ön tanısı konmuş tüm hastalar araştırma kapsamına alınmıştır. Başvurular, gıda zehirlenmeleri, ila zehirlenmeleri, alkol zehirlenmeleri, inhalasyon zehirlenmesi, kötüye kullanıma uygun ila/madde zehirlenmesi ve aşındırıcı asit/alkali (kostik) madde zehirlenmesi olarak sınıflandırılmıştır. Bu gruplar içerisinde bulunan zehirlenme alt grupları ICD kodlarına bakılarak listelenmiştir.

Bulgular: 2017 yılına ait zehirlenmeler incelendiğinde 1445 başvurunun olduğu görülmüştür. 2017’de en sık görülen zehirlenmeler ila zehirlenmesi, inhalasyon yoluyla zehirlenme ve aşındırıcı asit/alkali (kostik) madde zehirlenmesi olarak sıralanabilir. 2018 yılında 1418 vakanın dağılımına bakıldığında sıralamanın ila zehirlenmesi, aşındırıcı asit/alkali (kostik) madde zehirlenmesi ve gıda zehirlenmesi olduğu görüldü. 2019 yılına gelindiğinde ise 1316 zehirlenme hastasının sıralamasının, 2018 yılı ile aynı olduğu görüldü (Tablo 1).

Tablo 1. Yıllara göre toplam ve gruplandırılmış zehirlenme vaka sayıları

Zehirlenme Çeşitleri	2017	2018	2019
İlaç zehirlenmesi	878	794	761
İnhalasyon yoluyla zehirlenme	147	105	60
Aşındırıcı asit/alkali madde zehirlenmesi	114	135	150
Gıda zehirlenmesi	81	121	143
Alkol zehirlenmesi	58	107	54
Kötüye kullanıma uygun ilaç/madde zehirlenmesi	74	43	99
Diğer zehirlenmeler (civa/demir gibi ağır metal zehirlenmesi, örümcek/akrep/yılan/deniz hayvanı gibi zehirli hayvanların toksik etkisi, sabun/deterjan/boya/insektisit/siyanid gibi ajanların toksik etkisi, insektisitlerin toksik etkisi, teşhis ajanları ile zehirlenme gibi)	93	113	47
Toplam	1445	1418	1316

En sık görülen zehirlenme olan ilaç zehirlenmeleri incelendiğinde hastaların büyük kısmının ilk tanı esnasında spesifik olarak ayrıştırılmadığı ve X44 ICD kodu ile “İlaçlar, Haplar ve Biyolojik Maddelere Maruz Kalma ve Kazayla Zehirlenme” başlığı altında toplandığını görmekteyiz. Ayrıştırılanlar içinde en çok karşımıza nonsteroidal antienflamatuar ilaçlar ve kalp damar sistemini etkileyen ajanlar (antikoagulan, kalp uyarıcı glikozidler ve benzer ilaçlar) çıkmaktadır (Tablo 2).

Tablo 2. İlaç zehirlenmesi nedeniyle yapılan başvurular

İlaç Zehirlenmesi	2017	2018	2019
Nonsteroidal antienflamatuar İlaçlar	9	15	6
Kalp damar sistemini etkileyen ajanlar (Antikoagulan, kalp uyarıcı glikozidler ve benzer ilaçlar)	31	19	4
Antibiyotik ajanlar	3	yok	2
Hormon ilaçları	3	1	3
Diğer ilaçlar (İlaçlar, Haplar ve Biyolojik Maddelere Maruz Kalma Ve Kazayla Zehirlenme Diğer Ve Tanımlanmamış)	832	759	746
Toplam	878	794	761

İkinci sıradaki inhalasyon yoluyla zehirlenmelerde en sık karbonmonoksitin zehirlenmesi görülmekteydi. (Tablo 3). Üçüncü sıradaki aşındırıcı asit/alkali (kostik) madde zehirlenmesi ise tüm yıllar içinde en sık 2017 yılında hastanemizde görülmüştür.

Tablo 3. İnhalasyon yoluyla zehirlenme nedeniyle yapılan başvurular

İnhalasyon Yoluyla Zehirlenme	2017	2018	2019
Uçucu çözücü kullanımına bağlı akut zehirlenme	17	5	6
Karbonmonoksitin zehirlenmesi	105	72	80
Karbondioksitin zehirlenmesi	1	1	2
Diğer (Gazlar, dumanlar ve buharların toksik etkisi, organik çözücü buharına maruziyet gibi)	24	27	22
Toplam	147	105	90

Gıda zehirlenmelerinde ilk tanıda ayrıştırılan en sık gıdanın mantar ile balık ve kabuklu deniz hayvani zehirlenmesi olduğu görülmektedir. Spesifik bakteri türleri içinde ise Clostridium Perfringens, stafilokok ve Vibrio Parahaemolyticus karşımıza çıkmaktadır (Tablo 4).

Tablo 4. Gıda zehirlenmesi nedeniyle yapılan başvurular

Gıda Zehirlenmesi	2017	2018	2019
Gıda kökenli spesifik bakteri zehirlenmesi (Clostridium Perfringens /stafilokok/Vibrio Parahaemolyticus gibi)	3	1	1
Mantar zehirlenmesi	9	11	5
Balık ve kabuklu deniz hayvani zehirlenmesi	1	1	1
Diğer (tanımlanmamış bakteriyel gıda zehirlenmesi, gıda olarak yenilen ürünlerden tanımlanmış zehirlenmeler gibi)	68	108	136
Toplam	81	121	143

Alkol zehirlenmesi en sık 2018 yılında görülmüştür. Etanol ve metanol zehirlenmeleri de yıllar içerisinde toplam 9 vakada ön tanı almıştır. Başvuruların çoğunluğu alkol kullanımına bağlı zararlı kullanım, hafif ya da ileri alkol zehirlenmesi gibi genel başlıklar altında kodlanmıştır. (Tablo 5).

Tablo 5. Alkol zehirlenmesi nedeniyle yapılan başvurular

Alkol Zehirlenmesi	2017	2018	2019
Alkol kullanımına bağlı akut zehirlenme	48	65	42
Alkol kullanımına bağlı deliryumla birlikte yoksunluk durumu	3	3	1
Etanolün toksik etkisi	2	4	yok
Metanolün toksik etkisi	yok	2	1
Diğer (Alkol kullanımına bağlı zararlı kullanım, hafif ya da ileri alkol zehirlenmesi gibi)	5	33	11
Toplam	58	107	53

Hastaların kötü kullanımına uygun ilaç ya da madde kullanımına bağlı zehirlenmeler incelenildiğinde en sık birden fazla ilaç ve diğer psikoaktif madde kullanımına bağlı zehirlenme ve antidepresan kullanımına bağlı zehirlenme görülmüştür (Tablo 6).

Tablo 6. Kötüye kullanıma uygun ilaç/madde zehirlenmesi ile yapılan başvuruların yıllara göre dağılımı.

Kötüye kullanıma uygun ilaç/madde zehirlenmesi	2017	2018	2019
Opioid kullanımına bağlı	1	1	yok
Kannabinoid kullanımına bağlı	4	yok	16
Antidepresanlar	15	2	10
Uyuşturucular, ilaçlar ve biyolojik maddeler	1	5	3
Birden fazla ilaç ve diğer psikoaktif madde kullanımına bağlı	53	35	59
Diğer	yok	yok	11
Toplam	74	43	99

Tartışma ve Sonuç: Zehirlenmeler çok eski çağlardan beri toplumları yakından ilgilendiren önemli sorunlardan biri olmuştur. Bazen isteyerek (intihar amaçlı) bazen ise istemeyerek, vücudun toksik maddeye maruziyeti zehirlenme olarak karşımıza çıkar. Hastanelerin bulunduğu ile, ilçeye ve yaşayan kesime göre sayısı ve çeşitliliği değişmektedir. Ancak acil servislerin ve yoğun bakımların önemli bir hizmeti, zehirlenme hastalarının takip ve tedavisine ayrılmıştır. Hastanemiz İzmir Buca ilçesinde hizmet veren bir hastanedir. İzmir'in büyük ve kalabalık ilçelerinde biri olan Buca'da deprem öncesi yıllarda

başvuran zehirlenme hastası sayısı binli rakamların üzerinde seyretmektedir. Bu büyük hizmet sunumunu detaylı incelediğimiz bu çalışmada, en sık zehirlenme başvurularının ilaçlarla, inhalasyon ajanlarıyla, aşındırıcı asit/alkali (kostik) maddelerle ve gıdalarla olduğunu görmekteyiz.

Özköse ve ark. çalışmasında en sık zehirlenme nedeni olarak ilk üç sırayı ilaçlar, CO inhalasyonu ve besinler; Kavalcı ve ark. çalışmasında ilaçlar, besinler ve CO inhalasyonu; Yılmaz ve ark. çalışmasında ilaç, gıda ve mantar zehirlenmeleri almıştır (2,4,5). İlaç, gıda ve inhalasyon ajanları pek çok araştırmada ilk sıralarda karşımıza çıkmaktadır. Ancak koroziv/kostik maddeler genellikle çocuk hastalarda karşılaşılan zehirlenme biçimidir. Hastanemiz kadın doğum ve çocuk hastalıkları için ayrı bir binada, yoğun bir hizmet vermektedir. Bu nedenle bu zehirlenme çeşidinin hastanemizde sık görüldüğünü düşünmekteyiz.

Daha önceki pekçok çalışma gibi, bizim araştırmamızda da ilaçla olan zehirlenme ilk sırayı almaktadır (1,6). Zehirlenmeye neden olan ilaçlar genellikle analjezikler, antidepresanlar, kardiyovasküler sistem ilaçları, antibiyotikler ve diğer temin edilmesi kolay olan ilaçlardan oluşmaktadır. İlaçlarla zehirlenmelerde en sık etken bazı çalışmalarda analjezikler (2,3,7), bazı çalışmalarda psikoaktif ilaçlar (1,8) olarak bildirilmiştir. Bizim araştırmamızda ön tanıda ayrıştırılan grupta en sık nonsteroidal antienflamatuvar ilaçlar, kalp damar sistemini etkileyen ajanlar (antikoagulan, kalp uyarıcı glikozidler ve benzer ilaçlar), antibiyotik ajanlar karşımıza çıkmaktadır. Ancak ilk tanıda vakaların çoğunluğunun “diğer ilaçlarla zehirlenme” isimli genel bir ön tanı altında toplandığını ve sınıflandırılmadığını gördük. Bu da yaptığımız araştırmada zehirlenmeye yol açan tüm ilaç gruplarını sıralamamıza engel olan bir limitasyondur.

Psikoaktif ilaçları ise, kötü kullanıma uygun ilaç grubu içerisinde düşündük. Zira bu ilaçları kullanan hasta grubu intihara meyilli, duygu durumu bozuk hasta grubundan oluşmaktadır. En sık zehirlenmenin de birden fazla ilaç ve psikoaktif madde kullanan grupta olduğunu saptadık. Yayınlarda da ilaçla zehirlenmelerde çoklu ilaç kullanımları sık görülmektedir. Bazı merkezlerde geriye dönük olarak yapılan zehirlenme olgularının incelenmesinde ölüm bildirilmişken(6,7), bazı çalışmalarda bildirilmemiştir(9). Bunun toksik etkisi düşük, letal dozun yüksek olduğu ilaçların alınması ve zehirlenme olgularına hızlı, etkin bir tedavi protokolünün uygulanmasından kaynaklandığını düşünmekteyiz.

İnhalasyon yoluyla zehirlenmeler ülkemizde sıklıkla görülen zehirlenme şeklidir. Bizim hastanemizin bulunduğu ilçe, içinde alt gelirli geniş kesimin barındığı eski bir ilçedir. Kalabalık olan bu ilçede, kışın ısınma ihtiyacını odun ve kömür yakarak sağlayan geniş bir kesim bulunmaktadır. Bu nedenle inhalasyon yoluyla zehirlenmelerde, en büyük kısmı karbonmonoksitin zehirlenmesi oluşturmaktadır. Bu durum bizim ülkemizin diğer illerinde yapılan çalışmalarda da benzer bulunmuştur(4). Bölgesel sıcaklık düşük olan illerde bu zehirlenmeye sık rastlanırken (10), ılıman iklimli bölgelerde daha az görülmektedir (9).

Koroziv madde alımı özellikle çocukluk yaş döneminde ve kaza ile olmakta iken, mantar zehirlenmeleri sıklıkla yabani mantarların tüketilmesi sonucu olmaktadır. Ülkemizde yapılan bir çalışmada acil servise başvuran mantar zehirlenmeli olgular incelenmiş olup olguların %86,01'inin Haziran ve Mayıs aylarında acil servise başvurdıkları bildirilmiştir(11). Gıda zehirlenmeleri içerisinde mantara bağlı başvurular bizde de sık gözlenmiştir. Ancak diğer gıda zehirlenmeleri özel olarak ayrıştırılmamış, ilk tanıda “tanımlanmamış gıda zehirlenmeleri” başlığı altında toplanmıştır.

Zehirlenmeler içerisinde alkol zehirlenmeleri de önemli bir kısmı oluşturmaktadır (4,5,8,9,12). Hastanemize başvuran vakalar içerisinde etanol ve metanolün toksik etkisi olarak ayrılanlar olsa da, çoğunlukla “alkol kullanımına bağlı akut zehirlenme” olarak tanı almışlardır. Etanol ve metanol zehirlenmeleri, yakın takip gerektirir, ölüme yada kalıcı nörolojik hasara yol açabilir. Spesifik antidot tedavisi gerektirir. Bu amaçla Fomepizol (ticari preparat: Antizol), intravenöz %10'luk Etanol solüsyonu, Folik veya Folinik asit bulundurulması önemlidir.

Yayınlarda hastaların çoğunlukla acil serviste yapılan gözlem sonucunda taburcu edildiği görülmektedir. Bir kısmı ise ileri gözlem ve tedavi amaçlı yoğun bakımlara yatırılmaktadır. Hastanelerin hızlı müdahale gerektiren bu hasta grubu için açılacak spesifik birimlerin ve donanımlı ekiplerin olması gerektiğini düşünmekteyiz. Toksikoloji ile ilgilenen hekimleri ve acil müdahalede gerekli olabilecek antidotları da barındıran toksikoloji yoğun bakım birimleri, hem acil servislerin iş yükünü azaltacak hem de mortaliteyi azaltacaktır. Sunulan hizmet kalitesinin artırılması için, spesifik yoğun bakım birimleri hastanelere ayrıcalık kazandıracaktır. İzmir ili içerisinde de böyle bir toksikoloji yoğun bakım ünitesinin hem zehirlenme düşünülen hasta nakillerinde hız kazandıracak, hem spesifik tedavilerin hızla başlanmasına olanak sağlayacak, hem de düzenli tutulan kayıtlar sayesinde yapılacak olan araştırmalarda kaliteli veri sağlanmasına izin verecektir.

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ID-147 / OP: “Evaluation Of Thoracic And Lumbar Fracture Cases Applied Through The Body Mass Index After Trauma Surgery”

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Abstract (ID-147)

Introduction: According to the definition of the World Health Organization, overweight and obesity; It is defined as abnormal or excessive fat accumulation that poses a risk to health. A body mass index (BMI) over 25 is considered overweight and over 30 is considered obese, and is now an officially recognized disease that is increasing worldwide (1). The thoracic and lumbar regions are the most common regions of the spine that are affected by trauma due to their specific biomechanics (2). Traumas have an important place in its etiology; motor vehicle accidents, falls from height, sports injuries and work accidents are among the most common causes (3). Etiological and demographic evaluation of thoracic and lumbar fracture cases, which underwent surgery after trauma, was made based on body mass index.

Materials and Methods: 23 cases with thoracic and lumbar fractures who underwent post-traumatic surgery at the Neurosurgery Clinic of Ordu University Training and Research Hospital between 2019-2021 were analyzed in terms of BMI, etiologically and demographically. Results: Of the 23 cases, 8 (34.7%) were female and 15 (62.2%) were male. The mean age of operation was 42.2 years (20-68 years) in women, 39.1 years (18-69 years) in men, and 40.2 years (13-66 years) in total. The incidence was higher in men, and no significant difference was found in terms of mean age. The mean BMI was calculated as 25.4 (17.3-34.8) in women and 24.5 (18.3-29.2) in men. According to BMI, women were in the overweight class with 25.4, and men were observed at the upper limit of the normal limit with 24.5. When we examined the trauma etiologically, three different causes were observed; falling from a height (78.2%), in-vehicle traffic accident (13%) and falling on the same ground (8.6%).

Discussion and Conclusion: The mean age of the patients with chest and back fractures who underwent post-traumatic surgery was 40.2 years, and the mean BMI was calculated as 24.8 (Female: 25.4, Male: 24.5). Falling from a height, which is one of the high-energy traumas, was the most common (78.2%) trauma etiology. Study data were in the upper limit of normal in BMI-based obesity classification. By adding more parameters, more comprehensive information can be obtained by examining the cases in

detail.

Keywords: Body mass index, Traumatic lumbar fracture, Traumatic thoracic fracture

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ID-148 / OP: “The Effect of Obesity on Disease Activity in Rheumatoid Arthritis Patients and Related Factors”

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Abstract (ID-148)

Introduction: Rheumatoid arthritis (RA) is a chronic, inflammatory disease that usually affects peripheral synovial joints symmetrically. RA can lead to musculoskeletal deformity, disability, and a decrease in life expectancy depending on the level of inflammation (1). Obesity is a common problem worldwide and is associated with the development of chronic autoimmune diseases via adipokines (2). In addition to the effect of adipokines on the development of RA, their relationship with high disease activity has also been demonstrated (3). In this study, we aimed to investigate the effect of obesity on disease activity in patients with RA.

Materials and Methods: We performed a prospective, comparative, cross-sectional study. 104 patients diagnosed with RA according to ACR/EULAR 2010 criteria were included in the study. We used the 4-element Disease Activity Score (DAS) 28-ESR classification to evaluate disease activity. Body Mass Index (BMI) categories were determined according to World Health Organization (WHO) cut-off points. Demographic data such as age, gender, smoking, and disease-related data such as disease duration, medications used, and erythrocyte sedimentation rate (ESR) were recorded. Results : The median age of 104 patients evaluated in the study was 59 (27-78), mean BMI score was 27.3 ± 5.32 , mean ESR value was 28.31 ± 9.52 mm/h, and median DAS 28 score was 3.25 (1.51-5.55). There was a statistically significant positive correlation between the patients' DAS 28 scores and BMI scores (Spearman correlation coefficient=0.584 and $p < 0.001$). The DAS 28 scores of lean-normal weight patients were statistically significantly lower than those of overweight-obese patients ($p < 0.001$).

Discussion and Conclusion: There is a complex interaction between obesity, inflammation, and disease activity in patients with RA. In this study, we found a statistically significant correlation between being overweight and obese with higher scores in disease activity. Similar results were obtained regarding the effect of obesity on disease activity in a prospective cross-sectional study of 123 patients (3). A meta-analysis published in 2015 revealed an association between obesity and increased DAS 28 and HAQ scores. The same meta-analysis also revealed that obesity is associated with less radiographic joint damage and obtained conflicting results regarding inflammatory markers (4). The authors stated that this might be because the disease activity scores used in the evaluation included subjective parameters.

Conclusion : Depending on the findings of our study, it is possible to say that obesity has a negative effect on RA disease activity by increasing inflammation. However, it should be considered that the complex relationship between obesity, inflammation, and disease activity should be supported by comprehensive studies evaluating objective parameters.

Keywords: Rheumatoid arthritis, Obesity, Disease Activity

Full-text (ID-148)

Introduction: Obesity is a common problem worldwide and in the last fifty years, the prevalence of obesity has been at the level of a pandemic (1). The World Health Organisation (WHO) defines obesity as excessive fat deposition, detrimental to health, and is diagnosed as body mass index (BMI) $\geq 30 \text{ kg/m}^2$ (2). Low-grade chronic inflammation is one of the characteristics of obesity and has been associated with autoimmune diseases (3). Rheumatoid arthritis (RA) is a chronic, inflammatory, autoimmune multisystem disease, primarily affects peripheral synovial joints. In recent years, it has been suggested that obesity creates an adipokine-mediated inflammatory response in rheumatic diseases such as RA (4,5). Although the role of adipokines in the pathogenesis and prognosis of RA is not clear, their association with the development of RA and increased disease activity is emphasized. In this study, we aimed to investigate the effect of obesity on disease activity in patients with RA.

Materials and Methods: It is a prospective, comparative, cross-sectional study. We included 104 patients, diagnosed with RA according to American College of Rheumatology/European League Against Rheumatism (ACR/EULAR) 2010 criteria in the study. Subjects with neoplastic diseases, infections and, younger than 18 years were excluded.

Demographic data such as age, gender, smoking and disease-related data such as disease duration, medications used and duration of use, and erythrocyte sedimentation rate (ESR) were recorded.

We used the 4-element Disease Activity Score (DAS) 28-ESR classification to evaluate disease activity. DAS 28-ESR describes the severity of rheumatoid arthritis using clinical and laboratory data, specifically ESR (6). Clinical data includes tender and swollen joint counts, and self-reported patient global health. Score interpretation is as follows : < 2.6 suggests remission; $2.6-3.2$ suggests low disease activity; $> 3.2-5.1$ suggests moderate disease activity; > 5.1 suggests high disease activity.

Body Mass Index (BMI) is a statistical index that uses a person's weight and height to determine the estimated body fat for men and women of any age. BMI categories were determined according to the recommendations of World Health Organization (WHO) cut-off points (underweight : $< 18 \text{ kg/m}^2$; normal : $18-25 \text{ kg/m}^2$; overweight : $25-30 \text{ kg/m}^2$; obese : $> 30 \text{ kg/m}^2$).

Statistical Analysis

Normal distribution of numerical data was evaluated with Kolmogorov-Smirnov test. Normally distributed data were presented as mean $\pm$ standard deviation, and non-normally distributed data were presented as median (minimum-maximum). DAS 28-ESR score was the primary analytical variable. DAS 28-ESR scores of BMI groups were compared with Mann-Whitney U test. The relationship between DAS 28 score and the other characteristics of patients was assessed with Spearman correlation test. The statistical analysis was performed using SPSS for IBM version 21. Statistical significance was accepted as $P < 0.05$.

Results: The median age of 104 patients evaluated in the study was 59 (min. 27, max.78), mean BMI was 27.3 ± 5.32 , and median DAS 28-ESR score was 3.25 (min. 1.51, max.5.55). The clinical and demographic characteristics of the participants are presented in Table 1. There was a statistically significant positive correlation between the patients' DAS 28-ESR scores and BMI (*Spearman correlation coefficient* = 0.584 and $P < 0.001$). DAS 28-ESR score of obese patients was found to be statistically significantly higher than those of non-obese patients ($P < 0.001$) (Table 2). There was a weak but statistically significant correlation with age ($P=0.035$), and a strong negative correlation with the duration of RA diagnosis and steroid use ($P < 0.001$). The relationship between DAS 28-ESR scores and other characteristics of the patients is shown in Table 3.

Table 1. Clinical and demographic profile of the patients

	Number (n)	Percentage (%)
Gender		
Female	86	82.7
Male	18	17.3
Smoker		
Yes	13	12.5
No	91	87.5
Duration of RA		
<1 year	7	6.7
1-5 years	21	20.2
5-10 years	4	23.1
>10 years	52	50

Glucocorticoid use

Yes	100	96.2
No	4	3.8

Duration of gluc. use

<3 ay	14	13.5
3 ay-1 yıl	15	14.4
1-5 yıl	26	25
5-10 yıl	28	26.9
>10 yıl	21	20.2

Biological DMARD use

Yes	32	29.9
No	72	67.3

Body composition

Underweight (<18)	3	2.9
Normal (18-25)	28	26.9
Overweight (25-30)	45	43.3
Obese (>30)	28	26.9

DAS 28 categories

Remission	16	15.4
Low activity	32	30.8
Moderate activity	42	40.4
High activity	14	13.5

RA: rheumatoid arthritis, DMARD:disease-modifying antirheumatic drug DAS: Disease activity score

Table 2. Comparison of DAS 28-ESR scores of obese patients with non-obese patients

	Obese (n=28)	Non-obese (n=76)	<i>P</i> value
DAS 28-ESR scores	4.85 (3.19-5.55)	3.13 (1.51-5.38)	< 0.001

DAS: disease activity score; ESR: erythrocyte sedimentation rate

Table 3. Relationship between DAS 28-ESR score and other patient characteristics (Spearman Correlation test results)

	Correlation coefficient	<i>P</i> value
<i>Gender</i>	0.163	0.099
<i>Age</i>	-0.207	0.035
<i>BMI groups</i>	0.602	<0.001
<i>Smoker</i>	0.155	0,116
<i>Duration of RA diagnosis</i>	-0.345	<0.001
<i>Glucocorticoid use</i>	0.053	0,595
<i>Duration of gluc. use</i>	-0.387	<0.001
<i>Biological DMARD use</i>	-0.004	0.965

DAS: disease activity score; RA: rheumatoid arthritis; BMI: body mass index, DMARD:disease-modifying antirheumatic drug

Discussion and Conclusion: The main finding of our study was the relationship between obesity and disease activity in RA. Our secondary findings were the association between DAS 28 scores and demographic and clinical characteristics of patients with RA. In this study, we found a statistically significant correlation between being obese and higher scores in disease activity and a statistically significant positive correlation between the patients' DAS 28-ESR scores and BMI. A study published in 2018 determined that disease activity was higher in overweight and obese patients (7). In another study, it was found that patients with initial obesity achieved remission at lower rates than those who were overweight and normal (8). Disease activity was evaluated with DAS 28 tool in most of the studies examining the relationship between disease activity and obesity. Apart from markers of systemic inflammation, DAS 28 also includes subjective parameters, such as patient-reported outcomes (PROs) and the number of tender and swollen joints determined by physician evaluation. Although DAS 28 is a

globally accepted and reliable disease activity scale, the existence of subjective parameters raises conflicts and concerns about the results (7). PROs such as pain, patient global health score, Multi-Dimensional Health Assessment Questionnaire (MD-HAQ), and poor quality of life are generally higher in obese patients (9). A recent study revealed that in obese RA patients, swollen joints observed on examination did not have synovitis activity when examined by ultrasonography (10). In a systematic review and meta-analysis, obesity in RA was associated with increased DAS 28 and HAQ scores and less radiographic joint damage. This association has been attributed to the increased scores in the subjective components of DAS 28 (total joint count and global health assessment) in obese patients (11).

We used the 4-element DAS 28-ESR scale to be more objective in our study. We found a significant association between DAS 28-ESR scores and obesity and a strong positive correlation between obesity and ESR. However, not only subjective but also objective criteria of DAS 28 are controversial. In the meta-analysis written by Vidal et al., conflicting results were also reported regarding markers of inflammation (C-reactive protein and ESR) (11). It has been shown that inflammatory markers are higher in obese RA patients, similar to those in the general population (12).

Although many studies have been conducted in recent years on the relationship between obesity and adipokine-mediated disease development and activity in RA patients, the results are controversial, and the precise role of adipokines is not fully understood (13). Moreover, studies on the relationship between obesity and radiological progression and narrowing of the joint space in RA patients give opposite results (14,15). This contradictory situation leads to debates on the effect of obesity on disease activity.

As secondary findings, we found a negative correlation between disease activity and age, disease duration, and duration of glucocorticoid use. No significant correlation was found between the use of biological DMARDs and disease activation. There was also no significant relationship between biological DMARD use and disease activity in our obese RA patients. According to several studies obese RA patients are less responsive to treatment even with biological DMARDs (11). The authors attributed this to the increasing course of DAS 28 independent of RA.

In conclusion, our results show the negative effect of obesity on disease activity in RA patients with a globally accepted scale, similar to many studies. But it must be admitted that the subjective and even objective parameters of DAS 28 are controversial. The contradictory results obtained from studies carried out with DAS 28 indicate that it should be directed to more objective criteria to evaluate disease activity. We believe that more comprehensive molecular studies and clinical studies that will be handled with more objective criteria will be useful in determining both the mechanism of action of obesity in RA patients and treatment strategies.

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ID-149 / OP: “The Relationship Between Environmental Air Pollution, Meteorological Factors, and Emergency Service Admissions for Epileptic Attacks in Children”

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Abstract(ID-149)

Introduction: Air pollution is a global problem and data on its relationship with epilepsy attacks in children are limited. Aim: The aim of this study is to investigate the relationship between exposure to acute air pollution and epileptic attacks in children.

Materials and Methods: Study Design: Retrospective study. Methods: In the present study, the possible relationship between epileptic attacks seen in children over a 10-year period, two air polluting factors (PM10 and SO₂), and the meteorological factors affecting them were investigated. The effects of different variables on the number of epilepsy patients admitted to the hospital were also evaluated through four different models utilizing Poisson regression analysis.

Results: The results showed a moderately positive correlation ($r = 0.537$, $p \leq 0.0001$) between epileptic attacks and PM10 and a weak positive correlation between epileptic attacks and SO₂ ($r = 0.464$, $p \leq 0.0001$). A weak relationship was also determined between epilepsy and meteorological factors.

Discussion and Conclusion: This study revealed a relationship between epileptic attacks in children and short-term exposure to the air pollutants PM10 and SO₂, with meteorological factors affecting air pollution having influence on this result. In today's Turkey, where air pollution is an important issue, studies that investigate the relationship between epilepsy and air pollutants should be given importance; accordingly, this study is expected to be an example for further research.

Keywords: Air pollution, meteorological factor, epileptic attack, child, retrospective study

Full text (ID-149)

Introduction: Five air pollutants are often measured at ground level: ozone, particulate matter ≤ 10 and ≤ 25 (PM₁₀ and PM_{2.5}), carbon monoxide (CO), sulfur dioxide, and nitrogen dioxide (NO₂) ([https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)).

Although measurements of pollutant levels (including these five) occur in many cities in Turkey, in Diyarbakır a city located in southeastern Turkey, only the levels of two (PM₁₀ and SO₂) are measured (<https://sim.csb.gov.tr>). Regarding all information given above, the aim of this study is thus to retrospectively investigate the possible relationship between epileptic attacks in children, the two air polluting factors PM₁₀ and SO₂, and the meteorological factors affecting them in Diyarbakır. This study's results are intended to contribute to the literature on the relationship between epilepsy in children, meteorological factors, and air pollution.

Materials and Methods: For this study, the archived files of patients who were admitted to the children's hospital in Diyarbakır between January 1, 2009 and December 31, 2019 was collected from the Children Hospital's Data Processing Center. 1805 patients whose files were used for this retrospective study. Only PM₁₀ and SO₂ values are measured as air pollutants in Diyarbakır. Accordingly, 10 years' worth of the PM₁₀ and SO₂ values from between January 1, 2009 and December 31, 2019 were gathered from the official website of the Air Quality Monitoring Stations of the Turkish Republic Ministry of Environment and Urbanization. The Ministry has determined 50 µg/m³ (24 h average) for PM₁₀ and 350 µg/m³ (1 h average) for SO₂ as national limits (<https://sim.csb.gov.tr>). The meteorological data used in this study were received by sending an official application to the Diyarbakır Regional Directorate of the Ministry of Agriculture and Forestry General Directorate of Meteorology. These data included daily average relative humidity (%), daily average wind speed (m/s), daily average temperature (°C), daily total precipitation (mm), and daily average current pressure (hPa).

1.1. Statistical analysis: Spearman's correlation analysis was used to compare continuous variables, while Poisson regression analysis was used to determine the air pollutants and meteorological variables affecting the change in the number of patients. Four models were then created for a correlation analysis of highly correlated variables based on Poisson regression analysis. Linear regression analysis was used as well to see the change in the number of patients according to the seasons. When interpreting variable associations based on Spearman correlation coefficients, the following reference ranges were adopted: $0.00 < r < 0.25$, very weak; $0.26 < r < 0.49$, weak; $0.50 < r < 0.69$, moderate; $0.70 < r < 0.8$, high; and $0.90 < r < 1.00$ very high. A value of $p < 0.05$ was considered statistically significant.

2. Results

2.1. Patients: In total, the 1805 epilepsy patients evaluated within the scope of the study were prepared to be discharged home after an emergency service follow-up (Table 1). The average age of the patients was 13 (range: 9–16), with 40.1% (723) girls and 59.9% (1082) boys (Table 1).

2.2. Air pollutants and meteorological factors: The average pollutant concentrations in the city during the 10-year period were 130.78 $\mu\text{g}/\text{m}^3$ for PM_{10} and 14.57 $\mu\text{g}/\text{m}^3$ for SO_2 (Table 1). The average meteorological factor values were determined as 935.35 hPa for air pressure, 53.12% for humidity, 2.73 m/s for wind speed, 16.43°C for temperature, and 43.61 mm for rain (Table 1). The lowest and highest values and interquartile range results for each air pollutant variable are given in Table 1.

Table 2 shows the Spearman correlation test results examining the relationship between the number of children admitted to the hospital due to epilepsy, PM_{10} and SO_2 values, and meteorological factors. The results reveal a moderately positive correlation ($r = 0.537$, $p \leq 0.0001$) between epileptic attacks and PM_{10} and a weak positive correlation ($r = 0.464$, $p \leq 0.0001$) between epileptic attacks and SO_2 . It was also determined that the relationship between epilepsy and meteorological factors were weak.

Table 3 presents the results of the Poisson regression analysis performed to determine the air pollutants and meteorological variables that affect the number of patients admitted to the hospital due to epilepsy. Four models emerged through this assessment, as created by including and subtracting the variables observed to be highly correlated in the correlation analysis one by one.

According to Model 1, the number of epilepsy patients is only significantly affected by SO_2 and rain. A positive correlation emerged between an increase of 0.015 units in the number of patients with epilepsy and a 1-unit increase in SO_2 (Standard β : 0.015; 95% confidence interval (CI): 0.010, 0.020), as well as between a unit increase in rain level and an increase of 0.004 units in the number of patients (Standard β : 0.004; 95% CI: 0.001, 0.006).

From the second model, the relationships between the number of epilepsy patients and PM_{10} , SO_2 , wind speed, and temperature are also significant. A positive correlation was observed between a 0.002-unit increase in the number of epilepsy patients with a 1-unit increase in PM_{10} (Standard β : 0.002; 95% CI: 0.001, 0.004), and between a 0.015-unit increase in the number of epilepsy patients and a 1-unit increase in SO_2 (standard β : 0.015; 95% CI: 0.010, 0.021). In addition, Model 2 revealed a positive correlation between a 1-unit increase in temperature and a 0.032-unit increase in the number of epilepsy patients (standard β : 0.032; 95% CI: 0.007, 0.057). There was also a negative relationship between a 1-unit increase in wind speed and a 0.175-unit decrease in the number of epilepsy patients (Standard β : -0.175; 95% CI: -0.336, -0.013).

From Model 3, the relationships between PM_{10} , SO_2 , air pressure, humidity, wind speed, and the number of children admitted to the hospital with epilepsy are significant as well. It was determined that a 1-unit

increase in PM₁₀ increased the number of epilepsy patients by 0.007 (Standard_β: 0.007; 95% CI: 0.007, 0.008); a 1-unit increase in SO₂ increased the number of epilepsy patients by 0.008 (Standard_β: 0.008; 95% CI: 0.004, 0.011); a 1-unit increase in humidity increased the number of epilepsy patients by 0.008 (Standard_β: 0.008; 95% CI: 0.004, 0.011); and a 1-unit increase in wind speed increased the number of epilepsy patients by 0.156 units (Standard_β: 0.156; 95% CI: 0.055, 0.258). In contrast, a 1-unit increase in air pressure decreased the number of epilepsy patients by 0.032 units (Standard-β: -0.032; 95% CI: -0.052,-0.011).

From Model 4, the relationships between the number of children admitted to the hospital due to epilepsy, SO₂, and rain are significant. The model determined that a 1-unit increase in SO₂ level increased the number of epilepsy patients by 0.015 units (Standard_β: 0.015; 95% CI: 0.009, 0.021), while a 1-unit increase in rain level increased the number of epilepsy patients by 0.004 units (Standard_β: 0.004; 95% CI: 0.002, 0.007).

Table 4 gives the results of the linear regression analysis performed to determine how the seasonal variable affects the number of epilepsy patients. The results show that the number of epilepsy patients was statistically significantly affected by the autumn and winter seasons (autumn, $p < 0.005$; winter, $p = 0.040$). In turn, spring and summer did not have a statistically significant effect on the number of epilepsy patients admitted to the hospital.

Discussion and Conclusion: The literature shows that epilepsy is observed at a higher rate in men than in women (Russ et al., 2012). In the current study, the rate of male patients was 59.9%, consistent with this finding. The average age of the included patients in the present study was 13; Bao et al. similarly reported that there is a strong relationship between air pollutants (NO₂ and CO) and epileptic attacks in patients aged 18 years and younger (Bao et al., 2019). It was known that the amount of air pollutants and the duration of exposure to them have a negative effect on the occurrence of neurological pathologies (Cipriani et al., 2018). Moreover, PMs have been shown to cause more adverse effects on the human organism than any other pollutant. PM₁₀ is the respirable fraction from sources such as road and agricultural dust, tire wear emissions, wood burning, construction and demolition work, and mining (Block and Calderón-Garcidueñas, 2009; Craig et al., 2008). When PMs enter the human body via the respiratory tract, they go on to reach the lungs and gastrointestinal system and may cause oxidative stress and inflammation. The inflammatory markers produced then enter the bloodstream and can reach the brain and other organs. Exposure to PMs may also result in effects such as oxidative stress, neuroinflammation, and death of brain cells. When particulate matters reach the brain, they can produce a pro-inflammatory effect and cause overstimulation in the brain, including seizures (Block and Calderón-Garcidueñas, 2009).

Conclusion: This study is thought to be important in terms of showing the relationship between two air pollutants, meteorological factors, and epilepsy cases in children. Further studies that take into account

this study's limitations will provide more detailed information on the relationship between air pollution and epileptic attacks. This preliminary research, which was the first conducted in Turkey on this subject, thus constitutes a steppingstone for future studies.

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ID-150 / OP: “Comparison of the effects of surgical mask, double surgical mask and N95 mask on the vital signs of nurses in the pediatric intensive care unit.”

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Abstract (ID-150)

Introduction: The COVID-19 pandemic, which has affected the world, has significantly affected the work life of healthcare professionals. It Impacted and resulted in more challenging working conditions. Masks are routinely used in the work environment. Wearing an N95 mask has become routine, especially during the aerosol-generating procedure. However, these masks greatly reduce the work comfort of the employees.

Materials and Methods: The aim of this study is to investigate possible differences in vital signs of nurses working in the pediatric intensive care unit with unmasked (UM), single surgical mask (SSM), double surgical mask (DSM) and N95. At the end of one-hour work shift of 14 nurses on 4 separate days, the pulse rate numbers (PR), respiratory rates (RR), oxygen saturations (sPO2), systolic blood pressures (SBP), and diastolic blood pressures (DBP) were compared.

Results: Pulse rate and respiratory rate were statistically significantly different between the four groups. ($p<0.05$). Blood pressure and sPO2 were similar among four groups ($p>0.05$). The highest PR was measured in the UM group, and the lowest PR was measured in the DSM group ($p<0.05$). Respiratory rate was highest in the N95 group ($p<0.05$).

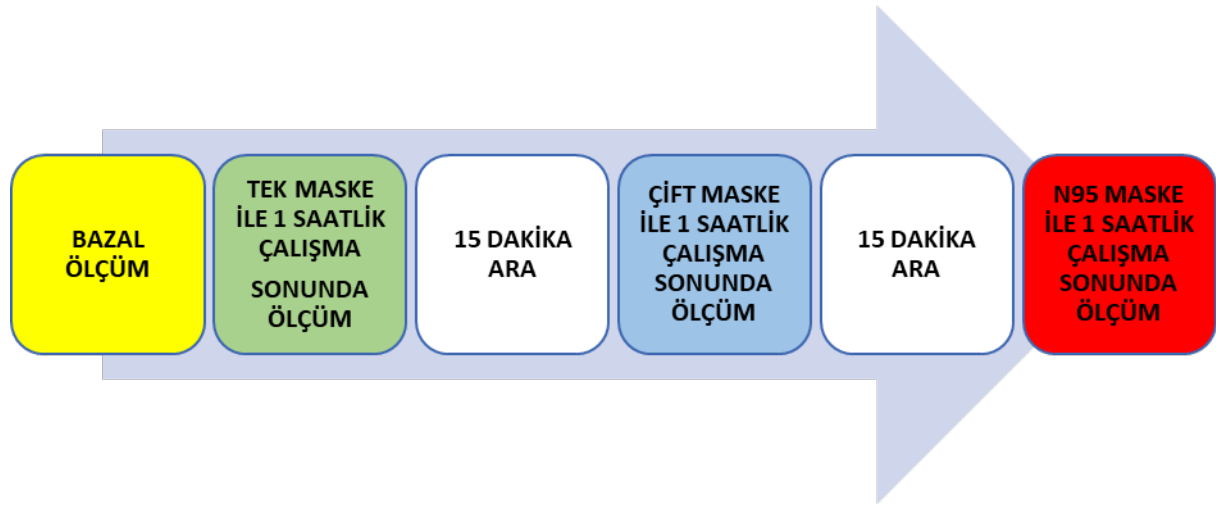
Discussion and Conclusion: The PR and RR of nurses working in the pediatric intensive care unit were affected from type of mask used. The type of mask used does not affect blood pressure and oxygen saturation.

Keywords: Surgical mask, COVID-19, N95 mask, pediatric intensive care

Full text: (ID-150)

Giriş ve Amaç: Dünyayı etkisi altına alan COVID-19 pandemisi, sağlık çalışanlarının iş yaşamını belirgin şekilde etkilemiş ve daha zorlu çalışma koşullarına neden olmuştur. Çalışma ortamında rutin olarak maske takmak, özellikle aerosol oluşturuvcu işlem sırasında N95 maske kullanımı rutin hale gelmiştir. Ancak bu maskeler çalışanların iş konforunu oldukça azaltmaktadır. Bu çalışmanın amacı çocuk yoğun bakım ünitesinde çalışan hemşirelerin bazal, tek cerrahi maske (TM), çift cerrahi maske (ÇM) ve N95 ile çalışmaları sırasında vital bulgularındaki olası farklılığı araştırmaktır.

Gereç ve Yöntem: Çocuk yoğun bakımda çalışan 14 hemşirenin, nabız sayıları (NS), solunum sayıları (SS), oksijen saturasyonları (sPO2), sistolik kan basıncı (SKB) ve diyastolik kan basıncı (DKB) ölçümleri yapıldı. Çalışma öncesinde maskesiz bazal ölçüm. 1 saat tek cerrahi maske ile çalıştı ve çalışma saatinin sonunda maske varken ölçüm yapıldı. 15 dakika maskesiz olarak dinlendi. 1 saat sonra çift cerrahi maske ile çalıştı ve çalışma saatinin sonunda çift maske varken ölçüm yapıldı. 15 dakika maskesiz olarak dinlendi. 1 saat sonra N95 maske ile çalıştı ve çalışma saatinin sonunda N95 varken ölçüm yapıldı. Bu ölçümler 3 gün tekrarlandı. İstatistiksel Analiz: SPSS 20.0 kullanıldı. Ütuden-t test ve Spearman Korelasyon analizi yapıldı. $P < 0,05$ istatistiksel olarak anlamlı kabul edildi.



Şekil 1. Çalışmanın akış şeması

Bulgular:

SOLUNUM SAYISI (/DAKİKA)	ORTALAMA	STANDART SAPMA	MİNİMUM	MAKSİMUM
Bazal ölçüm	21,7	2,3	16	28
Tek maske	<u>23,4</u>	3,0	16	28
Çift maske	25,4	4,3	16	32
N95 maske	27,7	12,2	16	40
P: 0,001 Farkın kaynağı: Bazal ölçüm -N95 maske ve Tek maske-N95				

Oksijen saturasyonu (%)	Ortalama	Standart sapma	Minimum	Maksimum
Bazal ölçüm	97,1	1,1	93	99
Tek maske	96,9	1,0	95	99
Çift maske	96,9	1,5	90	99
N95 maske	95,1	11,4	24	99
Fark yok P: 0,344				

Bulgular Kan Basıncı

Kan basıncı		Ortalama	Standart sapma	Minimum	Maksimum
Sistolik kan basıncı (mm Hg)	Bazal ölçüm	108,2195	13,95441	83,00	139,00
	Tek maske	110,2195	14,62107	88,00	146,00
	Çift maske	109,4146	16,87006	85,00	149,00
	N95 maske	109,2683	16,79736	83,00	148,00
P: 0,952					
Diyastolik kan basıncı (mm Hg)	Bazal ölçüm	74,4634	8,95013	58,00	91,00
	Tek maske	74,4878	10,82387	49,00	99,00
	Çift maske	76,2195	13,47500	59,00	109,00
	N95 maske	75,9512	12,69833	58,00	109,00
P: 0,850					

Bulgular (Kronik Hastalık - O₂ Saturasyon, NS, SS)

Oksijen saturasyonu (%)	Kronik hastalık	Ortalama	Standart sapma	p
Bazal ölçüm	Var	87.1	1.1	0.394
	Var	87.4	0.9	
Tek maske	Var	87.0	1.0	0.681
	Var	86.8	1.0	
Çift maske	Var	87.0	1.1	0.737
	Var	86.7	2.4	
N95 maske	Var	86.9	1.9	0.451
	Var	86.5	1.1	

Nabız sayısı (dakika)	Kronik hastalık	Ortalama	Standart sapma	p
Bazal ölçüm	Var	81.8	13.6	0.876
	Var	88.7	9.6	
Tek maske	Var	79.5	13.9	0.358
	Var	82.7	7.8	
Çift maske	Var	78.3	10.9	0.811
	Var	79.9	7.9	
N95 maske	Var	79.4	11.8	0.392
	Var	79.8	9.8	

Solunum sayısı (dakika)	Kronik hastalık	Ortalama	Standart sapma	p
Bazal ölçüm	Var	21.1	2.1	0.698
	Var	23.0	2.4	
Tek maske	Var	22.6	2.9	0.607
	Var	25.1	2.7	
Çift maske	Var	25.2	4.0	0.659
	Var	26.0	5.2	
N95 maske	Var	27.5	14.3	0.795
	Var	28.3	4.8	

Kronik hastalığı olanlar tek maske ile 1 saat çalışınca SS artıyor

Sistolik kan basıncı (mm Hg)	Kronik hastalık	Ortalama	Standart sapma	p
Bazal ölçüm	Var	110.8	13.7	0.057
	Var	101.8	12.7	
Tek maske	Var	111.7	16.3	0.250
	Var	106.4	12.3	
Çift maske	Var	113.2	16.9	0.014
	Var	100.2	13.0	
N95 maske	Var	112.7	15.8	0.043
	Var	100.7	16.6	

Bulgular

(Kronik hastalık – Kan basınçları)
Kronik hastalığı olanlarda Çift Cerrahi maske ve N95 maske ile 1 saat çalışma sonrasında sistolik kan basıncı düşüyor

Bulgular (Kronik ilaç Kullanımı - O₂ Saturasyon, NS, SS)

Oksijen saturasyonu (%)	Kronik ilaç kullanımı	Ortalama	Standart sapma	p
Bazal ölçüm	Var	82.2	13.5	0.142
	Var	80.0	7.8	
Tek maske	Var	79.4	13.8	0.031
	Var	78.8	10.1	
Çift maske	Var	80.0	8.5	0.100
	Var	79.8	11.0	
N95 maske	Var	81.5	10.8	0.288
	Var	81.5	10.8	

Nabız sayısı (dakika)	Kronik ilaç kullanımı	Ortalama	Standart sapma	p
Bazal ölçüm	Var	87.2	1.1	0.575
	Var	87.1	1.0	
Tek maske	Var	87.1	1.0	0.067
	Var	86.1	1.0	
Çift maske	Var	86.3	1.0	0.848
	Var	86.8	1.1	
N95 maske	Var	86.7	1.2	0.675
	Var	86.1	1.3	

Solunum sayısı (dakika)	Kronik ilaç kullanımı	Ortalama	Standart sapma	p
Bazal ölçüm	Var	21.2	2.4	0.777
	Var	22.2	2.1	
Tek maske	Var	23.1	3.0	0.138
	Var	25.0	2.4	
Çift maske	Var	24.9	4.1	0.039
	Var	26.0	3.9	
N95 maske	Var	27.4	10.9	0.309
	Var	26.5	3.3	

Kronik ilaç kullananların:
• NS tek maske sonrasında anlamlı artıyor
• Çift maske kullananların SS anlamlı artıyor

Bulgular

(Kronik ilaç kullanımı – Kan basınçları)

Sistolik kan basıncı (mm Hg)	Kronik ilaç kullanımı	Ortalama	Standart sapma	p
Bazal ölçüm	Var	108.8	13.7	0.567
	Var	104.6	15.9	
Tek maske	Var	110.3	14.6	0.929
	Var	109.6	15.9	
Çift maske	Var	110.2	16.9	0.463
	Var	104.6	16.9	
N95 maske	Var	110.0	17.2	0.452
	Var	104.8	14.4	

İstatistiksel olarak anlamlı fark bulunamadı
P>0,05

Bulgular (Sigara kullanımı - O₂ saturasyon, NS, SS)

Nabız sayısı (dakika)	Sigara	Ortalama	Standart sapma	p
Bazal ölçüm	Var	86.8	8.9	0.720
	Var	83.9	11.4	
Tek maske	Var	85.0	14.5	0.830
	Var	85.0	14.5	
Çift maske	Var	79.1	10.4	0.014
	Var	74.0	8.9	
N95 maske	Var	79.1	12.0	0.400
	Var	73.6	11.8	

Oksijen saturasyonu (%)	Sigara	Ortalama	Standart sapma	p
Bazal ölçüm	Var	86.8	1.3	0.096
	Var	86.8	1.3	
Tek maske	Var	86.9	1.2	0.001
	Var	86.9	1.2	
Çift maske	Var	87.1	1.3	0.002
	Var	86.7	1.1	
N95 maske	Var	86.9	1.2	0.379
	Var	86.7	1.1	

Solunum sayısı (dakika)	Sigara	Ortalama	Standart sapma	p
Bazal ölçüm	Var	20.4	1.9	0.601
	Var	21.6	2.2	
Tek maske	Var	23.0	3.0	0.116
	Var	24.9	2.8	
Çift maske	Var	26.0	4.1	0.003
	Var	26.0	4.1	
N95 maske	Var	26.0	4.1	0.488
	Var	26.4	4.8	

Sigara içenlerin bazal SS daha yüksek

Bulgular

Sigara kullanımı ve Kan basıncı

Sistolik kan basıncı (mm Hg)	Sigara	Ortalama	Standart sapma	p
Bazal ölçüm	Var	108.8	13.7	0.567
	Var	104.6	15.9	
Tek maske	Var	110.3	14.6	0.929
	Var	109.6	15.9	
Çift maske	Var	110.2	16.9	0.463
	Var	104.6	16.9	
N95 maske	Var	110.0	17.2	0.452
	Var	104.8	14.4	

İstatistiksel olarak anlamlı fark bulunamadı
P>0,05

Bulgular

Yaş artınca bazal ölçümlerde nabız azalıyor	Bazal ölçüm	Tek maske	Çift maske	N95 maske
P	-0.319*	0.541	0.541	0.527
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.042	0.001	0.001	0.001
Yaş artınca tek ve çift maske kullanımında oksijen saturasyonu azalıyor	0.104	0.108	0.471	0.512
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001
Yaş artınca bazal, tek, çift maske ve N95 maske kullanımlarında KB artıyor	0.001	0.001	0.001	0.001

Sonuçlar: Tek maske, Çift maske ve N95 kullanımı ile bazal ölçüm arasında oksijen saturasyonu açısından fark yok. Çift maske ve N95 kullanımı bazal ölçüme göre nabız sayısını düşürüyor. N95 kullanımı bazal ölçüme göre solunum sayısını arttırıyor.

Kronik hastalığı olanlarda 1 saat tek maske kullanımları sonunda solunum sayısı artıyor.

Kronik hastalığı olanlarda çift ve N95 maske ile 1 saat çalışma sonrasında sistolik kan basıncı düşüyor.

Kronik ilaç kullananlarda: Tek maske sonrasında nabız sayısı anlamlı artıyor; Çift maske kullananların solunum sayısı anlamlı artıyor. Yaş arttıkça tek ve çift maske kullanımında oksijen saturasyonu azalıyor

Yaş arttıkça bazal, tek, çift maske ve N95 maske kullanımlarında Kan Basıncı artıyor.

Kaynaklar:

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ID-151 / OP: “Intraosseous Access in A Resource-Constrained Pediatric Emergency Department: The Comparison of 18 Gauge Needle And Battery Powered Drill”

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Abstract (ID-151)

Introduction: It was aimed to compare the efficacy of the battery-powered drill (EZ-IO) and 18-gauge intravenous cannula (18gIVc) needle used by an experienced pediatric emergency specialist in a pediatric emergency department where resources are limited.

Materials and Methods: Study 01.04.2019 – 30.11.2020 between it was performed in the patients who access IO intervention in the emergency department of the secondary level children's hospital. Intraosseous (IO) access from the proximal tibia was achieved in all patients. Two different tools were used for IO access. Since the amount of EZ-IO needles is limited, 18gIVc was used as the first choice in infants younger than one year of age, and EZ-IO was used in older children. The time to achieve IO was measured.

Results: A total of 38 patients were included in the study [median age: 8 month; IQR: 4.8-19; minimum: 1, maximum: 62; 21 (55.3%) girl]. The first IO attempt was performed with 18 gIVc in 31 (81.5%) cases and with EZ-IO in 7 cases (8.5%). The procedure was unsuccessful in 13 (41.9%) cases in the 18 gIVc group, and all were successful in the EZ-IO group. In infants less than one year old, the age of the 18gIVc (median 5 months; IQR: 3-6.2) group was younger than that of the EZ-IO group (median age: 9; IQR: 8.5-11) ($p<0.001$). The IO access time was shorter with EZ-IO compared to 18gIVc (8.5 seconds vs. 16.6 seconds) ($p<0.001$). Extravasation developed in 4 cases (22.2%) in total, and all of these cases were in the 18gIVc group ($p: 0.026$). The residence times of the IO access were compared. IO access continued for a median of 3 hours (IQR: 2-4.5) in the EZ-IO group and 2.5 hours (IQR: 2.4-3) in the 18gIVc group ($p: 0.099$).

Discussion and Conclusion: EZ-IO IO is a fast, effective and reliable device for accessing experienced healthcare professionals. However, in circumstances where resources are limited, IO access with 18gIVc may be attempted, especially for those younger than six months.

Keywords: Intraosseous access, EZ-IO, 18-gauge needle

Full text (ID-151)

Introduction: There are three different IO needles/devices. These are manual IO needles (Example, Jamshidi needle, etc.), spring-loaded device (Example, Bone injection gun: BIG, WaisMed, Yokneam, Israel) and battery-powered drill (battery-powered drill, Arrow® EZ-IO® System), Teleflex, USA).^{2,4} There is no study in the literature comparing the efficacy of hypodermic needles and EZ-IO.

In this study, it was aimed to compare the efficacy of EZ-IO and hypodermic needles used by a pediatric emergency specialist in a hospital with limited resources and a large number of patients.

Materials and Methods: This study was conducted between 01.04.2019 and 30.11.2020 in the pediatric emergency department. According to the pediatric emergency service protocols in which the study was conducted, IO access is performed in critically patients, if the peripheral vascular access cannot be opened in 90 seconds or three consecutive attempts, or if it is foreseen that access cannot be achieved from the beginning. In all patients, IO access was performed on the left proximal tibia, 1 cm below and medial to the tuberositas tibia. When the first attempt was unsuccessful, the second attempt was applied to the same anatomical region in the right proximal tibia. Two different tools were used for intraosseous access: Manual IO access with an 18 gauge intravenous cannula (18gIVc) and IO access with a battery powered IO drill (EZIO) (Arrow® EZ-IO® System, Teleflex,USA) with standard needle of this device (EZ-IO PD 15 GA 15 mm) recommended for children 3 to 39 kg. The pediatric emergency specialist who applied IO access in the study preferred 18gIVc as the first choice for infants younger than one year old, and EZ-IO for older children, since the number of EZ-IO injections is limited. A nurse recorded the access time with a stopwatch. After all the materials were ready and the intervention site was sterilized, the chronometer was started as soon as the pediatric emergency specialist brought the needle tip into contact with the skin. The procedure was carried out in accordance with standard procedures. As soon as the doctor felt that it had entered the bone marrow, she said "OK" and the stopwatch was stopped. This period was recorded as time to obtain the intraosseous access. Successful IO access criteria were accepted as needle fixation, no evidence of extravasation after bone marrow aspiration or fluid delivery. Emergency treatment and follow-up of the patient was performed in accordance with standard procedures.

Ethics committee: Clinical Research Ethics Committee of Gazi Yaşargil Training and Research Hospital, Health Sciences University (date: 15.01.2021; No: 633).

Statistical analysis: The data were analyzed with the SPSS 21.00. The Mann Whitney U test was used to compare the numerical data of two independent groups, and the appropriate one of the Chi-square or Fischer's exact test was used for the comparison of categorical data. $P < 0.05$ was considered statistically significant.

Results: IO access was applied to a total of 59 patients during the study period. 21 of the patients were excluded from the study because the necessary measurements could not be made (Figure 1).

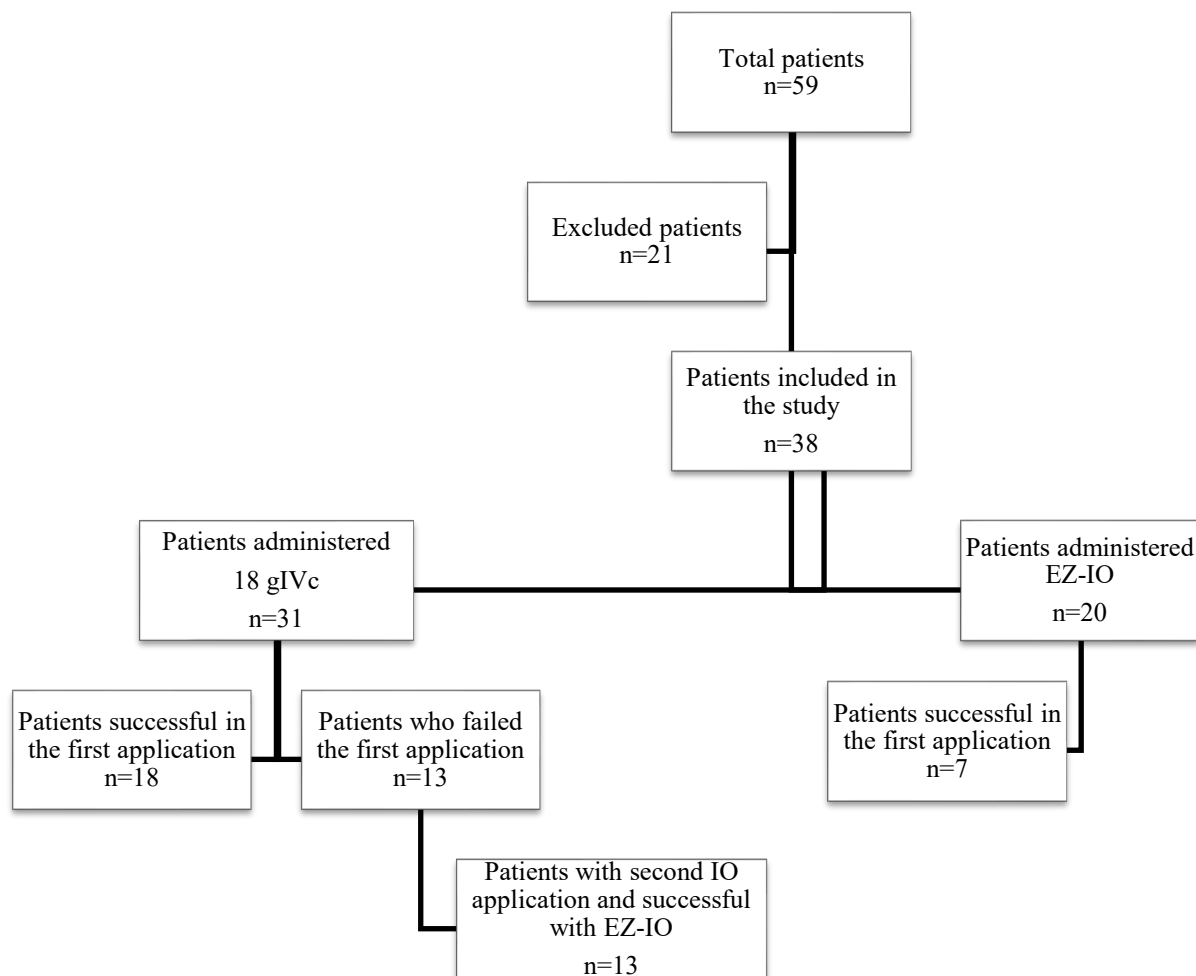


Figure 1. Operation flow diagram

EZ-IO: battery-powered drill; 18gIVc: 18-gauge intravenous cannula

The median age of 38 patients included in the study was 8 (IQR: 4.75-19; minimum: 1, maximum: 62) months, and 21 (55.3%) were girls (Table 1).

Table 1. Type of intraosseous access, success and treatments applied in patients

Pathology	n	EZ-IO		18 gIVc		Treatment Applied from IO Access
		Successful	Unsuccessful	Successful	Unsuccessful	
Hypovolemic Shock	19	8	-	11	6	physiological saline
Respiratory Failure	6	4	-	2	2	physiological saline, glucocorticoid, magnesium sulfate
Cardiopulmonary Arrest	5	2	-	3	2	physiological saline, adrenalin, sodium bicarbonate solution
Septic Shock	4	3	-	1	2	physiological saline, Ceftriaxone
Diabetic ketoacidosis	1	1	-	-	1	physiological saline
Poisoning	1	1	-	-	-	physiological saline, adrenalin
Status epilepticus	1	1	-	-	-	Midazolam, phenytoin

EZ-IO: Battery-powered drill; 18 gIVc:18-gauge intravenous cannula; n: Number of patients

Table 2. Comparison of case groups that were successfully accessed by two different intraosseous methods.

	EZ-IO	18gIVc	P
	n=20	n=18	
Age, month (IQR)	11,5 (9-38,2)	5 (3-6,2)	<0,001 ¹
<12 months, n (%)	10 (50)	16 (88,9)	0,010 ²
	11 (55)	6 (33)	0,180 ²
Male gender, n (%)			
GCS, n (IQR)	10 (8-12)	10 (7-11)	0,897 ¹
Access time, seconds (IQR)	8,5 (7,3-9,8)	16,6 (12,2-19,9)	<0,001 ¹
Complication, n (%)	0	4 (%22,4)	0,026 ³
pH, n (IQR)	7,12 (6,91-7,20)	7,10 (6,98-7,21)	0,784 ¹
pCO ₂ , mmHg (IQR)	56,1 (33,2-79,7)	65,9 (33,4-85,7)	0,762 ¹
Bicarbonate, mmol/L (IQR)	12,8 (7,3-17,2)	12,0 (9,3-16,9)	>0,999 ¹
Lactate, mmol/L (IQR)	5,1 (2,7-14,3)	6,2 (3,8-10,2)	>0,999 ¹

EZ-IO: battery-powered drill; 18gIVc: 18-gauge intravenous cannula; IQR: Interquartile range; GCS: Glasgow coma scale; ¹: Mann Whitney U test; ²: chi-square test; ³: Fischer's exact test

Extravasation developed in a total of 4 cases (22.2%) (2 patients 5 months old, 1 patient 3 months old, 1 patient 7 months old) and all these patients were in the 18gIVc group (p: 0.026). All extravasations seen occurred after the first hour of IO treatment (at 65, 68, 72, 85 minutes). No other complication was observed except extravasation. Five cases (13.2%) died (4 in the emergency department and one in the intensive care unit after 36 hours). Except for 4 patients who died in the emergency department, IO stay times were compared in the remaining patients. The median was 3 hours (IQR: 2-4.5) in the EZ-IO group and 2.5 hours (IQR: 2.4-3) in the 18gIVc group (p: 0.099) (Table 2).

Discussion and Conclusion: Compared to adults, pediatric patients need IO access more frequently.⁵ Studies have reported that the IO access success rate of battery powered drills (EZ-IO) is over 90%.^{6,7} If the person who made the attempt was experienced and followed the rules, the success rate would reach 100%.^{2,4,8} On the other hand, the success rate of manually used standard IO needles (Jamshidi needle, etc.) was reported to be between 43-94%. It was observed that manual IO needles had a higher success rate, especially in those younger than three years old.^{4,9} Manually used standard IO needles are ideally recommended to be hollow and with trocars. Thus, the risk of clogging with bone fragments is reduced.^{10,11,12} In children, the proximal tibia is the first-choice site, as the bone marrow is larger and the correct location is easier to locate. The bone cortex thickens as the child gets older. In this case, manual opening of IO access becomes difficult.³ In our center, the number of EZ-IO needles was very limited, and no standard manual IO needles. The lack or absence of numbers in these devices could not be eliminated for a long time. In this situations, the pediatric emergency specialist preferred 18gIVc as the first choice in patients younger than one year of age, and EZ-IO in patients one year of age or older. 18gIVc was successful on first access in 58% of cases younger than one year old. The age of successful 18gIVc cases is usually six months of ages or less. An IO route was provided at the first access with EZ-IO in all cases older than one year and all patients younger than one year of age in whom 18gIVc failed.

In conclusion, in experienced hands, the EZ-IO is a fast, effective, and reliable device for providing IO access in critically pediatric patients. However, in circumstances where resources are limited, IO access with 18gIVc may be attempted, especially for those younger than six months. In the follow-up, it is necessary to be careful especially in terms of extravasation.

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ID-152 / OP: “Inflammatory Markers in COVID-19 Disease in Children”

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Abstract (ID-152)

Introduction: In this study, we aimed to determine the prognostic values of biomarkers obtained from the complete blood count of pediatric patients diagnosed with COVID-19.

Materials and Methods: A total of 190 pediatric patients with a confirmed diagnosis of COVID-19 and 41 healthy children as a control group were included in this study. Lymphocyte count, platelet count, mean platelet volume (MPV), platelet crit (PCT), C-reactive protein (CRP), neutrophil-lymphocyte ratio (NLR), platelet-lymphocyte ratio (PLR), and systemic immune inflammation index (SII) was evaluated. Results: A statistically significant difference was found between the patient and control groups in lymphocyte, platelet, NLR, PLR, SII, PCT and CRP values ($p=0.001$, $p<0.0001$, $p<0.0001$, $p=0.007$, $p=0.001$), $p<0.0001$ and $p=0.002$, respectively). A strong positive correlation was found between SII and NLR ($r=0.919$, $p<0.0001$). There was a good positive correlation between PLR and NLR and between SII and PLR ($r=0.746$, $p<0.0001$; $r=0.787$, $p<0.0001$, respectively). The area under the curve for NLR, platelet, and lymphocyte was evaluated as moderate and for PCT as very good. Platelet count (≤ 285.00 ; AUC=0.740; 95%CI: 0.644-0.836; $p<0.0001$), lymphocyte count (≤ 2.665 ; AUC=0.727; 95%CI: 0.633-0.821; $p<0.0001$), NLR (≥ 1.28 ; AUC=0.707; 95%CI: 0.611-0.803; $p<0.0001$) and PCT (≥ 0.83 ; AUC=0.979; 95%CI: 0.950-1,000; $p<0.0001$).

Discussion and Conclusion: Platelet count, lymphocyte count, NLR and PCT may be easily obtainable inflammatory biomarkers with prognostic value for the diagnosis of COVID-19 in children.

Keywords: COVID-19, Neutrophil-lymphocyte ratio, Platelet-lymphocyte ratio, Systemic immune-inflammation index

Full text (ID-152)

Introduction: The coronavirus disease of 2019 (COVID-19) is an urgent public health problem around the world. Complete blood count (CBC) is inexpensive and easily performed on patients, and CBC data can be used as biomarkers. These markers include leukocytes, platelets, neutrophils, and lymphocytes (6). The neutrophil–lymphocyte ratio (NLR) and platelet–lymphocyte ratio (PLR) are inexpensive and easily calculable indexes that correlate with the prognosis of systemic inflammatory diseases (7). This study aims to determine the prognostic values of biomarkers such as cell count, NLR, PLR, SII, CRP in peripheral whole blood tests in children with COVID-19 disease at the time of first admission.

Materials and Methods: In this study, the files of COVID-19-positive pediatric patients who did not have chronic disease between March 11, 2020 and September 6, 2020 in XXX Pediatric Hospital were analyzed retrospectively. 190 pediatric patients and 41 children as a control group were included in the study. According to the inclusion criteria, patients under 18 years of age with positive PCR test were included in the study. As exclusion criteria, patients with chronic disease, chronic diarrhea, heart disease, malnutrition, central nervous system infection, respiratory system infection, using antibiotics in the last month and receiving treatment in any center before admission were determined. There was no statistically significant difference between the gender ratio and the average age of the study and control groups. As the control group, 41 children between the same age (2-211 months) and gender (21 female 51.21% and 20 male 48.78%) who did not have a chronic disease, who were followed up in a healthy pediatric outpatient clinic and requested routine examination were included in the study. The age, gender, contact history, and laboratory and chest radiography results of the patients were obtained from the patient files. Scores were calculated based on peripheral complete blood counts. $SII = \text{platelet count} \times \text{neutrophil count} / \text{lymphocyte count}$; $NLR = \text{neutrophil count} / \text{lymphocyte count}$; and $PLR = \text{platelet count} / \text{lymphocyte count}$ were calculated using the given formulas. The first-day data of clinical application, namely, real-time polymerase chain reaction (PCR) and laboratory results were included in this study. The pharynx and nasal swabs of all the patients were studied with a Bio Rad (USA) device. The collected patient data were analyzed IBM Statistical Package for the Social Sciences (SPSS) for Windows 23.0 (IBM Corp., Armonk, NY). For comparisons between groups, the Mann–Whitney U test was used to compare two groups, and the Kruskal–Wallis test was used for comparing more than two groups. Spearman correlation analysis was used to compare the continuous variables, whereas chi-square test was used to compare the categorical variables. The cut-off value for diagnosis was evaluated by receiver operating characteristic (ROC) analysis. Results were considered statistically significant when $p < 0.05$.

Results: A total of 190 pediatric patients with positive PCR tests were included in the study. Of these patients, 116 (50.2%) were women, 115 (49.8%) were men, and the mean age was 121.4 ± 71.4 (3-216)

months. While 112 (58.9%) of the patients had a history of contact, 78 (41.1%) had none ($p = 0.014$). Then, 165 (86.8%) of the patients were followed up at home, 22 (11.6%) in the service, and 3 (1.6%) in the intensive care unit. The mean hospitalization of the patients in the intensive care unit was 12.0 ± 7.0 days. One patient in the intensive care unit died and other patients were discharged with full recovery. Forty-four (84.6%) of 52 patients who had chest radiography were evaluated as normal. In the comparisons made according to the laboratory results of the patient and control groups during the first examination, a statistically significant difference was found in the lymphocyte, platelet, NLR, PLR, SII, PCT, CRP, calcium, AST, and ALT values ($p = 0.001$, $p < 0.0001$, $p < 0.0001$, $p = 0.007$, $p = 0.001$, $p < 0.0001$, $p = 0.002$, $p = 0.001$, $p = 0.045$, and $p = 0.050$ respectively) (Table 1). Spearman correlation test results, which examine the relationship between inflammatory markers, are shown in Table 2. When the results are analyzed, there was a good level of positive correlation between PLR and NLR and between SII and PLR ($r = 0.746$, $p < 0.0001$; $r = 0.787$, $p < 0.0001$, respectively), while a very good positive correlation was found between SII and NLR ($r = 0.907$, $p < 0.0001$), a moderate positive correlation was found between SII and CRP, between WBC and PLR, and between WBC and PLT ($r = 0.432$, $p < 0.0001$; $r = 0.408$, $p < 0.0001$; $r = 0.538$, $p < 0.0001$). The relationship between CRP and NLR and between PCT and SII was determined to be a weak positive correlation ($r = 0.386$, $p < 0.0001$; $r = 0.224$, $p = 0.020$ respectively). In order to determine the distinctiveness of the test, the receiver operating characteristic (ROC) curve method graphical approach data were interpreted. ROC analyses were performed because there was a statistically significant difference in lymphocyte, platelet, NLR, PLR, SII, PCT, and CRP values between control and patient groups (Table 3, Figure 1). NLR, PCT Platelet, lymphocyte values were found to be significant. The area under the NLR, platelet, lymphocyte ROC curve was graded as moderate and for PCT very good. The cut-off point for platelet values was ≤ 285.00 (AUC, 0.740; 95% CI, 0.644–0.836; $p < 0.0001$). The cut-off point for lymphocyte values was ≤ 2.665 (AUC, 0.727; 95% CI:0.633–0.821; $p < 0.0001$). The cut-off point for NLR was ≥ 1.28 (AUC, 0.707; 95% CI, 0.611–0.803; $p < 0.0001$). The cut-off point for PCT values was ≥ 0.83 (AUC, 0.979; 95% CI, 0.950– 1.000; $p < 0.0001$).

Discussion and Conclusion: In COVID-19 pediatric patients, the white blood cell count is generally normal. CRP may be normal or increased (8). A decrease in peripheral lymphocyte count in COVID19 patients is considered a critical factor associated with disease severity and mortality (11). Therefore, it has been stated that it is related to NLR, PLR and SII sepsis and multiorgan damage, which are accepted as inflammatory indices (12). For COVID-19 patients, NLR has been shown to be an independent risk factor for severe disease (13). In our study, similar to that of Gracia et al. lymphopenia, increased NLR, and CRP were found to be significant in pediatric patients (3). Wu et al. in a study of 148 pediatric patients, found the median (IQR) lymphocytes/ μL to be 2,990 (2,360 - 4,170) (14). However, unlike adult patients, who showed a significant increase, there was no difference in NLR. In our study, high NLR was considered to be a sensitive marker for the diagnosis of COVID-19. Qin et al. stated that it

may be helpful in early screening (15). Tjendra et al. observed that systemic inflammation indicators such as the NLR and SII index in COVID-19 infection can be used to predict disease severity, outcome and mortality (16). Paliogiannis et al. found that SII was significantly higher in those who did not survive (17). In our study, although there was a significant difference between the patient and control groups, the sensitivity was found to be 59.1% and the specificity was found to be 41.5%. Ponti et al. found that CRP, a marker of infection associated with IL-6, increases significantly in the early stages of COVID-19 patients (18). In our study, the accepted serum CRP level was defined as distinctive in patients compared to the control group, and a moderate positive correlation was found between the CRP level and SII. However, as the result of 68% of the CRP levels in the data set was 1 mg/L, it was not included in the ROC analysis.

This is the first study to describe the initial changes in inflammatory markers such as CRP, NLR, PLR, SII, PCT, MPV, platelets, and lymphocytes in pediatric patients with COVID-19. Platelet count, lymphocyte count, NLR, and PCT can be used as easily obtainable, sensitive, prognostic inflammatory biomarkers for diagnosis of COVID-19 disease in children. However, more prospective studies are needed to determine the severity of inflammation.

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ID-153 / OP: “Does Obesity Affect Prognosis in Patients with Multisystem Inflammatory Syndrome? Data From A Single Center”

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Abstract (ID-153)

Introduction: Multisystemic inflammatory syndrome (MISC) is a new phenomenon, and obesity is a risk factor for MISC. Moreover, more than 25% of MISC population is obese or overweight. The aim of this study is to show the effect of obesity on prognosis in MISC cases.

Materials and Methods: This study was conducted between November 2020 and November 2021 in Tepecik Training and Research Hospital, Izmir, Turkey on patients diagnosed with MISC. MISC Patients were divided into two groups according to body mass index (BMI) percentiles; a BMI percentile of 85 and above was considered overweight. Patient characteristics, laboratory findings and results were evaluated. Those whose height and weight data were missing were excluded from the study. SPSS version 25 and $p < 0.05$ were considered significant.

Results: Ten (6.3%) of the 63 patients were overweight or obese. The median age of the overweight patients was 119 months, while the median age of the non-overweight patients was 96 months ($p=0.492$); 40 (63.5%) were male. The median length of hospital stay of the patients was 9 days (± 5 days, min-max 1-34). The median fever was 39.1 (min-max 38-41) and the median duration of fever was 4 days (min-max 2-12 days). On admission, 93.7% of patients were fatigued and 88.9% had gastrointestinal symptoms. There was no statistically significant difference between the two groups when comparing symptoms (for all $p > 0.05$). When comparing laboratory values, the number of eosinophils was significantly higher in the obese patients, while total bilirubin levels were significantly lower in this group (eosinophils $p=0.010$; total bilirubin $p=0.027$). Intravenous immunoglobulin was administered to 53 (84%) patients, acetylsalicylic acid to 8 (12.7%) patients, the steroid to 46 (73%) patients, anticoagulant to 50 (79.4%) patients, and anakinra to four patients.

Discussion and Conclusion: Compared with the literature, the rate of MISC patients with obesity was lower. In addition, we could not demonstrate any association between obesity and the clinical course of MISC patients.

Keywords: MISC, pediatric, obese

ID-154 / OP: “Can Delayed Neurological Sequelae Due To Carbon Monoxide Poisoning Be Predicted in Children?”

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Abstract (ID-154)

Introduction: The incidence of delayed neurological sequelae (DNS) due to the negative effect of hypoxia on the brain in carbon monoxide (CO) poisoning is 3-17%. The aim of this study is to examine the relationship between clinical and laboratory findings and DNS in children with CO poisoning.

Materials and Methods: The cases who admit to the pediatric emergency department of Diyarbakır Children's Hospital between 01.01.2014 and 31.12.2019 due to CO poisoning and whose carboxyhemoglobin COHb level was >10% were included in the study. The pediatric neurology admissions of the patients within one year after poisoning were evaluated. Those with pre-existing chronic diseases were excluded from the study. The hemogram, biochemistry, blood gas analysis and COHb levels of the patients measured in the emergency department were recorded. Systemic Immune Inflammation Index (SII) ($SII = \text{platelet count} \times \text{neutrophil count} / \text{lymphocyte count}$) was calculated from the parameters measured in the hemogram.

Results: A total of 137 CO poisoning patients and 30 control patients were included in the study. There was no statistical difference between the patient (median age: 11; 48.2% male) and control (median age: 11; 36.7%) groups in terms of age and gender ($p > 0.05$). A total of 46 cases (33.5%) were diagnosed with DNS within one year after CO poisoning. When DNS (-), DNS (+) and control groups were compared, blood glucose (96, 128, 87), potassium (4.2, 4.1, 4.3), blood glucose/potassium (21.9, 31.4, 20), platelet/lymphocyte (113.8, 182.1, 101.3), leukocytes (10000, 12600, 7700), neutrophil (6300, 10400, 4200), lymphocytes (2450, 1500, 2900), neutrophils/lymphocyte (2.5, 6.5, 1.4) and SII (767.6, 2038.33, 406.7) ($p < 0.05$) were significantly different ($p < 0.05$). When the DNS (-) and (+) cases were compared, a significant difference was found in terms of male gender (41.8% vs. 60.9%), being

symptomatic at presentation (31.9% vs. 65.2%), pCO₂ (41.4 vs. 39.3) and COHb (17.6 vs. 22), respectively (p<0.05).

Discussion and Conclusion: DNS due to CO poisoning is more common in boys, those who are symptomatic at presentation, and those with high COHb levels and acute inflammation levels

Keywords: Delayed neurological sequelae, inflammation, carbon monoxide poisoning

Full text (ID-154)

Giriş ve Amaç: Karbon monoksit (CO), hidrokarbon yanması sonucu oluşan kokusuz, tatsız, renksiz, tahriş edici olmayan bir gazdır. CO, hemoglobine oksijenden çok daha fazla afinite ile bağlanır. Karboksihemoglobin (COHb) oluşturur ve oksijen taşınması ile kullanımında bozulmaya neden olur. CO ayrıca santral sinir sisteminde (SSS) lipid peroksidasyonu ve gecikmiş nörolojik sekel ile sonuçlanan bir inflamatuvar kaskadı da hızlandırabilir. Akut CO zehirlenmesinden kurtulan hastalarda, kalıcı nörolojik sekel (KNS) veya gecikmiş nörolojik sekel (GNS) meydana gelebilir. Akut karbon monoksit zehirlenmesinden sonra GNS, akut CO zehirlenmesi semptomlarının kaybolmasından günler veya haftalar sonra ortaya çıkan bir grup nöropsikolojik bozukluktur. Bu çalışmada klinikte CO zehirlenmesine bağlı GNS'yi öngörmede kullanılabilecek kolay, hızlı parametreler olarak; serum glukoz/potasyum oranı (GLU/K) ve sistemik inflamasyonun bir göstergesi olarak periferik tam kan sayımlarına dayalı skorların uzun vadeli nörolojik sonuçlarla ilişkili olup olmadığını araştırmak amaçlanmıştır.

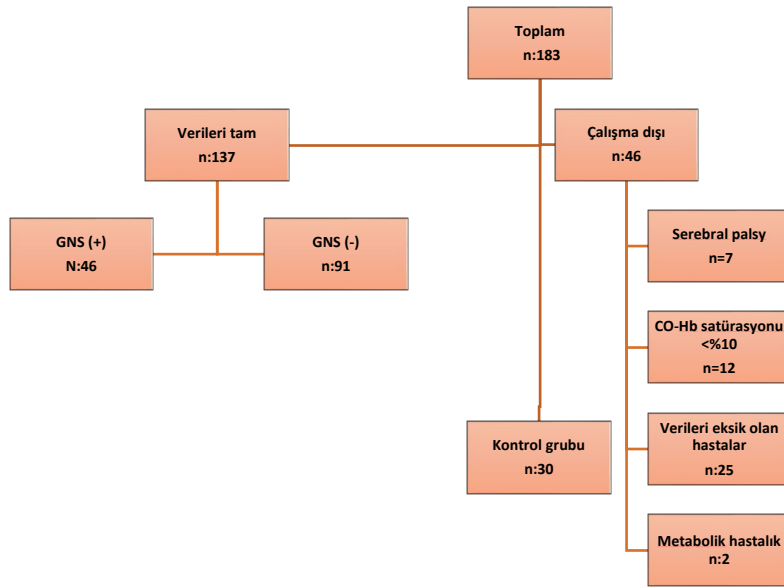
Gereç ve Yöntem: Bu araştırma, yıllık acil serviste yaklaşık 120 000 hasta sayısı olan tek bir hastanede gerçekleştirilen retrospektif, gözlemsel bir çalışmaydı. Hastanemiz çocuk acil servisine Ocak 2014-Aralık 2019 tarihleri arasında 24 saat içinde akut CO zehirlenmesi ile başvuran 18 yaş ve altı hastalar çalışmaya alındı. CO zehirlenmesi ile ilk başvurusu acil servisimize olan ve ilk karboksihemoglobin (COHb) seviyesinin %5'nin üstünde olan çalışma kapsamına dahil edildi. Öncesinde psikiyatrik ve nörolojik hastalık öyküsü, kronik hastalık öyküsü (Diyabet, immun yetmezlik, kanser, hematolojik hastalıklar gibi), gebelik, immünosupresan kullanımı öyküsü, ölüm, çoklu zehirlenme, tedaviye ret etme durumlarında hastalar çalışma dışı bırakıldı. Hastanemiz çocuk acil servisine Ocak 2014-Aralık 2019 tarihleri arasında başvuran 183 hasta çalışmaya alındı. Verileri eksik olan hastalar (n=25), kan karboksihemoglobin (COHb) saturasyonu <%10 (n=12) olan hastalar, kronik hastalık yakınması olan (Tüm hastalara acil serviste geri solunmayan maske kullanılarak normobarik oksijen tedavisi (oksijen konsantrasyonu %100 ve dakikada 10/L) uygulandı. Hastanemizde hiperbarik tedavi olmaması nedeniyle ihtiyaç duyulan hastalar dış merkeze sevk edildi. Hasta tıbbi kayıtları gözden geçirilerek aşağıdaki veriler toplanmıştır: yaş, cinsiyet, ilk başvuru laboratuvar sonuçları, CO'ya maruz kalma süresi, CO kaynağı, başvuru sırasında Glasgow Koma Skalası (GCS) skoru, hiperbarik oksijen (HBO)

için endikasyon verileri hasta dosyalarından elde edilmiştir. İlk başvuruda; tam kan sayımı (hemoglobin, kırmızı kan hücresi, trombosit sayısı, beyaz kan hücresi, trombosit/lenfosit oranı, nötrofil/lenfosit oranı, systemic immun inflamasyon index (SII)=trombosit sayısı×nötrofil sayısı/lenfosit sayısı) biyokimya (alanin aminotransferaz, aspartat aminotransferaz, gamaglutamil transferaz, kan üre nitrojeni, serum kreatinin, sodyum, potasyum, glukoz, glukoz/potasyum oranı) ve arteriyel kan gazı (pH, pCO₂, HCO₃, COHb, metHb, laktat) bakıldı.

Uzun Dönem Nörolojik Etki: GNS'nin ana prezentasyonları; nöbet, konuşma bozukluğu, psikonevroz, strial sendrom, motor ve duyuşsal eksiklik, spinal kord ve periferik sinir defisiti dir. Hastane kayıtlarından Uluslararası Hastalık Sınıflandırması (ICD-10) koduna göre GNS teşhisi yapılmıştır. Dahil edilen hastalar CO intoksikasyonu sonrası GNS komplikasyonları nedeniyle 1 yıl içinde nöroloji veya psikiyatri kliniğine başvurup başvurmadıkları açısından değerlendirildi. Hastalara telefonla ulaşıldı ve kontrole çağrıldı. Zehirlenme sonrası çocuk nöroloji ve çocuk psikiyatri başvuruları soruldu. İlgili birimlere başvuran hastalar bir çocuk nöroloğu ve çocuk psikiyatrisi tarafından yeniden değerlendirildi. Hastalar için anksiyete, depresif belirtiler, dikkat, görsel-uzaysal beceriler, bellek ve davranışları değerlendirmek için yapılacak testlerin Türkçe versiyonları kullanıldı. Hastalara ilgili birim hekimlerince DNS tanısı konuldu ve çalışmaya dahil edildi.

İstatistiksel Analiz: Rakamsal veriler ortanca ve çeyrek değerler aralığı (ÇDA; 25- persentil – 75- persentil); kategorik verileri sayı (n) ve yüzde (%) ile ifade edildi. Bağımsız iki grubun rakamsal verilerinin karşılaştırılmasında Mann Whitney U testi, bağımsız üç grubun rakamsal verilerinin karşılaştırılmasında Kruskal Wallis testi, Kategorik verilerin karşılaştırılmasında Ki-kare veya Fischer's exact testten uygun olanı, GNS'i öngörme ROC analizi ile değerlendirildi, Eğri altında kalan alan (EAA) saptandı. Analizde SPSS 22,0 ve MedCalc kullanıldı, p<0,05 anlamlı kabul edildi.

Bulgular: Toplam 183 çocuğa CO zehirlenmesi teşhisi kondu. Ancak 46 hasta çalışmadan çıkarılmış ve 137 hasta çalışmaya dahil edilmiştir (Şekil 1).



CO zehirlenmelerin kaynağının tamamı soba olduğu saptandı. Acil servisimizde CO'ya maruz kaldıktan ortalama 1saat sonra başvuran 137 hasta GNS (-) ve GNS (+) olarak iki gruba ayrıldı, ayrıca kronik hastalığı olmayan, sağlıklı çocuk polikliniğinde takip edilen, aynı yaş ve cinsiyette 30 kontrol grubu oluşturuldu. Tablo 1, hastaların temel özelliklerini açıklamaktadır.

		25 persentil	Ortanca	75 persentil	p
Yaş (yıl)	Kontrol	6	11	16	0,197
	GNS (+)	7,5	11	15	
	GNS (-)	6	11	13	
Eritrosit sayısı (/mm ³)	Kontrol	4,4	4,7	5,0	0,960
	GNS (+)	4,3	4,7	5,2	
	GNS (-)	4,4	4,7	5,1	
Hemoglobi n (g/dL)	Kontrol	12,3	13,0	14,4	0,385
	GNS (+)	11,4	12,5	13,2	
	GNS (-)	12,1	13,0	13,8	

Hematokrit (%)	Kontrol	36,1	39,0	42,5	0,016
	GNS (+)	33,5	36,6	39,1	
	GNS (-)	35,2	36,8	40,0	
Trombosit (/ mm ³) x 10 ³	Kontrol	258	283	328	0,647
	GNS (+)	244	284	392	
	GNS (-)	253	302	368	
Glikoz, mg/dL	Kontrol	80,7	87,0	98,2	<0,001
	GNS (+)	119,0	128,5	141,0	
	GNS(-)	87,0	96,0	129,0	
Potasyum, mg/dL	Kontrol	4,2	4,3	4,6	<0,001
	GNS (+)	3,9	4,1	4,2	
	GNS(-)	4,1	4,2	4,4	
G/K	Kontrol	17,8	20,0	23,0	<0,001
	GNS (+)	30,1	31,4	35,6	
	GNS(-)	20,4	22,0	31,0	

GNS (-) grupta 38 (%41,8)'i, GNS(+) grupta ise 28 (%60,9)'i erkek idi (p=0,034). GNS (+) grubundaki hastaların glukoz ile GLU/K oranları GNS (-) grup ve kontrol grubuna göre istatistiksel olarak anlamlı derecede yüksekti (p <0,001). GNS (+) karboksihemoglobin düzeyi GNS (-) gruba göre anlamlı olarak yüksekti (p<0,001). GNS (+) grubundaki hastaların GCS skorları, GNS (-) grubundaki hastalardan istatistiksel olarak anlamlı bulunmamasına rağmen (p=0.773), ilk başvuru anında semptom olan hastalarda GNS (+) gelişme olasılığı istatistiksel olarak anlamlı bulundu (p<0,001). GNS'i öngörme için ROC analizi yapıldı. GNS'yi tahmin etmek için GLU/K için eğrinin altında kalan alan 0.796 olarak ölçüldü ve cut-off değeri olarak 24,4; %100 duyarlılığa ve %61,5 özgüllüğe sahipti. Nötrofil için eğrinin altında kalan alan 0,841 olarak ölçüldü ve cut-off değeri olarak >8000; %78,2 duyarlılığa ve %79,1 özgüllüğe sahipti. N/L oranı eğri altında kalan alan 0,852, kesme değeri >4; %78,2 duyarlılığa ve %75,5 özgüllüğe sahipti. COHb için eğrinin altında kalan alan 0,726 olarak ölçüldü ve cut-off değeri olarak >18,4; %100 duyarlılığa ve %56 özgüllüğe sahipti (Şekil 1).

Tartışma ve Sonuç: Karbon monoksit zehirlenmesinin klinik bulguları oldukça değişkendir. Ağır CO toksisitesi sonrası DNS ortaya çıkabilir. Bu çalışma araştırılan parametrelerin aynı çalışmada değerlendirildiği ilk çalışmadır. GNS gelişen hastalarda GNS olmayan hastalara göre GLU/K, Sİİİ, nötrofil sayısı ve nötrofil/lenfosit oranının anlamlı olduğunu bulduk ve GNS gelişimi için bir risk faktörleri olabileceğini de gösterdik.

Jeong Mi Moon ve ark. Yaptıkları çalışmada SII, akut CO zehirlenmesi olan hastalarda uzun vadeli nörolojik sonucu tahmin etmek için önemli bir prognostik föktör olduğunu belirtmişlerdir. Stres, sempatik sinir aktive olur ve adrenalin, noradrenalin ve dopamin gibi katekolaminlerin aşırı üretimine yol açar. Glukagon ve kortikosteroidler ile birlikte katekolaminler, hiperglisemik yanıtta yer alan birincil glikol düzenleyici hormonlardır. Katekolaminler, glukagon sekresyonunu arttırdıkları ve böylece kan glukoz konsantrasyonlarını yükselttikleri için stres sonrası büyük önem taşır. Serum potasyumu da çok sayıda hücrel fonksiyona katılımı nedeniyle özellikle önemlidir. Aşırı katekolamin sekresyonunun neden olduğu serum glukoz konsantrasyonlarındaki bir yükselme de insülin sekresyonunu indükler ve ardından hücrelere serum potasyum girişine yol açar. Kan glukoz düzeylerini ve klinik hastalık progresyonunu araştıran birçok çalışma vardır. Demirtaş ve ark. CO zehirlenmesi ile izlenen 281 hastada GNS geliştiren hastalarda GLU/K oranının GNS olmayan hastalara göre anlamlı derecede yüksek olduğunu saptadılar.

Sonuç olarak, bu çalışma, başvurudan hemen sonra periferik tam kan sayımına dayalı elde edilen skorların uzun vadeli nörolojik sonucun potansiyel öngörücüleri olduğunu göstermektedir. Bu değerler kolayca ölçülebildiğinden, akut CO zehirlenmesinden sonra uzun vadeli nörolojik sonucu tahmin etmek için umut vericidir.

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ID-155 / OP: “The Results of Pneumatic Balloon Dilatation Treatment in Children with Achalasia: A Single Center Experience”

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Abstract (ID-155)

Introduction: Achalasia is a primary motility disorder characterized by relaxation disorder of the lower esophageal sphincter (LES). It is less common in children. In pneumatic balloon dilatation (PBD) that one of the treatment methods, the muscle fibers are torn with the endoscopically inflated balloon in the LES. Studies on long-term outcomes in children who have undergone pneumatic balloon dilation are limited. It is aimed to evaluate the long-term PBD treatment results of children diagnosed with achalasia, to whom we applied PBD in our clinic with this study.

Materials and Methods: Pediatric patients who underwent pneumatic balloon dilatation with the diagnosis of achalasia in Tepecik Training and Research Hospital Pediatric Gastroenterology Clinic between 2016-2021 were included in the study. Demographic data of the patients, clinical findings at diagnosis and follow-up, Eckardt scores, imaging studies, presence of Triple-A syndrome, length of hospital stay and postoperative follow-up results were evaluated retrospectively. The success of the PBD procedure was accepted as the Eckardt score falling below 3 in the postoperative follow-up. Results: Ten patients who underwent pneumatic balloon dilatation were included in the study. The mean age at diagnosis of the patients was 10.5 (2-16 years), and 6 (60%) of the patients were girls and 4 (40%) of the patients were boys. The mean Eckardt score of the patients at the time of diagnosis was 9.9 ± 1.5 . Triple-A syndrome was detected in two (20%) patients. When the patients were evaluated in terms of the necessity of repeating PBD procedures; it was observed that the procedure was performed once in three (30%) patients, twice in 4 (40%) patients and three times in 3 (30%) patients. There was the balloon

diameters used in the first and second procedures of the patients who needed repetitive procedures were less than 30 mm.

Discussion and Conclusion: There are various debates on treatment models in childhood achalasia and there is no definite consensus. Pneumatic balloon dilatation is the strongest alternative to surgical treatment methods due to its lower complication rates. When the patients who needed recurrent dilatation were evaluated in our study; it is striking that the diameter of the balloon in which the first procedure was performed in these patients was lower. This study is important for the contribution to literature due to the scarcity of pediatric achalasia data in which long-term results related to PBD are reported in our country.

Keywords: Achalasia, Pneumatic balloon dilatation, Children

ID-156 / OP: “The Role Of General Surgery in The Emergency Department Trauma Unit”

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Abstract (ID-156)

Aims: Emergency cases constitute the main workload of the general surgery unit. Patients evaluated in the emergency department by the general surgery unit can be divided into two groups as traumatic and nontraumatic. Trauma is the cause of high mortality and morbidity in the world. Trauma accounts for 10% of all deaths. It is an indispensable part of the general surgery team for trauma cases.

In this study; it was aimed to discuss the demographic characteristics, etiology of the diseases, emergency results of the patients, surgeries and consultation rates of trauma patients who were consulted to general surgery from the emergency department in a tertiary education and research hospital, in the light of the literature.

Methods: This study is a retrospective study that included patients who applied to the Çiğli Training and Research Hospital Emergency Department Trauma Unit in 2020 and were consulted to the general surgery branch after being evaluated by the emergency physician. Patients over the age of 18 who applied to the trauma unit and were later consulted to general surgery were included in the study. The medical records of the patients included in the study were reviewed retrospectively through patient files. Patients' age, gender, symptoms at admission, consultation results, emergency outcomes (discharge, hospitalization, intensive care unit admission), hospital outcomes (discharged, exitus) were recorded using a standard form.

Results: In 2020, 320,262 patients were admitted to the Çiğli Training and Research Hospital Emergency Service. 49,393 (15.42%) of the patients were met in the trauma unit. 150 (0.3%) of trauma patients were consulted with general surgery. Of the consulted patients, 130 (86.66) were male and 20 (13.33) were female. The mean age of the patients was 41.18 years. 145 of the patients were hospitalized and treated. Emergency operation was performed in 65 (44.82) of these patients, and 85 (55.17%) patients were hospitalized and followed-up without the need for any operation. Of the operated patients, 31 (47.69%) were operated by general surgery, 12 (18.4) by neurosurgery, 11 (16.9%) by thoracic surgery, and 11 (16.9%) by orthopedics. 5 patients were taken to the ICU after surgery. Of the patients operated by general surgery, 14 (45.16%) bowel perforation, 6 (19.35%) diagnostic laparoscopy, 6 (19.35%) spleen laceration, 2 (6.4%) primary suturation due to liver injury 1 (3.2%) bladder perforation,

1 (3.2%) kidney laceration were detected. The mean hospital stay of the patients was 7.4 days. Of the hospitalized patients, 4 (2.7%) died.

Conclusion: As a result of our study, the number of consultations made from the emergency department trauma unit to the general surgery clinic was found to be low compared to the literature. The reason for this is the high number of non-emergency patients due to abuse of the emergency department. In addition, it is clear that the presence of emergency specialists in the emergency department is an important factor.

As a result; We believe that the appropriate use of emergency services and the work of specialist physicians in the field have a positive effect on the workload of other clinics.

Keywords: Emergency surgery; Trauma; Emergency Medicine.

ID-158 / OP: “Comparison of Acute Reverse Shoulder Arthroplasty and Reverse Shoulder Arthroplasty After Failed Osteosynthesis in Humerus Proximal Fracture Management”

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Abstract (ID-158)

Introduction: Surgical treatment of complex and osteoporotic proximal humeral fractures in advanced age is very difficult. With the development of technology, reverse total shoulder arthroplasty (RTSA) has begun to be used in the surgery of these difficult fractures. Our aim in this study was to compare the clinical and functional results of patients who underwent RTSA after acute and failed surgery in proximal humeral fracture surgery.

Material and Method: When consecutive RTOAs performed in our clinic were examined retrospectively, 17 patients who met our criteria were included in the study. Of these, RTSA was applied to 10 patients immediately after fracture, and RTSA (FORTSA) to 7 patients after failed osteosynthesis. Patients who underwent RTSA due to rotator cuff disease, glenohumeral arthrosis, and patients who did not attend their final follow-up were excluded from the study. Patients; age, gender, affected side, type of anesthesia, operation time, perop blood transfusion, hospital stay, follow-up time, Neer classification, Constant score, QDASH scores and range of motion were evaluated.

Results: When gender, affected side, type of anesthesia, duration of surgery, blood transfusion, length of hospital stay, follow-up period, Neer classification were compared, no significant difference was found between the two groups. In the final controls, when the Constant score, QDASH score, and VAS score were examined, no difference was found between the two groups.

Conclusion: RTSA in multi-fragmented and osteoporotic proximal humeral fractures; It is a viable treatment option acutely or after unsuccessful osteosynthesis.

Keywords: Proximal humerus fracture; Reverse shoulder prosthesis; Osteosynthesis with plate.

ID-159 / OP: “Copy Number Variations of PRSS1, SPINK1, CTSC and CFTR are Not Common Contributors to Idiopathic Pancreatitis Pathogenesis in Turkish Patients”

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Abstract (ID-159)

Introduction and Aim: Pancreatitis is one of the leading causes of digestive system related hospital admissions and leads to significant amount of morbidities, mortalities, and socioeconomic burden. It is known that genetic contributions are identified in a portion of patients with idiopathic pancreatitis. In this study, we planned to investigate the genetic risk factors of pancreatitis in Turkish population and contribution of copy number variations to the pathogenesis of idiopathic pancreatitis.

Material and Method: The diagnosis of acute pancreatitis, recurrent acute pancreatitis or chronic pancreatitis were determined according to the latest guidelines. Idiopathic pancreatitis is defined as failure to detect risk factors despite comprehensive clinical assessments. New generation sequencing (NGS) and multiple ligand dependent probe amplification (MLPA) of PRSS1, SPINK1, CTSC, and CFTR genes were performed for genetic testing. For further genotype-phenotype correlations, patients were also questioned for age of onset, family history and presence of pancreatic divisum.

Results: A total of 67 patients diagnosed with idiopathic pancreatitis were enrolled in the study. Of these, variants with potential clinical significance of PRSS1 were identified in 9 (13.6%), SPINK1 in 4 (6.3%), CTSC in 3 (4.8%), and CFTR in 17 (25.4%) by NGS. No copy number variations were seen by MLPA of all four genes. At least 7.5% of the participants had complex genetic etiology involving two genes. The variant frequency did not differ much in different diagnostic groups, except that pathogenic PRSS1 variants were much more common in CP group. It was seen that pathogenic PRSS1 and SPINK1 variants were predominantly present in patients whose symptoms have started in childhood.

Discussion and Conclusion: By this study, it was found that at least 41.8% of our participants had potential genetic risk factors. Five novel genetic variants were identified and distinctive genetic risk factors of Turkish pancreatitis patients were shown. Evident genotype-phenotype correlations were also discovered for certain genetic variants and the patients were informed on prognosis and potential treatment options. The results of this study also showed that copy number variations may not be frequent risk factors for pancreatitis and performing NGS with gene panels increases the diagnosis rate significantly.

Keywords: Idiopathic pancreatitis; PRSS1; SPINK1; CTSC; CFTR

ID-160 / PP: “A Rare Case: Treatment of Great Gouty Tophus with Masquelet Technique in Polyarticular Gout Disease”

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Abstract (ID-160)

Introduction: In this case, we aimed to demonstrate the feasibility of the Masquelet technique to treat the first metatarsophalangeal joint, which is accompanied by a large tophi and massive bone defect.

Case report: In the physical examination of a 64-year-old male patient; There was swelling in both feet and both hands , and limitation of movement. Complete blood count, urea and electrolytes, erythrocyte sedimentation rate, C-reactive protein and rheumatological factor were normal. The uric acid (UA) level was found to be 8.9 mg/dl (normal: 3.5-7.2 mg/dl). X-ray and computed tomography showed erosion and monosodium urate collection in the metatarsal head and proximal phalanges . An operation was planned for the MTP joint. The patient underwent two operations. During the first surgery, nodular uric acid crystals in the tofus were shaved and radical debridement of dead bone and necrotic tissue was performed. Bone defect length was measured as 3.5 cm and alignment was achieved with a Kirschner wire. The bone cement was then implanted into the formed defect. The 2nd distal interphalangeal joint and the 5th interphalangeal joint and the tophi posterior to the calcaneus were debrided. After 8 weeks, the bone cement and Kirschner wire were removed and the bone was fixed with a 2.7 mm locking plate. The defect was filled with cancellous bone taken from the iliac crest . The patient is followed up in the first year with pain-free foot.

Discussion: Surgical treatment of tophaceous gout is rarely required due to favorable pharmaceutical control of hyperuricemia in recent years. Surgical treatment is preferred in severe cases with joint destruction, deformities and infection. Surgical options include debridement, arthrodesis and amputation. Feng et al., in their series of 11 cases; used the Masquelet technique because of joint erosion and bone defect due to tophi in the first metatarsophalangeal joint. They reported union and good outcome in 10 of 11 patients. They found the mean duration of union to be 3 months. They emphasized that the Masquelet technique can be applied to ensure the continuity of the medial arch of the foot and to return the patients to work early. We did not find any other reports in the literature in the treatment of 1st MTP joint gout tophi. The difference of our case is that it has polyarticular involvement and it was intervened in the second and fifth fingers together with the large tophi in the 1st MTP joint. Masquelet described this method in the treatment of defects in long bones in his original technique. This technique, which provides bone formation by forming an induced membrane, is based on the principle

of new bone formation by adding autografts and, if necessary, allografts. In addition, Masquelet completed the treatment with the help of an external fixator in his original technique. In our case, we performed internal fixation with a locking plate. We believe that the advantages of this are that it is more stable and that the patient can tolerate it better.

Conclusion: Masquelet technique should be kept in mind as an option that can be used in symptomatic large gout tophi, especially if the defect due to bone erosion is large.

Keywords: Masquelet, gout, tophi, induced membrane

ID-161 / OP: “Causes of Conversion of Laparoscopic Surgery to Open Surgery in Colorectal Tumors: Single-Center Retrospective Analysis”

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Abstract (ID-161)

Introduction and Aim: To examine the reasons for conversion to open surgery due to the difficulties encountered during laparoscopic colorectal surgery.

Materials and Methods: The surgical notes of 302 patients who were operated for rectum and rectosigmoid tumors in the general surgery clinic of Izmir Tepecik Training and Research Hospital between 2014-2021 were reviewed retrospectively. The surgical notes and daily observation records of those whose procedures were converted from laparoscopic surgery to open surgery and the reasons behind the conversion were analyzed.

Results: It was determined that 22 (24.4%) of 90 (100%) patients with rectosigmoid and rectal cancer were started with laparoscopic surgery and were switched to open surgery. Sixteen (73%) of them were male and 6 (27%) were female patients. The mean age was 58±14 years for male patients and 62±12 years for female patients. The reasons for conversion to open surgery was difficulty in pelvic dissection in 5 (22.7%) male patients, inability to trace left ureter in 2 (9%) (1 male, 1 female) patients, evaluation of the seminal vesicles lumen as ureteral lumen in 2 (9%) male patients, loss of a sponge in the abdomen in 1 (4.5%) patient, opening of the hemoclips placed in the inferior mesenteric artery in 1 (4.5%) patient, blood supply disorder in the colon segment where anvil was placed in 1 (4.5%) patient, tumor invasion into the surrounding tissue in 2 (9%) patients, inability to place endoscopic stapler distal to the tumor in 1 (4.5%) patient, inability to progress to the distal of the tumor because the tumor was close to the dentate line in 2 (9%) patients, inability to evaluate the distal border of the tumor in 2 (9%) patients, intra-abdominal adhesions in 1 (4.5%) patient, inability to tolerate pneumoperitoneum in 1 (4.5%) patient, and inability to control presacral bleeding in 1 (4.5%) patient. None of these patients developed mortality and major morbidity.

Conclusion: In laparoscopic surgeries of rectal tumors the conversion rates to open surgery may be higher in male patients due to pelvic dissection being more difficult and the seminal vesicles, which has a high risk of injury in distal rectal tumors, being easy to confuse with the ureter. In addition, inability to determine the proximal and distal borders of the tumor endoscopically in the preoperative period increases the chance of conversion. Not hesitating to convert to open surgery when there is insufficient operation management in laparoscopic surgery can reduce the postoperative morbidity and mortality rate.

Keywords: laparoscopic colorectal surgery; Conversion surgery; Colorectal tumors.

ID-162 / OP: “The Mediator Effect of Emotional Eating in The Relationship Between Aggression and Eating Attitudes.”

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Abstract (ID-162)

Introduction: In this article, it was aimed to examine the relationship between emotional eating, aggression and eating attitude characteristics of adults and the mediating role of emotional eating behaviors in the relationship between aggression characteristics and eating attitudes.

Materials and Methods: A total of 293 participants, including 70 men and 223 women, were included in the study. In the study, the participants filled the Demographic Information Form, Buss Perry Aggression Scale, Turkish Emotional Eating Scale and Eating Attitude Test (EAT 26).

Results: It was found that there was a significant difference in the averages of aggression compared according to healthy and unhealthy eating attitudes. It was determined that there was a significant difference between the emotional eating averages of the participants according to their healthy and unhealthy eating attitudes. It was determined that there was a significant difference in the average eating attitude of the participants according to the presence of emotional eating behavior. According to the Pearson Product Moment Correlation analysis findings, there is a statistically significant and positive relationship between eating attitude and aggression; a statistically significant and positive relationship between aggression and emotional eating; A statistically significant and positive relationship was found between eating attitude and emotional eating. Structural equation model results show that emotional eating has a mediating role in the relationship between hostility and bulimia and eating preoccupation.

Conclusion: Emotional eating has been found to play a mediating role in the relationship between diet and hostility. In addition, the relationship between oral control and hostility was found to be mediated by emotional eating.

Keywords: Aggression; Physical aggression; Verbal aggression; Hostility; Anger; Eating attitude; Bulimia and food preoccupation; Diet; Oral control; Emotional eating.

ID-163 / OP: “Is Obesity a Risk Factor or Protective For Hip Fractures?”

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Abstract (ID-163)

Introduction and Purpose: In recent years, the average age has been increasing and obesity has increased at different rates in different societies. However, hip fractures, especially seen in the elderly, constitute an important public health problem due to the morbidity and mortality they cause. There are many studies on obesity and hip fracture. However, the results are contradictory. In this study, we aimed to evaluate the relationship between obesity and hip fracture risk in the elderly by considering additional diseases and characteristics of the patients.

Materials and Methods: Patients with a diagnosis of hip fracture who were admitted to our clinic and operated in 2020-2021 were retrospectively scanned. A total of 141 patients were evaluated according to their demographic data, fracture sites, body mass index (BMI), comorbidities and medications they used. Those with a BMI of 30 and above were defined as obesity. The results were statistically analyzed comparatively.

Results: Of the patients, 83 were female and 58 were male. The mean age of women was 77, and the mean age of men was 58(standard deviation[SD] 11.9). It was determined that 116(%83.4) of 139 patients whose height and weight information were accessed did not have obesity, and 23(%16.5) had obesity. BMI averages are; 26.2 in women and 24.9 in men(SD4.4). It was determined that there was no significant difference between the patients with and without obesity according to the fracture type (intertrochanteric or femoral neck)(P 0.46). While the number of patients without diabetes or obesity was 95(%68), the number of patients with obesity and no other comorbidities was 8(%5). Concomitant type 2 diabetes was present in 36 of the patients(%25). Of these patients, 15 had obesity, while 21 had only type 2 diabetes. While the number of patients diagnosed with obesity was 23, it was found that 15(%65) of them were accompanied by type 2 diabetes.

Discussion and Conclusion: It is not appropriate to consider obesity alone as a risk factor for hip fracture. As a matter of fact, no significant difference was found between obese and non-obese patients in our study. However, the literature is controversial. Bone mineral densities of obese patients are high due to the mechanical load on the bones and the tension created by obesity. In addition, leptin hormone secreted from adipose tissue cells has a constructive effect on bone tissue. Insulin, preptin and amylin, which are

high in obese patients, have similar effects. Fat tissue with increased hip circumference can also be counted as a protective mechanical factor that acts as a barrier during falls. However, there are also publications stating that abdominal obesity poses a risk for hip fracture. Although obesity is not seen as a risk factor as in our study, it includes a risk of hip fracture due to its predisposition to type 2 diabetes and its high comorbidity. The most likely reason for this is increased bone matrix collagen glycosylation and fragility, decreased bone mineral density and bone turnover seen in type 2 diabetes. Although obesity seems to be a protective factor rather than a risk for hip fracture alone, especially concomitant type 2 diabetes and impaired insulin level should be considered as risk factors.

Keywords: Hip fractures; Obesity; Type 2 diabetes.

ID-166 / OP: “Is COVID-19 More Severe in Obese Children?”

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Abstract (ID-166)

Introduction: Obesity has been well established as an independent risk factor for adverse the coronavirus disease 2019 (COVID-19) outcomes in adults. However, limited research has addressed the association of obesity with COVID-19 severity in children and adolescents. The aim of this study is to investigate the effect of obesity on the prognosis of COVID-19 in pediatric hospitalized population.

Method: We conducted a retrospective cohort study between January 2020 to November 2020 of pediatric patients hospitalized with a diagnosis of COVID-19. We assessed demographical characteristics, height and weight, body mass index (BMI), weight SDS values, factors associated with hospitalization and factors associated with clinical severity (eg, admission to intensive care unit [ICU], need to oxygen support) among those hospitalized patients.

Results: Among 76 patients with COVID-19, 40 (52.6%) were female, and 13 (17.1%) patients had obesity. The patients median age was 75 months (min-max: 1-123), BMI median value was 17.1 (min-max: 10.6-37.3), BMI SDS median value was 0.13(min-max: -5.2-4.6). The clinical severity of the cases was evaluated and 48.7% patients were mild, 36.8% were moderate, 14.5% were severe. Of the patients, 38.2% were need to oxygen support and 7.9% were admitted to the ICU. There was no significant difference between obese and non-obese patients in terms of gender ($p=0.607$), clinical severity ($p=0.882$), need to oxygen support ($p=0.980$), and ICU admission ($p=0.976$).

Conclusion: Obesity was not significantly associated with disease severity in our pediatric population. The small sample size of this descriptive study may additionally limit generalizability.

Keywords: Hospitalized children; Obesity; COVID-19; Severity.

ID-167 / OP: “The Significance of Nuclear Factor-Kappa B in The Differential Diagnosis of Macrofollicular Variant of Thyroid Papillary Carcinoma”

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Abstract (ID-167)

Objective: Macrofollicular variant of thyroid papillary carcinoma (TPC-MFV) is a rare entity that can be misinterpreted as adenomatous nodules (AN), histopathologically. In this study, it was aimed to obtain new data on whether NF- κ B will have a diagnostic contribution to routine CK-19, HBME-1, Gal-3 by comparing NF- κ B staining properties in TPC-MFV lesions with AN and thyroid papillary carcinoma (TPC) cases.

Material and Method: Forty TPC-MFV, 20 TPC (10 TPC-follicular variant/FV and 10 TPC-classical variant/CV) and 20 AN cases were stained CK-19, HBME-1, Gal-3 and NF- κ B immunohistochemically, the staining density and the percentage of the stained tumor area were calculated and scored.

Results: In terms of CK-19 staining score, significant difference was found between malignant groups and benign group, TPC-MFV and AN group. With HBME-1, significant difference was observed between TPC-MFV and AN groups, and malignant and benign groups in terms of staining scores. For the Gal-3 staining score, significant difference was observed between malignant (TPC-MFV and TPC) and benign group. However, when the case groups are considered separately; While a significant difference between TPC-MFV and TPC-CV was observed in terms of staining scores, there was no significant difference between PC-MFV and AN cases. NF- κ B was stained at varying degrees in the nodules of all the case groups in our study. In terms of NF- κ B staining score, statistically significant difference was found between TPC-MFV and AN groups, as well as malignant and benign groups. In addition, it was determined that the staining scores of all IHC markers were weak or moderately correlated with each other.

Discussion: Although these findings indicated that the addition of NF- κ B to the routinely used CK-19, HBME-1 and Gal-3 IHC markers can be beneficial for histopathologically suspicious nodules, the

detection of staining with NF- κ B in all benign nodules suggests that its role in differential diagnosis is limited.

Keywords: Thyroid; Papillary carcinoma; Macrofollicular variant

Full text: (ID-167)

Introduction: Macrofollicular variant of thyroid papillary carcinoma (TPC-MFV) is a rare entity that was first identified by Albores-Saavedra and his colleagues in 1991, classified by WHO as a separate entity in 2004, creating a differential diagnosis problem with benign thyroid lesions (1-3). This variant, whose prognosis is usually described as excellent, may present with lymph node metastases (2,3) or distant metastases, albeit at low rates (4). Therefore, it is important to recognize these cases and distinguish them from benign lesions such as adenomatous nodule (AN).

In the diagnosis of thyroid lesions, routinely used CK-19, HBME-1 and Gal-3 are defined as "universal markers of malignancy" (5,6). However, these markers generally tend to be expressed focally and at a lower rate in TPC-MFV cases, as in TPC-FV cases (3,5-6).

First identified by Ranjan Sen and David Baltimore in 1986, NF- κ B is a member of the transcription factor family (7).

In this study, it was aimed to obtain new data on whether NF- κ B will have a diagnostic contribution to routinely used CK-19, HBME-1, Gal-3 by comparing NF- κ B staining features in; TPC-MFV lesions with adenomatous nodules (AN) and TPC cases that causes suspicions for histopathological malignancy.

Materials and Methods: 40 TPC-MFV, 20 TPC (10 Thyroid papillary carcinoma-classical variant/TPC-CV, 10 Thyroid papillary carcinoma-follicular variant/TPC-FV) and 20 AN cases diagnosed in the thyroidectomy materials or blocks sent for consultation purposes between 2010 and 2015 in the pathology department of a medical faculty were included in the study. Hematoxylen-eozin stained samples of the cases were re-evaluated and diagnoses were confirmed. Microcarcinoma cases were not included in the study. As a benign group, AN cases that were suspicious for TPC-MFV and who had routine diagnostic examination for IHC were included in the study, while nodules with oncocytic characteristics were excluded due to misleading results with IHC.

Immunohistochemical staining performed to the sections taken on positively charged slides with a thickness of 4 microns from selected paraffin blocks in the fully automatic immunohistochemical staining device (Ventana, Benchmark, XT), with Antihuman Keratin 19 Ab-1 antibody (Clone Ks19.1, MS198, ThermoFisherScientific, UK; 1/100 dilution-40 min), Mouse antihuman anti-HBME-1 monoclonal antibody (Clone HBME-1, MAD-001707QD, Master Diagnostica; 1/20 dilution-32 min), Mouse antihuman Galectin-3 Ab-1 monoclonal antibody (Clone 9C4, MS1756, ThermoFisherScientific, UK; 1/100d-40 min), rabbit NF- κ B/p65 antibody (Clone RB-1638-R7, 1638R80, NeoMarkers, Ferment, CA; 1/100 dilution-28 min.) using the immunohistochemical kit (DAB substrate system, AEC detection

kit, EZ prep, LCS,LSS solutions, RBS, amplification, protease, block solutions, Mayerhematoxylane) compatible with the device.

The 15.0 version of the SPSS (Statistical Package for Social Sciences) program running on a personal computer was used for the statistical evaluation of the results. Pearson, Kappa and Spearman correlation analyses were used to investigate the correlation, Kruskal-Wallis test and Chi-square test were used to test the significance of different series. Results were considered statistically significant when $p \leq 0.05$. All evaluations were made under the standard light microscope.

A semi-quantitative scoring system was developed for all four markers, including staining areas and staining percentages.

The percentage of the staining area of the cells was scored as "0", "1", "2" and "3";

0: No staining; **1:** 1% -35% stained cells ; **2:** 36% -65% stained cells ; **3:** 66%-100% stained cells

The staining intensity in positive cells was rated between 0 and **3**;

0: No staining; **1:** weak; **2:** medium; **3:** strong

The total of the percentage of the stained area and the degree of staining intensity obtained for each slide was evaluated as "total staining score" . Statistical studies were performed using the total staining score.

Results: In terms of CK-19 staining score showed a significant difference between malignant (TPC-MFV, TPC-FV and TPC-CV) and benign group (AN) ($p < 0.05$). When case groups are considered separately; TPC-MFV and TPC-CV cases and TPC-MFV and AN cases were significantly different in terms of staining scores ($p < 0.05$). There was no significant difference between TPC-MFV and TPC-FV cases ($p > 0.05$).

With HBME-1, there was a significant difference between malignant (TPC-MFV, TPC-FV and TPC-CV) and benign group (AN) in terms of HBME-1 staining score ($p < 0.05$). When case groups are considered separately; TPC-MFV and TPC-CV groups and TPC-MFV and AN groups were significantly different in terms of staining scores ($p < 0.05$). There was no significant difference between TPC-MFV and TPC-FV cases ($p > 0.05$).

Table 1: Staining scores for CK-19 and HBME-1 according to groups

STAINING SCORE FOR CK- 19	CASE GROUP					TOTAL L (%)
	TPC- MFV (%)	TPC- - Total (%)	TPC -FV (%)	TPC -CV (%)	AN (%)	
0 (%)	1 (2,5)	0 (0)	0 (0)	0 (0)	5 (25)	6 (7,5)
2 (%)	0 (0)	0 (0)	0(0)	0 (0)	7 (35)	7 (8,8)
3 (%)	8 (20)	0 (0)	0 (0)	0 (0)	4 (20)	12 (15,0)
4 (%)	10 (25)	0(0)	0 (0)	0 (0)	3 (15)	13 (16,2)
5 (%)	4 (10)	1 (5)	1 (10)	0 (0)	1 (5)	6 (7,5)
6 (%)	17 (42,5)	19 (95)	9 (90)	10 (100)	0 (0)	36 (45)
TOTAL(%))	40 (100)	20 (100)	10 (100)	10 (100)	20 (100)	80 (100)

STAININ G SCORE FOR HBME-1	CASE GROUP					TOTAL L (%)
	TPC- MFV (%)	TPC- Topla m (%)	TPC -FV (%)	TPC -CV (%)	AN (%)	
0 (%)	11 (27,5)	4 (20)	4 (40)	0 (0)	14 (70)	29 (36,2)
2 (%)	4 (10)	1 (5)	1 (10)	0 (0)	3 (15)	8 (10)
3 (%)	2 (5)	0 (0)	0 (0)	0 (0)	1 (5)	3 (3,8)
4 (%)	9 (22,5)	3 (15)	2 (20)	1 (10)	1 (5)	13 (16,2)
5 (%)	3 (7,5)	1 (5)	1 (10)	0 (0)	1 (5)	5 (6,3)
6 (%)	11 (27,5)	11 (55)	2 (20)	9 (90)	0 (0)	22 (27,5)
TOTAL (%)	40 (100)	20 (100)	10 (100)	10 (100)	20 (100)	80 (100)

For the Gal-3 staining score, there was a significant difference between malignant (TPC-MFV, TPC) and benign group (AN) in terms of Gal-3 staining score ($p<0.0.5$). When case groups are considered separately; Significant difference was observed between TPC-MFV and TPC-CV in terms of staining scores ($p<0.0.5$). There was no significant difference between TPC-MFV and TPC-FV cases and TPC-MFV and AN cases ($p>0.05$). NF- κ B was stained at varying degrees in the nodules of all the case groups in our study (Figure-a and b). In terms of NF- κ B staining score, statistically significant difference was found between malignant (TPC-MFV, TPC-FV and TPC-CV) and benign group (AN) ($p<0.0.5$). When case groups are considered separately; TPC-MFV and TPC-CV cases and TPC-MFV and AN cases were significantly different in terms of staining scores ($p<0.0.5$). There was no significant difference between TPC-MFV and TPC-FV cases ($p>0.05$).

Table 2: Staining scores for Gal-3 and according to groups NF- κ B

STAINING SCORE FOR GAL- 3	CASE GROUP					TOTAL (%)
	TPC- MFV (%)	TPC- Total (%)	TPC- FV (%)	TPC- CV (%)	AN (%)	
0 (%)	24 (60)	7 (35)	7 (70)	0 (0)	19 (95)	50 (62,5)
2 (%)	8 (20)	2 (10)	2 (20)	0 (0)	1 (5)	11 (13,7)
3 (%)	3 (7,5)	1 (5)	1 (10)	0 (0)	0 (0)	4 (5)
4 (%)	2 (5)	1 (5)	0 (0)	1 (10)	0 (0)	3 (3,8)
5 (%)	1 (2,5)	2 (10)	0 (0)	2 (20)	0 (0)	3 (3,8)
6 (%)	2 (5)	7 (35)	0 (0)	7 (70)	0 (0)	9 (11,2)
TOTAL (%)	40 (100)	20 (100)	10 (100)	10 (100)	20 (100)	80 (100)

STAINING SCORE FOR NF- κB	CASE GROUP					TOTAL (%)
	TPC- MFV (%)	TPC- Total (%)	TPC- FV (%)	TPC- CV (%)	AN (%)	
0 (%)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
2 (%)	1 (2,5)	0 (0)	0 (0)	0 (0)	1 (5)	2 (2,5)
3 (%)	2 (5)	0 (0)	0 (0)	0 (0)	7 (35)	9 (11,3)
4 (%)	13 (32,5)	3 (15)	3 (30)	0 (0)	7 (35)	23 (28,7)
5 (%)	14 (35)	4 (20)	2 (20)	2 (20)	4 (20)	22 (27,5)
6 (%)	10 (25)	13 (65)	5 (50)	8 (80)	1 (5)	24 (30)
TOTAL (%)	40 (100)	20 (100)	10 (100)	10 (100)	20 (100)	80 (100)

The staining scores of all IHC markers were weak or moderately correlated with each other. Moderate correlation between CK-19 and NF-κB ($r=0.37$); weak correlation between HBME-1 and NF-κB ($r=0.27$); moderate correlation between Gal-3 and NF-κB ($r=0.48$); moderate correlation between CK-

Figure a: Immunohistochemical staining patterns with CK-19, HBME-1, Gal-3 and NF-κB for-TPC-MFV

Case with CK-19 staining score 6 in TP MFV

Case with HBME-1 staining score 6 in TPC-MFV

Case with Gal-3 staining score 6 in TPC MFV

Case with NF-κB staining score 6 in TP MFV

Figure b: Staining patterns for TPC-CV, TPC-FV and AN with NF-κB

Case with NF-κB staining score 6 in TP CV

Case with NF-κB staining score 6 in TP FV

Case with NF-κB staining score 6 in AN

19, HBME-1 and Gal-3 were detected.

Discussion: Studies have shown that CK-19 has high selectivity and lower sensitivity in TPC cases (8-9). In previous studies, it was stated that CK-19 positivity can be seen in benign processes besides neoplastic lesions, although it is weak and focal (5-6,8). In the study conducted by Rossi et al., including 14 TPC-MFV cases, it was reported that 85.7% of TPC-MFV cases were stained with CK-19 (9). In our study, TPC-MFV cases show a higher rate (97.5%) of staining. It is considered that the differences in the number of cases evaluated, and the evaluation method may have caused that situation.

Correlated staining scores with CK-19 were obtained with HBME-1. There was a significant difference between all malignant groups and the AN group, as well as between TPC-MFV and AN in terms of total staining score ($p < 0.05$). This data shows that, like CK-19, HBME-1 also helps with differential diagnosis.

HBME-1 was reported to have high sensitivity in TPC and lower selectivity (5-6,8). Fischer et al. found the staining rate in TPC and its variants as 88% (10). In two separate studies involving 14 and 4 cases evaluating the staining rates of TPC-MFV cases, the rate of staining with HBME-1 in these cases was 100% (9). The staining rate obtained in our study is not this high.

The low HBME-1 staining rate and total staining score in AN's are in line with previous studies (5-6, 8, 10). Very different results were reported in studies on sensitivity and selectivity of Gal-3 in TPC and variants (5, 8, 11). Although there are researchers who emphasize that in TPC and its variants, Gal-3 has high diagnostic accuracy (9), there are also researchers who argue that its staining rates and diagnostic value are low, especially in TPC-FV and their encapsulated forms (11-12). Although the Gal-3 staining rate is reported as 100% in a study focusing on TPC-MFV and TPC-FV lesions (9), the rates in our study are quite low.

In benign thyroid lesions, the staining rates of Gal-3 are also controversial. Some researchers report little or no staining of benign nodules (9) while there are some studies suggesting Gal-3 positivity was detected (5, 10, 12). In our study, the weak positivity seen in 1 AN case was found to be consistent with the data in the literature.

With NF- κ B, it can be said that staining score in TPC-MFV lesions are higher than benign lesions, but not as high as TPC-CV cases in the malignant group. Although this indicates that NF- κ B may benefit when used with other markers, the fact that it is also stained in all benign nodules showing cell proliferation suggests that its role in differential diagnosis is limited.

NF- κ B, which has continuous transport mechanism between cytoplasm and nucleus (13), has shown different staining patterns in different studies. While Pacifico et al.'s study is based solely on nuclear staining (14), there are researchers who argue that both staining patterns should be taken into account (13, 15). All of the cases in our study showed cytoplasmic staining. The fact that cytoplasmic staining was observed in cases with capsule invasion and metastasis in the malignant case groups considered contradictory with the publications suggesting that nuclear staining correlates with aggressive behavior (15,16).

As a result, the fact that TPC-MFV lesions differed from the AN group in terms of CK-19, HBME-1 and NF- κ B staining, suggests that these markers, taken together, will increase diagnostic accuracy. On the other hand, the fact that Gal-3 staining in TPC-MFV is similar to the AN group rather than malignant lesions does not contribute to differential diagnosis and is a finding that can lead to false negative diagnoses.

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ID-169 / OP: “Comparison of Two Different Types of Surfactant Preparations Used for Early Rescue Treatment of RDS in Preterm Infants”

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Abstract (ID-169)

Introduction and Purpose: Respiratory distress syndrome (RDS) is one of the most important causes of mortality in preterm newborns. Surfactant deficiency is the main cause of this condition, which affects approximately 40-50% of preterm babies born before the thirty second gestational week (GW) and surfactant treatment is mostly life-saving in RDS. The aim of this study is to reveal the effect of two natural surfactant preparations on respiratory morbidities.

Materials and Methods: The hospital records of infants with a diagnosis of <32 GW and RDS who were hospitalized in the neonatal intensive care unit of Zekai Tahir Burak Women's Health Training and Research Hospital between January 1, 2009 and December 31, 2015, were retrospectively analyzed. Infants who received 200 mg/kg poractant alfa or 100 mg/kg beractant as surfactant treatment via endotracheal tube or minimal invasive method due to RDS treatment within the first 2 hours of their life were included in the study. Demographic data, morbidities, surfactant repeat needs and mortality of the infants were recorded. Babies with major congenital anomalies and for whom sufficient data could not be obtained from medical records were excluded from the study.

Results: 266 infants (161 infants in poractant alfa, 106 infants in beractant group) were included in the study. Mean birth weight and gestational week were 883 ± 173 g and 26.8 ± 1.5 weeks in the group receiving poractant alfa, while it was 885 ± 199 g and 26.5 ± 2 weeks in the group receiving beractant ($p > 0.05$). The two groups were similar regarding demographic data except for the rates of antenatal steroid administration. Antenatal steroid administration rate was found to be significantly lower in the beractant group ($p = 0.01$). The total surfactant dose repeated for RDS treatment was found to be significantly higher in the beractant group ($p = 0.00$). When the total mechanical ventilation duration and bronchopulmonary dysplasia rates were compared, no difference was observed in both groups, but mortality was significantly higher in the beractant group ($p = 0.00$).

Discussion and Conclusion: Although surfactant is a life-saving treatment in the treatment of RDS, there is still no clear consensus on which preparation should be administered, in which dose, by which route, and when. When two different natural surfactant preparations applied for early rescue treatment of RDS were compared, it is found that the total surfactant dose repetition was higher and the mortality was higher in patients who received beractant. However, the lower rates of antenatal steroid administration in the beractant group was considered as one of the effective factors for this conclusion. Multicenter randomized controlled further studies are needed to show the superiority of surfactant preparations over each other.

Keywords: Newborn; Surfactant; Respiratory morbidity; Beractant; Poractant alfa.

Full-text (ID-169): “Prematüre bebeklerde RDS tedavisinde erken dönemde kullanılan iki surfaktan preparatının karşılaştırılması”

Giriş ve Amaç: Respiratuvar distres sendromu (RDS) preterm yenidoğanlarda mortalitenin en önemli nedenlerinden biridir. Otuz ikinci gestasyon haftasından (GH) önce doğan prematürelerin yaklaşık %40-50’sini etkileyen bu durumun temel nedeni surfaktan eksikliğidir ve surfaktan tedavisi RDS’de hayat kurtarıcıdır (1). 1991 de ilk hayvan kaynaklı doğal surfaktanların (beraktant) kullanımı ile solunum sıkıntısında daha hızlı düzelme gözlenirken, pnömotoraks, pulmoner interstisyel amfizem gibi komplikasyonların daha az görüldüğü birçok metaanalizde gösterilmiştir (2,3). Doğal surfaktan kullanımı artarken preparatların birbirine üstünlüğü konusunda da birçok çalışma yapılmıştır. Bu çalışmada amaç iki doğal surfaktan preparatının solunumsal morbiditeler üzerine etkisini ortaya koymaktır.

Gereç ve Yöntem: Dr. Zekai Tahir Burak Kadın Sağlığı Eğitim ve Araştırma Hastanesi yenidoğan yoğun bakım ünitesinde 1 Ocak 2009-31 Aralık 2015 tarihleri arasında yatarak tedavi gören <32 GH ve RDS tanısıyla surfaktan tedavisi alan bebeklerin hastane kayıtları retrospektif olarak incelendi. Çalışmaya yaşamının ilk 2 saati içinde RDS tedavisi nedeniyle endotrakeal tüp yoluyla veya minimal invaziv yöntemle 200mg/kg dozunda poraktant alfa veya 100 mg/kg dozunda beraktant olarak surfaktan tedavisi alan hastalar dahil edildi. Hastaların demografik verileri, morbiditeleri, surfaktan tekrar ihtiyaçları ve mortalite durumları kaydedildi. Majör konjenital anomalisi olan ve hasta dosyasından sağlıklı veri elde edilemeyen bebekler çalışma dışı bırakıldı.

Bulgular: Çalışmaya toplam 267 bebek (161 bebek poraktant alfa, 106 bebek beraktant) dahil edildi. Ortalama doğum ağırlığı ve gestasyon haftası poraktant alfa alan grupta 883 ± 173 gr ve $26,8 \pm 1,5$ hf iken, beraktant alan grupta 885 ± 199 gr ve $26,5 \pm 2$ hf idi ($p > 0.05$). İki surfaktan grubuna ait demografik verilerde antenatal steroid uygulanma oranları dışında anlamlı fark görülmedi (Tablo 1). Antenatal steroid uygulama oranı beraktant grubunda anlamlı olarak düşük bulundu ($p < 0.05$). RDS tedavisi için uygulanan toplam surfaktan doz tekrarı beraktant grubunda anlamlı olarak yüksek bulundu ($p = 0.00$) Toplam mekanik ventilasyon süresi ve bronkopulmoner displazi oranları karşılaştırıldığında her iki grupta farklılık görülmezken beraktant grubunda mortalitenin anlamlı olarak daha yüksek olduğu görüldü ($p = 0.00$) (Tablo 2).

Tablo 1. İki farklı doğal surfaktan uygulanan hastaların demografik verileri

	Poraktant alfa grubu(n:161)	Beraktant grubu (n:106)	p
Doğum ağırlığı,gr, ort±std	883±173	885±199	>0.05
Doğum haftası,hf, ort±std	26,8±1,5	26,5±2	>0.05
APGAR 5.dk, median, min-max	7(2-9)	6(1-9)	>0.05
Doğum şekli,C/S,n,%	129(80,6)	80(75,5)	>0.05
Çoğul gebelik,n,%	53 (32,9)	34(32,1)	>0.05
Cinsiyet, E, n, %	83(51,9)	51(48,1)	>0.05
Antenatal steroid,n,%	72(44,7)	25(23,6)	0.01
PPROM, n,%	24(15,3)	17(16)	>0.05
Maternal koriyoamniotit,n,%	4(2,5)	6(5,7)	>0.05
Kısaltmalar: PPRM: Preterm erken membran rüptürü			

Tablo 2. İki farklı doğal surfaktan kullanan hastaların birincil sonuçları

	Poraktant alfa grubu (n:161)	Beraktant grubu (n:106)	p
MVsüresi,gün,ort±std	5,6±12,2	7,8±10,2	>0.05
BPD,n,%	32(26)	36(34)	>0.05
2. doz surfaktan,n, %	39(24,7)	49(46,7)	0.00
3. doz surfaktan,n,%	10(6,2)	16(15,2)	0.02
Mortalite,n,%	42(26,1)	55(52,9)	0.01
Kısaltmalar: BPD: bronkopulmoner displazi, MV: mekanik ventilatör			

Tartışma ve Sonuç: RDS tedavisinde surfaktan hayat kurtarıcı bir tedavi olsa da halen hangi preparatın, hangi dozda, hangi yoldan ve ne zaman uygulanması gerektiği ile ilgili net bir görüş birliğine varılamamıştır. RDS tedavisi için erken dönemde uygulanan iki doğal surfaktant preparatı karşılaştırıldığında beraktant uygulanan hastalarda toplam surfaktan doz tekrarının daha fazla olduğu ve mortalitenin daha yüksek olduğu görüldü. Ancak beraktant grubunda antenatal steroid uygulanma oranlarının daha düşük olması, bu sonuca varılmasında etkili faktörlerden biri olarak değerlendirildi. 2015 yılında Cochrane metanalizinde, poraktant alfanın surfaktan protein ve lipid içeriğinin daha iyi olduğu ve klinik olarak daha iyi sonuçlar elde edildiğini belirtilmiştir (4). Bir diğer ilgi çekici metanalizde ise 200 mg/kg poraktant alfa ile tedaviye başlamanın 100 mg/kg beraktant ve 100 mg/kg poraktant alfaya göre mortaliteyi azalttığı belirtilmiştir (5). Bu metanalizlerde çalışmaya alınan hasta grubunun çok heterojen olması, farklı kliniklerde farklı yaklaşımların kullanılması, farklı surfaktan

uygulama zamanları gibi nedenlerle halen tatmin edici sonuçlara ulaşamamıştır. Surfaktan preparatlarının birbirine üstünlüğünü gösterebilmek için çok merkezli randomize kontrollü çalışmalara ihtiyaç olduğunu düşünmekteyiz.

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ID-170 / OP: “Retrospective Evaluation of the Twelve-Week Group Therapy Sessions-Naturalistic Developmental Behavioral Intervention for Preschool Children with Autism Spectrum Disorder in an Autism Center”

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Abstract (ID-170)

Introduction and Purpose: Autism Spectrum Disorder (ASD) is a neuropsychiatric disorder that affects individuals' functionality in multiple domains. It has been determined that the most effective way to alleviate core symptoms and increase functionality in ASD is educational approaches as early as possible. “Naturalistic Developmental Behavioral Interventions (NDBI)” are implemented in natural settings, involve shared control between child and therapist, utilize natural contingencies, and use a variety of behavioral strategies to teach developmentally appropriate and prerequisite skills. After evaluation for the eligibility for the therapy groups in Ankara University Autism Center, 5 children with ASD were included in the NDBI intervention program. The programme duration was 12 weeks between November 2019 and February 2020 and each week has 10 hour education period. Routine group evaluations were performed before and after the training. In this retrospective evaluation, we aimed to analyze the group improvements by the end of the twelve-week group therapy sessions-Naturalistic Developmental Behavioral Intervention for Preschool Children with Autism Spectrum Disorder in an Autism Center.

Materials and Methods: Five children with ASD (three boys and two girls) aged between 36 to 45 months old participated in the programme. Before the intervention, all children were assessed in terms of their language-cognitive development and autism-related symptom severity. In order to measure language and cognitive abilities, Stanford-Binet Intelligence Test and Tifaldi (Turkish Expressive and Receptive Language) Test were applied. AGTE (Ankara Development Screening Inventory) was implemented for those who could not comply with these tests. Besides, a semi-structured scale, CARS (Childhood Autism Rating Scale), was administered to all children to assess the severity of autism. Furthermore, all parents agreed to fill out Autism Behavior Checklist (ABC) and Aberrant Behavior Checklist forms for their child. After the programme, all children were re-evaluated with the same assessment tools.

Results: By the end of twelve weeks, noteworthy progressions were recorded. ABC Total scores (prescore Mean±SS: 37,6±22,05; final score Mean±SS: 21±21,23, p=0,004) and CARS scores (prescore Mean±SS: 30,30±6,41; final score Mean±SS: 25,70±7,10, p=0,002) were significantly decreased. Furthermore, there were significant differences in Tifaldi Expressive Language (prescore Mean±SS: 112,66±2,08; final score

Mean±SS: 121±0,00, $p=0,020$) and ABC Language scores (prescore Mean±SS: 6,4±2,60; final score Mean±SS: 3,4±3,20, $p=0,001$), indicating improvements in language skills. Additionally, there were significant diminishments in Aberrant Behaviour Checklist (prescore Mean±SS: 30,80±10,68; final score Mean±SS: 18±8,03, $p=0,002$) and ABC Sensory (prescore Mean±SS: 4,6±4,92; final score Mean±SS: 1,2±2,68, $p=0,039$) scores.

Discussion and Conclusion: Findings from both parent reports and clinical and psychometric evaluations reveal that the NDBI approach provides explicit improvements in children with ASD in multiple areas, particularly in language development and autistic symptoms.

Keywords: Autism spectrum disorder; Early group intervention; Naturalistic developmental behavioral interventions

ID-171 / OP: “Transvaginal Natural Orifices Endoscopic Surgery in Patients with Endometrial Intraepithelial Neoplasia”

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Abstract (ID-171)

Introduction and Aim: Endometrial intraepithelial neoplasia is a premalignant endometrial pathology that is treated with surgery in the patients that completed childbearing. The surgery includes removal of uterus. Removal of unilateral or bilateral ovaries can be performed in postmenopausal patients. Surgical options for the treatment of EIN are laparotomy (LT), Laparoscopy (L/S) and vaginal hysterectomy. After introduction of natural orifices transluminal endoscopic surgery (notes) vaginal notes was emerged as an option for the removal of uterus. Gynecology has great advantage since vaginal notes can be applied frequently. V-notes so called scarless surgery gained popularity among gynecologists since this route of surgery provides improved recovery after surgery. In the current study we aimed to present our cases that were managed using v-notes and diagnosed with endometrial intraepithelial neoplasia (EIN).

Materials and Methods: This study was conducted at our gynecologic oncology department. The patients with EIN between August 2019 and 2021 August were included to the study. The data including Age, body mass index, type of delivery, menopausal status, presence of diabetes mellitus (DM) presence of hypertension (HT) removal of ovaries (BSO) duration of surgery, change in hemoglobin level, duration of hospital stay, postoperative complications and final pathology were retrieved from hospital records. V-Notes was performed under general anesthesia in dorsolithotomy position. Gel-port laparoscopic system (Applied Medicine) was used for vaginal port. A 30* rigid optic, straight laparoscopic instruments and bipolar energy devices was used during surgery. A frozen section was performed to all patients.

Results: A total of 17 patients were eligible for the study. Median age was 61 (49-75). BMI was 30.4 (22-39) kg/m². Two patients had a history of cesarean. DM and hypertension were encountered in 47.1% and 52.9% of the patients respectively. Bilateral salpingooforectomy was performed at 76.% of the patients that were in postmenopausal age. Median duration of surgery was 75 (50-120) minutes. Median hemoglobine change was 1.2 (0.9-2) gr/dl. Median hospital stay was 2 (2-4) days. EIN was encountered in 88.2% of the cases that remaining results were hyperplasia without atipia and normal histology. One patients experienced mild vaginal hemorrhage at 18th postoperative day without the need for transfusion. The patient was hospitalized and vaginal packing was applied and discharged following day without any complaint.

Discussion: Scarless surgery, transvaginal notes was introduced in the field of gynecology especially for

the management of adnexal pathologies e.g adnexal masses(Lee, Wu et al. 2012). V notes hysterectomy in gynecologic oncology has great importance since obesity stands nearly most of endometrial pathologies. EIN was reported to be related with obesity (Djordjevic and Stanojevic 2007). V-notes in obese patients has several advantages. Entrance to abdomen via laparoscopy and laparotomy is problematic due to increased subcutaneous fatty tissue whereas entrance via vaginal route is relatively easier because vagina is less affected by obesity. Laparoscopy can be used in the management of EIN however extreme trendelenburg position may be needed in order to work in a bowel free pelvis. Longer duration in trendelenburg position may increase pulmonary pressure as a result increased pulmonary complications. Third performing a scarless surgery certainly provides improved cosmetic results and improved patient recovery after surgery. Regarding frequency of the obesity and shorter hospital stay in the current study v notes provided improved recovery after surgery with favorable complications. Postoperative bleeding after hysterectomy was reported to occur up to 25% of the patients(Djordjevic and Stanojevic 2007) . The incidence of delayed postoperative mild bleeding that was not related with transfusion in the current study was very low compared to the literature. Postoperative earlier discharge after surgery was the other advantage of the v notes surgery enabling less incidence of hospital infection. Hospital infection was not encountered in any of the patients in the current study. Furthermore no intraoperative complication occurred (urinary system injury, gastrointestinal injury) so no conversion to conventional laparoscopy or laparotomy were needed. In conclusion our study showed that v notes can be used in the management of obese patients with EIN with a favorable surgical and pathological outcomes.

Keywords: V-NOTES; Endometrial intraepithelial neoplasia.

ID-172 / OP: “Evaluation of The Phenotypic Effects Of Family History in Patients with Axial Spondyloarthritis”

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Abstract (ID-172)

Introduction and Purpose: It has been known for a long time that spondyloarthritis (SpA) group diseases, especially ankylosing spondylitis (AS), show familial accumulation. A family history of SpA has been reported in up to 40% of AS patients. In the limited number of studies evaluating the differences between familial and sporadic cases, inconsistencies are observed in terms of disease characteristics and structural damage. The majority of the studies were conducted in AS patients and by evaluating the family history of AS. In this study, our aim was to evaluate the frequency of familial history and its effects on disease phenotype in patients with axial SpA (ax-SpA) according to ASAS recommendations.

Materials and Methods: 526 patients (325 [62%] males; mean age 42.3 ± 11.9 years) with axial spondyloarthritis (ax-SpA) were included in the study. The study group consisted of 358 (68%) AS and 168 (32%) non-radiographic ax-SpA patients. According to the ASAS recommendations, the presence of a family history was defined as having: AS, acute anterior uveitis, reactive arthritis, psoriasis, or inflammatory bowel disease in one of the first or second-degree relatives. Demographic and disease-related data of the patients were collected using a standard form. The modified Stoke Ankylosing Spondylitis Spine Score (mSASSS) was used to evaluate the structural damage.

Results: A family history of SpA was detected in 134 (25.5%) patients. AS (102/134; 76.1%) and psoriasis (46; 34.3%) were found in the family most frequently, respectively. While first degree relatives of 89 (66%) patients were affected, more than one family member was affected in 40 patients (29.8%). When sporadic cases and patients with family history were compared; the rate of female patients, the frequency of psoriasis, and HLA B 27 positivity were higher and the duration of symptoms was longer in those with a family history. However, there was no difference between two groups in terms of disease activity, function and structural damage. While in patients with family history the mSASSS score was higher in men than in women (19.0 ± 26.1 vs 3.4 ± 12.4 $p < 0.001$), this difference was not observed in sporadic cases (19.0 ± 26.1 vs 14.6 ± 22.8 $p: 0.481$).

Conclusion and Discussion: In our study, we found that familial cases had higher female gender and HLA B 27 positivity and had longer symptom duration. On the other hand, there was no difference in disease activity, function and structural features.

Keywords: Ankylosing spondylitis; Family history.

Full-text (ID-172): Evaluation of the Phenotypic Effects of Family History in Patients with Axial Spondyloarthritis

Introduction: Spondyloarthritis (SpA) is a term used for a heterogeneous group of diseases that share some clinical and radiological features as well as common genetic predisposition factors. SpA group diseases are examined in two main groups as axial SpA (ax-SpA) with axial involvement and peripheral SpA with mostly peripheral (arthritis, enthesitis and dactylitis) involvement (1). The group defined as ax-SpA includes patients with radiographic SpA (Ankylosing Spondylitis [AS]) and non-radiographic SpA patients. The definition of non-radiographic SpA is used for patients who do not have sufficient findings on direct X-ray but who meet the SpA criteria clinically (Human leukocyte antigen B27 [HLA B27]) or radiologically (Magnetic resonance imaging) (1,2). AS is a chronic inflammatory disease mainly involving the sacroiliac joints and spine, characterized by pathological new bone formation and syndesmophyte (vertical new bone growth, generally starting from the vertebral body corners). HLA-B27 is known to be the strongest genetic risk factor for the development of ax-SpA (3).

It has been known for a long time that SpA group diseases, especially AS, show familial accumulation. A family history of SpA has been reported in up to 40% of AS patients and, the risk of developing AS in HLA-B27-positive first-degree relatives of HLA-B27-positive AS patients is estimated to be 16 times higher than in HLA-B27-positive individuals in the general population (4,5). In the limited number of studies evaluating the differences between familial and sporadic cases, inconsistencies were observed in terms of disease characteristics and structural damage. The majority of the studies were conducted in AS patients and by evaluating the family history of AS (6-8)

In this study, our aim was to evaluate the frequency of familial history and its effects on disease phenotype in patients with ax-SpA.

Materials and Methods: Patients with ax-SpA according to the Assessment of SpondyloArthritis international Society (ASAS) criteria from outpatient clinics of the rheumatology department in a university hospital were enrolled. Ax-SpA patients were divided into two distinct subgroups as AS and non-radiographic ax-SpA. The presence of a family history was defined as having: AS, acute anterior uveitis, reactive arthritis, psoriasis, or inflammatory bowel disease in one of the first or second-degree relatives according to the ASAS recommendations (1).

Demographic (age, sex, date of birth, height, weight, calculated body mass index) and disease-related data of the patients were collected using a standard form. Disease activity and function were evaluated with Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and Bath Ankylosing Spondylitis Disease Functional Index (BASFI), respectively (9,10). The Ankylosing Spondylitis Disease Activity Score (ASDAS) was also calculated for disease activity (11). The Bath Ankylosing Spondylitis Metrology Index (BASMI) was used to evaluate spinal mobility (12). Presence of syndesmophyte and the modified Stoke Ankylosing Spondylitis Spinal Score (mSASSS) were collected for structural

damage. The modified Stoke Ankylosing Spondylitis Spine Score (mSASSS) was used to evaluate the structural damage (13). The patients who were ≤ 18 years were excluded.

Descriptive analyses were reported by using mean (standard deviation [SD]) values for continuous variables and numbers (percentages) for categorical variables. Chi-square test or Fisher exact test was used to analyze differences between categorical data and Mann-Whitney U test was applied to test statistical differences between continuous data.

Results: 526 patients (325 [62%] males; mean age 42.3 ± 11.9 years) with ax-SpA were included in the study. The study group consisted of 358 (68%) AS and 168 (32%) non-radiographic ax-SpA patients. A family history of SpA was detected in 134 (25.5%) patients. AS (102/134; 76.1%) and psoriasis (46; 34.3%) were found in the family most frequently, respectively. While first degree relatives of 89 (66%) patients were affected, more than one family member was affected in 40 patients (29.8%). When sporadic cases and patients with family history were compared; the rate of female patients, the frequency of psoriasis, and HLA B 27 positivity were higher and the duration of symptoms was longer in those with a family history (Table). However, there was no difference between two groups in terms of disease activity, function and structural damage. While in patients with family history the mSASSS score was higher in men than in women (19.0 ± 26.1 vs 3.4 ± 12.4 $p < 0.001$), this difference was not observed in sporadic cases (19.0 ± 26.1 vs 14.6 ± 22.8 $p: 0.481$).

Table. Demographic and clinical characteristics of patients with axial spondyloarthritis with and without family history

	Familial Ax-SpA (n=134)	Sporadic Ax-SpA (n=392)	P
Age, mean $\pm$ SD	43.7 $\pm$ 12.0	41.8 $\pm$ 11.8	0.086
Female, %	47.0	35.2	0.015
Symptom duration; mean $\pm$ SD	16.6 $\pm$ 11.7	13.6 $\pm$ 9.4	0.018
Delay in diagnosis; mean $\pm$ SD	7.4 $\pm$ 8.7	6.7 $\pm$ 7.4	0.379
Smoking, %	71.6	70.5	0.797
BMI, mean $\pm$ SD	26.6 $\pm$ 4.8	26.4 $\pm$ 8.8	0.135
Peripheric arthritis, %	49/132; 37.1	121/346; 35.0	0.661
Enthesitis, %	53.4	48.4	0.380
Dactylitis (ever), %	1.5	2.3	0.734
Uveit (ever), %	11.9	10.9	0.750
Psoriasis, %	12.0	2.3	<0.001
IBD, %	2.3	3.4	0.762
IBP (by any criteria), %	88.8	91.3	0.400
NSAID response rate, %	89.2	89.1	0.983
HLA B27 positivity, %	71.2 (74/104)	57.4 (155/270)	0.018
CRP mg/dl; mean $\pm$ SD	13.6 $\pm$ 21.0	15.5 $\pm$ 23.6	0.261
BASFI; mean $\pm$ SD	3.7 $\pm$ 2.8	3.5 $\pm$ 2.7	0.374
BASDAI; mean $\pm$ SD	4.4 $\pm$ 2.3	4.2 $\pm$ 2.3	0.615
ASDAS-CRP; mean $\pm$ SD	2.9 $\pm$ 1.1	2.9 $\pm$ 1.1	0.755
BASMI; mean $\pm$ SD	2.8 $\pm$ 2.2	2.6 $\pm$ 2.2	0.493
mSSASS; mean $\pm$ SD	12.2 $\pm$ 22.5	11.8 $\pm$ 20.8	0.649
Syndesmophyte, %	55.3 (52/94)	60.9 (176/289)	0.338
Hip involvement, %	14.2 (18/127)	20.5 (76/369)	0.117

BMI: body mass index, IBD: Inflammatory bowel disease, IBP: Inflammatory back pain, NSAID: Non-steroid anti-inflammatory drugs, CRP: C-reactive protein, BASFI: Bath ankylosing spondylitis functional index, BASDAI: Bath ankylosing spondylitis disease activity index, ASDAS: Ankylosing spondylitis disease activity score, BASMI: Bath Ankylosing spondylitis metrology index, mSASSS: Modified stoke ankylosing spondylitis spinal score

Discussion and Conclusion: To date, the majority of studies evaluating the family history among SpA patients were conducted in AS patients (6-8). The diagnosis of SpA in relatives of SpA probands was

reported to be %37 in a previous French study (4). In this study, a family history of SpA was detected in % 25.5 of our ax-SpA patients.

Besides the frequency of familial cases, we also examined the phenotypic effects of family history. Past reports evaluating differences between familial and sporadic cases have found inconsistent results for disease activity and structural damage, some of which are consistent with our findings (7,8). Calin et al. found that there were milder cases in familial AS when evaluated with spinal mobility, physical, social and pain scores (7). In contrast, Paardt et al. found no difference in phenotype expression (14). In our study, while the duration of symptoms was longer in familial ax-SpA patients, no relation between diagnostic delay and familial SpA was observed. This was similar to a previous report that relatives of younger probands had a higher risk of having AS (7, 15). A study conducted in Spain also reported familial AS patients at a younger age at symptom onset and female predominance, higher frequency of uveitis and HLA-B27 prevalence, and better response to NSAIDs in familial AS (6). In a study from Belgium, psoriasis and uveitis were found to be significantly higher in familial cases (16) In contrast, no relationship was found between familiarity and psoriasis and inflammatory bowel disease in a report from France (17). One study reported that disease severity, as assessed by BASDAI and BASFI, was associated with family history, suggesting that disease severity is genetically determined (18).

In this study, we report that Turkish familial ax-SpA cases had higher female gender and HLA B 27 positivity and had longer symptom duration. However, there was no difference in terms of disease activity (BASDAI, ASDAS-CRP), function (BASFI) and structural features(mSASSS) between familial and sporadic ax-SpA patients.

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ID-173 / OP: “Are There Any Features to Predict the Development of Axial Spondyloarthritis in Patients with Chronic Low Back Pain?”

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Abstract (ID-173)

Introduction and Purpose: Chronic low back pain (BP), especially inflammatory low back pain (IBP) has an important place in the diagnosis of spondyloarthritis (SpA), and SpA develops in up to 5% of those with chronic low back pain. The frequency of IBP among individuals with low back pain in the general population is reported to be between 5-20% according to the criteria set used. Various studies have shown that 24-44% of these patients can be classified as axial SpA (axSpA) according to the ASAS classification criteria. In this study, we aimed to reveal the factors that may predict the development of axSpA in patients with chronic low back pain.

Materials and Method: Individuals with chronic low back pain (>3 months) from the cohort that consecutively included patients with a preliminary diagnosis of SpA in our center were included in the study. In total, 526 (325 [62%] males; mean age 42.3 ± 11.9 years) who could be classified as axSpA according to the ASAS criteria and 90 patients who did not meet the ASAS criteria (non-criteria BP group; 22 [24.4] males, mean age 39.8 ± 9.2) were included. AxSpA group consisted of 358 (68%) AS patients and 168 (32%) non-radiographic axSpA patients. Demographic and disease-related data of the patients were collected using a standard form. IBP presence was evaluated according to Calin, Berlin and ASAS criteria. The baseline demographic and clinical data of the patients were evaluated by univariate and multivariate analysis to predict the development of axSpA.

Results: Male sex ratio and HLA B27 positivity were found to be significantly lower in patients in the non-criteria BP group ($p < 0.001$). In the axSpA group, the duration of symptoms was longer and the duration of education was shorter. The rates of completing the IBP criteria were similar in the two groups according to the Calin, Berlin and ASAS criteria. While structural damage was more prominent in the axSpA group, no difference was found between the two groups in terms of activity, function, and quality of life (Table 1). In univariate analysis; male gender, presence of arthritis, HLA B27 positivity, high CRP levels, low education period, long symptom duration and NSAID response were associated with the diagnosis of axSpA. In multivariate analysis male gender, high CRP and HLA B27 positivity independently predicted the diagnosis of axSpA (Table 2).

Conclusion and Discussion: In patients with non-criteria chronic low back pain, the burden of disease without structural damage appears similar to that of patients classified as axSpA. Among these patients, in the presence of HLA B27 positivity, high CRP levels and male gender, care should be taken in terms of the development of axSpA.

Keywords: Ankylosing spondylitis; Inflammatory low back pain.

Table 1. Demographic and clinical characteristics of patients with axial spondyloarthritis and patients with non-criteria inflammatory low back pain

	axSpA (n=526)	Non-criteria IBP (n=90)	<i>P</i>
Age, mean $\pm$ SD	42.3 $\pm$ 11.9	39.8 $\pm$ 9.2	0.145
Female, %	38.2	75.6	<0.001
Symptom duration; mean $\pm$ SD	14.4 $\pm$ 10.1	11.1 $\pm$ 8.6	0.001
Smoking, %	68.6	60.0	0.260
Education (years), mean $\pm$ SD	9.9 $\pm$ 4.4	11.2 $\pm$ 4.9	0.025
ASAS family history positivity, %	31.9	33.3	0.794
BMI, mean $\pm$ SD	26.4 $\pm$ 7.9	26.5 $\pm$ 5.4	0.937
Peripheric arthritis, %	35.6	24.4	0.048
Enthesitis, %	49.9	61.8	0.061
Dactylitis (ever), %	2.1	0	0.375
Uveit (ever), %	11.2	6.7	0.260
Psoriasis, %	5.0	2.2	0.255
IBD, %	3.1	0	0.262
IBP according to Calin criteria	89.0	85.2	0.362
IBP according to Berlin criteria	74.0	67.0	0.190
IBP according to ASAS	80.3	72.4	0.113
NSAID response rate, %	89.1	70.1	<0.001
HLA B27 positivity, %	61.2 (74/104)	11.4 (155/270)	<0.001
CRP mg/dl; mean $\pm$ SD	15.0 $\pm$ 22.9	6.2 $\pm$ 13.4	<0.001
BASFI; mean $\pm$ SD	3.5 $\pm$ 2.8	3.5 $\pm$ 2.7	0.892
BASDAI; mean $\pm$ SD	4.3 $\pm$ 2.3	4.7 $\pm$ 2.3	0.081
ASDAS-CRP; mean $\pm$ SD	2.9 $\pm$ 1.1	2.7 $\pm$ 0.9	0.232
BASMI; mean $\pm$ SD	2.7 $\pm$ 2.2	2.1 $\pm$ 1.4	0.183
ASQoL; mean $\pm$ SD	9.7 $\pm$ 9.5	9.7 $\pm$ 4.5	0.682
HAQ-S; mean $\pm$ SD	0.8 $\pm$ 0.5	0.8 $\pm$ 0.5	0.551

mSSASS; mean ± SD	11.9 ± 21.2	0.4 ± 1.3	0.004
Presence of syndesmophyte, %	59.5	8.0	0.012
Hip involvement, %	19.0	4.1	0.001

BMI: body mass index, IBD: Inflammatory bowel disease, IBP: Inflammatory back pain, NSAID: Non-steroid anti-inflammatory drugs, CRP: C-reactive protein, BASFI: Bath ankylosing spondylitis functional index, BASDAI: Bath ankylosing spondylitis disease activity index, ASDAS: Ankylosing spondylitis disease activity score, BASMI: Bath Ankylosing spondylitis metrology index, ASQoL: Ankylosing spondylitis quality of life questionnaire, HAQ-S: Health assessment questionnaire for the spondyloarthropathies, mSASSS: Modified stoke ankylosing spondylitis spinal score

Table 2. Univariate and multivariate analysis results of factors that can be used to predict the diagnosis of axSpA

	Univariate		Multivariate	
	OR (%95 CI)	p	OR (%95 CI)	p
Sex (male vs female)	4.9 (2.9-8.3)	<0.001	3.2 (1.4-7.2)	0.003
Arthritis	1.7 (0.99-2.42)	0.50	1.6 (0.66-4.0)	0.283
HLA B27 (positive vs negative)	12.2 (5.6-26.3)	<0.001	7.2 (2.8-18.2)	<0.001
CRP	5.4 (2.7-10.7)	<0.001	11.6 (2.6-52.3)	0.001
Symptom duration (<10 vs ≥10 years)	1.6 (1.06-2.6)	0.025	1.001 (0.47-2.10)	0.998
Education (≤8 vs > 8 years)	0.5 (0.31-0.84)	0.008	0.73 (0.33-1.59)	0.434
NSAID response	3.38 (1.8-6.36)	<0.001	1.72 (0.71-4.17)	0.224

ID-174 / OP: “Safety and Efficacy of Bronchial Artery Embolization For Hemoptysis in Primary Lung Cancer”

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Abstract (ID-174)

Introduction and Purpose: Hemoptysis is symptomatic of a variety of diseases, and severe cases are associated with an unfavorable prognosis when managed conservatively, with mortality rates exceeding 50%. Since bronchial artery embolization (BAE) was first introduced in 1973, it has been established as a safe and effective treatment for hemoptysis, irrespective of severity. However, most studies have reported the effectiveness of BAE in the management of hemoptysis in patients with benign diseases, such as tuberculosis, cystic fibrosis, aspergillosis, and bronchiectasis, and few studies have focused on hemoptysis resulting from primary lung cancer. Thus, the purpose of this study was to report the experience of BAE in the management of hemoptysis in patients with primary lung cancer.

Materials and Methods: Patients who underwent bronchial artery embolization in a single center with hemoptysis were retrospectively reviewed. A total of 16 patients with primary lung cancer (14 males and 2 females; mean age 60.69 ± 9.36) were incorporated into the study. The hemoptysis volume, angiographic findings, technical success, clinical success, complication, and recurrence rates were analyzed.

Results: Technical success, defined as the ability to selectively embolize the abnormal vessel, was achieved in all patients (100%), and clinical success, defined as the hemoptysis-free survival of at least 30 days was achieved in 15 (93.8%) patients. No major complication was experienced. Hypervascularity (93.8%) was the most common angiographic finding. Recurrence occurred in one patient within the first month and recanalization of the same vessel was observed during the procedure in this patient.

Discussion and Conclusion: BAE is a safe and effective approach to control hemoptysis, although the prognosis in primary lung cancer patients presenting with hemoptysis is generally poor.

Keywords: Hemoptysis; Embolization; Lung cancer.

ID-175 / OP: “Long-Term Outcomes After Bariatric Surgery: Single Center Experiences”

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Abstract (ID-175)

Introduction: Obesity is an increasing health problem all over the World. The only method that truly provides permanent weight control is bariatric surgery. Laparoscopic sleeve gastrectomy is the most common operation among these methods. In our study, we aimed to present the results of patients with sleeve gastrectomy, which we performed more frequently in our clinic. (1-3).

Materials & Methods: The surgical methods, weight loss, complications, and follow-up results of 208 patients who underwent bariatric surgery due to obesity between April 2015 and January 2020 at İzmir Katip Çelebi University Atatürk Training and Research Hospital were recorded. Operations other than sleeve gastrectomy, patients who gave birth after surgery and whose follow-up could not be reached were excluded from the study.

Results: 101 of 104 patients included in the study were operated laparoscopically. Cholecystectomy was performed in addition to sleeve gastrectomy in 8 patients. 82 (78.8%) of the patients were female and 22 were male. All patients were discharged uneventfully. (Mortality 0%) The mean follow-up period of the patients was 52 months. The mean weight of the patients before surgery was 129 kg. postoperative 1.3.4. and 5-year averages were recorded as 88-88-81-94 kg. The mean weight of the patients in the 5th year was found to be statistically significantly higher than in the 3rd year. The mean weight in the 1st year of 31 patients with a follow-up period of 60 months or more was found to be statistically significantly lower than the mean preoperative weight. In addition, the 5th year averages of these patients were statistically significantly higher than the 3rd year averages.

Discussion: Weight loss results after bariatric surgical procedures are related to many factors. An increase in revisional bariatric surgery operations has been reported with long-term follow-up results. Criteria such as the education level of the patients, pre-operative BMI of 40 and below, and surgical technique affect long-term results. Gastric bypass or duodenal switch surgeries may be preferred for patients whose body mass indices reach their preoperative value (2-5).

Conclusion: Laparoscopic sleeve gastrectomy is one of the most effective treatments for morbid obesity. It may be the first choice treatment in selected patients with low mortality and morbidity rates. However, in patients with long-term follow-up, patients should be followed carefully in terms of stopping weight loss and regaining obesity.

Keywords: Sleeve gastrectomy; Weight loss.

ID-176 / OP: “In-Hospital Outcomes of Hospitalized Large-For-Gestational-Age Newborns Born From Diabetic or Non-Diabetic Mothers”

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Abstract (ID-176)

Introduction and Purpose: Being a newborn with large-for-gestational age (LGA) is associated with a multifactorial interaction such as genetic factors, fetal nutrition and environmental factors. Fetal growth in early pregnancy is mainly under the influence of genetic factors. LGA fetuses are grouped into two main groups. The first of these is the LGA group, which shows structural macrosomia in babies of nondiabetic women, while the second group is composed of fetuses of diabetic mothers. Some of LGA babies are born from large or obese women. Infants who are born LGA may have an increased risk for short-term outcomes, such as shoulder dystocia, neonatal hypoglycemia, and longer hospital stay. In this study, we aimed to evaluate the demographic data and neonatal clinical outcomes of LGA newborns hospitalized in our neonatal intensive care unit (NICU).

Materials and Methods: LGA newborns followed up in our NICU between November 1, 2020 and April 30, 2021 were included in the study. Demographic data and clinical characteristics of the infants were evaluated retrospectively.

Results: In this study, 22 infants were evaluated. Median birth weight of babies was 4102 (min-max: 3060 – 4840) g, and the median gestational week was 38 (min – max: 35 – 40) weeks. 81% of the babies were males and 77% were born by cesarean section (C/S). Only 3 mothers had a history of gestational diabetes.

When the indications for hospitalization were evaluated, 68% of them were hospitalized due to transient tachypnea of the newborn. The median length of hospital stay was found to be 6 (min – max: 2 – 15) days. Median duration of ventilation was 1 (min - max: 0-7) day. Other indications for hospitalization were hyperbilirubinemia, hypocalcemia and early neonatal sepsis. When the laboratory results were evaluated, we observed that 2 newborns had hypocalcemia, 2 had thrombocytopenia, 3 had polycythemia and 4 had hyperbilirubinemia during the follow-up. Polycythemia and thrombocytopenia regressed spontaneously on the other hand, the cases required treatment for hypocalcemia and hyperbilirubinemia. While no pathology was detected in the cranial ultrasonography, abdominal ultrasonography revealed 2nd degree

renal pelvicalyceal dilatation in 2 cases and they were discharged with the plan of pediatric nephrology follow-up. Echocardiographic evaluation revealed secundum atrial septal defect in 31% of the cases.

Discussion and Conclusion: LGA babies have an increased need for neonatal intensive care and higher neonatal complication rates. We found that the indications for hospitalization of these newborns were similar to the general practice of our NICU while C/S rates were higher than usual. In these babies, a careful antenatal evaluation and the early detection of the complications followed by a careful postnatal care will improve their prognosis. Further studies comparing these newborns with hospitalized AGA newborns and LGA newborns who were not hospitalized are needed to draw a more definite conclusion.

Keywords: Large-for-gestational-age; Gestational diabetes; Newborn

Full text (ID-176): In-hospital outcomes of hospitalized large-for-gestational-age newborns born from diabetic or non-diabetic mothers

Introduction and Purpose: Babies born LGA are usually defined by weight, determined as >90th percentile at birth according to gestational age (GA) and sex. Being a newborn with large-for-gestational age (LGA) is associated with a multifactorial interaction such as genetic factors, fetal nutrition and environmental factors. Fetal growth in early pregnancy is mainly under the influence of genetic factors. LGA fetuses are grouped into two main groups. The first of these is the LGA group, which shows structural macrosomia in babies of nondiabetic women, while the second group is composed of fetuses of diabetic mothers. Some of LGA babies are born from large or obese women. Infants who are born LGA may have an increased risk for short-term outcomes, such as shoulder dystocia, neonatal hypoglycemia, and longer hospital stay. Additionally, epidemiological studies have shown a strong association between being born LGA and later adverse metabolic and cardiovascular outcomes. In this study, we aimed to evaluate the demographic data and neonatal clinical outcomes of LGA newborns hospitalized in our neonatal intensive care unit (NICU).

Materials and Methods: LGA newborns followed up in our NICU between November 1, 2020 and April 30, 2021 were included in the study. Demographic data and clinical characteristics of the infants were evaluated retrospectively. The results were recorded in the SPSS 20.0 program and descriptive statistical analysis were made.

Results: In this study, 22 infants were evaluated. Median birth weight of babies was 4102 (min-max: 3060 – 4840) g, and the median gestational week was 38 (min – max: 35 – 40) weeks. 81% of the babies were males and 77% were born by cesarean section (C/S). Only 3 mothers had a history of gestational diabetes. When the indications for hospitalization were evaluated, 68% of them were hospitalized due to transient tachypnea of the newborn. The median length of hospital stay was found to be 6 (min – max: 2 – 15) days. Median duration of ventilation was 1 (min - max: 0-7) day. Other indications for

hospitalization were hyperbilirubinemia, hypocalcemia and early neonatal sepsis. When the laboratory results were evaluated, we observed that 2 newborns had hypocalcemia, 2 had thrombocytopenia, 3 had polycythemia and 4 had hyperbilirubinemia during the follow-up. Polycythemia and thrombocytopenia regressed spontaneously on the other hand, the cases required treatment for hypocalcemia and hyperbilirubinemia. While no pathology was detected in the cranial ultrasonography, abdominal ultrasonography revealed 2nd degree renal pelvicalyceal dilatation in 2 cases and they were discharged with the plan of pediatric nephrology follow-up. Echocardiographic evaluation revealed secundum atrial septal defect in 31% of the cases.

Table 1. Clinical characteristics of the study group

Parameters	Study Group (n=22)
Gestational age, week (min-max)	38 (35-40)
Birth weight, grams (min-max)	4102 (3060-4840)
Male gender, n (%)	18 (81)
Cesarian section, n (%)	17 (77)
Born from diabetic mother, n (%)	3 (13)
Length of hospital stay, days (min-max)	6 (2-15)
Duration of ventilation, days (min-max)	1(0-7)
Transient tacyphnea of newborn, n (%)	15 (68)
Atrial septal defect, n (%)	8 (36)
Hyperbilirubinemia, n (%)	4 (18)
Polycythemia, n (%)	3 (13)
Thrombocytopenia, n (%)	2 (9)
Hypocalcemia, n (%)	2 (9)

Discussion and Conclusion: LGA babies have an increased need for neonatal intensive care and higher neonatal complication rates. We found that the indications for hospitalization of these newborns were similar to the general practice of our NICU while C/S rates were higher than usual. There are several limitations to this study. It was a retrospective study and only infants hospitalized with LGA diagnosis were evaluated. The non-diabetic mother group was not evaluated for obesity. Further studies comparing these newborns with hospitalized AGA newborns and LGA newborns who were not hospitalized are needed to draw a more definite conclusion. In these babies, a careful antenatal evaluation and the early detection of the complications followed by a careful postnatal care will improve their prognosis.

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ID-177 / OP: “The Effect of Obesity on Female and Male Fertility”

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Abstract (ID-177)

Introduction and Purpose: Due to the growing epidemic of obesity and related illnesses, we are confronting a global public health emergency. Obesity comes with a slew of comorbidities, as well as social, psychological, and demographic issues. Obesity affects both males and females in every area of reproduction. In both women and men, a higher body mass index (BMI) is linked to infertility (1). A few tiny randomized-controlled trials of weight loss and assisted reproduction success further support this association (2). This study aimed to see whether BMI made a difference in patients who received infertility treatment.

Materials and Methods: An observational and retrospective study based on couples who came to IVF polyclinics of Suleyman Demirel University. Descriptive, Chi-Square analysis, and Fisher Exact were available. Then Spearman Correlation models were performed.

Results: Our study included 378 couples who came to Suleyman Demirel University for IVF between 2015-2018. Women's average weight was $66,8 \pm 12,64$, and men's average weight was $80,87 \pm 12,39$. If we group the participants Body Mass Index (BMI), 32,7 % of men was overweight ($n=200$), 14,6 % ($n=55$) of men were obese. 27 % ($n=102$) of women were overweight and 19,3% ($n=19,3$) of women were obese. According to the Spearman correlation a lower but significant negative correlation between BMI and FSH* ($r=-0,125$; $p<0,05$), LH** ($r=-0,179$; $p<0,01$). In addition, there was no statistical difference between maternal BMI and Fertilization rate (FR) ($p=0,573$), while paternal BMI was not connected with Sperm count, motility, or morphology ($p=0,389$; $p=0,178$). Men's average sperm counts were 63.47 ± 67.94 million/ml. In correlation analysis, paternal BMI was positively correlated with maternal BMI ($r=0.21$, $p<0.001$).

Discussion and Conclusion: Obesity is a public health issue that affects people of all ages and genders. According to TÜİK data, the rate of obese individuals over the age of 15 in Turkey in 2019 is 21.1% (3). In our study, women's obesity rates were 19,3%, men's obesity rate was 14,6%. Many researchers have looked at the impact of maternal obesity on IVF success, and it has been proven that female obesity can reduce IVF success. But in our study, there was not any relationship between fertilization and maternal obesity. Some studies say that male obesity is more common in the infertile population (2). Even though

male infertility is on the rise, there is little data on the relationship between paternal obesity, infertility, and IVF success (4); there was no relationship between paternal BMI and Sperm count and motility, morphology in our study. We also know obesity has an inhibitory effect predominantly on the hypothalamus-pituitary axis, the ovary, or both (5). Surprisingly, this study discovered that obese women had decreased FSH and LH levels. However, it should not be overlooked that, the BMI of men and women is positively correlated with each other. This means that if we want to lose weight, it is necessary to change the diet at home altogether. Our study population contained data from couples undergoing IVF treatment; so we could not generalize our findings. Furthermore, the results must be validated in larger research with larger sample size.

Keywords: IVF; BMI; Obesity; Fertility.

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Full-text (ID-177): “The Effect of Obesity on Female and Male Fertility”

Introduction and Purpose: Due to the growing epidemic of obesity and related illnesses, we are confronting a global public health emergency. Obesity comes with a slew of comorbidities, as well as social, psychological, and demographic issues. Obesity affects both males and females in every area of reproduction. In both women and men, a higher body mass index (BMI) is linked to infertility (1). A Body Mass Index (BMI) of 25 kg/m² is categorized as overweight, a BMI of 30 kg/m² as obese, and a BMI of 40 kg/m² as extremely obese, according to current standards from the US Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) (2). BMI climbed at an annual rate of 0.4 kg/m² for males and 0.5 kg/m² for women between 1980 and 2000, according to data collected. In 2008, the global incidence of overweight adults was alarmingly high at 1.47 billion people (3). Obesity has become much more common among women of reproductive age in the last decade.

According to Nghiem et al., 35.8% of menstruation women have a BMI that is greater than normal, with a mean BMI of 28.7 kg/m² (4). Meanwhile, the WHO has identified infertility as one of the public health problem (5, 6). More than 15% of couples struggle with infertility (7). A few tiny randomized-controlled trials of weight loss and assisted reproduction success further support this association (8). Obesity has been linked to an increased risk of sub-fecundity and infertility in both women and men, in addition to the cardio-metabolic implications of obesity (9-11). Menstrual disruption, which leads to anovulation, is the principal mechanism by which BMI might influence fertility. Other circumstantial arguments suggest that BMI has a deleterious impact on embryo quality and endometrial function. A systematic analysis of the literature found that the relationship between exercise, BMI, and ovulation is U-shaped, with women at the extremes (sedentary with high BMI and over-trained with low BMI) being more likely to experience hormonal impairment and menstrual cycle disruptions (12). Obese women had a significantly lower ratio of good quality oocytes (at metaphase I or II) than normal-weight women, according to Wittemer et al.(13) (BMI 20-24). Also men with a high body mass index (BMI) may have trouble conceiving. A high BMI has been linked to poor sperm concentration (14, 15). This study aimed to see whether BMI made a difference in patients who received infertility treatment.

Materials and Methods: An observational and retrospective study based on couples who came to IVF polyclinics of Suleyman Demirel University between 2015-2018. SPSS 26 (SPSS Inc., Chicago, IL, USA) was used to analyze the data. Data can be displayed as a median (range), mean standard deviation (SD), or a number (percentage). The Kolmogorov–Smirnov test was used to establish the type of data distribution, and a nonparametric test was employed to confirm statistical significance in the case of variables with non-normal data distribution. The Chi-square test and Fisher Exact, where available, were utilized in this study. Female and male individuals had their demographic characteristics calculated separately. The BMI groups were evaluated in four groups: underweight, normal, overweight, obese and morbid obese. In men, sperm concentration and motility were examined between the four BMI groups; thus, the Kruskal-Wallis nonparametric test was used to assess differences. The Chi-square test was used for categorical variables, and the Kruskal–Wallis test was used to analyze continuous variables. The link between BMI, age, the number of parity was determined using the Spearman correlation test. A statistically significant P value of 0.05 was used.

Results: Our study included 378 couples who came to Suleyman Demirel University for IVF between 2015-2018. Women's average weight was 66.8±12.64, and men's average was 80.87±12.39. If we group the participants If we look at the maternal and paternal education, 31.7 (n=240) % of participants were primary school graduates, 32.6% (n=247) of people were high school graduates, and 35.2% (n=266) people were university graduates. 10.1% of women and 35.7% of men were smoking. There was no statistically difference between smoking and BMI in men and women (p=0.273; p=0,640). And also, there was no statistically difference between paternal smoking -sperm count and motility (p=0.611; p=0.750) and maternal smoking- fertilization rate (p=0.157).

According to Body Mass Index (BMI) groups, 32.7 % of men was overweight (n=200), %14.6 (n=55) of men were obese. %27 (n=102) of women were overweight and 19,3% (n=19.3) of women were obese. First of all there was no statistically difference between BMI groups and E2 (p=0.144), prolactin (p=0.332) and TSH (p=0.715), but there was a statistically difference between FSH (p=0.011) and LH (p=0.002). According to the Spearman correlation a lower but significant negative correlation between BMI and FSH* (r=-0.125; p<0.05), LH** (r=-0.179; p<0.01). In addition, there was no statistical difference between maternal BMI and Fertilization rate (FR) (p=0.573), while paternal BMI was not connected with Sperm count, motility, or morphology (p=0.389; p=0.178). Men's average sperm counts were 63.47 ± 67.94 million/ml. In correlation analysis, paternal BMI was positively correlated with maternal BMI (r=0.21, p<0.001).

Discussion and Conclusion: Obesity is a public health issue that affects people of all ages and genders. According to TUIK data, the rate of obese individuals over the age of 15 in Turkey in 2019 is 21.1% (16). In our study, women's obesity rates were 19,3%, men's obesity rate was 14,6%. Many researchers have looked at the impact of maternal obesity on IVF success, and it has been proven that female obesity can reduce IVF success. But in our study, there was not any relationship between fertilization and maternal obesity. Some studies say that male obesity is more common in the infertile population (8). According to Alshahrani et al., semen volume and sperm concentration, motility, and morphology all demonstrated a negative connection with BMI. Only with sperm concentration did this association become meaningful (15). Even though male infertility is on the rise, there are some data on the relationship between paternal obesity, infertility, and IVF success (17); there was no relationship between paternal BMI and Sperm count and motility, morphology in our study. We also know obesity has an inhibitory effect predominantly on the hypothalamus-pituitary axis, the ovary, or both (18). Surprisingly, this study discovered that obese women had decreased FSH and LH levels. However, it should not be overlooked that the BMI of men and women is positively correlated with each other. This means that if we want to lose weight, it is necessary to change the diet at home altogether. About smoking, as in our study Lyngso et al. found in all intrauterine insemination or IVF/ICSI treatment cycles, female occasional/daily cigarette smoking was not linked with the chance of attaining a clinical pregnancy or a live birth (19). Male smokers are exposed to about 4,700 possibly mutagenic substances, including polycyclic aromatic hydrocarbons and other hazardous chemicals and, in moderate and strong tobacco smokers, oligozoospermia, asthenozoospermia, and teratozoospermia are common results (20, 21). Controversly in our study there was not any significant relationship between smoking and sperm count and morphology.

Our study population contained data from couples undergoing IVF treatment; so we could not generalize our findings. Furthermore, the results must be validated in larger research with larger sample size.

Table 1. Demographical Values

		Male N (%)	Female N (%)
Body Mass Index (BMI)	<i>Underweight</i>	2 (0.5)	9 (2.4)
	<i>Normal</i>	118 (31.2)	193 (51.1)
	<i>Overweight</i>	200 (52.9)	102 (27)
	<i>Obese</i>	55 (14.6)	73 (19.3)
	<i>Morbid obese</i>	3 (0.8)	1 (0.3)
Smoking	<i>Yes</i>	135 (35,7)	38 (10,1)
	<i>No</i>	243 (64,3)	340 (89,9)
Alcohol	<i>Yes</i>	10 (2,6)	1 (0,3)
	<i>No</i>	368 (94,7)	377 (99,7)
Education	<i>Primary School</i>	96 (25,4)	147 (38,9)
	<i>High School</i>	138 (36,5)	109 (28,8)
	<i>University</i>	144 (38,1)	122 (38,1)

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ID-178 / OP: “The Effect of Gluten-Free Diet On Body Mass Index in Paediatric Celiac Disease”

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Abstract (ID-178)

Aim: Celiac disease (CD) is a chronic autoimmune enteropathy triggered by the ingestion of gluten in genetically predisposed individuals. Treatment of CD is only gluten-free diet (GFD). There is little information about body mass index (BMI) and effect of GFD in patients with celiac disease. The aim of this study is to investigate the association of BMI and celiac disease, and to determine the impact of GFD on BMI.

Methods: The children who were followed with diagnosed CD (from July 2017 to April 2018) in Diyarbakır Children's Hospital was analyzed retrospectively. The patients with biopsy-proven CD, age < 18 years who had been followed by with GFD at least one year were included the study. According to age and gender, body mass index (BMI) below 5% is underweight, BMI between 5% and 85% is normal weight, BMI <85% but <95% is risky for overweight, BMI >95% was considered obese. Adherence to a gluten-free diet was accepted as negative serological tests after one year of GFD. Patients who adhered to and not adhered to a gluten-free diet were compared in terms of BMI.

Results: Of the 181 children included in the study, 126 (69.6%) were adherence to GFD and 55 (30.4%) were not adherence to GFD. The mean BMI was 16.2 ± 2.8 in the patients who were adherence with GFD and 16.1 ± 2.8 in the patients who were not adherence with GFD. Of the patients who were adherence with GFD, 96 (76.1%) were underweight and 30 (23.9%) were normal weight. Of the patients who were not adherence with GFD, 45 (81.8%) were underweight and 10 (18.2%) were normal weight. No obese or overweight patients were observed in either two groups. There was no statistically significant difference between the two groups for BMI ($p=0.44$).

Conclusion: In this study, although patients who adherence with GFD had more normal BMI, the affect of GFD on BMI had not be shown statistically. This situation may be related to insufficient calorie intake, environmental factors and additional diseases. The limitation of study is that BMI at the time of diagnosis was not be evaluated.

Keywords: Gluten-free diet; Body mass index; Pediatric celiac disease.

ID-179 / OP: “Evaluation of Social Media Usage in Dissemination of Scientific Events”

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Abstract (ID-179)

In the age of the internet and with the effect of the coronavirus, social media takes place in all areas of life. The aim of our study; this study aims to examine the effect of social media, which is very active in areas such as the social, cultural, and entertainment sectors, in academic life, and the announcement of scientific meetings. In the study, a review was carried out on the Twitter platform, which is easily accessible and effective for many people. In our study, studies on the scientific event of IMCIDU (International Medical Congress of Izmir Democracy University) held on 17, 18, 19 December 2020 were examined. The tweets about IMCIDU on the official Twitter account of Izmir Democracy University Faculty of Medicine “@idutip1” were examined.

A total of 74 tweets were sent about IMCIDU (International Medical Congress of Izmir Democracy University) via the “idutip” account. There were 2 (%2.7) tweets on 16.12.2020, 37 (50%) on 17.12.2020, 21 (28.4%) on 18.12.2020, 14 (tweets on 19.12.1010. 39 of these tweets were posted in the morning and 35 in the afternoon. 71% of tweets contain photos, 60% have presentations, and 98% have text. The tweet content of each tweet in the study was examined. Hashtags, tags (person and institution), tags used in social media platforms were examined to increase the presence of photographs, presentations, articles, and Social Media interaction. In addition, tweet engagements (likes, retweets, comments, views, total interaction, media interaction, and detailed (profile) interaction levels, which are informative about the level of reaching users of tweets) were evaluated.

As a result of our study, we observed that sharing about scientific meetings on social media can reach a wider audience. In addition, we have seen that hashtags and hashtags that can increase social media interaction lead to an increase in values that indicate that tweets reach more users. In the future, the visibility of scientific meetings on social media may provide more opportunities for scientists to present their work. In addition, sharing scientific developments and meetings on social media can also create a reliable and accessible source of information that everyone can access.

Keywords: Social media; Scientific event; Interaction; Tweet; Medical congress.

Full-text (ID-179): “Evaluation of social media usage in dissemination of scientific events” /

“Bilimsel Etkinliklerin Yaygınlaştırılmasında Sosyal Medya Kullanımının İncelenmesi”

İnternet çağında ve koronavirüsün etkisiyle sosyal medya hayatın her alanında yer almaktadır. Çalışmamızın amacı; sosyal, kültürel, eğlence sektörü gibi alanlarda fazlasıyla aktif yer alan sosyal medyanın akademik hayatta, bilimsel toplantıların duyurulmasında etkisini incelemektir.

Sosyal Medya platformları ve akıllı telefon üreticileri yeni iletişim teknolojileri geliştirip; çeşitlilik sağladıkça bunları kullanan kişi sayıları günden güne ciddi bir şekilde artmaktadır. Bu tür sistemler ucuzlamakta ya da ücretsiz olmaktadır. Kamu yetkilileri, gönüllüler, vatandaşlar, engelliler, iş sektörü artan bir şekilde kriz durumlarında sosyal medyayı; uyarı bilgilerinin iletilmesi, durumsal farkındalığın geliştirilmesi, geribildirim verilmesi için kullanmaktadır. Konuyla ilgisiz ve güvenilir kaynaklardan gelen mesajları filtrelendirme yöntemleri geliştirilmiş olmasına rağmen sosyal medyanın güvenilirliği çoğu zaman sorgulanmaktadır.

Tablo 1. Dünyada ve Türkiye’de dijital ve sosyal medya kullanımı (Digital in 2020)

	Dünya	Türkiye
Toplam Nüfus	7,75 milyar	83,88 milyon
Kentleşme Oranı	%55	%75
Aktif İnternet Kullanıcısı	4,54 milyar (PO* %59)	62,07 milyon (PO %74)
Mobil hatlar	5,19 milyar (PO %67)	77,93 milyon (PO %92)
Aktif Sosyal Medya hesapları	3,80 milyar (PO %39)	54,00 milyon (PO %64)

**PO=Penetrasyon Oranı*

Tablo 1 de görüldüğü gibi Türkiye’de aktif ve mobil hatlardan internet ve Sosyal Medya kullanımı dünya geneli ortalamalarından yüksektir (Digital in 2020). Çalışmamızda Twitter platformu kullanılmıştır. Twitter, en yalın anlamıyla popüler bir sosyal paylaşım sitesi olmasının yanı sıra insanlar arasında network olanağı sağlayan basit bir arayüze sahip ve mikroblog odaklı, anlık ileti paylaşım uygulamasıdır. Kullanıcı adı ve e-posta ile giriş yapılan bu platform üzerinden çeşitli konularda yazı ve görsel materyal paylaşılabilir. Aynı zamanda paylaşımlarda yer alan hashtag ve etiketler içeriğin paylaşım konusunda ilgili kişiler tarafından görülebilmesini kolaylaştırmaktadır ve paylaşımın etkileşimini artırarak daha çok kişiye ulaşılabilir hale getirmektedir. Bilimsel toplantılar ve bilimsel çalışmalar hakkında daha fazla kişiyi haberdar etmek bu toplantılara katılımı ve bilimsel aktivitelerin niteliğini artırırken aynı zamanda topluma bilimsel çalışmaları ulaştırmak, doğru bilgiye ulaşımı ve bilimsel ilerlemeyi de sağlayacaktır. Bu yüzden sosyal medyanın geniş bir kitleye ulaşabilme

potansiyelinin bilimsel toplantılar için de kullanılması değerli olacaktır. Çalışmamızda bilimsel bir aktivitede sosyal medya kullanımının etkilerini incelemek amaçlanmaktadır.

Gereç ve Yöntemler: Twitter platformundaki istatistik görüntüleme özelliği kullanılarak IMCIDU2020 temalı paylaşımların detaylı incelemesi gerçekleştirilmiştir. Çalışmamızda kolay erişilebilir ve çok kişi üzerinde etkili olan Twitter platformundaki veriler derlenmiştir. 17,18,19 Aralık 2020 Tarihlerinde gerçekleştirilen IMCIDU (International Medical Congress of Izmir Democracy University) bilimsel etkinliği hakkında İzmir Demokrasi Üniversitesi Tıp Fakültesinin resmi Twitter hesabı “@idutip” üzerinden IMCIDU ile ilgili atılan tweetler incelenmiştir. Tweetlere ait fotoğraf, sunum, yazı yer alma durumu; sosyal medya etkileşimini artırmak için sosyal medya platformlarında kullanılan hashtag, etiketler (kişi ve kurum) etiketleri ve Twitter istatistikler bölümünden ulaştığımız tweet etkileşimleri (tweetlerin kullanıcılara ulaşma düzeyi hakkında bilgi verici olan beğeni sayıları, retweet sayıları, yorum sayıları, görüntüleme sayıları, toplam etkileşim, medya etkileşimi ve detaylı (profil) etkileşim düzeyleri) verileri Microsoft excell üzerinden tablo haline getirilmiştir. Bulgular detaylı şekilde sınıflandırılmış ve veriler kaydedilmiştir.

Bulgular: “idutip” hesabı üzerinden IMCIDU (International Medical Congress of Izmir Democracy University) hakkında toplam 74 tweet atılmıştır. 16.12.2020 tarihinde 2 tweet, 17.12.2020 tarihinde 37, 18.12.2020 tarihinde 21, 19.12.1010 tarihinde 14 tweet atılmıştır. Bu tweetlerin 39’u öğleden önce, 35’i öğleden sonra atılmıştır. Tweetlerin %71’inde fotoğraf, %60’ında sunum, %98’inde yazı bulunmaktadır. Çalışmada atılan her tweetin tweet içeriği incelenmiştir. Fotoğraf, sunum, yazı yer alma durumu ve Sosyal Medya etkileşimini artırmak için sosyal medya platformlarında kullanılan hashtag, etiketler (kişi ve kurum), etiketleri incelenmiştir. Ayrıca tweet etkileşimleri (tweetlerin kullanıcılara ulaşma düzeyi hakkında bilgi verici olan beğeni sayıları, retweet sayıları, yorum sayıları, görüntüleme sayıları, toplam etkileşim, medya etkileşimi ve detaylı(profil) etkileşim düzeyleri) incelenmiştir.

İncelenen verilerden yola çıkarak tweetlerdeki etiket sayısı ayrıca not edilmiş ve bu etiketlerin kişi, kurum hesabına ait olma durumları ayrıca değerlendirilmiştir. Etiket sayılarına göre tweet miktarları tablo haline getirilmiştir (Tablo 2).

Tweet etkileşimini saptamak için beğeni, retweet, toplam etkileşim, görülme sayısı, medya ve detaylı etkileşim miktarları ayrıca incelenerek belirlenen aralıklardaki tweet sayıları kaydedilmiştir. Tablo haline getirilmiştir (Tablo 3).

Tablo 2:

Content of Tweets	
Number of Hashtags	Number of Tweets
1	69
2	2
3	2
4	1
Number of Personal Account Tags	Number of Tweets
0	1
1	41
2	23
3	4
4	1
5	2
6	1
14	1
Number of Institution and Organization Tags	Number of Tweets
0	1
1	73

Tablo 3:

Tweet Engagements	
Likes	Number of Tweets (a)
$0 \leq a < 5$	1
$5 \leq a < 10$	23
$10 \leq a < 15$	41
$15 \leq a < 20$	9
Retweets	Number of Tweets (a)
$1 \leq a < 5$	34
$5 \leq a < 10$	49
Total Engagement	Number of Tweets (a)
$0 \leq a < 30$	49
$30 \leq a < 60$	20
$60 \leq a$	5
Views of the tweet	Number of Tweets (a)
$0 \leq a < 500$	33
$500 \leq a < 1000$	19
$1000 \leq a$	2
Media Engagement	Number of Tweets (a)
$0 \leq a < 5$	39
$5 \leq a < 10$	16
$10 \leq a < 15$	8
$15 \leq a < 20$	1
$20 \leq a < 25$	3
$25 \leq a < 30$	1
$30 \leq a$	4
Detailed (Profile) Engagement	Number of Tweets (a)
$0 \leq a < 5$	56
$5 \leq a < 10$	13
$10 \leq a$	5

Tartışma ve Sonuç: Çalışmamız sonucunda bilimsel toplantılar hakkında sosyal medya üzerinden paylaşımların yapılmasının bu etkinlikleri daha geniş bir kitleye ulaştırabileceğini gözlemledik. Ayrıca sosyal medya etkileşimini artıracak hashtag ve etiketlerin tweetlerin daha çok kullanıcıya ulaştığını gösteren değerlerde artışa sebep olduğunu gördük. İlerleyen dönemlerde bilimsel toplantıların sosyal medyada görünür olmasının bilim insanlarının çalışmalarını sunmasına daha çok fırsat sağlayabilir. Ayrıca bilimsel gelişmelerin ve toplantıların sosyal medyada paylaşılması herkesin ulaşabileceği güvenilir ve erişilebilir bir bilgi kaynağı da oluşturabilir.

ID-180 / OP: “Body Mass Index, Age and Gender Affect COVID-19 Vaccine Antibody Response”

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Abstract (ID-180)

Introduction: The 2019 novel coronavirus disease (COVID-19) still remains a global pandemic and an international public health problem, with thousands of deaths. Numerous vaccines have been developed for COVID-19, including inactivated, live virus, recombinant protein, vectored, and DNA or RNA vaccines. CoronaVac vaccine, developed by Sinovac Biotech in China, is an inactivated vaccine with good immunogenicity that can neutralize against CoV-2. We aimed to investigate the relationship of the antibody titer with age, gender and body mass index (BMI) by evaluating the quantitative Ig G antibody titers against the receptor binding site of the Sars-Cov-2 virus spike protein.

Materials and Methods: 85 healthcare professionals and their relatives were included in the study, which was carried out in the Biochemistry laboratory of the SBU Tepecik Training and Research Hospital. Individuals who had passed 28 days after the second dose of vaccination were included in the study. Body mass indexes were calculated using the formula $= \text{kg/m}^2$ and grouped as normal (BMI: 19–24.9), overweight (BMI: 25–29.9), and obese (BMI: 30 and above). Antibody analysis was performed on the Abbott Architect i 1000SR immunology device using the Architect SARS-CoV-2 IgG II Quant kit.

Results: There was no significant difference between the female and male genders in terms of antibody response. Although we found a lower antibody response in obese compared to non-obese, no significant difference was found between them. When the antibody response was evaluated according to the age ranges of 27-39, 40-59, 60-83, a significant difference was found in antibody levels ($p < 0.002$). When the correlation of antibody levels was examined, a weak negative correlation was found between age ($r = -0.317$, $p = 0.05$) and BMI ($r = -0.273$, $p = 0.02$).

Conclusion: Considering that responses to COVID-19 vaccines may be weaker in obese, elderly individuals, an extra dose of vaccine may be considered.

Keywords: COVID-19 vaccine; CoronaVac; COVID-19 antibody testing; Body mass index.

ID-181 / OP: “The Effects of Acamprosate on Small Intestine Smooth Muscle Contractions in Alcohol-Dependent Rats”

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Abstract (ID-181)

Introduction and Purpose: Acamprosate is one of the pharmacological agents frequently used in the treatment of alcohol addiction. However, in the use of acamprosate, patients describe symptoms related to the gastrointestinal system. Identification of possible pathophysiological effects of drugs affects the success of treatment. The aim of this study was to examine the possible pathophysiological effects of acamprosate on small intestine smooth muscle contractions.

Materials and Methods: 32 Wistar Albino female rats were divided into 4 groups: 1st Group (Control group), 2nd Group (Chronic alcohol group), 3rd Group (Acamprosate group) and 4th Group (Acamprosate+ alcohol+ Saline group). 1st Group was administered 10 mg/kg/g saline (0.9% NaCl isotonic) by oral gavage for 21 days, 2nd Group was administered 10 mg/kg/g ethyl alcohol (99.8%) and 10 mg/kg/g saline combination by oral gavage for 21 days, 3rd Group was administered 200 mg/kg/g acamprosate and 10 mg/kg/g saline combination by oral gavage for 21 days, 4th Group was administered 200 mg/kg/g acamprosate, 10 mg/kg/g ethyl alcohol and 10 mg/kg/g saline combination by oral gavage for 21 days. Alcohol withdrawal syndromes of the rats were observed and scored on 21st day and alcohol withdrawal data of 2nd Group and 4th Group were statistically significant ($p<0.05$). On the 22nd day, rats were sacrificed under anesthesia, small intestine tissues were taken and 2 cm sections obtained from these tissues were hung in an isolated organ bath. The tension was set to 1 g, then the recording process was started. Acetylcholine was given at the 30th minute of the recording, adrenaline was given at the 60th minute and the induced contractions were recorded. Tensions were recorded every 15 minutes and statistical analysis of the data was performed.

Results: A significant difference was found in the strain data of all experimental groups at the 45th and 75th minutes ($p<0.05$). When the contraction values were compared between the groups, a significant decrease was observed in the 2nd Group, 3rd Group and 4th Group data compared to the control group ($p<0.05$). In addition, as a result of body weight measurements made on the 0th, 10th and 20th days and a significant decrease in the body weights of the 2nd and 4th groups on the 10th and 20th days ($p<0.05$). It was determined that the body weights of the 3rd group increased significantly in the measurements on the 10th and 20th days ($p<0.05$).

Discussion and Conclusion: It was determined that acamprosate decreased small intestine smooth muscle contraction tension values and decreased small intestine motility. This effect was found to be stronger than the motility-reducing effect of alcohol. Some of physiopathological changes that cause the development of gastrointestinal symptoms with the use of acamprosate have been revealed. These effects should be considered in the treatment of alcohol dependence and should be considered in use of patients with gastrointestinal system diseases in their medical histories.

Keywords: Acamprosate; Alcohol addiction; Isolated organ bath; Small intestine contractions.

Özet (ID-181): “Alkol Bağımlılığı Oluşturulan Sıçanlarda Akamprosatin İnce Bağırsak Düz Kas Kasılmaları Üzerine Etkileri”

Giriş ve Amaç: Akamprosate, alkol bağımlılığı tedavisinde sıklıkla kullanılan farmakolojik ajanlardanır. Ancak akamprosate kullanımında hastalar gastrointestinal sistemle ilişkili semptomlar tanımlamaktadır. İlaçların olası fizyopatolojik etkilerinin tanımlanması, tedavi başarısını etkilemektedir. Bu çalışmanın amacı, akamprosatin ince bağırsak düz kas kasılma yanıtları üzerine olası fizyopatolojik etkilerini incelemektir.

Gereç ve Yöntem: 32 adet Wistar Albino cinsi dişi sıçan 4 gruba ayrılmıştır: 1.Grup (Kontrol grubu), 2.Grup (Kronik alkol grubu), 3.Grup (Akamprosate grubu) ve 4.Grup (Akamprosate+ alkol+ Serum Fizyolojik grubu). 1.Gruba 21 gün oral gavaj ile 10 mg/kg/g serum fizyolojik (%0.9 NaCl izotonik), 2.Gruba 21 gün oral gavaj ile 10 mg/kg/g ethanol (%99.8) ve 10 mg/kg/g serum fizyolojik birleşimi, 3.Gruba 21 gün oral gavaj ile 200 mg/kg/g akamprosate ve 10 mg/kg/g serum fizyolojik birleşimi ve 4.Gruba 21 gün oral gavaj ile 200 mg/kg/g akamprosate, 10 mg/kg/g ethanol ve 10 mg/kg/g serum fizyolojik birleşimi uygulanmıştır. Sıçanların alkol yoksunluk sendromları 21. Günde gözlemlenmiş ve skorlanmıştır. 2. Grup ve 4. Grubun alkol yoksunluk verileri istatistiksel olarak anlamlı bulunmuştur ($p<0.05$).

22.günde ise, ince bağırsak dokuları alınmış ve bu dokulardan elde edilen 2’şer cm’lik kesitler izole organ banyosuna asılmıştır. Gerim 1g olarak ayarlanmış, ardından kayıt işlemi başlatılmıştır. Kaydın 30. dakikasında asetilkolin, 60. dakikasında adrenalin verilmiş ve indüklenen kasılmalar kaydedilmiştir. Ayrıca gerimler her 15 dakikada bir kaydedilmiş ve verilerin istatistiksel analizi gerçekleştirilmiştir.

Bulgular: Tüm deney gruplarının 45. ve 75.dakikadaki gerim verilerinde anlamlı farklılık saptanmıştır ($p<0.05$). Kasılma değerleri gruplar arası karşılaştırıldığında ise 2. Grup, 3. Grup ve 4. Grup verilerinde kontrol grubunkine kıyasla anlamlı bir düşüş görülmüştür ($p<0.05$). Bunun yanısıra 0., 10. ve 20. gün yapılan vücut ağırlığı ölçümlerinin sonucunda; 2. ve 4. Grubun vücut ağırlıklarında 10. Ve 20. Günlerde anlamlı düşüş saptanmıştır ($p<0.05$). 3.Grubun vücut ağırlıklarının ise 10. Ve 20. Günlerdeki ölçümlerde anlamlı olarak arttığı saptanmıştır ($p<0.05$).

Tartışma ve Sonuç: Akamprosatin ince bağırsak düz kas kontraksiyon gerim değerlerini düşürdüğü, ince bağırsak motilitesini azalttığı tespit edilmiştir. Ayrıca bu etkinin alkolün motilite azaltıcı etkisinden

daha güçlü olduđu saptanmıřtır. Bu veriler ışığında, akamprosot kullanımıyla birlikte gastrointestinal semptomların gelişimine neden olan fizyopatolojik değışimler ortaya konmuřtur. Alkol bağımlılığı tedavisinde kullanımında bu etkiler göz önünde bulundurulmalı, tıbbi öykülerinde gastrointestinal sistem hastalıkları mevcut hastalarda kullanımında dikkate alınmalıdır.

Anahtar Kelimeler: Akamprosot, Alkol bağımlılığı, İzole organ banyosu, İnce bağırsak kasılmaları.

Full-text (ID-181)

Giriř ve Amaç: İnce bağırsak, alkol bağımlılığından oldukça olumsuz yönde etkilenmektedir. Alkol bağımlılığı sonucunda ince bağırsakta; ekstraintestinal doku hasarı geliştiğı, villus yüksekliklerinde azalmalar görüldüğü, hücreler arasında genişlemeler meydana geldiğı, oksidatif stresin yükseldiğı, mikrobiyotasının bozulduğı ve hücrelerin hem endoplazmik retikulumlarında hem de mitokondrilerinde artışların meydana geldiğı bilinmektedir (Persson 1991; Persson ve ark. 1990; Bhonchal ve ark. 2008; Bagyánszki ve ark. 2010; Yılmaz ve Altındış 2019).

Alkol bağımlılığı tedavisinde yaygın olarak reçetelendirilen ilaçlardan biri de akamprosattır. Çalışma prensibi gereğı akamprosatin kalsiyum üzerinde çeşitli etkileri söz konusudur. (Boothby ve Doering 2005; Mann ve ark. 2008). Akamprosatin çalışma sistemi ve yan etkileri göz önüne alındığında ise ince bağırsak kontraksiyonlarının akamprosot kullanımından etkilenebileceğı kanısına varılmıştır.

İlaçların olası fizyopatolojik etkilerinin tanımlanması, tedavi başarısını doğrudan etkilemektedir. Bu sebeple mevcut çalışmada; alkol bağımlılığı oluşturulan sıçanlarda akamprosatin ince bağırsak kontraksiyonları üzerindeki fizyopatolojik etkilerinin değerlendirilmesi amaçlanmıştır.

Gereç ve Yöntem: Bu çalışma, N. E. Ü. KONÜDAM Deneysel Tıp Uygulama ve Arařtırma Merkezi Müdürlüğü Hayvan Deneyleri Yerel Etik Kurulu'nun 2021-050 no.'lu kararıyla, N. E. Ü. KONÜDAM Deneysel Tıp Uygulama ve Arařtırma Merkezi ve N.E.Ü. Fizyoloji Anabilim Dalı Laboratuvarında gerçekleştirilmiştir. Çalışmada N. E. Ü. KONÜDAM Deneysel Tıp Uygulama ve Arařtırma Merkezinden temin edilen 300-350 gram ağırlığında, erişkin 32 adet diři Wistar Albino cinsi sıçanlar kullanılmıştır. Sıçanlar deney süresince; 12 saat aydınlık 12 saat karanlık döngüde, besin ve su kısıtlaması bulunmaksızın barındırılmıştır. Çalışmada sıçanlar başlangıçta randomize olarak 1.Grup (Kontrol grubu), 2.Grup (Kronik alkol grubu), 3.Grup (Akamprosot grubu) ve 4.Grup (Akamprosot+ alkol+ Serum Fizyolojik grubu) olmak üzere 4 gruba ayrılmıştır. 1.Gruba 10 mg/kg/g serum fizyolojik (%0.9 NaCl izotonik), 2.Gruba 10 mg/kg/g ethanol (%99.8) ve 10 mg/kg/g serum fizyolojik birleşimi, 3.Gruba 200 mg/kg/g akamprosot ve 10 mg/kg/g serum fizyolojik birleşimi ve 4.Gruba 200 mg/kg/g akamprosot, 10 mg/kg/g ethanol ve 10 mg/kg/g serum fizyolojik birleşimi 21 gün boyunca oral gavaj ile uygulanmıştır.

Deney protokolünün 21. Gününde alkol yoksunluk sendromunun skorlanması için oral gavaj uygulamasının ardından geçen; ilk 30 dakikalık sürenin akabinde, 2. saatin akabinde, 4. saatin akabinde ve 6. saatin akabinde 10'ar dakika sürecek şekilde gözlem yapılmıştır. Gözlemler, video kayıt sistemi ile kaydedilmiştir. Sıçanların hangi gruplarda yer aldığını bilmeyen bir araştırmacı, alkol yoksunluk sendromu skorlamasını manuel olarak gerçekleştirmiştir ve bu bulgular konfirme edilmiştir. Alkol yoksunluk sendromu skorlama işlemi, sıçanlarda görülen belirtiler (anormal postür, anormal yürüyüş, kas ve kuyruk rijiditesi, irritasyon hali, artmış stereotipik aktivite, ıslak köpek silkelenmesi, tremor, katatoni, spontan nöbet) ve belirtilerin şiddeti doğrultusunda skarlardan uygun olan skoru (-, +, ++, +++) yuvarlak içerisine alınmasıyla işaretleme işlemi gerçekleştirilmiştir. Skarlara (-, +, ++, +++) anlamları; '(-), alkol yoksunluk semptomu yok'; '(+), hafif düzeyde alkol yoksunluk semptomu var'; '(++)', orta düzeyde alkol yoksunluk semptomu var' ve '(+++)', şiddetli düzeyde alkol yoksunluk semptomunu var' şeklindedir. Skarlama sonucunda elde edilen veriler tek yönlü varyans analiziyle değerlendirilmiştir. Ayrıca deney protokolü boyunca 10 günlük periyotlarda (Başlangıç, 10. gün, 20. gün) ağırlık ölçümleri yapılmıştır.

21. işlem gününün gecesi itibariyle yem alımı durdurulmuş olan sıçanlar, 22. gün ketamin hidroklorür ve ksilazin anestezisi (intraperitoneal) uygulanmasının ardından servikal dislokasyon ile sakrifiye edilmiştir. Ardından ince bağırsaklar diseke edilip, 2 cm'lik kesitler krebs çözeltisine alınmıştır. Ardından alınmış olan doku örnekleri izole organ banyosuna asılmış ve gerim 1g olarak ayarlanmıştır. Anestezik ajanların etkisini dışlamak için 15 dakikalık aralıklarla 4 kez (1 saat) krebs çözeltisi değiştirilmiş ve 1 saatin sonunda 15'er dakikalık aralıklarla olmak üzere 75 dakika boyunca kasılma ve gevşeme yanıtları kaydedilmiştir.

30. dakikada izole organ banyosu haznelerine 10^{-6} yoğunluğa sahip asetilkolin damlatılmış ve sonrasında gerimler kaydedilmiştir. 60. dakikada ise 0,001 M adrenalin çözeltisi izole organ banyosu haznesine damlatılmış ve ince bağırsak gerimleri kaydedilmiştir.

İstatistiksel analizinde, Jamovi Versiyon 2.0 ve R. Core Team Versiyon 4.0 programları kullanılmıştır. Kategorik değişkenler için ise frekans ve yüzde değerleri, Gerim değerlerinin gruplar arası ve zamana bağlı değişimlerini değerlendirmede ise karma etki modeli oluşturulup kullanılmıştır. Alkol yoksunluk sendromu skarlara (-, +, ++, +++) anlamları değerlendirilmesinde poisson karma etki modelinden yararlanılmıştır. $p < 0.05$ değeri anlamlı olarak kabul edilmiştir.

Bulgular: 2.Grup (kronik alkol grubu) ve Grup 4' taki (Akamprosate+ alkol+ Serum fizyolojik grubu) sıçanların alkol yoksunluk sendromu davranışlarının, istatistiksel olarak anlamlı olduğu saptanmıştır ($p < 0.05$). İzole organ banyosu ölçüm verileri değerlendirildiğinde ise; 2. Grup (Kronik alkol grubu), 3. Grup (Akamprosate grubu) ve 4. Gruptaki (Akamprosate+ alkol+Serum fizyolojik grubu) sıçanların ince bağırsak düz kas kontraksiyonlarında düşüş saptanmıştır ($p < 0.05$). Kasılma ve gevşeme verileri gruplar arası karşılaştırıldığında ise 4. Grup (Akamprosate+ alkol+Sf grubu) ve 3.Grubun (Akamprosate grubu)

yanıtlarının, 1. Grup (Kontrol grubu) ve 2. Gruba (Kronik alkol grubu) göre düşük olduğu görülmüştür ($p<0.05$).

Sıçanların vücut ağırlığı ölçümleri değerlendirildiğinde (başlangıç, 10. Gün ve 20.Gün; 2. Grup ve 4. Grubun 10. Ve 20. Günlerdeki ölçümlerde anlamlı düşüş saptanmıştır ($p<0.05$). 3.Grubun 10. ve 20. Günlerdeki ölçümlerinin sonucunda ise anlamlı artış saptanmıştır ($p<0.05$).

Tartışma ve Sonuç: Alkol bağımlılığının ince bağırsak motilitesini olumsuz yönde etkilediği, bunun sonucunda kişilerde sıklıkla diyare oluştuğu bilinmektedir (Persson 1991).

Çalışmamızda; kronik alkol grubu (2. Grup) sıçanların ince bağırsak gerim değerlerinin, kontrol grubunun gerim değerlerine kıyasla anlamlı düşüş gerçekleştirdikleri tespit edilmiştir ($p<0.05$). Literatürdeki alkol bağımlılığı araştırmaları incelendiğinde ise; çalışma sonuçlarımızdaki gibi ince bağırsağın gevşeme hareketlerinde düşüşler meydana geldiği ve kas hareketliliklerinde de bozulmaların oluştuğu bildirilmiştir. (Preedy ve Peters 1990; Bode 1997; Bagyánszki ve ark. 2010).

Alkol bağımlılığında yaygın olarak kullanılan bağımlılık ilaçlarından birisi de akamprosattır (Uğurlu ve ark. 2012). Akamprosatin sindirim sistemi üzerinde çeşitli olumsuz etkileri mevcuttur. Diyare, kusma, karın ağrısı, bulantı ve gaz yakınmaları bu olumsuz etkilerinden birkaçıdır (Evren 2012). Akamprosatin çalışma prensibi gereği kalsiyum üzerinde çeşitli etkileri söz konusudur. Akamprosatin; alkol bağımlılığı sonucunda beyindeki uyarıma bağlı olarak artış göstermesi gereken kalsiyum girişini baskıladığı, hücre içerisindeki kalsiyum salınımını da değiştirdiği bilinmektedir (Boothby ve Doering 2005; Mann ve ark. 2008). Akamprosatin kalsiyum üzerinde etkinlik göstermesi, düz kas dokusuna sahip olan ince bağırsak motilitesini de etkileyebileceği düşüncesini oluşturmuştur. Gerçekleştirilen detaylı literatür taraması sonucunda ise bu alanda herhangi bir çalışmaya rastlanmamıştır. İlaçların olası fizyopatolojik etkilerinin tanımlanması, tedavi başarısını da etkilemektedir. Bu sebeple akamprosatin ince bağırsak üzerindeki mevcut fizyopatolojik etkinliğinin değerlendirilebilmesi için bu araştırma gerçekleştirilmiştir. Gerçekleştirilmiş olan izole organ banyosu ölçümleri sonucunda: Akamprosatin grubu (Grup 3) ve akamprosatin+ alkol+ SF grubunun (Grup 4), kontrol grubuna kıyasla istatistiksel olarak anlamlı ($p<0.05$) düşüş yaşadıkları tespit edilmiştir. Alkol bağımlılığı sebebiyle ince bağırsak kontraksiyonlarında azalma yaşanmasına rağmen bağımlılık tedavisi amacıyla kullanılan akamprosatin, yaşanan bu olumsuz etkiyi arttırıp arttırmadığı incelenmiştir. İnceleme sonucunda akamprosatin+ alkol+ SF grubunun (Grup 4), kronik alkol grubuna (Grup 2) kıyasla ince bağırsak gerimlerinde istatistiksel olarak anlamlı bir düşüş meydana geldiği tespit edilmiştir.

Akamprosatin ince bağırsak düz kas kontraksiyon gerim değerlerini düşürdüğü, ince bağırsak motilitesini azalttığı tespit edilmiştir. Ayrıca bu etkinin alkolün motilite azaltıcı etkisinden daha güçlü olduğu da anlaşılmıştır. Alkol bağımlılığı tedavisinde, ince bağırsak sağlığının da gözetilmesi oldukça önemlidir. İnce bağırsak sağlığının gözetilmemesi durumunda homeostazi bozucu pek çok durum meydana gelebileceği bilinmektedir. Çalışma verileri doğrultusunda, ince bağırsakla ilişkili hastalıklara

sahip kişilerde akamprosot kullanımının riskli olabileceđi düşüncesine varılmıştır. İnce bağırsak problemleri olmayan alkol bağımlısı bireylerin de akamprosot kullanımı süresince, ince bağırsak sağlığının belirli periyotlarla kontrol edilmesinin ve takibinin gerçekleştirilmesinin önemli olduđu düşünülmektedir. İnce bağırsakta, akamprosot kullanımının diğeri olası fizyopatolojik etkilerini tespit etmek için devam çalışmalarına ihtiyaç duyulmaktadır.

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ID-182 / PP: “Is The Upper Pouch X-Ray Taken with A Thin Catheter Sufficient to Determine The Level of The Upper Esophagus?”

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Abstract (ID-182)

Introduction/Aim: The diagnosis of esophageal atresia is made by a nasogastric tube is not going beyond 10-12.cm from the mouth and it gives springig sign; however, babygraphy and esophagogram are very important in determining the type of atresia and surgical intervention. The upper esophageal level is established by radiography taken as it is advanced from the mouth to the place where a thick opacue catheter is inserted and up to 1.5cc of opaque material can be delivered. This study was presented to draw attention to the fact that the esophagogram taken at the outer center may not show the true esophagus level.

Case Report: A patient who was followed-up for antenatal Fallot Tetralogy and was born in a private center with a G2P0A1 38-year-old healthy mother at 38+1week with 3320gr C/S; x-ray graphies were consulted in two-day old. On the esophagogram, level of the upper esophagus had uppper the 1stthoracic vertebra, and there was intestines gaseous. His father had informed that “His baby has an esophageal atresia with distal fistula, and the upper esophagus is blocked at neck level; Therefore, fistula ligation should be performed primarily with thoracotomy, if possible anastomosis will be performed between the two esophageal ends; however, according to the esophagogram anastomosis may not be performed, a feeding gastrostomy will be opened, and esophageal replacement will be needed in the following months, and also Fallot tetralogy will negatively affect the prognosis.” At the request of the family, the patient was transferred to our intensive care unit three-day later. Preoperative preparations were made, Fallot tetralogy and right aortic arch were detected in echocardiography. Oral examination with a 3.5Fr endotracheal intubation tube, the tube was advanced to 12thcm. On the repeated X-Ray, the esophagus was at the level of the 3rd thoracic vertebra. The right thoracotomy showed that esophageal pouch was at the level of the 3rd thoracic vertebra and the fistula at the level of the 4th thoracic vertebra behind the right aortic arch. After fistula ligation, Vena Azigos was preserved and oblique-oblique esophagus anastomosis was performed without stretching. He was discharged on the 28th day. The patient, whose oral intake was insufficient, was shown to have no recurrent fistula or anastomosis stenosis with 3rd month bronchoscopy and esophagoscopy.

Conclusion: Examinations made with inappropriate techniques may mislead the follow-up and treatment of diseases and increase morbidity and mortality. It is very important in determining the treatment method that the upper pouch radiography of patients with esophageal atresia is performed or repeated using appropriate techniques at the person or center to perform the operation.

Keywords: Esophageal atresia; Babygram; Esophagogram; Long gap.

Full Text (ID-182):”İnce bir kateter ile üst poş grafisi çekilmesi üst özofagus seviyesinin belirlenmesinde yeterli mi?”

Giriş: Özofagus atrezisi tanısı nazogastrik tüpün ağızdan 10-12.cm’den ileriye gitmemesi ve yaylanma bulgusuyla konulmaktadır; ancak atrezi tipi ve cerrahi girişim şeklini belirlemek açısından babygrafi ve özofagogram çok önemlidir. Üst özofagus seviyesi, ağızdan kalın opakt bir kateterin takıldığı yere kadar ilerletildiği esnada çekilen grafi ile konulur; çekim sırasında 1.5cc kadar opakt madde film sırasında verilebilir.

Bu çalışmada, dış merkezlerde çocuk cerrahisi uzmanlarınca çekilmemiş özofagogramlar ile proksimal özofagus seviyesinin tam olarak belirlenemeyeceğine, bizzat ameliyatı yapacak cerrah tarafından hastanın değerlendirilmesi ve grafilerinin çekilmesi gerektiğine dikkat çekmek için sunuldu.

Olgu sunumu: Antenatal fallot tetralojisi nedeniyle takip edilen ve G2P0A1 38 yaş sağlıklı anneden 38+1hafta, 3320 g C/S ile özel bir merkezde doğan erkek bebek, tarafımıza iki günlükken konsülte edildi. Dış merkezde çekilmiş özofagogramında üst özofagusun torakal 1.vertebra seviyesinde olduğu ve barsaklarda gaz olduğu görüldü (Resim a). Babaya “Bebeğinde distal fistüllü özofageal atrezisi olduğu, üst özofagusun boyun seviyesinde tıkalı olduğu; dolayısıyla hastada öncelikli olarak torakotomiyle fistül ligasyonu yapılaması gerektiği, eğer mümkünse iki özofagus uçları arasında anastomoz yapılacağı; ancak mevcut grafiye göre anastomoz yapılamayabileceği, gastrostomi açılarak bir süre buradan besleneceği, ilerleyen aylarda özofageal replasman gerekeceği ve ayrıca Fallot tetralojisinin prognozu olumsuz etkileyeceği” konusunda bilgilendirildi. Ailenin isteğiyle 4 günlükken hasta çocuk cerrahisi yoğun bakım ünitemize transfer edildi.

Preoperatif hazırlıklar yapıldı. Ekokardiyografisinde fallot tetralojisi ve sağ arkus aorta saptandı. Oral yoldan 3.5 Fr. endotrakeal entübasyon tüpü ile yapılan muayenede tüp 12.cm’e ilerletildi ve tekrarlanan grafide özofagus üst poşu 3.torakal vertebra seviyesindeydi (Resim b). Sağ torakotomi ile üst özofageal poşun 3.torakal vertebra hizasında ve fistülün sağ arkus aortanın arkasında 4.torakal vertebra hizasında olduğu görüldü. Vena Azigos korunarak fistül ligasyonu sonrası oblik-oblik özofagus anastomozu gergin olmadan yapıldı. Hasta 28.gün taburcu edildi. Oral alımı yeterli olmayan hastada 3.ay yapılan bronkoskopi ve özofagoskopi ile rekürren fistül veya anastomoz darlığının olmadığı gösterildi. Hasta bir yaşında iken Fallot tetralojisi nedeniyle opere oldu. 21 aylık olup takipleri sorunsuzdur.

Tartışma: Özofagus atrezisi 4000 canlı doğumda bir nadir görülen konjenital bir durum olup izole veya fistüllü tipleri olabildiği gibi, eşlik eden anomaliler veya sendromlarla birliktelikleri olabilir (1-3). Çoğu vakada trakea ile özofagus arasında fistül mevcuttur, özofagus atrezisinin en sık görülen tipi distal fistüllü özofagus atrezisidir (Gross Tip C atrezi) (Resim c) (2-5).

Prenatal tanı konulması mümkündür; tanısından genellikle prenatal olarak polihidroamnioz ve mide cebinin küçük olması veya mide cebinin olmaması ile şüphelenilmektedir (3). Postnatal dönemde ise doğum sonrası bebekte hipersalivasyon olması durumunda özofagus atrezisi dışlanmalıdır. Özofagus açıklığını değerlendirmek için mideye orogastrik veya nazogastrik tüp ilerletilir; ağızdan ilerletilen tüpün ağız kenarından itibaren yaklaşık 10-12.cm’de yaylanması özofagus atrezisi için tipiktir (4-8). 5-6 French gibi ince bir NGT tüp ile yapılan muayene sırasında Orogastrik/Nazogastrik tüp üst özofagusta kıvrılabilir, mideye ilerletilmiş olduğu düşünülebilir. Dolayısıyla muayenenin 10 veya 12 French nazogastrik tüp veya aspirasyon kateteri ile yapılması üst pošta kıvrılma olasılığını azaltır. Birinci ve ikinci parmakla tutulan nazogastrik sondanın takıldığı noktadan itibaren bir-iki cm itilmesi ve kateterin bırakıldığında 1-2 cm geri kayması özofagus atrezisi için patognomonik bir bulgudur.

Kalın NGT ile yapılan muayenede yaylanma bulgusunun olması özofagus atrezisi tanısı konulması için yeterlidir; ancak hastanın operasyona hazırlanması ve alınması için tek başına yeterli değildir. Orogastrik/nazogastrik tüp takılı halde iken hastanın babygrafisinin mutlaka görülmesi gereklidir. Bir yenidoğanda çekilecek ilk grafide karın ve göğüs dahil olacak şekilde röntgen çekilmelidir. Babygrafi olarak adlandırılan bu filmde öncelikli olarak NGT’nin seviyesi tesbit edilir. Bir yandan vertebra, costalar, kardiak silüet, diyafragma konturları değerlendirilirken diğer yandan akciğerde ateletatik alanlar ve pnömonik infiltrasyon varlığı, mide ve duodenumda ve barsaklarda gaz olup olmadığı değerlendirilir. Böylelikle hastanın eşlik eden anomalileri ortaya konulduğu gibi fistül olup olmama durumuna ve üst özofageal poş seviyesine göre hastaya yapılacak operasyonun tipi belirlenmiş olur.

Özofagus atrezili olgularda nazogastrik tüpün midede izlenmesi çok nadiren mümkün olabilmektedir. Literatürde çok nadiren distal ve proksimal fistüllü olgularda orogastrik veya nazogastrik tüpün fistülden geçip mideye ilerlediği de bildirilmiştir (7-9). Ancak bu olgularda tekrarlanan NGT takma eylemlerinde başarısızlık olması durumunda NGT takılamıyorsa opakt madde verilerek grafi tekrarlanmalıdır.

Hastanın orogastrik/nazogastrik tüpü tesbit edilerek çekilen röntgende tüpün üst özofagus poşu içinde kıvrılması veya daha aşağıya ilerlemesi, ya da kıvrılarak yukarıya ağıza doğru dönmesi özofagus atrezisi tanısını teyit eder. Ayrıca grafide kateterin ilerlediği son nokta bizlere üst özofagus poşunun seviyesini göstermektedir. Üst özofagus seviyesi hastaya yapılacak girişim yönteminin belirlenmesinde en önemli faktörlerden biridir (1-3). Röntgen çekimi esnasında genellikle takılan NGT’nin opakt olması yeterli olsada NGT içinden 1-1.5 cc kadar opakt madde verilebilir.

Üst özofagus seviyesi ne kadar yüksekte olursa primer özofagus anastomozu yapma şansı o kadar azalmaktadır. Çünkü long gap özofagus atrezilerinde genellikle primer anastomoz yapmak mümkün

olamamaktadır; gergin anastomoz yapılmaya çalışıldığında ise anastomoz kaçağı, darlık veya fistül rekürrensi olabilmektedir; hatta ağır mediastinit nedeniyle hastalar kaybedilebilmektedir. Long gap olgularda fistül ligasyonu ile birlikte gastrostomi açılmalıdır; ayrıca üst poş sürekli aspire edilemeyecek ise özofagostomi de yapılmalıdır (1-3).

Olgumuzun ilk röntgen grafisinde birinci torakal vertebra hizasında izlenen geniş poş olması nedeniyle aileye “distal fistülünün bağlanacağı ve büyük olasılıkla 3-4 vertebra boyu long gap olacağı için özofagusta primer onarım yapılamayacağı, beslenme amaçlı gastrostomi açılacağı ve sürekli üst poş aspirasyonu yapılacağı” bilgisi verilmişti. Ancak kliniğimize hasta getirildiğinde fizik muayene sırasında takılan NGT kateterinin 12 cm kadar ilerletilmiş olması nedeniyle intra torakal uzanan bir üst poş olabileceği düşünüldü. Hastanın muayenesi daha sert olan ve üst poşa kıvrılma olasılığı olmayan 3.5 French endotrakeal entübasyon tüpü ile yeniden yapıldı. ETE’nin de 12 cm ilerlediğinde yaylanma bulgusu vermesi nedeniyle long gap olmadığı düşünülerek hastada primer özofagus onarımı yapılabileceği kanaati oluştu; aile yeniden bilgilendirilerek opere edildi. İlk filmine bakarak muayenemizi tekrarlamamış olsaydık muhtemelen hastanın fistülünü bağlayarak gastrostomi açmış olurduk.

İnce NGT tüplerle yapılan muayenede üst poş içinde kıvrılabileceği için özofagus atrezileri fark edilemeyebilir; ayrıca ince kateterler ile çekilen grafilerde üst özofagus seviyesi doğru değerlendirilemeyebilir. Dolayısıyla hastanın operasyon şeklinin belirlenmesinde hatalara neden olabilir.

Sonuç olarak, uygun olmayan tekniklerle yapılan incelemeler, hastalıkların takip ve tedavisini yanlış yönlendirebilir, morbidite ve mortaliteyi arttırabilir. Özofagus atrezili olguların üst poş grafisinin bizzat operasyonu yapacak kişi veya merkezde uygun tekniklerle çekilmesi, grafi ile gelen olgularda bebeğin kalın bir NGT veya entübasyon tüpü ilerletilerek gerekiyorsa grafinin tekrarlanması tedavi yönteminin doğru belirlenmesinde çok önemlidir. Radyolojik olarak uygun çekilen görüntüleme yöntemleri özofagus atrezisi tanısında gecikmeleri önler, doğru cerrahi planlamayı sağlar.

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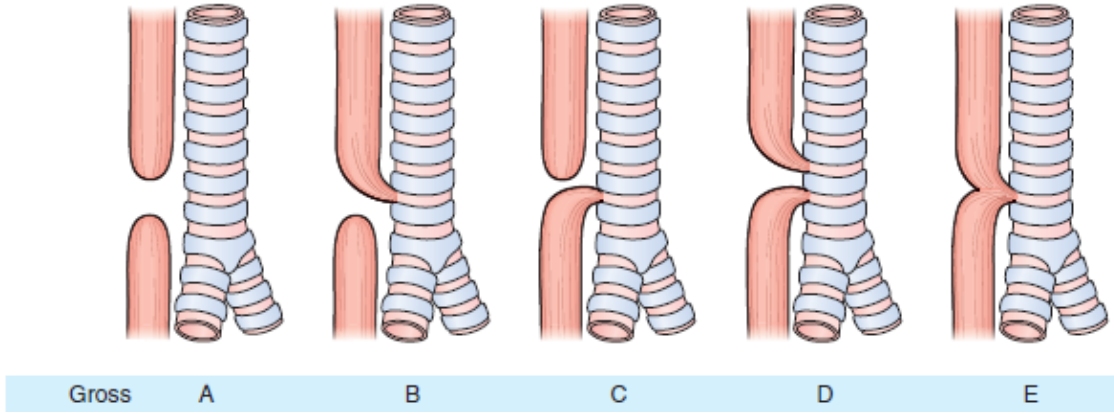
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Resim a: Hastanın ikinci gün dış merkezde çekilen üst poş grafisi



Resim b: Hastanın ETE ile yapılan muayenesinde 12.cm ilerletildi, grafi tekrarlandı.



Resim c: Özofagus atrezisi tipleri

ID-183 / OP: “Examining the Relationship Between Parents' Knowledge and Students' Self-Efficacy About Substance Use”

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Abstract (ID-183)

Introduction and Purpose: The substance can be described as all kinds of chemicals which are probably lead to abuse and dependence, and also to create a change in mood, perception, cognition and other brain functions (1). The substance misuse and addiction has become a social problem among especially the young in Turkey in recent years. The studies indicated that reasons to start using substances are curiosity, peer impression, proving himself, thinking to be matured, self-esteem, loneliness, inability to cope with distressing feelings and to not know the coping, achievement, performance, increase energy, lose weight and request for creativity increase (2,3). The aim of this study is to investigate relationship between parents' knowledge and students' self-efficacy levels about substance use on high school students.

Materials and Methods: The population of the research consists of 17689 students and their parents in State High Schools in Karabaglar District of Izmir Province. There are 5 Vocational Technical High Schools (1 Multi-Program Anatolian High School), 6 Imam Hatip High Schools and 12 Anatolian High Schools (1 Multi-Program Anatolian High School) in Karabaglar District of Izmir. The school principals and guidance counselors of the students were reached by the Karabaglar District Directorate of National Education and the Karabaglar Guidance Research Center Directorate, and an online meeting was held on March 24, 2021 with the participation of the school principals and guidance teachers, and information was given about the purpose of the research and how to deliver the questionnaires to the students' parents. The survey was created through the online survey portal SurveyMonkey® (www.tr.surveymonkey.com). The survey link has been sent to the WhatsApp® accounts of the parents of the students. The answers were collected after the approval of the students' parents and students. The sociodemographic data form prepared by the researchers includes demographical questions about students' age, gender, grade, who they live with, whether they have received any psychiatric treatment, whether there is a cigarette-alcohol-substance user in their family, the monthly income of their families,

their parents' employment status, and their educational status.

Results: A total of 1771 parents responded to survey. Majority of them were mothers (83.75%) and most of them had primary school graduate (35.23%). We found a statistically significant and strong relationship between the level of awareness of parents about addiction and the level of self-efficacy of students in all subscales ($p=0.000$, $r=0,528$). Although there was no statistically significant relationship between students' self-efficacy on protecting against substances and their families' monthly income, nonattendance to lessons, and having a disciplinary penalty were found to be strongly and statistically significant related. We did not find any sex differences about self-efficacy of students.

Discussion and Conclusion: As the education level of the family increases, the level of knowledge and awareness of the family increases, addiction decreases, and we understand the importance of formal education to families. Special attention should be paid to students who are absent or subject to disciplinary punishment, according to the literature, these situations can be both a cause and a result for each other. There was no difference between genders in terms of self-efficacy capacity. However, as we have shown in our previous studies, the types of substances used differ. In men, cannabis is becoming the most popular substance in adolescence, in women, ecstasy.

Keywords: Substance use disorder; High school; Risk factors.

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ID-184 / OP: “Investigation of Alcohol-Substance Use Frequency and Related Factors of High School Students in Izmir”

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Abstract (ID-184)

Introduction and Purpose: Substance use is a growing public health and socioeconomic problem that has increased dramatically, especially in developing countries (1). Alcohol-substance use is becoming an increasing public health problem also in Turkey especially among the young in recent years. However, there are not enough studies on the prevalence and the causes of alcohol-substance use. The studies indicated that reasons to start using substances-alcohol are curiosity, peer impression, proving himself, thinking to be matured, self-esteem, loneliness, inability to cope with distressing feelings, to increase achievement and performance, to increase energy, to lose weight, and to increase creativity (2,3). The aim of this study is to investigate the frequency and the related factors of alcohol-substance use among high school students in Izmir.

Materials and Methods: The population of the research consists of 1686 students in State High Schools in Karabaglar District of Izmir Province. The school principals and guidance counselors of the students were reached by the Karabaglar District Directorate of National Education and the Karabaglar Guidance Research Center Directorate, and an online meeting was held on March 24, 2021 with the participation of the school principals and guidance teachers, and information was given about the purpose of the research and how to deliver the questionnaires to the students. The survey was created through the online survey portal SurveyMonkey® (www.tr.surveymonkey.com). The survey link has been sent to the WhatsApp® accounts of the students. The answers were collected after the approval of the students' parents and students. The students were asked to complete a sociodemographic data form prepared by the researchers, Multidimensional Scale of Perceived Social Support (MSPSS), and the Self-Confidence Scale (SCS).

Results: A total of 1697 students completed the surveys. 65.32% of them were female and 34.68% of them were male. 86.63% of them were living with their both parents. 8.39% of them reported to have had a psychiatric treatment or psychological help. 5.62% of them have had a disciplinary punishment. 26.77% of them have a friend and 19.46% have a family member who uses alcohol. 3.67% of them have a friend and 1.12% have a family member who uses substance. 55.65% have a family member who uses nicotine. In the last year, 5.30% of the participants reported to use nicotine. The age of the students who were using nicotine (16.55 ± 1.38) was found to be significantly higher than those who did not (15.85 ± 1.18). Mean value of MSPSS were found to be 5.37 ± 0.21 which is considered as high perceived social support. Mean value of SCS were found to be 3.85 ± 0.33 which is considered as high self-confidence. The total score of perceived social support in nicotine users (61.51 ± 17.30) was lower than in non-smokers (64.82 ± 16.62) ($p=0.015$). There was no significant relationship between students' self-confidence and nicotine use ($p=0.362$).

Discussion and Conclusion: Nicotine, alcohol and substance use and associated adverse outcomes contribute to substantial morbidity, mortality, and economic costs to adults each year in the Turkey. Adolescents are susceptible to engaging in risky and impulsive behaviors, including substance use, because the brain areas associated with executive functioning, judgment, and decision-making matures after the areas associated with emotional responses and reward systems. It is important to know factors associated with alcohol-substance use disorder and related factors in order to prevent this psychosocial problem.

Keywords: Alcohol-substance use; High school; Risk factors.

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Full Text (ID-184): “Investigation of alcohol-substance use frequency and related factors of high school students in Izmir Introduction and Purpose”

Introduction: Alcohol-substance use is a growing public health and socioeconomic problem that has increased dramatically, especially in developing countries (1). Alcohol-substance use is becoming an increasing public health problem also in Turkey especially among the young in recent years. The studies indicated that reasons to start using alcohol-substance are curiosity, peer impression, proving himself, thinking to be matured, self-esteem, loneliness, inability to cope with distressing feelings, to increase

achievement and performance, to increase energy, to lose weight, and to increase creativity (2). However, there are not enough systematic studies on the prevalence and the causes of alcohol-substance use in part due to the reservations of school administrators. The aim of this study is to investigate the frequency and the related factors of alcohol-substance use among high school students in Izmir.

Materials and Methods: The population of the research consists of 1697 students in State High Schools in Karabaglar District of Izmir Province. The school principals and guidance counselors of the students were reached by the Karabaglar District Directorate of National Education and the Karabaglar Guidance Research Center Directorate, and an online meeting was held on March 24, 2021 with the participation of the school principals and guidance teachers, and information was given about the purpose of the research and how to deliver the questionnaires to the students. The survey was created through the online survey portal SurveyMonkey® (www.tr.surveymonkey.com). The survey link has been sent to the WhatsApp® accounts of the students. The answers were collected after the approval of the students' parents and students. The students were asked to complete a sociodemographic data form prepared by the researchers, Multidimensional Scale of Perceived Social Support (MSPSS), and the Self-Confidence Scale (SCS).

Sociodemographic data form: Prepared by the researchers. The students' age, gender, who they live with, whether they have received any psychiatric or psychological treatment before, whether they had a disciplinary punishment before, how often they are absent, whether they have friends who use cigarettes, alcohol, and drugs, whether there is a cigarette-alcohol-substance user in his family.

Multidimensional Scale of Perceived Social Support: The 12-question MSPSS which has been developed by Zimet et al. (3) at 1998 was used for the subjective assessment of social support. The validity and reliability analyses of the scale was performed by Eker and Arkar at 1995 (4). MSPSS is a likert type scale which has been organized as 7 graded. The scale has three subfields as family, friend, and special person support which represent the support sources and have four articles each. The 3, 4, 8, and 11 articles measure the family support, 6, 7, 9, and 12. articles measure friend support, and 1, 2, 5, and 10 articles measure a special person's support. A higher grade obtained from the scale represents that perceived social support is at a high level.

Self-Confidence Scale: The scale developed by Akin et al. (5) The 33-item scale is a 5-point Likert-type scale with answers as never, rarely, often, generally, and always. Always. A person's self-confidence level is calculated by dividing the total score obtained from the scale by the number of items on the scale. Scores lower than 2.5 points indicate low levels of self-confidence, scores between 2.5 and 3.5 points indicate moderate levels of self-confidence, and scores above 3.5 show high levels of self-confidence.

Results: Of the students, 1102 (65.32%) of them were female and 585 (34.68%) of them were male. Of the students, 1255 (74.3%) were studying at Anatolian High School, 332 (19.6%) at Vocational and

Technical High School, and 103 (6.1%) at Imam Hatip High School. 734 (43.5%) were 9th grade, 503 (29.8%) were 10th grade, 282 (16.6%) were 11th grade, 170 (10.1%) were 12th grade students. Of the students, 1464 (86.6%) lived with their parents, 162 (9.6%) lived with only their mother, 34 (2.0%) lived with only their father, and 30 (1.8%) lived with someone other than their mother or father. 142 (8.39%) students reported to have a psychiatric treatment or psychological help before. 95 (5.62%) of them have had a disciplinary punishment before. Seventeen (1.0%) of the students stated that they used their full absenteeism rights, 33 (2.0%) stated that they were absent very often, 316 (18.7%) of them stated that they were rarely absent, and 1321 (78.3%) of them did not attend unless it was compulsory.

26.77% of them have a friend and 19.46% have a family member who uses alcohol. 3.67% of them have a friend and 1.12% have a family member who use substance. 55.65% have a family member who uses nicotine.

In the last year, 5.30% of the students stated that they had used nicotine. The age of the students who were using nicotine (16.55 ± 1.38) was found to be significantly higher than those who did not (15.85 ± 1.18). There was no significant difference between smoking in men (8.0%) and smoking in women (9.7%) ($p=0.287$). The rate of smokers in 12th grade (21.2%) was higher than 9th grade (6.9%), 10th grade (7.0%) and 11th grade (11.0%) students ($p=0.001$). The rate of smoking among the students studying at Vocational and Technical High School (17.5%) is higher than the students studying at Imam Hatip High School (10.7%); and the rate of smoking among students studying at Imam Hatip High School was found to be higher than Anatolian High School (6.9%). 300 (17.7%) of the students stated that 1-5 of their friends and 153 (9.0%) of them stated that more than 5 of their friends used alcohol. The rates of cigarette-alcohol use in the families of the students were 55.7% and 19.4%, respectively.

According to the scale scores of SCS; 6 (0.4%) of the students' self-confidence were very low, 63 (3.7%) were low, 311 (18.3%) were medium, 785 (46.3%) were high, and 532 (31.3%) were very high level. There was no significant relationship between students' self-confidence and nicotine use ($p=0.362$). The total score of perceived social support in nicotine users (61.51 ± 17.30) was lower than in non-smokers (64.82 ± 16.62) ($p=0.015$).

Discussion and Conclusion: Adolescents are susceptible to engaging in risky and impulsive behaviors, including substance use, because the brain areas associated with executive functioning, judgment, and decision-making matures after the areas associated with emotional responses and reward systems (6). In a study, researchers suggested that adolescents were more vulnerable to the addictive properties of nicotine because the duration of smoking and the number of cigarettes required to establish nicotine addiction are lower comparing to adults (7). Data collected by the National Youth Risk Behaviour Survey in U.S.A. (8) indicate that almost 45% of high-school students tried a cigarette, and 18% smoked cigarettes on at least one day during the 30 days before. This rate is much higher than the rate of our study which is 5.30%.

We have found that perceived social support in nicotine users was lower than in non-smokers. The influences of family, peers, and school-interactions are the primary sources for both pros- and anti-smoking messages in adolescents' lives (9). In a study, which supports our results, researchers have found that teenagers reporting poor perceived social support showed significantly higher frequency of cigarette smoking (10).

In conclusion, it is important to know factors associated with alcohol-substance use disorder and related factors in order to prevent this psychosocial problem.

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Table 1. Some of the descriptive characteristics of the students.

			N	%
Gender	Male		34.68%	585
	Female		1,102	65.32%
Grade of the student	9th		734	43.46%
	10th		503	29.78%
	11th		282	16.70%
	12th		170	10.07%
Previous psychiatric or psychological treatment	No		1,550	91.61%
	Yes		142	8.39%
Smoking status of the student	No		1,538	94.70%
	Yes (Number of cigarettes a day)	1-10	65	4%
		10-20	15	0.9%
		>20	6	0.4%
Smoking in the family	No		749	44.35%
	Yes		940	55.65%
Alcohol in the family	No		1,362	80.54%
	Yes		329	19.46%

ID-185 / OP: “Ocular Examination Findings of Healthy Full-term Newborns.”

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Abstract (ID-185)

Purpose: The study is aimed to reveal the ocular examination findings of healthy full-term newborns.

Methods: This study was carried out by retrospectively examining the demographic and ocular examination findings of healthy full-term newborns who were referred to the Izmir Democracy University Buca Seyfi Demirsoy Training and Research Hospital outpatient clinic for eye screening between May 2021 and November 2021. The gender, type of birth, birth weight and ocular examination findings of the newborns were recorded.

Results: A total of 195 newborns (70 boys, 125 girls) were included in the study. Mean week of birth was 38.9 ± 1.08 (36-43) and mean birth weight was 3353 ± 457.44 (1880-4660) grams. The vaginal delivery and cesarean section rates were 61% (n:119) and %39 (n:76), respectively. When the ocular examination findings were examined, intraretinal hemorrhage at the posterior pole and/or peripapillary area in 18 patients (9.2%), epiphora and neonatal conjunctivitis in 8 patients (4.1%), capillary hemangioma of the upper eyelid in 1 patient (0.51%), and congenital cataract in 1 patient (0.51%) were detected. Retinal hemorrhages (vaginal delivery: 17, cesarean section: 1) were statistically significantly higher in newborns who were born by vaginal delivery ($p:0.002$).

Conclusion: A wide range of ocular pathologies can be seen in newborns, including the anterior and posterior segments of the eye. Posterior segment findings can only be detected by dilated fundus exam. Also, the exam is important in detecting both retinal hemorrhages that resolve spontaneously during follow-up and other posterior segment pathologies that may be serious.

Keywords: Epiphora; Newborn; Ocular findings; Retinal hemorrhage.

ID-186 / OP: “Suicide Risk and Related Factors Among Cancer Patients”

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Abstract (ID-186)

Introduction and Purpose: Several studies have shown an increased risk of suicide in cancer patients. Suicide rates among cancer patients are thought to be twice of the general population (1). But literature is scarce about the factors associated with increased suicide risk in our country (2). Therefore, in this study we aimed to study risk of suicide and it's related factors such as decrease in quality of life, lack of social support, severity and type of symptoms, anxiety and depression, and sociodemographic characteristics.

Materials and Methods: In this cross-sectional descriptive study; Sociodemographic Data Form, Suicide Probability Scale (SPS), Multidimensional Scale of Perceived Social Support (MSPSS), European Organization for Research and Treatment (EORTC) quality of life questionnaire (QLQ-C30), Edmonton Symptom Assessment System (ESAS), and Hospital Anxiety and Depression Scale (HADS) were administered to 122 newly diagnosed cancer patients who were treated in an oncology outpatient clinic in a tertiary referral hospital.

Results: Mean age of the cancer patients was 58.5 ± 13.3 . Eastern Cooperative Oncology Group (ECOG) performance status of 107 (87.7%) patients was 0. Among the patients; 40 (32.8%) were breast cancer, 28 (23%) were colorectal cancer, 12 (9.8%) were lung cancer, 8 (6.6%) were esophagus/stomach cancer, 5 (4.1%) were pancreas, 2 (1.6%) were larynx cancer and 27 (22.1%) were other types of cancer. Fourtyfour (36.1%) of the patients had a relative with cancer in their family. Fifteen (12.3) of the patients were diagnosed with a psychiatric disorder whereas 18 (14.8%) of the patients had a relative with a psychiatric disorder. Median value of ESAS for pain was 2, for tiredness was 3, drowsiness was 2, appetite was 2, well being was 3, with a total of 1 point. Among the 122 patients, 5 were living alone. Four patients had a suicide attempt history and 4 patients had suicide attempt history in their family. In the last month,

4 patients reported to have suicide thoughts. In total, median value of suicide risk for all patients were found to be 2.3 (%30).

Discussion and Conclusion: Median value of suicide risk for all patients were not found to be high probably due to the patients were newly diagnosed. Knowledge about the psychiatric disorders and other factors related with suicide risk among cancer patients is an important aid for the psychiatrists and physicians who are primarily taking care of those patients in order to prevent suicide. According to previous studies; intractable pain, major depression, loss of control, emotional disturbance and loss of physical functioning were found to be related with suicide thoughts. Physicians should be aware of patients with high risk of suicide and guide those patients for the appropriate psychotherapeutic interventions which should include also the relatives and treatment team.

Keywords: Cancer; Suicide; Prevention.

Full Text (ID-186): “Suicide Risk and Related Factors Among Cancer Patients”

Introduction and Purpose: Several studies have shown an increased risk of suicide in cancer patients. Suicide rates among cancer patients are thought to be twice of the general population (1). While this risk is at the highest level in early times of the diagnosis, a study showed that the risk for suicide continued even after 30 years after a breast cancer diagnosis. Furthermore, it was reported that suicidal ideation and attempts were frequent in childhood cancer patients after 20 years from the treatment (2). But literature is scarce about the factors associated with increased suicide risk in our country (3). In the light of this information; it is extremely important to determine the suicide probability of the patient at an earlier stage and detect the variables that may be effective on this condition in order to take necessary precautions. Therefore, in this study we aimed to study risk of suicide and it's related factors such as decrease in quality of life, lack of social support, severity and type of symptoms, anxiety and depression, and sociodemographic characteristics.

Materials and Methods: *Data collection and samples:* In this cross-sectional descriptive study; Sociodemographic Data Form, Suicide Probability Scale (SPS), Multidimensional Scale of Perceived Social Support (MSPSS), European Organization for Research and Treatment (EORTC) quality of life questionnaire (QLQ-C30), Edmonton Symptom Assessment System (ESAS), and Hospital Anxiety and Depression Scale (HADS) were administered to 122 new to diagnosis cancer patients who were admitted to Izmir Katip Celebi University Ataturk Education and Research Hospital on medical oncology outpatient clinic between June 2020-March 2021.

Sociodemographic Data Form: Age, gender, marital status, education level, psychiatric history of the participants and their family, history of suicide attempt of participants and their family were asked.

Suicide Probability Scale: It was developed by John Cull and Wayne Gill (4). A Turkish version was prepared with validity and reliability studies have been done (5). The scale has been slightly modified by Sahin and Batigun (6). It has four subscales (Hopelessness, suicidal ideation, negative self-evaluation and hostility). The sum of all scores gives the overall suicidal probability score. According to rating scaled

from 1-4, the total score to be taken from the scale is between 36-144. High scores on the scale indicate a high probability of suicide.

Hospital Anxiety and Depression Scale (HADS): HADS is a self-report scale developed by Zigmond and Snaith (7) which is used to determine anxiety and depression levels. It consists of 14 questions, each of which is scored 0–3. Anxiety and depression are evaluated with seven questions each. The lowest possible scores for depression and anxiety are 0, and the highest possible scores are 21. Higher scores indicate increased severity of anxiety or depression. The reliability and validity of the Turkish language version were examined by Aydemir et al. Cut-off scores for Turkish society have been determined as 7 for anxiety and 10 for depression (8).

Edmonton Symptom Assessment System: The ESAS scale was developed by Eduardo Bruera et al. (9) with the aim of improving the management of care for patients with cancer. The main rule (golden rule) of the symptom assessment is based on the opinion of a patient of the severity of his/her symptoms. The ESAS is designed to assist in the assessment of nine symptoms that are common in patients with cancer: pain, tiredness, nausea, depression, anxiety, drowsiness, appetite, loss of well-being and shortness of breath (there is also a line labelled “Other Problems”). The severity of each symptom at the time of assessment was rated from 0 to 10 on a numerical scale, with “0” meaning that the symptom was absent, and “10” meaning that the symptom was of the worst possible severity. The validity and reliability of the ESAS were investigated by Sadırlı et al. (10).

Multidimensional Scale of Perceived Social Support: The 12-question MSPSS which has been developed by Zimet et al. (11) at 1998 was used for the subjective assessment of social support. The validity and reliability analyses of the scale was performed by Eker and Arkar at 1995 (12). MSPSS is a likert type scale which has been organized as 7 graded. The scale has three subfields as family, friend, and special person support which represent the support sources and have four articles each. The 3, 4, 8, and 11 articles measure the family support, 6, 7, 9, and 12. articles measure friend support, and 1, 2, 5, and 10 articles measure a special person’s support. A higher grade obtained from the scale represents that perceived social support is at a high level.

European Organization for Research and Treatment (EORTC) quality of life questionnaire (QLQ-C30)
It was developed to assess the quality of life of cancer patients. With the EORTC QLQ-C30 symptoms are assessed on a fourpoint verbal rating scale by the descriptors “not at all”, “a little”, “quite a bit”, and “very much” (13). The Turkish form was evaluated by Guzelant et al. (14). This scale has 30 items and 3 subscales: general wellness, functional difficulties, and symptom control. High scores of general wellness mean that the quality of life is high. Low scores in functional difficulties and symptoms mean that the quality of life is high.

Results: Mean age of the cancer patients was 56.85 ± 13.3 . Among the patients; 40 (32.8%) were breast cancer, 28 (23%) were colorectal cancer, 12 (9.8%) were lung cancer, 8 (6.6%) were esophagus/stomach cancer, 5 (4.1%) were pancreas, 2 (1.6%) were larynx cancer and 27 (22.1%) were other types of cancer. Fourtyfour (36.1%) of the patients had a relative with cancer in their family. Fifteen (12.3) of the patients

were diagnosed with a psychiatric disorder whereas 18 (14.8%) of the patients had a relative with a psychiatric disorder. Among the 122 patients, 5 were living alone. Seven patients had a suicide attempt history and 4 patients had suicide attempt history in their family. In the last month, 4 patients reported to have suicide thoughts.

There was a statistically significant difference between scores obtained from the suicidal probability scale in patients with and without smoking status and suicide thoughts in the last month. Descriptive characteristics of patients and the comparison of suicide probability of patients with respect to patients' descriptive characteristics are summarized at Table 1.

ECOG performance status of 107 (87.7%) patients was 0, 12 (9.8%) patients was 1 and 3 (2.5%) patients was 2. Median value of ESAS for pain was 2, for tiredness was 3, drowsiness was 2, appetite was 2, well being was 3, with a total of 1 point. SPS was found to be moderately correlated with anxiety subscale of ESAS ($p=0.013$). Total HAD scale score values were found to be significantly correlated with SPS values ($p=0.013$). There were no correlations between SPS values and MSPSS values ($p=0.611$).

Discussion and Conclusion: Median value of suicide risk for all patients were considered to be significant in our sample of newly diagnosed cancer patients. Cancer patients choose to commit suicide rather than dying in agony from an incurable illness and regard it as a peaceful way to die (15). In our study, 4 (3.2%) patient reported to have suicidal ideation in the last month which is similar with the literature. In their study, Leung et al. (2013) determined that 5.9% of patients had suicidal ideation (16). Anxiety disorders are common mental disorders in cancer patients, with reported prevalence of 10% - 30% (17). We have found that HAD scale values were significantly correlated with SPS values as expected.

Knowledge about the psychiatric disorders and other factors related with suicide risk among cancer patients is an important aid for the psychiatrists and physicians who are primarily taking care of those patients in order to prevent suicide. Physicians should be aware of patients with high risk of suicide and guide those patients for the appropriate psychotherapeutic interventions which should include also the relatives and treatment team.

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Table 1. Descriptive characteristics of patients and the comparison of suicide probability of patients with respect to patients' descriptive characteristics

		N (%)	SPS (mean±SD)	P value
Gender	Male	55 (45.1)	83.45±10.91	0.167
	Female	67 (54.9)	82.74±9.43	
Marital Status	Married	99 (81.1)	83.32±9.58	0.496
	Single	10 (8.2)	79.5±7.69	
	Divorced	10 (8.2)	85.20±16.03	
	Other	3 (2.5)	89.1±13.23	
Employment	Yes	22 (18)	83.45±10.01	0.879
	No	100 (82)	83.09±10.15	
Smoking	Yes	26 (21.3)	88.92±11.11	0.004
	No	96 (78.7)	81.63±9.20	
Alcohol	Yes	17 (13.9)	86.18±13.03	0.236
	No	105 (86.1)	82.69±9.55	
Cancer in the family	Yes	44 (36.1)	82.25±10.15	0.507
	No	78 (63.9)	83.50±9.83	
Psychiatric comorbidity	Yes	15 (12.3)	86.20±12.12	0.180
	No	107 (87.7)	82.5±9.76	
Suicide thought last month	Yes	118 (96.7)	97.50±14.47	0.029
	No	4 (3.3)	82.39±9.45	

ID-187 / OP: “Suicide Risk and Related Factors Among Physicians in Turkey”

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Abstract (ID-187)

Introduction and Purpose: Suicide rates among physicians appears to be higher than general population. In recent years, due to the increasing difficulties in working conditions in our country, reports of suicide attempts are more common among physicians. Easy access to drugs and having knowledge about drugs play an important role in physician suicides (1). Unfortunately, comorbid psychiatric disorders and psychosocial factors associated with suicide among physicians in Turkey were not adequately studied in the literature (2). Therefore, in this study we aimed to study risk of suicide and it's related factors among physicians.

Materials and Methods: In this cross-sectional descriptive study; Sociodemographic Data Form, Suicide Probability Scale (SPS), Addiction Profile Index (BAPI) short form, and Maslach Burnout Inventory (MBI) were administered to 285 physicians working in Turkey who gave consent to be included in the study.

Results: Mean age of physicians (155 female, 130 male) were 43 ± 15.3 years. Majority of physicians were working in internal medicine (77.5%; n:221), 50 (17.5%) were working in surgical medicine and 14(4.9%) were working in preclinical sciences. Of the physicians, 166 (58.2%) were specialist, (15.1%) 43 were general practitioner, 29 (10.2%) were associate professor, 19 (6.7%) resident, 15 (5.3%) were assistant professor, and 13 (4.6%) were professor. Out of a total, 230 (80.7%) were married, 29 (10.2%) were single, 22 (7.7%) were divorced and 4 (1.4%) were widowed. 224 physicians (78.6%) answered yes and 61 physicians (21.4%) answered no to the question "Do you have faith?". The median years of

employment in the profession was 18 years. 213 (74.7%) of the physicians were drinking alcohol. Median value of MBI was 3.18. Median value of suicide probability was found to be 2.4 (30%).

Discussion and Conclusion: Majority of the physicians included in the study were specialists. It was determined that three out of four physicians have been using alcohol. About two-thirds of the physicians worked for more than 8 hours and the burnout score was found to be high. The median suicide probability scale was found to be at a significant rate. Both the long working hours of physicians and the increased burnout seem to have an important factor. Therefore, physicians were found to have increased risk of suicide and it is very important to evaluate physicians at regular intervals in order to reduce the probability of suicide.

Keywords: Physician; Suicide; Risk factors.

Full Text (ID-187): “Suicide Risk and Related Factors Among Physicians in Turkey”

Introduction and Purpose: In recent years, due to the increasing difficulties in working conditions in our country, reports of suicide attempts are more common among physicians. Suicide rates among physicians appears to be higher than general population (1). Suicide rates of male doctors are as much as 40% higher than the general population, and for female doctors this rate goes up to 130% higher (2). There are many biological, psychological, and social factors for suicide risk. Major risk factors for 90% of individuals who die by suicide are mental illness and substance use disorders (3). On the other hand, Easy access to drugs and having knowledge about drugs play an important role in physician suicides (4). Alcohol-substance abuse is related with impulsivity and it worsens affective symptoms therefore it may increase suicide rates.

It was found that 20% of medical residents have had major depressive disorder and 74% of them were experiencing burnout (5). Physicians are forced to work in high standards with low mistake rates, put patients well being first than their own lives and are reluctant to ask for help, which makes them vulnerable for burnout (6).

Unfortunately, comorbid psychiatric disorders and psychosocial factors associated with suicide among physicians in Turkey were not adequately studied in the literature Therefore, in this study we aimed to study risk of suicide and it's related factors among physicians.

Materials and Methods: In this cross-sectional descriptive study; Sociodemographic Data Form, Suicide Probability Scale (SPS), Addiction Profile Index (BAPI) short form, and Maslach Burnout Inventory (MBI) were administered to 285 physicians working in Izmir, Turkey, who gave consent to be included in the study.

Sociodemographic Data Form

Age, gender, marital status, education level, psychiatric history of the participants and their family, history of suicide attempt of participants and their family were asked.

The Suicide Probability Scale

It was developed by John Cull and Wayne Gill (7). A Turkish version was prepared with validity and reliability studies have been done (8). The scale has been slightly modified by Sahin and Batigun (9). It has four subscales (Hopelessness, suicidal ideation, negative self-evaluation and hostility). The sum of all scores gives the overall suicidal probability score. According to rating scaled from 1-4, the total score to be taken from the scale is between 36-144. High scores on the scale indicate a high probability of suicide.

Maslach Burnout Inventory (MBI): This inventory was designed by Maslach and Jackson (10). Inventory approaches burnout through three sub-dimensions: emotional burnout, depersonalization and personal accomplishment. High score in emotional burnout and depersonalization dimensions, low score in personal accomplishment dimensions mean burnout.

Results: Mean age of physicians (155 female, 130 male) were 43 ± 15.3 years. Majority of physicians were working in internal medicine (77.5%; n:221), 50 (17.5%) were working in surgical medicine and 14 (4.9%) were working in preclinical sciences. Of the physicians, 166 (58.2%) were specialist, (15.1%) 43 were general practitioner, 29 (10.2%) were associate professor, 19 (6.7%) resident, 15 (5.3%) were assistant professor, and 13 (4.6%) were professor. Out of a total, 230 (80.7%) were married, 29 (10.2%) were single, 22 (7.7%) were divorced and 4 (1.4%) were widowed. 224 physicians (78.6%) answered yes and 61 physicians (21.4%) answered no to the question "Do you have faith?". The median years of employment in the profession was 18 years. 213 (74.7%) of the physicians were drinking alcohol. Median value of MBI was 3.18. Median value of suicide probability was found to be 2.4 (30%).

Discussion and Conclusion: Major finding of our study is that the median SPS was found to be at a significant rate. This finding is similar with other studies who repeatedly have shown from decades ago that physicians are in high risk for suicide (11). Male physicians are 40% more likely to die by suicide than non-physician males, and the risk to female physicians is more than doubled (12).

Other finding of our study is almost three out of four physicians have been using alcohol. In a study, it was reported that physicians who committed suicide were significantly more likely than non-physicians to have antipsychotics, benzodiazepines and barbiturates present on toxicology screen (13). Our result is in concordance with previous studies which reports a high incidence of alcoholism and drug addiction among physicians who suicide.

Last finding of our study is that about two-thirds of the physicians worked for more than 8 hours and the burnout score was found to be high. Competitive training and working environment is thought to be inherent to becoming a physician and stress is mostly normalized for physicians. As a result, physicians may feel alone and not supported by their colleagues and this isolation and lack of social support increases the burden of burnout (14). Both the high rate of alcohol consumption and the increased burnout seem to have an important factor for suicide risk according to our study.

Unfortunately, physicians who died by suicide were found to be less likely to get help than the general population who committed suicide (13). Therefore, it is very important to evaluate physicians at regular intervals in order to reduce the probability of suicide.

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ID-188 / OP: “Does Lateral Overhang of Tibial Baseplate Affect Clinical Results After Total Knee Arthroplasty?”

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Abstract (ID-188)

Purpose: The aim of this study is to investigate the amount of lateral overhang of the tibial components used in patients undergoing primary total knee replacement, and to evaluate the knee pain and functional capacity associated with this overflow and compare it with patients without lateral overhang.

Method: Patients who underwent primary total knee replacement between 2014 and 2021 were retrospectively analyzed. Having a previous operation on the same extremity or a history of fracture, known active hip or low back problem, undergoing unicondylar or revision total knee replacement, developing infection, having tibial component in varus or valgus, not present for the last control examination, and duration of follow-up Patients less than 24 months old were excluded from the study. Forty-two patients who fell outside of these criteria and underwent the same total knee replacement (brand and model) by the same surgeon were included in the study. The amount of lateral protrusion of the tibial components was measured radiologically on direct AP X-ray. The Knee Society Score (KSS) system was used for clinical evaluation. The patients were divided into two groups as those with and without lateral overflow. The patients without lateral overflow were named Group 1, and the patients with it were named Group 2. The pre- and postoperative clinical and radiological results of the groups were compared. Statistically, $p < 0.05$ was considered significant.

Results: Of 42 patients, 36 were female and 6 were male. The right knee of 20 patients and the left knee of 22 patients were operated. Mean follow-up was 41.8 months (range; 25-58 months). The mean age was 67.4 years (range; 53-81 years). Preoperative mean CSR score of all patients was 52.45 (range; 47-57 points), and mean postoperative CSR score was 79.3 (range; 71-84 points). When all patients were evaluated together, the increase in postoperative CSR scores was statistically significant compared to preoperatively ($p < 0.05$). According to direct X-ray, lateral extrusion was detected in 13 patients (31%) (Group 2), while lateral extrusion was not observed in 29 (69%) patients (Group 1). There was no difference between the groups in demographic data and preoperative CSR scores ($p > 0.05$). The mean postoperative CSR score was 83 in Group 1 and 72 in Group 2. The mean postoperative CSR score of Group 1 was higher than Group 2, and this difference was statistically significant ($p < 0.05$).

Conclusions: This study has shown us that the rate of patients with lateral overhang is quite high in patients who underwent primary total knee replacement, and this overflow adversely affects clinical outcomes. The amount of lateral overhang may increase with external rotation of the tibial component. We think that this situation should be considered by clinicians as a risk factor for decreased clinical success after total knee replacement.

Keywords: Knee arthroplasty; Lateral overhang; Tibial baseplate; Knee pain.

ID-189 / PP: “Investigation of Bipolar Disorder with Functional Magnetic Resonance Imaging (fMRI) Studies”

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Abstract (ID-189)

Bipolar disorder is a serious psychiatric disorder that affects approximately 1-2% of the population. The biological basis of bipolar disorder with manic-depressive episodes is still unknown. Functional magnetic resonance imaging or functional MRI (fMRI) method is one of the most effective methods recently used in brain imaging. In our study, the etiology of bipolar disorder is investigated by evaluating the findings of fMRI studies. If more information is gained about the causes of bipolar disorder, treatment can become more effective and solution-oriented.

In our study, functional magnetic resonance imaging (fMRI) studies in patients with bipolar disorder were examined and the findings were compiled. 10 of 27 studies conducted in 2020 and 2021, which were accessed by searching the keywords (((neuroimaging) AND (bipolar disorder)) AND (connectome)) AND (brain)) AND (fMRI) on Pubmed, were analyzed and the study findings were compiled.

As a result of the study, it was observed that there were significant differences in fMRI imaging findings in bipolar patients compared to the normal population. Intranetwork hypo-connectivity has been reported between the resting default mode, salience, and central executive networks in bipolar disorder. Hyperconnectivity was found between the central executive network while performing a cognitive task. Internetwork functional connectivity in the brain of bipolar disorder was greater between projection and putative mode networks, compared with control, and decreased between resting projection and central executive networks.

Collective findings from these studies may suggest potential roles of certain cortical and subcortical regions of the brain as neural correlates of bipolar disorder. However, the relationships between multiple brain regions identified to be significantly altered, and clinical symptoms of the bipolar disorder remain highly inconclusive. Recently, increasing evidence reveals important roles of functional brain changes in bipolar disorder, such as functional connectivity within and between brain regions responsible for cognition and emotion. Collective findings from ROI-based studies have revealed different inter-network functional connectivity patterns among large-scale functional networks in bipolar disorder compared to healthy control. It shows a significantly increased connectivity between the prominent network and the default mode network (DMN) . Decreased functional connectivity between the salience network and the

central executive network, as well as between the central executive network and the default mode network (DMN), has been reported. Although this relationship has not been reported bilaterally, it is noteworthy that there is also increased functional connectivity between the right dorsolateral prefrontal cortex of the central executive network and the posterior cingulate cortex of the default mode network. The intermittent intra- and inter-network functional connectivity also associated with clinical symptoms suggest that the altered functional connectivity of large-scale networks plays an important role in the pathophysiology of bipolar disorder. Specifically, these studies indicated that impairment in DMN functional activity was associated with symptoms of depression, anxiety, or suggested as reliable predictors of relevant clinical symptom severity. This study may demonstrate the importance of network-based perspectives in bipolar disorder as it can provide more comprehensive results about changes in the brain and reduce the possibility of error in the selection of interests.

Keywords: Bipolar disorder; Functional magnetic resonance imaging (fMRI); Connectivity; Neuroimaging; Default mode network (DMN).

ID-190 / OP: “Neonatal Outcomes of Overweight and Obese Mothers-Do They Obey Recommended Gestational Weight Gain Guidelines?”

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Abstract (ID-190)

Introduction and Purpose: Overweight and obesity is a worldwide epidemic and 33% of pregnant women are overweight or obese in the UK. Accumulating evidence shows that women with overweight or obesity before pregnancy are at increased risk for adverse maternal and neonatal outcomes compared with normal weight women. Furthermore, our recent study shows that women with gestational weight gain (GWG) above or below the Institute of Medicine (IOM) guidelines are at risk for adverse pregnancy outcomes.

Therefore, the objectives of our study were to study the incidence of adverse maternal and neonatal outcomes in obese or overweight women and to evaluate the adherence to guidelines of IOM regarding GWG by these mothers.

Materials and Methods: A retrospective study was conducted among all singleton births to obese or overweight women pregestationally and were followed at Izmir Medicalpark Hospital, Department of Obstetrics and Gynecology between January 1, 2018 and December 31, 2019. Data were obtained from computerized medical records. Demographic characteristics, medical and obstetric histories, and information regarding the course of the pregnancy and neonatal outcomes are recorded.

Results: In this study, infants of 17 overweight and 23 obese pregnant women are evaluated. Mean gestational week was 38,7±0,9 and 38±2 weeks, mean birth weight of the newborns were 3515±308 and 3161±575 respectively. When the two groups are evaluated together, hospitalization rate of the newborn to NICU is %8.9, mean duration of hospitalization being longer in the obese group. 62.2% of the babies were males and 86.7% were born by cesarean section (C/S), 8.9% with assisted vaginal delivery. None of the pregnant women experienced placental abruption but 4 had abnormal presentation of the fetus. 4 (10%) had diagnosis of gestational diabetes (GDM) while none had pregestational diabetes. Only 1 pregnant woman had hypertension and 1 had preeclampsia. Neither of the babies had perinatal asphyxia nor intracranial hemorrhage. 2 newborns had postnatal hypoglycemia during their course. 5 newborns were LGA and 1 SGA. None of the babies had congenital anomaly, hypocalcemia and polycythemia. Total weight gained

all throughout the pregnancy by overweight women was 17 ± 5.5 kg and obese women was 9.5 ± 5 kg. 88% of the overweight women did not obey the recommended weight gain guideline while this ratio is 52% in obese ones.

Discussion and Conclusion: According to our findings, neonatal LGA and hospitalization ratios of newborns are higher in obese or overweight pregnancies compared to the general practice. GDM, preeclampsia and placental abruption are found to be lower compared to the current literature. Adherence to the recommendations for GWG is seen to be low in obese women, being even lower in overweight group. Also considering the longer hospitalization duration of infants of obese women, our study confirmed most prior reports that maternal obesity is associated with increased risks for adverse neonatal outcomes even if they were better in adhering to the GWG recommendations compared to the overweight pregnant.

Keywords: Maternal obesity, overweight, gestational weight gain, neonatal outcome.

Full-text (ID-190)

Introduction and Purpose: Overweight and obesity is a worldwide epidemic and 33% of pregnant women are overweight or obese in the UK. The situation is even worse in US. Accumulating evidence shows that women with overweight or obesity before pregnancy are at increased risk for adverse maternal and neonatal outcomes compared with normal weight women. Furthermore, recent studies show that women with gestational weight gain (GWG) above or below the 2009 Institute of Medicine (IOM) guidelines are at risk for adverse pregnancy outcomes. It is, however, unclear whether similar associations exist across all women or there is a differential effect of GWG on the rate of adverse pregnancy outcome among women of different pregestational weight categories.

Therefore, the objectives of our study were to study the incidence of adverse maternal and neonatal outcomes in obese or overweight women and to evaluate the adherence to guidelines of Institute of Medicine (IOM) regarding gestational weight gain (GWG) by these mothers.

Materials and Methods: A retrospective study was conducted among all singleton births to obese or overweight women pregestationally and were followed at Izmir Medicalpark Hospital, Department of Obstetrics and Gynecology between January 1, 2018 and December 31, 2019. Data were obtained from computerized medical records. Demographic characteristics, medical and obstetric histories, and information regarding the course of the pregnancy and neonatal outcomes are recorded.

Results: In this study, infants of 17 overweight and 23 obese pregnant are evaluated. Mean gestational week was $38,7\pm0,9$ and 38 ± 2 weeks, mean birth weight of the newborns were 3515 ± 308 and 3161 ± 575 respectively. When the two groups are evaluated together, hospitalization rate of the newborn to NICU is %8.9, mean duration of hospitalization being longer in the obese group. 62.2% of the babies were males and 86.7% were born by cesarean section (C/S), 8.9% with assisted vaginal delivery. None of the pregnant experienced placental abruption but 4 had abnormal presentation of the fetus. 4 (10%) had diagnosis of gestational diabetes (GDM) while none had pregestational diabetes. Only 1 pregnant had

hypertension and 1 had preeclampsia. Neither of the babies had perinatal asphyxia nor intracranial hemorrhage. 2 newborns had postnatal hypoglycemia during their course. 5 newborns were LGA and 1 SGA. None of the babies had congenital anomaly, hypocalcemia and polycythemia. Total weight gained all throughout the pregnancy by overweight women was 17 ± 5.5 kg and obese women was 9.5 ± 5 kg. 88% of the overweight women did not obey the recommended weight gain guideline while this ratio is 52% in obese ones.

Discussion and Conclusion: According to our findings, neonatal LGA and hospitalization ratios of newborns are higher in obese or overweight pregnancies compared to the general practice. GDM, preeclampsia and placental abruption are found to be lower compared to the current literature. Adherence to the recommendations for GWG is seen to be low in obese women, being even lower in overweight group. Also considering the longer hospitalization duration of infants of obese women, our study confirmed most prior reports that maternal obesity is associated with increased risks for adverse neonatal outcomes even if they were better in adhering to the GWG recommendations compared to the overweight pregnant women. Further prospective studies comparing obese and overweight pregnant women with normal weight ones are needed to support these findings.

Keywords: Maternal obesity, overweight, gestational weight gain, newborn, outcome

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ID-191 / OP: “Effect of Body Mass Index on F-18 FDG PET/CT Images”

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Abstract (ID-191)

Introduction and Purpose: Obesity-related difficulties are encountered in the treatment and follow-up of patients with malignancy. F-18 fluorodeoxyglucose positron emission tomography/computed tomography (F-18 FDG PET/CT) is a metabolic imaging method used in the evaluation of malignant lesions due to its high accuracy. FDG is a sugar-equivalent compound that accumulates in malignant cells. In malignant cells, glucose metabolism increases, and accordingly, FDG uptake increases by comparison to the background activity. While visual evaluation of F-18 FDG PET/CT images is crucial for diagnosis and response to treatment, semi-quantitative analysis [(standardized uptake value) (SUV)] provides an objective marker for lesion characterization. SUV is a measure of normalized tumor uptake based on the volume of distribution. The patient's body weight is used to calculate the mean radioactivity concentration. If the same amount of FDG is injected into overweight and underweight patients, the concentration of radioactivity measured in the lesion of the overweight patient would be expected to be lower than that measured in the underweight patient. Since SUV calculations are standardized according to body weight, the patient's body mass index and body composition may cause variability in SUV measurements.

Materials and Methods: In our study, 32 obese (body mass index over 30) (24 females, 8 males), 32 normal weight (body mass index 18.5-24.5) (8 females, 24 males) patients who underwent oncological F-18 FDG PET/CT examination in our department between May and October 2021 were included. Patients should fast at least 4 hours before the F-18 FDG PET/CT to ensure blood glucose and insulin levels are low. The pre-injection fasting blood glucose levels, concomitant hypertension, and diabetes diagnosis, liver, blood pool, and muscle SUV were compared. Patients with liver metastases were not included in the study for the standardization of liver SUV measurements. Liver SUV measurements were plotted in the left lobe, blood pool measurements were made from the aortic arch, and muscle measurements were made from the right deltoid muscle in each patient.

Results: In obese patients, increased FDG uptake was detected in the liver, blood pool, and muscle tissues compared to the non-obese group. Mean liver SUV was calculated as 4.7 in the obese group and 3.0 in the non-obese group, respectively. In obese patients, blood pool and muscle SUV were calculated as 3.2 and 2.0, respectively, but in the normal weight group, these measurements were found as 2.2 and 1.4, respectively. There was a higher rate of hypertension and diabetes diagnosis in obese patients. There are 19 patients with hypertension and 10 diabetes in the obese patient group however, there are 5 patients

with hypertension and 3 patients with diabetes in the non-obese group. Fasting serum glucose levels were also found to be higher in the obese patient group compared to the normal weight patient group.

Conclusion: Fluorodeoxyglucose distribution in the body is weight-dependent. As a result, as the body mass index increased, it was observed that the background activity in F-18 FDG PET/CT images increased, the FDG biodistribution changed, and the FDG uptake of malignant lesions, thus SUV, was negatively affected.

Keywords: Body mass index; F-18 FDG PET/CT; SUV.

Full-Text (ID-191): “Vücut Kitle İndeksinin F-18 FDG PET/BT Görüntüleri Üzerine Etkisi”

Giriş ve Amaç: Son yıllarda toplumumuzda giderek artan obezite (vücut kitle indeksi [VKİ] ≥ 30 kg/m²) nedeniyle birçok sağlık problemi ortaya çıkmakta, var olan hastalıkların takibi ve prognozu etkilenmektedir. Dünya sağlık örgütü (DSÖ) verilerine göre dünya çapında obezite 1975'ten beri neredeyse üç katına çıkmıştır. Endometrium, over, meme, pankreas, kolon ve prostat kanserleri başta olmak üzere bazı malignitelerin etyolojisinde obezitenin yer aldığı bilinmektedir (1). Etiyolojik varlığının yanında malignite tanılı hastaların tedavi ve takibinde de obeziteye bağlı zorluklar ile karşılaşilmektedir. Flor-18 florodeoksiglukoz pozitron emisyon tomografi/ bilgisayarlı tomografi (F-18 FDG PET/BT) malignitelerin evreleme ve tedaviye yanıtının değerlendirilmesinde kullanılan metabolik bir görüntüleme yöntemidir. FDG malign hücrelerde biriken şeker eşdeğeri bir bileşiktir. Malign hücrelerde, glikoz metabolizması artar ve buna bağlı olarak FDG tutulumu da zemin aktiviteye oranla artmaktadır. F-18 FDG PET/BT görüntülerinin görsel değerlendirilmesi, tanı ve tedaviye yanıt için çok önemli olmakla birlikte, yarı kantitatif analiz (standartize edilmiş tutulum değeri, SUV) lezyon karakterizasyonu için objektif bir belirteç sağlamaktadır. SUV, dağılım hacmine dayalı normalize edilmiş tümör tutulumunun ölçümüdür. Yüksek insülin seviyesi mevcut ise insülin duyarlı glukoz taşıyıcılarının aktive olmaları ile yağ ve kas dokusunda daha fazla tutulum olmakta ve bu durum FDG biyodağılımını, görüntü kalitesini ve malign lezyonların SUV'unu etkileyebilmektedir. SUV hesaplamaları vücut ağırlığına göre standardize edildiği için hastanın vücut kitle indeksi ve vücut kompozisyonu da SUV ölçümlerinde değişkenliğe ve buna bağlı olarak hastaların takibinde yanlış sonuçlara neden olabilmektedir (2).

Materyal ve Metot: Çalışmamıza Mayıs-Ekim 2021 tarihleri arasında bölümümüzde onkolojik F-18 FDG PET/BT (Philips True Flight Select) tetkiki yapılan 32 obez (VKİ 30 üzeri) (24 kadın, 8 erkek) (yaş ortalaması 59), 32 normal kilolu (VKİ 18,5-24,5) (8 kadın, 24 erkek) (yaş ortalaması 55) hasta dahil edildi. Tüm hastaların vücut ağırlığı (kg) ve boyu (m) ölçüldü, vücut ağırlığının (kg) boyun (m²) karesine bölünmesiyle VKİ hesaplandı. Kan şekeri ve insülin düzeylerinin düşük olmasını sağlamak amacıyla hastalara tetkik öncesi en az 4 saat aç olmaları gerektiği belirtildi. Çalışmaya dahil edilen hastaların enjeksiyon öncesi bakılan açlık kan şekeri düzeyleri, eşlik eden hipertansiyon ve diyabet tanıları, PET/BT görüntülerinde karaciğer, kas ve mediastinel kan havuzu SUVmax ortalamalarını karşılaştırıldı. Karaciğer SUV ölçümünün standardizasyonunu sağlamak amacıyla çalışmaya karaciğer metastazları olan hastalar

dahil edilmedi. Her hastada karaciğer SUV ölçümleri sol lobdan, kan havuzu ölçümleri arkus aortadan ve kas ölçümleri sağ deltoid kastan yapıldı.

Bulgular: Çalışmaya dahil edilen obez hastaların ortalama VKİ 36.3 (30.8-53.0); obez olmayan hastaların ortalama VKİ 21.7 (18.5-24.5) olarak hesaplandı. Obez hastalarda daha yüksek oranda eşlik eden hipertansiyon ve diyabet tanıları mevcuttu. Obez hasta grubunda 19 hipertansiyon ve 10 diyabet tanılı hasta mevcut iken, obez olmayan hasta grubunda sırasıyla 5 hipertansiyon ve 3 diyabet tanılı hasta saptandı. Açlık kan şekeri düzeyleri de obez hasta grubunda obez olmayan hasta grubuna kıyasla yüksek bulundu. F-18 FDG enjeksiyonu öncesi ölçülen açlık kan şekeri düzeyleri obez grupta ortalama 120 mg/dl (100-161 mg/dl), obez olmayan grupta ise ortalama 85.3 mg/dl (43-99 mg/dl) idi. Her iki gruptaki hastaların PET/BT görüntülerinde karaciğer, kas ve kan havuzu SUVmax'ları karşılaştırıldı. Obez hastalarda karaciğer, kan havuzu ve kas dokusunda, obez olmayan gruba kıyasla artmış F-18 FDG tutulumları saptandı. Ortalama karaciğer SUV, obez grupta 4.7 ve obez olmayan grupta 3.0 olarak hesaplandı. Obez hastalarda kan havuzu ve kas SUV sırasıyla 3.2 ve 2.0 olarak hesaplanırken, normal kilo grubunda bu ölçümler sırasıyla 2.2 ve 1.4 olarak bulundu.

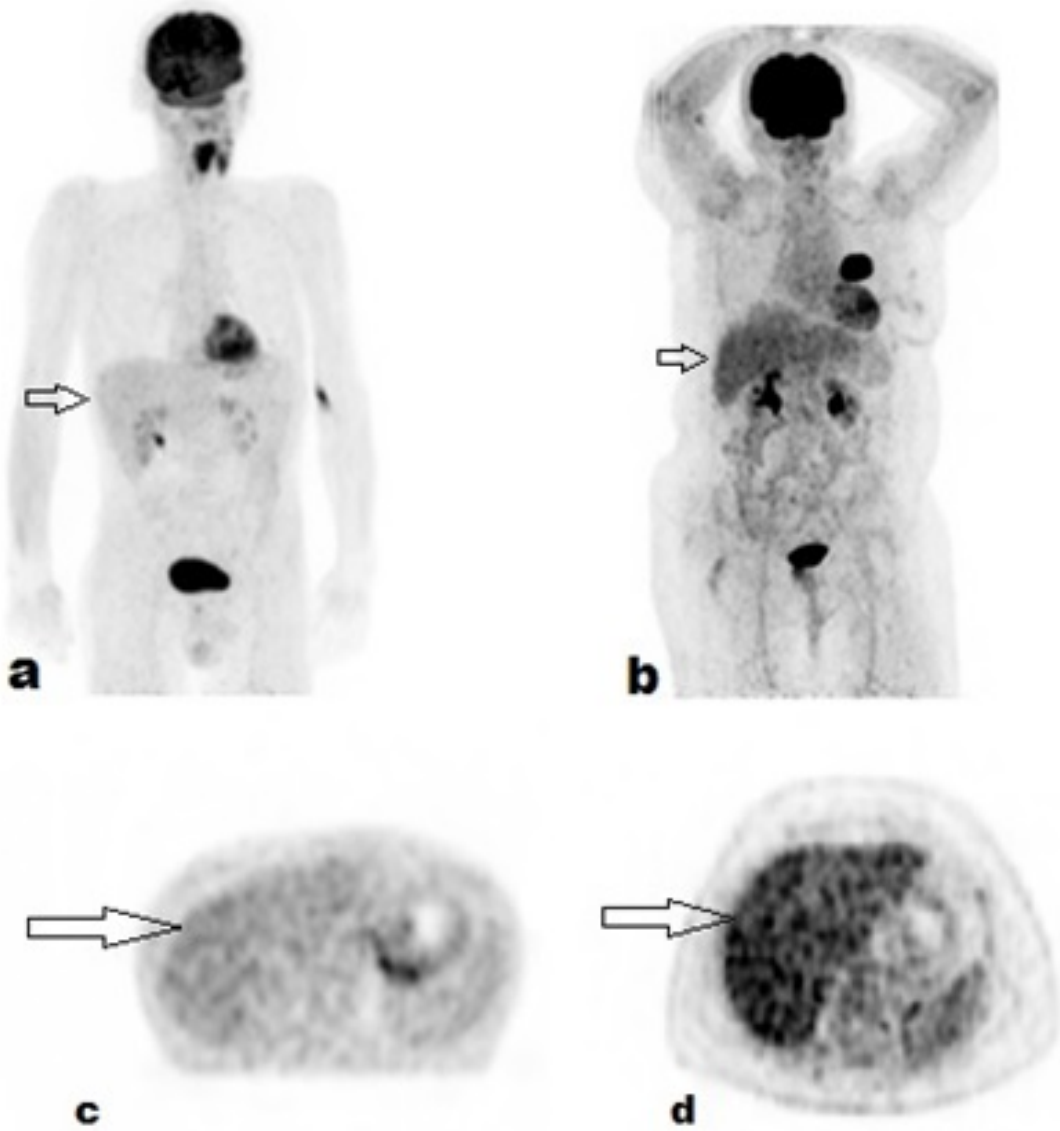
Tartışma: Onkolojik hastaların değerlendirilmesinde kullanılan SUV, enjekte edilen aktivite miktarının vücut ağırlığına bölünmesi ile elde edilir. SUV dokudaki radyoaktivite konsantrasyonunu ifade eder. SUV'u etkileyen biyolojik faktörlerin başında vücut kitle indeksi ve kan glikoz düzeyi gelmektedir (3). Vücut ağırlığı ve vücut kitle indeksi arttıkça normal dokuda SUV artmaktadır. PET uygulamalarında en sık kullanılan radyofarmasötik olan FDG vücutta eşit olarak dağılmaz. Aynı miktarda FDG, kilolu ve zayıf hastalara enjekte edilirse, kilolu hastanın lezyonunda ölçülen radyoaktivite konsantrasyonunun zayıf hastada ölçülenden daha düşük olması beklenir. Bu nedenle farklı vücut kompozisyonlarına sahip hastalar arasında SUV'ların karşılaştırılması hatalıdır (4). SUV dağılım hacmine dayalı normalize edilmiş tümör tutulumunun ölçümüdür. Vücut kitle indeksi arttıkça, kas ve yağ dokularındaki F-18 FDG biyodağılımı değişebilmekte, SUV ölçümleri etkilenmekte ve bu durum hastaların takibinde yanlış pozitif ve negatif sonuçlara neden olabilmektedir. F-18 FDG PET görüntülerinde tedavi yanıtının izlenmesi SUV değişimi ile ölçülür. Yapılan çalışmalarda vücut kitle indeksinden etkilenen SUV'a alternatif hesaplamalar yapılmış, yağsız vücut kitlesine göre normalize edilen SUV değeri SUL olarak adlandırılmıştır (5). SUL özellikle tedaviye yanıtın değerlendirileceği ve iki çalışma arasında hastanın vücut kitle indeksinde belirgin farklılık ortaya çıkan hastalarda kullanılabilir. Ancak bu yöntemler rutin pratikte kullanılmaya çok elverişli değildir. Bu nedenle son yıllarda SUV'a kıyasla daha doğru değerlendirmeye olanak sağlayacak metabolik parametreler sıklıkla çalışılmaktadır. Metabolik tümör volümü (MTV) ve total lezyon glikolizisi (TLG) gibi tümör yükünü ölçmek için kullanılan kantitatif metabolik parametrelerin prognostik değeri ve gösterdikleri değişikliklerin yüksek bir klinik değere sahip olduğu belirtilmektedir (6). FDG metabolizması glikoz metabolizmasının ilk basamakları ile benzerdir. Glikoz ve FDG hücre içerisine glukoz taşıyıcıları tarafından alınır. Plazma glukozu, hücrelere taşınma ve heksokinaz ile fosforilasyonda FDG ile rekabet eder. FDG tutulumu plazma glukozu ile ters orantılıdır. F-18 FDG PET

çekimi öncesi hastanın en az 4 saatlik açlık ile hazırlanmasının asıl amacı, insülinin tümör dışındaki hücrelerde glukoz tutulumundan direkt olarak sorumlu olması nedeni ile kan şekerinin ve insülin düzeyinin düşük olmasını sağlamaktır. Bu nedenle, FDG enjeksiyonu öncesinde serum glukoz konsantrasyonu ölçülmelidir. Eğer serum glukoz seviyesi yüksekse, onkolojik görüntülemelerde yanlış sonuçlar ortaya çıkabilir. Plazma glukoz düzeyi 200 mg/dL'nin altında ise F-18 FDG PET/BT çalışması yapılabilir (7). Ancak bu plazma glikoz seviyelerinin diyabetli hastalarda elde edilmesi zor olabilir. Diyabetik hastalarda görülen kronik hiperglisemi tümörün aktivite tutulumunu kısmen etkilerken, insülinin neden olduğu hipoglisemide artan kas aktivitesi ve tümöral tutulumun azlığı nedeniyle lezyon tanımlanması güçleşebilir ve SUV değerleri etkilenebilir (2) (8, 9).

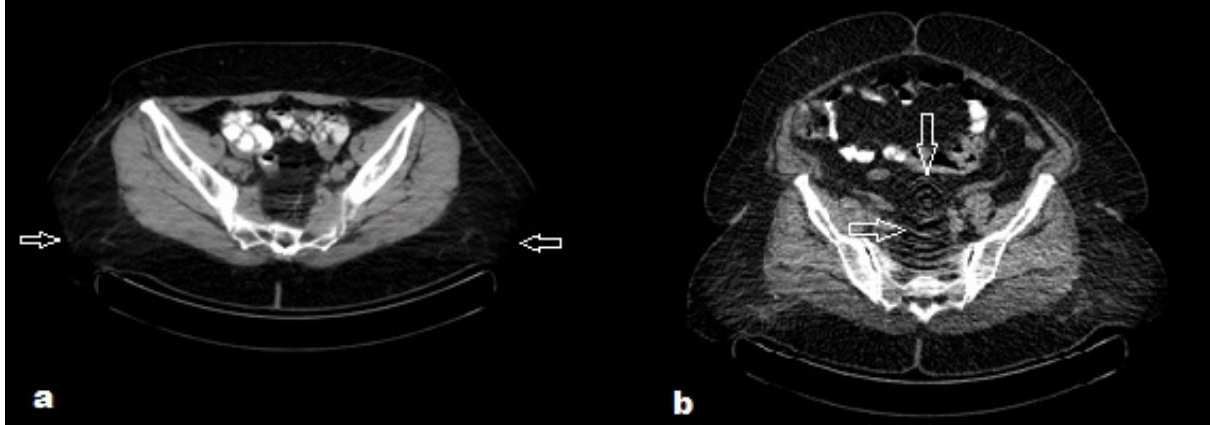
Araştırmalar, karaciğer'in FDG tutulumu ile glisemik durum arasında anlamlı bir pozitif ilişki olduğunu göstermiştir. Kan şekeri dışındaki birçok faktörün de F-18 FDG tutulumunu etkilediği belirtilmiştir ve bu faktörler arasında en belirgin etkiye sahip olanın VKİ olduğunu ortaya koymuşlardır. Yapılan çalışmalarda, normal karaciğer SUV'unun, 50 ile 110 kg arasında değişen bir vücut ağırlığına göre yaklaşık % 50 oranında değiştiği bildirilmiştir (10). Literatür ile uyumlu olarak biz de çalışmamızda obez hastaların ortalama karaciğer SUV'unu 4.7 ve obez olmayan hastaların ortalama karaciğer SUV'unu 3.0 olarak hesapladık.

Çalışmamızda VKİ'nin kas ve mediastinel kan havuzu FDG tutulum düzeylerini de etkilediğini ve obez hastalarda normal kilolu hastalara kıyasla ortalama SUV'ların daha yüksek olduğunu saptadık. Yapılan çalışmalar karaciğer kadar belirgin olmasa da bu alanların kan şekeri ve VKİ ile etkilendiğini belirtmişlerdir (10). Ancak biz çalışmamızda karaciğer, kan havuzu ve kas dokusu SUV ortalamalarının obez ve normal kilolu hastalarda benzer oranlarda değiştiğini gözlemledik.

Sonuç: Obezite, tüm nükleer tıp görüntüleme modalitelerinde artefaktlara neden olur ve bu, görüntülerin klinik etkinliğini değiştirebilir. Çalışmamızda vücut kitle indeksi arttıkça F-18 FDG PET/BT görüntülerinde arka plan (zemin) aktivitenin arttığı, FDG biyodağılımının değiştiği gözlemlendi. Bu durum malign lezyonların SUV'unu da etkileyerek hasta yönetiminde yanlış yönlendirmelere neden olabilir. Obez hastalarda veya belirgin kilo değişimi izlenen aynı hastaya ait takip PET/BT'lerin değerlendirilmesinde SUV güvenilirliğinin düşük olabileceği ve bu nedenle SUL, MTV ve/veya TLG gibi metabolik parametrelerden de yararlanılmasının daha doğru sonuçlar sağlayacağı düşünülmektedir.



Resim 1: (a) Larinks Ca tanılı, VKİ 21.3 olan erkek hastanın F-18 FDG PET/BT MIP (Maksimum İntensite Projeksiyon) görüntüleri. Larinkste primer tümöre ait artmış FDG tutulumu izlenmektedir. Arka plan aktivitesi düşük, karaciğerde FDG dağılımı fizyolojik sınırlardadır (ok). (c) Aynı hastaya ait karaciğer PET görüntüsünde normal yoğunlukta ve homojen FDG dağılımı izlenmektedir (ok). (b) Meme Ca tanılı, VKİ 40.1 olan kadın hastanın F-18 FDG PET/BT MIP görüntüleri. Sol memede primer tümöre ait artmış FDG tutulumu izlenmektedir. Arka plan aktivitesi, mediastinel kan havuzu ve karaciğer FDG tutulumu artmıştır (ok). (d) Aynı hastaya ait karaciğer PET görüntüsünde artmış yoğunlukta FDG dağılımı izlenmektedir (ok).



Resim 2: (a) Meme Ca tanılı, VKİ 41.7 olan kadın hastanın pelvik BT görüntüsünde bilateral gluteal bölgede genişliğe bağlı görüntü kaybı alanları izlenmektedir. **(b)** Böbrek malign neoplazmı tanılı, VKİ 53.0 olan kadın hastanın pelvik BT görüntüsünde pelvik obeziteye bağlı halkasal BT artefaktı alanları izlenmektedir.

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ID-192 / OP: ‘The Outcome of Congenital Heart Surgery Post-Operative Care; A Single Center Experience’

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Abstract (ID-192)

Introduction and Purpose: Post-operative care following congenital heart surgery requires a dedicated pediatric intensive care team to improve outcomes. We aimed to evaluate the characteristics and outcomes of post-operative care following congenital heart surgery.

Materials and Methods: This retrospective cohort study includes 66 children who were admitted to Dokuz Eylul University pediatric intensive care unit (PICU) following congenital heart surgery between October 2017 and May 2020. Data were extracted from medical records including demographics, need for mechanical ventilation and vasoactive drug infusion, ICU, and hospital length of stay (LOS), RACHS classification of the surgical operation, and overall PICU mortality.

Results: Of the 66 patients in the study, 35 (53%) were male with a median age of 17 months (interquartile range [IQR], 4-51). Sixty-three (95,5%) children needed invasive, 12 (18,2%) needed non-invasive mechanical ventilation. Median PIM3 score was 2,4% (IQR, 1,7%-5,5%), median PRISM4 score was 0,69% (IQR, 0,42%- 1,8%). Thirty-three patients (50%) needed vasoactive drug infusion. The most common surgical operations were ventricular septal defect repair (30,3%), atrial septal defect repair (15,2%), and total repair of tetralogy of Fallot (12,1%). According to RACHS risk classification, 15 operations were in category 1, 33 operations were in category 2, 17 operations were in category 3, 1 operation was in category 4. The Median PICU length of stay (LOS) was 4 days (IQR, 2-9,5) whereas the median hospital LOS was 9 days (IQR, 5-22). Only one of the 66 patients died during post-operative care after surgery, whilst the overall PICU mortality rate was 1,5%.

Conclusion: Surgery in pediatric congenital heart disease can be performed with low post-operative mortality and improved clinical outcome with the collaboration of pediatric intensivists and pediatric cardiovascular surgeons.

Keywords: Congenital heart disease; Pediatric intensive care.

Full-Text (ID-192): “The Outcome of Congenital Heart Surgery Post-operative Care; A Single-Center Experience”

Introduction and Purpose: Children with congenital heart defects are at great risk of both early and late mortality after surgery (1). Early mortality is caused by abnormal cardiac function, arrhythmias, systemic and pulmonary vascular problems, and respiratory dysfunctions (2). Post-operative care following congenital heart surgery requires dedicated pediatric intensive care team to improve outcomes. In this study, we aimed to evaluate the characteristics and outcomes of post-operative care following congenital heart surgery.

Materials and Methods: This retrospective cohort study includes 66 children who were admitted to Dokuz Eylul University pediatric intensive care unit (PICU) following congenital heart surgery between October 2017 and May 2020. Data were extracted from medical records including demographics, need for mechanical ventilation and vasoactive drug infusion, ICU, and hospital length of stay (LOS), overall PICU mortality. We used Risk Adjustment for Congenital Heart Surgery 1 (RACHS-1) (3) clinical tool to stratify the mortality risk of surgical procedures.

Results: Of the 66 patients in the study, 35 (53%) were male with a median age of 17 months (interquartile range [IQR], 4-51). Sixty-three (95,5%) children needed invasive, 12 (18,2%) needed non-invasive mechanical ventilation. Median PIM3 score was 2,4% (IQR, 1,7%-5,5%), median PRISM4 score was 0,69% (IQR, 0,42%- 1,8%). Thirty-three patients (50%) needed vasoactive drug infusion. The most common surgical operations were ventricular septal defect repair (30,3%), atrial septal defect repair (15,2%), and total repair of tetralogy of Fallot (12,1%). According to RACHS risk classification, 15 operations were in category 1, 33 operations were in category 2, 17 operations were in category 3, 1 operation was in category 4. The median PICU length of stay (LOS) was 4 days (IQR, 2-9,5) whereas the median hospital LOS was 9 days (IQR, 5-22). Only one of the 66 patients died during post-operative care after surgery, whilst the overall PICU mortality rate was 1,5%. Characteristics of the children undergoing congenital heart surgery are given in **table 1**.

Conclusion: Surgery in pediatric congenital heart disease can be performed with low post-operative mortality and improved clinical outcome with the collaboration of pediatric intensivists and pediatric cardiovascular surgeons.

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Table 1: Characteristics of the children undergoing congenital heart surgery

	Survivor (n=65)	Dead (n=1)
Sex n (%)		
Female	30 (46)	1 (100)
Male	35 (54)	
Age - month (median[IQR])	17 (4-51)	72
Vasoactive need n(%)		
Yes	32 (49)	1 (100)
No	33 (51)	
Mean lactate on admission (mmol/L)	2,46	11,8
Operations n (%)		
RACHS 1		
Aort coarctation repair	1 (1,5)	
ASD repair	10 (15)	
PDA ligation	1 (1,5)	
Pulmonary valve replacement	1 (1,5)	
RACHS 2		
Total repair of tetralogy of Fallot	8 (12,3)	
Glenn shunt	5 (7,7)	
VSD repair	20 (30,7)	
RACHS 3		
Aortic valve replacement	1 (1,5)	
Arterial switch	6 (9,2)	
Repair of atrioventricular canal	1 (1,5)	
Systemic to pulmonary shunt	5 (7,7)	
Fontan procedure	1 (1,5)	1 (100)
Pulmonary artery banding	2 (3)	
PICU LOS - days (median [IQR])	4 (2-9,5)	2
Hospital LOS - days (median [IQR])	9 (5-22)	2

ASD: Atrial Septal Defect, PDA: Patent Ductus Arteriosus, VSD: Ventricular Septal Defect

ID-193 / OP: “Psychiatric Follow Up The Patients Hospitalized in The Stroke Unit”

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Abstract (ID-193)

Introduction and Purpose: Stroke is the leading cause of mortality and disability worldwide. Standardized stroke mortality rates are falling, thanks to breakthroughs in stroke treatment, such as reperfusion strategies (such as thrombolytic and mechanical thrombectomy) developed in recent years to open the occluded blood vessel, and early surgical clipping of the ruptured blood vessel or angiographic embolization methods, thereby reducing mild to moderate disability. The number of patients is increasing. In this case, it increases the burden of stroke globally.

Research to determine functional status after stroke generally focuses on patients' motor-sensory deficits, speech disorders, visuospatial neglect, and impairments in daily life. However, it is stated that in the long-term follow-up of stroke patients by multidisciplinary clinics, serious psychological problems and more than one psychiatric disease occur in most patients. Especially psychological symptoms such as distress, depression, anxiety and post-traumatic stress disorder are frequently seen in stroke patients. This psychiatric disability significantly reduces the quality of life by causing social isolation, deterioration in daily activities and functionality after stroke, and becomes an important source of burden, stress and fatigue for caregivers. In addition, psychopathological symptoms negatively affect the patient's participation in the rehabilitation process.

With this study, it was aimed to contribute to the literature of our country related to psychiatric disorders that occur after stroke by collecting data on the admissions of patients discharged from the stroke unit in a secondary health care institution to the psychiatry outpatient clinics of state hospitals in the same province.

Materials and Methods: Patients hospitalized with a diagnosis of stroke in the Stroke Unit of Aydın State Hospital during the 6-month period between 01.10.2018 - 01.04.2019 were included in the study. Patients with a diagnosis of transient ischemic stroke who were admitted to the unit and those who died during hospitalization were excluded from the study. From the date of discharge from the stroke unit, the patients' applications to the psychiatry outpatient clinic before and after two and a half years were analyzed retrospectively through the data recording system. In the data collection form, the demographic characteristics, background and neurological examination findings of the patients, as well as pre- and

post-stroke psychiatry outpatient clinic admissions and psychiatric diagnoses were recorded. Descriptive statistical analyzes were performed for the data analyzed in the study.

Results: Of 88 patients hospitalized in the stroke unit, 10 were excluded from the study because of the diagnosis of transient ischemic attack, and 8 of them died during hospital follow-up (7 ischemic stroke, 1 hemorrhagic stroke). In this study; a total of 70 patients, 40 of whom were women (57.1%), with a mean age of 70.3 ± 13.9 (31-94 years) years were recruited. 93% were diagnosed with ischemic stroke (IS), and 7% with hemorrhagic stroke (HS). While 28.6% of the hospitalized patients did not graduate from any school, 3% were university graduates. Hypertension (81.4%) was the most common risk factor. While 55.7% of the patients had a history of smoking at some point in their life, 17% had a history of stroke, 31.4% had coronary artery disease.

The rate of patients who applied to the psychiatry outpatient clinic after stroke was 31.4% (n: 22), and the diagnosis distribution was determined as mixed anxiety-depressive disorder, depressive disorder and sleep disorder in order of frequency (32%, 22%, 22% within themselves). The mean duration of admission to the psychiatry outpatient clinic of these patients after stroke was 7 ± 6.1 (0.3-24 months) months. The mean number of applications was determined as 4.4 ± 4.3 (1-16). 25.7% (n:18) of all patients had a pre-stroke psychiatry outpatient clinic presentation, and their diagnosis ranges were anxiety disorder, mixed anxiety-depressive disorder, and depressive disorder, respectively (28%, 28%, 17%, respectively). It was determined that 61% (n:11) of these patients were followed up in the psychiatry outpatient clinic with the same diagnoses after stroke. The number of patients who did not have a previous application and applied to the psychiatry outpatient clinic after stroke was determined as 11 (15.7%). Diagnostic distributions of these patients were sleep disorder, mixed anxiety-depressive disorder, and depressive disorder, respectively (their rate was 45%, 28%, 28%).

Discussion and Conclusion: Psychiatric disorders are common after stroke, and there is significant overlap with anxiety, depression, and sleep disorders. The reduction in quality of life and adverse functional impact caused by psychiatric disorders may complicate the management of clinical comorbidities and adherence to treatment, and may result in an increased risk of overall complications.

To prevent and/or treat these conditions, it is necessary to identify mental health disorders in this population. Studies have shown that selective serotonin reuptake inhibitors and some serotonin norepinephrine reuptake inhibitors are safe and effective in this population and can help both treat and prevent mental health disorders. Cognitive behavioral therapy has also been shown to be effective. Combating social isolation and increasing activity participation have also been suggested as treatments for post-stroke depression.

There are numerous potential barriers to mental health treatments, including social stigma, polypharmacy and cost concerns. Therefore, psychiatric comorbidities should be evaluated as part of the rehabilitation of stroke patients and carefully examined by physicians.

Keywords: Stroke; Psychiatric follow up; Stroke unit; Psychiatric disorders; State hospital.

ID-194 / OP: “A Case of Severe Plasmodium Vivax Infection Complicated by ARDS and Multiple Organ Involvement”

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Abstract (ID-194)

Introduction: Complicated malaria is caused mainly by Plasmodium falciparum, and increasingly nowadays by Plasmodium vivax. We report a case of vivax malaria complicated by acute respiratory distress syndrome and treated with extracorporeal membrane oxygenation.

Materials and Methods: A 49-year-old patient was operated due to squamous cell carcinoma. After a successful right upper lobectomy operation, he became hypoxemic and developed progressive bilateral lung infiltrates. He had fever, thrombocytopenia and splenomegaly that were not present in the preoperative timeline. A peripheral blood smear verified Plasmodium vivax infection. The patient deteriorated clinically and was intubated. A bronchoscopic evaluation revealed a fistula in the lobectomy stump. Veno-venous extracorporeal membrane oxygenation was initiated due to refractory hypoxemia and to improve healing of the fistula.

Conclusion: Our patient expired despite lung protective ventilation and extracorporeal membrane oxygenation support. This case is presented to emphasize the rare occurrence of ARDS and multiple organ failure in Plasmodium vivax infections.

Keywords: Plasmodium infections, fever, acute respiratory distress syndrome, extracorporeal membrane oxygenation; malaria.

ID-195 / PP: “Congenital Diaphragma Hernia in an Adolescent: A Case of Late Relapse”

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Abstract (ID-195)

Introduction and Aim: Recurrence between 3-50% is reported in congenital diaphragmatic hernia (CDH), the mortality of which varies between 30-50% despite developments of the neonatal intensive care and surgical technology. Our case was presented to draw attention to recurrent diaphragmatic hernia, which is symptomatic in adolescence.

Case Report: A 12-year-old girl presented to our department with complaints of abdominal pain and vomiting. Breathing sounds in the left basal were not absent; the left diaphragm could not be selected on the radiograph, and bowel loops were seen on basal. Bowel loops within the thorax were confirmed by ultrasound.

The patient with a left subcostal incision scar was born with 2950 gr cesarean section, was intubated due to respiratory distress, was hospitalised in intensive care, and 4cm’s left posterolateral diaphragmatic defect was closed on 3rd day. It was seen from the hospital records that she was extubated on 7th day and discharged on 15th day. The patient, who had a smooth follow-up for the first year, had not been admitted to the hospital for ten years, since her radiography at one age control was normal and without complaints. The patient who has been playing volleyball for two years, has had left flank pain without respiratory distress since six-month.

Thorax Tomography showed that intestinal loops were herniated into the thorax due to the large diaphragmatic defect in the posterior of the left hemithorax. During the operation small intestines and transverse colon were in the thorax; removed the outside and intestinal adhesions were opened, the sutures of the first operation could not be seen at the edges of the diaphragmatic defect. Diaphragma repair was done with prolene number 0 and 1. On the 4th postoperative day, the diaphragm contours were normal on the chest x-ray. The two-year follow-up was uneventful.

Conclusions: Recurrence is inevitable in cases with large diaphragmatic defects tightly closed or repairs with absorbable sutures. Recurrences are usually seen within the first year; however, it should always be kept in mind that relapse may develop in late periods, especially in cases with operated diaphragmatic hernia. Having been complaining for ten years; although not certain, it suggests that diaphragmatic hernia recurred in the late period with heavy sports exercises.

Keywords: Adolescent; Diaphragmatic hernia; Relapse.

ID-196 / OP: “Heart Rate Variability in Obese and Overweight Children”

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Abstract (ID-196)

The prevalence of obesity among children has increased in recent years, obesity is increasingly recognized as an important public health problem. Early in life obesity has been associated with the early onset of chronic diseases such as type 2 diabetes and cardiovascular disease. Heart rate variability (HRV) is defined as cyclic changes in sinus rate over time. In addition, since it gives information about sympathetic and parasympathetic balance. Decreased HRV is a predictor of mortality in many diseases. Heart rate variability measurement is a good indicator of the autonomic nervous system. This measurement is usually made using recordings obtained during holter monitoring. The normal-normal (NN) R intervals in the pulse file created in the data processing program in Holter are based on the computerized HRV measurement. Parameters used in HRV measurement include SDNN), PNN50, and RMSSD. Studies of heart rate changes in obese children have produced conflicting results. High sympathetic activity and lower parasympathetic activity have been reported, as well as lower both sympathetic and parasympathetic activity, as well as decreased parasympathetic activity with normal sympathetic activity.

Objective: Evaluation of heart rate variability in children with obesity and overweight and comparison with normal weight children.

Patients who applied to Pamukkale University pediatric cardiology outpatient clinic between December 2018 and January 2020, who had 24-hour Holter ECG recording and no pathology was found, were retrospectively these children were classified as obese, overweight and control group according to body mass index. A 4-lead "Cardioline Mod 400 Walk Holter" recording system was used to evaluate heart rate variability. SDNN, PNN50 and RMSSD were used for HRV analysis with the holter data processing program automatically.

A total of 217 children participated in our study, including 45 obese children, 30 overweight children, and 141 normal weight children. There was no difference between the groups in terms of gender. While the mean age and height were similar, body weight, body mass index and body surface area were higher in the obesity group. While there was no significant difference in body weight between the obesity group and the overweight group, other differences were significant. Mean heart rate, maximum heart rate and minimum heart rate were higher in the obesity group, but the difference was not significant. SDNN was 131.3 ± 47.3 in the obesity group, 139.4 ± 42.4 in the overweight group, and 142.8 ± 40.3 in the control group.

PNN50 was 20.6 ± 16.3 in the obese group, 23.1 ± 15 in the overweight group, and 23.2 ± 13.3 in the control group. RMSSD was found to be 53.8 ± 33.5 in the obese group, 56.5 ± 25.1 in the overweight group, and 57.3 ± 28.6 in the control group. HRV parameters was found the lowest in the obesity group, but the difference between them was not significant.

Although our results suggest that there is a decrease in both sympathetic and parasympathetic modulation of the autonomic nervous system in obese and overweight children, the low levels of SDNN, PNN50 and RMSSD were not found to be significant.

Since changes in heart rate variability are also seen in obese and overweight children, a healthy diet and a physically active lifestyle change are very important for these children.

Keywords: Obesity; Overweight; Children; Heart rate variability.

ID-197 / PP: “Short Bowel Syndrome Developing After Mesenteric Ischemia in a Liver Transplant Planned Infant Due to Widespread Liver Hemangioma in The Perinatal Period”

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Abstract (ID-197)

Introduction: Short bowel syndrome is a malabsorption condition that mostly develops due to massive small bowel resection. Herein, a case with intestinal necrosis and short bowel syndrome due to mesenteric ischemia after severe dehydration in a follow-up infant from prenatal period due to liver hemangioma was shared.

Case Report: A widespread A-V malformation (hemangioma?) was diagnosed 25th-week of gestation and lesions regressed to 20x2.5mm by giving three weeks of cortisone and propranolol treatment to the pregnant at 33 weeks. The parents were interviewed with the transplant team for possible postnatal liver transplantation.

Propanolol treatment was initiated in the postnatal US in a 38 + 3-week-old male born 2730 grams due to persistence of tortuous dilated arterial and venous vascular structures in the left lobe in the liver. Vascular structures couldn’t be evaluated optimally due to motion artifact in abdominal MR. At two-month old, the liver lesion decreased to 18x22mm, he was hospitalized with diarrhea, dehydration, and stool Entamoeba Histolytica cysts. Endocrine consultation wasn’t found in terms of water-salt loss syndrome. In the patient who was hospitalized with abdominal distention two days after discharge, it was operated that the intestines were dilated and purple in color and the mesentery was edematous, and the abdomen was closed due to the increase in abdominal distention and lack of stool. In the second look, necrosis and perforations were seen in the entire small intestine, 2 cm in the cecum, 5 cm in the right transverse colon and the entire rectosigmoid colon. All small intestines, colon perforation areas were excised except for the 3 cm well-fed area in the jejunum and terminal ileum, and an end-to-end anastomosis was performed. When stool drained from incision, when it was reoperated, one cm perforation areas on the antimezenteric

edges of all anastomoses were repaired; Autologous 8cc-blood injection was performed on the anastomoses.

The patient, who was intubated during this six-week period, gradually increased the enteral nutrition that was regulated by gastroenterology after extubation. He was referred to the transplant center when she was 6kg in 9th month to be evaluated for small bowel transplantation. The patient, who is not suitable for transplantation, is still being followed up in an external center for a year.

Conclusion: All efforts were directed towards keeping the patient alive with ischemic bowel necrosis, which developed unexpectedly in the infant, even for liver transplantation planning due to hemangioma in the common liver.

Keywords: Short bowel syndrome; Liver hemangioma; Mesenteric ischemia.

ID-198 / PP: “Approach in A Rare Case with Extensive Aganglionosis”

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Abstract (ID-198)

Introduction and Aim: Approximately 5% of the Hirschsprung patient site involves the entire colon, while rarely, small intestines can also be affected. Genetic transition can be seen in extensive aganglionosis. In this study, a case with extensive aganglionosis operated in our clinic is presented.

Case Report: The baby girl who was born as a twin wife of 1140gr at 35+6weeks in the outer center was referred to our department with suspicion of Hirschsprung Disease in the barium enema performed on the 3rd day due to the lack of meconium output. The patient's twin had a similar signs, and her one-year-old sister was operated for Hirschsprung's disease.

Due to the absence of discharge by rectal irrigation and hegar dilatation, it was explored with a preliminary diagnosis of meconium ileus/extensive aganglionosis on the 13th-day. The transition zone was seen 30cm proximal to the ileocecal valve; Frozen biopsy was positive for ganglion cell that sent over 2cm of the zone. Ileostomy was created from the biopsy site, whic was 70cm from Treitz.

Her older sister and her twin that had Hirschsprung diseases at the rectosigmoid level were completed by the transanal endorectal route. Rectal biopsy was aganglionic. She had to be hospitalized twice in the hospital until she was 5-month old, 4350 grams. Despite the fact that there was a very detailed information about “it is a much heavier case than her twin and her sister, her definitive surgery is different, her weight gain and quality of life will not be like her siblings”, the family wanted definitive surgery.

Peroperative frozen biopsies sent from sigmoid and transverse colon, appendix, and 10cm proximal to the terminal ileum were ganglion negative. Except for the distal 15cm colon, the 30cm ileum at the distal of the aganglionic colon and stoma were excised. Duhamel-Lester Martin modification was done with proximal ileostomy leg; The distal of the 14cm anastomosis is 8cm staples, the proximal is completed manually.

The patient who was extubated at the postoperative 4th hour was reentubated upon the onset of respiratory distress at the 8th hour. At the 12th-hour, suddenly cardiac arrest developed, and despite cardiopulmonary resuscitation, it became exitus. Autopsy was recommended to the family, not accepted. The cause of worsening of the general condition and sudden cardiac arrest could not be confirmed, except for the possibility of a suspicious pulmonary embolism on the radiograph.

Conclusion: The longer the aganglionic segment in extensive aganglionosis, the more difficult the patient's clinical course and postoperative period. Difficult course in our patient resulted in mortality.

.Keywords: Extensive aganglionosis; Hirschsprung disease.

ID-199 / OP: “Evaluation The Effect of a Course Designed With Collaborative Learning Approach on Learner’s Team Working Attitudes; Sample of Girne American University”

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Abstract (ID-199)

Introduction: The main competencies and roles of graduates are well defined in undergraduate medical education programs in which competency based education approach is preferred. In the most of schools, being a team-member is one of the most important roles. So, educational activities including teamwork are designed with the purpose of training of physicians who have these roles in their graduation goals.

Aim: it is aimed to evaluate the effect of the Public health and social medicine course designed on the basis of collaborative learning in Girne American University Faculty of Medicine students on the change of learners’ Team working Attitudes.

Method: The study was designed as a quasi-experimental quantitative research design. The TeamSTEPPS Teamwork Attitudes Questionnaire (T-TAQ) was used as a pre-test to determine the current status of the students. The Public health and social medicine course of the students was designed with small group training activities that include group tasks with teamwork in accordance with the collaborative education approach. In team work, the students were divided into two groups and they were asked to perform a performance on the determined topic. At the end of the performance, a presentation was made about the product obtained. The other group evaluated this presentation with the peer review form (TEAMWORK ASSESSMENT SCALE). A cycle was completed with the feedback from the other group and the facilitator. With this planning, teamwork was done five times. T-TAQ was used as a post-test to observe the change at the end of the fifth study.

Results: First year students of Girne American University Faculty of Medicine were included in the study (n:13). Five of the students were female and eight were male. The relationship between the students' (T-TAQ) sub-dimension and total scores and the pretest and posttest is shown in the table 1.

Discussion: In our study, an increase in all sub-dimensions and total scores was observed. Although this increase is not statistically significant in Team structure and Leadership areas, it has been shown that there is a statistically significant difference in Situation Monitoring, Mutual Support, Communication and Total Score. With this study this educational approach (small group training activities based on teamwork) was able to consider effective and should be supported according to more activities focusing leadership issues to be more fruitful to contribute to students' attitudes towards teamwork.

However, it is valuable in that a novel medical school that has just started its education life prefers and monitors student-centered educational activities like the one in this study, the low number of students is considered as a limitation of the study. Further researches are essential to have more clear results.

Keywords: Team working; Collaborative learning; Medical education.

Full-text (ID-199): “Evaluation The Effect Of A Course Designed With Collaborative Learning Approach On Learner’s Team Working Attitudes; Sample of Girne American University”

Introduction: The main competencies and roles of graduates are well defined in undergraduate medical education programs in which a competency-based education approach is preferred (Shadid et al., 2019). In most of the schools, being a team member is one of the most important roles. So, educational activities including teamwork are designed with the purpose of training physicians who have these roles in their graduation goals (Shahid et al., 2019). In addition to improvements in team working skills, communications skills, leading and managing skills (reporting as “*non-technical skills*” in literature) are lead to be improved by team-based educational activities (Gelis et al., 2020).

Aim: It was aimed to evaluate the effect of the “Public health and Social Medicine” course was designed based on a collaborative learning approach in Girne American University Faculty of Medicine on the student’s attitudes changes on’ Team working Attitudes

Materials and Method: The study was designed as a quasi-experimental quantitative research design. The study was conducted in the 2021/2022 Autumn Semester by an educator who is an expert in being a facilitator in small group activities and an expert in medical education. The Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) Teamwork Attitudes Questionnaire (T-TAQ) was used as a pre-test to determine the current status of the students. The scale has several uses. In our study, the scale was used after the training to evaluate the changes in the attitudes of the individuals participating in the training after the training to improve teamwork. The questionnaire consists of five

subsections: team structure, leadership, situation monitoring, mutual support and communication. It consists of a total of 30 items, with six statements in each section. The statements have a 5-point Likert feature. A minimum of 30 and a maximum of 150 points can be obtained from the “T-TAQ”. An increase in the scale score indicates that students' attitudes towards teamwork characteristics increase (Agency for Healthcare Research and Quality (AHRQ), 2019) The Public health and Social Medicine course was designed with small group training activities that include group tasks with teamwork by the collaborative learning approach. In teamwork studies, the students were divided into two groups randomly, and they were asked to perform a performance on the determined topic. At the end of the performance, a presentation was made about the product obtained. The other group evaluated this presentation with the peer review form (Teamwork Assessment Scale). A cycle was completed with feedback from the other group and the facilitator. With this planning, teamwork was done five times. Finally, T-TAQ was used as a post-test to observe the change at the end of the fifth study.

Results: First-year students of Girne American University Faculty of Medicine were included in the study (n:13). Five of the students were female and eight were male. The average age is $18\pm1,7$ years. According to the statistical analysis result. The students' total mean score of T-TAQ before teamwork was found as $110,38\pm23,13$. The subscale mean scores; team structure was $22,61\pm5,12$, leadership was $24,54\pm6,00$, situation monitoring was $23,38\pm5,56$, mutual support was $19,00\pm3,67$ and communication was found as $20,85\pm4,54$. The students' total mean score of T-TAQ after teamwork was $127,85\pm13,39$. Sub-dimension mean scores; team structure was $25,85\pm3,44$, leadership was $27,85\pm1,90$, situation monitoring was $26,38\pm3,17$, mutual support was $22,92\pm4,75$ and communication was found $24,85\pm2,91$.

A statistically significant difference was found between the T-TAQ total score averages before and after the teamwork performances of the students included in the study ($p=0,027$). A statistically significant difference was found in the sub-dimensions of mutual support and communication before and after the teamwork performances of the students (respectively; $p= 0,027$, $p= 0,013$).

No statistically significant difference was found in the sub-dimensions of Team structure, leadership and situation monitoring before and after the teamwork performances of the students (respectively; $p= 0,071$, $p= 0,079$, $p= 0,079$). The relationship between the students' (T-TAQ) sub-dimension and total scores and the pretest and posttest are shown in table 1.

Table 1. TeamSTEPPS Teamwork Attitudes Questionnaire

	n	Pre-test	SS	Post-test	SS	p
Team Structure	13	22,61	± 5,12	25,85	± 3,44	0,071
Leadership	13	24,54	± 6,00	27,85	± 1,90	0,079
Situation						
Monitoring	13	23,38	± 5,56	26,38	± 3,17	0,079
Mutual Support	13	19,00	± 3,67	22,92	± 4,75	0,027
Communication	13	20,85	± 4,54	24,85	± 2,91	0,013
Total Score	13	110,38	± 23,13	127,85	± 13,39	0,027

Discussion

The studies that evaluate the team-based skills in health professions and health professions education has grown dramatically in recent years. Being an effective team worker, communicator, leader, and competent in managing medical situations seems critical for improving health care quality and patient safety (Clapper, 2019). TeamSTEPPS tools were the samples of well-documented and validated tools for the measurement and assessment of these skills improving through the health care professionals (Clapper, 2019).

The studies, evaluating the relationships between the improvement of non-technical skills and the educational methods, proved that active learning methods or the methods committing collaborating through the learners are more effective in gaining non-technical skills (like communication, leadership, teamwork, etc.) (Dagnell A, 2020). And also, the dominant result of these studies showed that active learning methods and team-based learning approach should be preferred instead of the didactic learning approach (Nguyen et al., 2016, Moore-Davis et al., 2015) for improving teamwork skills, communication skills. Even though, exam scores and the passing/failing ratios were shown to be improved (Nieder et al., 2005; Camiel et al., 2013) in the team-based learning approach. In constant with works of literature, in our study, an increase in all sub-dimensions and total scores was observed in TeamSTEPPS scores of our students after they performed team-based educational activities. Although this increase is not statistically significant in “Team structure” and “Leadership areas”, it has been shown that there is a statistically significant difference in Situation Monitoring, Mutual Support, Communication, and Total Score. This result can be explained by the content of educational activities. In clinical content, this strategy was found to be more effective (Gelís et al. 2020). Because of our population is first-year medical students, the content was not related to clinical conditions, and leading skills or team structure was not as essential as the other topics related to content. This may be evaluated as a limiting factor in our study. As a result, with this study, this educational approach (small group training activities based on teamwork) was able

to consider effective and should be supported according to more activities focusing on leadership issues to be more fruitful to contribute to students' attitudes towards teamwork.

However, it is valuable in that a novel medical school that has just started its education life prefers and monitors student-centered educational activities like the one in this study, the low number of students is considered as a limitation of the study. Further researches are essential to have more clear results.

Conclusion

Physicians are expected to be team members, communicators, or leaders in the 21st century for more quality in health care services and patient safety. For competent graduates, it is important to design undergraduate medical curricula in detail, and plan educational activities that committing to help for gaining these skills. As a result of our study, team based and collaborative learning approach in small groups may be preferred to reach learning outcomes related to these non-technical skills in first year medical students.

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ID-200 / PP: “Surprise in The Postoperative Histopathological Diagnosis in A Child with A Prediagnosis of Cystic Lymphangioma: Extrathoracic Bronchogenic Cyst”

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Abstract (ID-200)

Introduction and Aim: Bronchogenic cysts are rare foregut abnormalities that arise from aberrant budding of the tracheobronchial tree early in embryological development. These cysts predominantly appear in the mediastinum Extrathoracic bronchogenic cysts are very rare entity but should be considered in the differential of all non-invasive cystic masses. In this study, it was aimed to draw attention to the subject by presenting a 1.5-year-old male patient who was injected with bleomycin twice with a preliminary diagnosis of cystic lymphangioma and was diagnosed with a bronchiogenic cyst after excision.

Case Report: A 3x2cm diameter cyst wad detected subdermal area over the rigth scapula by ultrasound in a male patient who had been 3 moths old to have an congenital supra scapular cystic mass. Cystic aspiration and Bleomycin injection were performed twice in the 3rd and 4th months, considering it was a cystic lymphangioma. The cyst sizes did not change one’s year follow-up. Although there was no significant increase in the size of the lesion, it was decided to excise the lesion located on the right back near the shoulder during the circumcision procedure. The cystic lesion was totally excised. Histopathological evaluation revealed that the cystic lesion was a bronchogenic cyst. The cystic lesion was filled with ciliated multi-layer flat epitel containing goblet cells.

Conclusion: Extrathoracal bronchogenic cysts are extremely rare tumors. Subcutaneous bronchogenic cysts, despite their rarity, should be considered in the differential diagnosis of all subcutaneous cystic masses. Moreover, since bronchogenic cysts can be rarely seen anywhere in the body, they should be considered in the differential diagnosis of all cystic masses. Histopathological evaluation is essential for definitive diagnosis. In cases where bleomycin treatment is unsuccessful in cystic lymphangioma, it should be considered that the nature of the cyst may be different.

Keywords: Cystic mass; Bronchogenic cyst; Cystic lymphangioma; Child.

ID-201 / OP: “Stroke Awareness of Healthcare Personnel Working in 112 Emergency Call Center”

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Abstract (ID-201)

Introduction and Purpose: The usefulness of stroke treatment modalities such as reperfusion strategies developed to open the occluded blood vessel and surgical clipping or angiographic embolization of the ruptured blood vessel in the early stage is highly dependent on time and stroke patients should be treated as soon as possible. The most important loss of time in this period is the time between the onset of symptoms and the time to bring the stroke patient to a suitable hospital where the stroke patient will be intervened. Thanks to the fact that the healthcare professionals in the 112 emergency call center, which stroke patients or their relatives call first for help, know the stroke symptoms and treatment times, stroke, which is an emergency that competes with time, will be diagnosed quickly and accurately, and ambulance crews will be directed appropriately, so that the necessary treatment will be given to the patients as soon as possible.

With this study, it was aimed to measure the awareness of stroke among emergency medicine technicians (EMT) and paramedics working in the 112 emergency call system, to determine the knowledge and awareness of patient transfer and treatment approaches, as well as to determine the status of their knowledge about stroke, the FAST score, which is frequently used in 112 systematics.

Materials and Methods: A survey prepared by emergency medicine specialists and neurologists was applied to 54 non-physician healthcare professionals-33 emergency medicine technicians and 21 paramedics working in 112 Emergency Call Center of Aydın Provincial Health Directorate between 01-03 November 2021. In this survey, which was prepared by evaluating similar studies in the literature, 11 open-ended questions measuring the knowledge of the participants about stroke (general information about stroke, what are the indications and symptoms of stroke, how much information they have about stroke intervention time, and where they learned their information about stroke) (Table 1). In line with the answers given by the respondents, the questions were categorized and the results were evaluated with the percentage of answers. Descriptive statistical analyzes were performed for the data analyzed in the study.

Results: To the survey; A total of 54 healthcare professionals, 45 of whom were women (83.3%), with a mean age of 32.3 ± 5.2 (24-42 years) years. The survey questions and the results are given in Table 1.

Discussion and Conclusion: The most important and remarkable result of the survey is the way of learning of participants about stroke information. Two-fifths of healthcare professionals received their knowledge about stroke through university education, and about one-third of them learned by experiencing the symptoms of patients without any training after starting the profession is remarkable. About a quarter of them state that they have knowledge about stroke through in-service training after starting the profession. Healthcare professionals should be provided with increased education about stroke in universities, and they should start their careers knowing stroke diagnosis and treatment strategies. After starting the profession, stroke information should be reinforced and updated with inservice trainings.

Keywords: Stroke; Emergency, stroke awareness, healthcare personnel, emergency call center.

Table 1. Stroke awareness survey for healthcare professionals in 112 emergency call centers

%	Question	%	Question
%100	1. What is stroke?		7. Until how many hours after the onset of stroke symptoms, mechanical thrombectomy can be performed?
%0	a. Cerebrovascular disease	%9.4	a. 3 hour
%0	b. Heart disease	%24.5	b. 4.5 hour
%0	c. Arm-leg vein occlusion	%34	c. 6.5 hour
%0	d. Pulmonary vascular disease	%9.4	d. 8 hour
%0	e. Muscle disease	%15.1	e. 12 hour
%96.3	2. Which organ is affected in stroke?	%7.6	f. Other...
	a. Brain		8. Which of the following symptoms is an unexpected clinical or examination finding in a patient thought to have a stroke?
%3.7	b. Heart	%13	a. Speech disorder
	c. Arm-leg	%1.9	b. Imbalance in walking
	d. Lungs	%3.7	c. Defect of vision
	e. Muscles	%72.2	d. Chest pain
%94.3	3. Is stroke a curable disease?	%3.7	e. Facial paralysis
%5.7	a. Yes	%5.5	f. Other...
	b. No		9. Where did you learn about stroke?
%72.2	4. Has anyone close to you had a stroke?	%39.2	a. University
%27.8	a. Yes	%2	b. Internet, social media
	b. No	%27.5	c. In-service trainings
%84.9	5. Is stroke is a preventable disease?	%1	d. Press
%15.1	a. Yes	%29.4	e. Self-experience with patients' symptoms.
	b. No		10. Which of the following is the expansion of the FAST algorithm, which refers to recognizing stroke symptoms and acting quickly?
%48.1	6. Until how many hours after the onset of stroke symptoms, intravenous thrombolytic therapy can be administered?	%3.7	a. Eye-Mouth-Face-Time
%35.2	a. 3 hour	%0	b. Head-Neck-Leg-Feeling
%7.4	b. 4.5 hour	%11.1	c. Face- Eye-Speech-Call Time
%1.9	c. 6.5 hour	%77.8	d. Face-Arm- Speech-Time
%1.9	d. 8 hour	%7.4	e. Speech-Arm-Leg-Call Time
%5.5	e. 12 hour		11. Which type of stroke is more common?
	f. Other...	%1.9	a. Intracerebral hematoma
		%83.3	b. Ischemic stroke
		%14.8	c. Transient ischemic stroke
		%0	d. Subarachnoid hemorrhage
		%0	e. Hypoxic ischemic encephalopathy

ID-202 / OP: “Twins with Infantile Hypertrophic Pyloric Stenosis and Refractory Hypoglycemia with Normal Insulin Levels: Report of The First Cases”

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Abstract (ID-202)

Introduction and Aim: Infantile Hypertrophic Pyloric Stenosis (IHPS) is a condition commonly seen in infancy. It typically presents with projectile, nonbilious vomiting and requires surgery. Twins with IHPS have been reported. Refractory hypoglycemia is described either as prolonged duration of hypoglycemia (hours to days) or high dose of dextros/prolonged infusion to maintain normal blood glucose levels. Combination of IHPS and refractory hypoglycemia due to high insulin levels are rarely seen. Here, we present the first cases of male twins with IHPS, refractory hypoglycemia and normal insulin levels with a review of the literature.

Case Report: Twin brothers born spontaneously in 35th week to a 37-year-old G2P0A1 non-smoking non-obese mother via cesarean section in another city. On the 3rd week of life they started to vomit after every feedings. They were hospitalized in a neonatal intensive care unit. Although gastroesophageal reflux treatment, their nonbilious vomiting became projectile. On ultrasound, pyloric muscle thickness and length were detected as 5mmx17mm in Twin-1 and 4mmx16mm in Twin-2, respectively and twins referred to our center with prediagnosis of IHPS.

Oral feeding was stopped and intravenous fluid with the standard 5 mg/kg/min of glucose infusion rate was given. In routine blood tests, it was determined that there were hypoglycemia as well as alkalosis as pH:7.63 in Twin-1 and pH:7.53 in Twin-2. They both needed an intravenous glucose infusion rate as high as 12 mg/kg/min and glucagon administration to maintain normal blood glucose levels. The blood insulin levels were normal ranges in both. Patients were operated after correction of alkalosis and hypoglycemia; open pyloromyotomy underwent in both on 6th day of hospitalization. The postoperative course was uneventful, glucose infusion rates were decreased gradually, and the fully oral feeding was reached for both. Twins discharged the 13th postoperative day. No complications including hypoglycemia were observed postoperatively. 6 month follow ups was uneventful.

Conclusions: The aetiology of IHPS is still unknown but genetic and environmental factors appear to play a role. Twins with IHPS seems to support the genetic predisposition but they are also exposed to the same environmental factors. Combination of IHPS and refractory hypoglycaemia despite high

glucose infusion rates with normal insulin levels have not been reported before to our knowledge in English Literature.

Keywords: Hypertrophic pyloric stenosis; Twins; Hypoglycemia; Refractory.

Full-text (ID-202): “Twins with Infantile Hypertrophic Pyloric Stenosis and Refractory Hypoglycemia with Normal Insulin Levels: Report of the First Cases”

Introduction: Infantile Hypertrophic Pyloric Stenosis (IHPS) is a gastric outlet obstruction typically presents with projectile, nonbilious vomiting and requires surgery. It was first described by Hirschsprung in 1888 (1) and is commonly seen in infancy. Although it is common, etiology is still unknown.

Case reports of twins (2-5) and triplets (6-9) with IHPS can be found in the literature. Combination of IHPS and refractory hypoglycemia are rarely seen but reported as a postoperative complication (10) and a result of hyperinsulinism (11). Refractory hypoglycemia is described either as prolonged duration of hypoglycemia (hours to days) or high dose of dextrose/prolonged infusion to maintain normal blood glucose levels. Here, we present the first case of male twins with IHPS, preoperative refractory hypoglycemia and normal insulin levels with a review of the literature.

Case Report: Twin brothers of a nonconsanguineous couple born spontaneously in 35th week to a 37-year-old G6P0A5 nonsmoking nonobese mother via cesarean section through the use of in-vitro fertilization. The mother had polio and underwent achilotomy when 6 years old. The birth weight was 2250 grams for Twin-1(T1) and 2050 grams for Twin-2(T2). The perinatal period was reportedly uneventful. On the 3rd week of life they started to vomit after every feeding. Gastroesophageal reflux treatment was given but their vomiting got worse. They were hospitalised in a neonatal intensive care unit in another city. On ultrasound, pyloric muscle thickness and length were detected as 5mm-17mm in T1 and 4mm-16mm in T2, respectively and they were referred to our center with the diagnosis of IHPS after 5 days of hospitalisation.

Oral feeding was stopped and total parenteral nutrition with the standard 5 mg/kg/min of glucose infusion rate was given. On administration the weight of T1 was 2180 g and T2 was 1960 g. In routine blood tests, it was determined that there was hypoglycemia in addition to expected alkalosis (pH: 7.63, Glucose: 53 mg/dL in Twin-1, pH: 7.53, Glucose: 42 mg/dL in Twin-2). They both needed intravenous fluid, electrolytes and glucose infusion rate as high as 12 mg/kg/min administration to maintain normal blood pH, electrolytes and glucose levels. T2 needed additional glucagon administration twice. Blood insulin, c-peptide, cortisol and urine ketone levels taken during hypoglycemic period were in normal ranges for both. Patients were operated after correction of alkalosis and hypoglycemia. Both of them underwent open pyloromyotomy on 6th day of hospitalization, simultaneously. Oral feeding started on postoperative day 4 in T1, due to peroperative mucosal injury and postoperative day 1 in T2. The postoperative course was uneventful, glucose infusion rates were decreased gradually and the fully oral feeding was reached for both. Twins discharged the 13th postoperative day. No complications including

hypoglycemia were observed postoperatively. Their body weight was 3040 gram for T1 and 2795 gram for T2 on discharge. 6 month follow up was uneventful.

Discussion: IHPS is the most common cause of abdominal operations in infancy, with a prevalence of 20.09 per 10,000 live births (2). It is characterized by hypertrophy and thickening of the circular and longitudinal muscle of the pylorus, leading to obstruction of gastric outlet (12). Although it is common, the etiology is still not known clearly. Genetic factors seem to play a role looking at male predominance, high incidence in the offspring of affected parents and high incidence in twins compared to general population (13). In 1961, the hypothesis of the multifactorial threshold model of inheritance was suggested by Carter and Evans (14). After analysing 553 patients and their relatives, they suggest the genetic component of IHPS is polygenic and modified by sex. In the study, there were also 5 twins and none of the co-twins were affected. This difference among twins supports the effect of environmental factors. Screening nearly 2 million children, Korgh et al. found that IHPS is associated with many pre- and perinatal factors like male sex, being first-born, preterm delivery, small weight for gestational age, cesarean section and suggested that environmental factors may play a role in the etiology (15). There are other studies in favour of environmental factors such as bottle feeding (16) and maternal smoking (17). Our patients were born through the use of IVF which is known to increase the rate of some anomalies. IHPS is not known to be one of these anomalies but there is another case of triplets with IHPS born after IVF (6).

The etiology of IHPS is not clear but diagnosis and treatment are. Muscle thickness greater than 4 mm and pyloric channel length greater than 15 mm are consistent with the diagnosis (12). Once the diagnosis is made and blood tests revealed normal results, pyloromyotomy should be performed. Our patients used reflux treatment for a week after the first symptom. Their vomiting worsened during that week and they were hospitalized for 5 days in another city before referred to our center. This delay caused longer preoperative period to balance blood glucose, electrolytes and pH levels. In a report of 3 patients with IHPS, postoperative refractory hypoglycemia caused convulsions in 3, cardiac arrest in 2 patients after fully oral feeding and discontinuance of parenteral glucose infusion. One of them studied in detail, low levels of hepatic glycogen and normal levels of serum insulin suggested glycogen depletion as the mechanism for hypoglycemia (10). Glycogen depletion due to prolonged preoperative period may explain refractory hypoglycemia seen in our patients.

Conclusions: The etiology of IHPS is still unknown but genetic and environmental factors appear to play a role. Twins with IHPS seems to support the genetic predisposition but since they are also exposed to the same environmental factors it is not clear whether environmental or genetic factors are more important in the etiology. Delay in the diagnosis and operation may cause severe consequences like refractory hypoglycaemia. Combination of IHPS and preoperative refractory hypoglycaemia despite

high glucose infusion rates with normal insulin levels have not been reported before to our knowledge in English literature.

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**ID-203 / OP: “Evaluation of The Relationship of NGAL and KIM1 Expressions With
Clinicopathological Parameters in Gastric Carcinomas”**

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Abstract (ID-203)

Introduction and Aim: At the time of diagnosis, gastric cancers are generally at an advanced stage and the survival rates are very low. Kidney Injury Molecule-1 (KIM-1) and Neutrophil Gelatinase-Associated Lipocalin (NGAL) have important roles in both immunity and cell proliferation. But their roles in tumorigenesis of gastric carcinomas have not been evaluated before. This study aims to determine the prognostic values of KIM1 and NGAL expressions in tumor cells and to detect the presence of NGAL- positive neutrophils in the tumor microenvironment.

Materials and Methods: In this study, all clinical and histopathological information about 172 patients with gastric carcinoma who had been undergone gastrectomy between 2011, and 2018 were retrospectively reviewed. NGAL and KIM1 expressions were evaluated using immunohistochemical methods.

Results: In this series, the mean age of the patients was 64.07 ± 12.35 years and the patients were followed up for a mean period of 32.04 months. In 54 (31.4 %) cases, there were both NGAL and KIM1 expressions in tumor cells. NGAL- positive inflammatory cells were also seen in tumors of 23 (13.4 %) cases. There was no significant relationship between NGAL positive PNL presence and survival times ($p = 0.497$). But there was statistical significance between the survival and presence of NGAL expression ($p = 0.016$) and KIM1 expression ($p = 0.037$) of tumor cells.

Conclusion: This study has demonstrated that the NGAL and KIM1 positivities will be effective on gastric tumorigenesis. But we have not found a positive correlation between the presence of NGAL (+) neutrophils at the tumor microenvironment and survival. Considering the development of anti-KIM 1 therapies, the presence of KIM 1 expression may be a new treatment option in aggressive gastric cancer. But these findings should be confirmed in larger series.

Keywords: Gastric carcinom; NGAL, KIM1, therapy, prognosis.

Full-text (ID-203)

Introduction: Breast cancer is the most frequently seen cancer type in women, and it is the second most frequent cause of cancer-related deaths. Multiple numbers of factors play important roles in its etiopathogenesis including mainly hormonal factors followed by family history, advanced age, alcohol consumption, obesity, dietary habits, and genetic factors. While the traditional classification of malignant breast tumors by the World Health Organization (WHO) was made based on histological features of the tumor, nowadays some subtypes have been described according to molecular characteristics of the tumors. Firstly, in the year 2000, subtypes of breast cancers were described based on the presence of estrogen receptor (ER) in the light of gene expression studies. As a result of studies and meta-analyses performed, breast cancers were classified according to the molecular subtypes. It has been understood that 75% of breast tumors contain ER and/ or progesterone (PR) receptors, in other words, they belong to the luminal group. However, since tumors in the luminal group manifest diverse behaviors, this group is divided into luminal A and B subgroups. Nowadays immunohistochemically cut-off value discriminating between luminal A, and luminal B tumors is accepted as nuclear Ki67 expression demonstrated by less than 14 % of tumor cells. Other subtypes are Her2 -positive and triple-negative or basal cell-like tumors.

The kidney injury molecule-1 (KIM -1) firstly was determined in 1998, as a sensitive and specific biomarker in predicting injury of the proximal tubules. Nowadays this biomarker is preferred to name as T-cell immunoglobulin and mucin domain 1 (TIM-1). It is expressed at a low level in the normal kidney; however, its expression increases dramatically in the post-ischemic kidney. Its expression is also upregulated in several human cancers, most notably in renal and ovarian carcinomas, but has very restricted expression in healthy tissues, thus representing a promising target for antibody-mediated therapy. Recently, a human monoclonal IgG1 antibody specific for the extracellular domain of TIM-1 was developed. This antibody (CDX-O14), was shown to bind purified recombinant chimeric TIM-1-Fc protein and TIM-1 expressed on a variety of transformed cell lines. However, it has not been included in the routine treatment regimen yet.

As a member of the lipocalin superfamily, neutrophil gelatinase-associated lipocalin (NGAL, also called lipocalin 2 or 24p3), was first isolated as a 25 kDA glycoprotein covalently bound to matrix metalloproteinase 9 (MMP9) in neutrophils. NGAL is an acute-phase protein, and it is rapidly released from both neutrophils and a variety of cell types as a response to inflammation and tissue injury. NGAL is expressed in neutrophils, and as recently discovered in most epithelial cells, and involves in diverse processes of growth, development, and tumorigenesis.

Hitherto, as relevant markers for assessing the proliferative activity and tumor cell dynamics of breast carcinomas, many parameters have been suggested. However, among these parameters NGAL and

TIM1 have not been investigated extensively. In this study we have aimed to explore the statistical significance of NGAL and TIM1 expressions in breast cancers.

Material and Methods: A total of We examined the expressions of NGAL and KIM1 proteins by immunohistochemical staining in tissue specimens harvested from 412 primary breast cancer cases who underwent mastectomy, and excisional breast biopsy between the years 2011, and 2018, and histopathologically diagnosed as breast carcinoma in the Pathology Laboratory of Tepecik Education and Research Hospital were included in the study. Patients' files were retrospectively evaluated. This study was approved by the local Ethics Committee. Hematoxylin-Eosin (H&E) stained archived slides were re-evaluated based on 2012 breast tumor classification of the The World Health Organization. For immunohistochemistry (IHC), hematoxylin -eosin staining was used to select appropriate paraffin blocks and to identify the viable tumor areas. The paraffin block most suitable for immunohistochemical evaluation was selected, and labeled firstly on the slide, and then the block, and 2 mm thick cylindrical paraffined tissue samples were harvested from donor blocks. Then multiple blocks were prepared using mapping, and **addressing techniques, then IHC was performed using** the diluted monoclonal rabbit antibodies Affinity-purified monoclonal mouse antibodies against NGAL (Novus Biologicals, Littleton, USA, NDP1- 90331) and KIM-1 (Bioss, Philadelphia, USA, HAVCRI) were used at a dilution of 1: 300. As a positive control for KIM-1, renal tissue damaged by acute tubular necrosis, and for NGAL, a splenic tissue was used. The pathologists who were blinded to the clinical features of the patients examined the slides and staining patterns were classified according to the intensity of staining. KIM-1 positivity was defined as cytoplasmic staining intensity comparable to that of renal proximal tubules in control tissues. Focal staining occupying less than 5 % of the high-power field (HPF) of view or weak staining visible under a microscope was considered as KIM-1 negativity. In previous studies, authors have reported the presence of strong cytoplasmic and membranous expressions of NGAL in tumor cells. Contrary to the other studies, in the present study very weak expression of NGAL was detected in tumor cells. We considered the very weak NGAL expression compared with the staining of inflammatory cells as false background staining. To assess the intensity of NGAL expression, we counted the NGAL- positive neutrophils that infiltrated the tumors in every high-power field (HPF).

Results: Median age of the patients at the time of diagnosis was 56.5 years. Mean ages of the patients in different groups were close to each other ($p=0.377$). In this series, the mean age of the patients was 55.6 ± 12.4 years. In 104 (25.2%) cases, there was KIM1 expressions in tumor cells. In 218 (53 %) cases, there were NGAL expressions in tumor cells. NGAL- positive inflammatory cells were seen in tumors of 45 (10.9 %) cases. There was no significant relationship between NGAL positive PNL presence in the tumor microenvironment and other clinicopathological features. But there was statistical significance between the presence of in-situ carcinomas and the presence of both NGAL expressions ($p=0.008$) and KIM1 expressions ($p=0.020$) of tumor cells.

Discussion: This study has demonstrated that the NGAL and KIM1 positivities will be effective on breast cancer. Considering the development of anti- KIM 1 therapies, the presence of KIM 1 expression may be a new treatment option in breast cancer, especially in-situ component-rich ones. But these findings should be confirmed in the larger series.

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ID-204 / OP: “Vitamin D Deficiency is Associated with Early Stages of Autoimmune Thyroiditis”

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Abstract (ID-204)

Background: Our main objective was to evaluate the association between 25-OH Vitamin D concentrations and early stages of autoimmune thyroiditis (AT).

Material/Methods: A total of 56 patients were divided into 3 groups according to the thyroid ultrasonography (US) findings: Group 1: control cases (n=17); Group 2: intermediate (early) cases (n=15); Group 3: active and late-stage thyroiditis cases (n=24). Serum 25-hydroxy Vitamin D concentrations, thyroid hormones (free T3, free T4, TSH) and antibody levels (TPO Ab, Tg Ab) were assessed in different stages of AT.

Results: Vitamin D concentrations of both Group 2 ($15 \pm 7,5$ ng/mL) and Group 3 ($14 \pm 9,2$ ng/dL) are significantly lower than Group 1 (28 ± 20 ng/dL) (ANOVA, Tukey HSD Test, $p=0,025$, $p=0,004$, respectively). Interestingly, thyroid gland antibodies, both Tg Ab and TPO Ab, only increased in Group 3 compared to Group 1 and 2 (Mann Whitney U Test, $p<0,001$, $p<0,001$, respectively).

Conclusion: This data shows us, even before anti-thyroid antibodies are produced in the body and give evidence about the nature of the thyroiditis disease, patients already has a developed Vitamin D deficiency.

Keywords: Thyroiditis; Vitamin D, autoimmune.

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Contact Author: Kaan Yücel**E-mail:** kaanyucel2014@gmail.com**Abstract (ID-205)**

Introduction: A person with a body mass index (BMI:kg/m²) equal to or higher than 30 is considered as obese. Obesity is a severe condition affecting millions of people worldwide. Obesity has been related to increased risk of type 2 diabetes mellitus, insulin resistance, osteoarthritis, certain cancers hypertension, coronary heart disease, stroke and Alzheimer’s disease. The rate of obesity in adults is 13 % in the world, 17 % in European Union countries and 33 % in USA. In longitudinal studies higher BMI has been found to be related with decreases in the gray matter volume in the temporal and occipital lobes over time. In cross-sectional studies in obese people decreases in several regions have been reported including structures related to the reward circuit (nucleus accumbens, orbitofrontal cortex, striatum, insula), homeostatic regulation (hypothalamus), biological rhythm (pineal gland), emotion and memory (amygdala and hippocampus), executive function (inferior frontal gyrus, left prefrontal cortex), long-term memory, auditory, speech, and vision processing (inferior and middle temporal gyri and occipital gyri), somatosensory (postcentral gyrus), interface between emotions and cognition (cingulate gyrus), food intake behavior (ventral diencephalon and brainstem) compared to the lean people or people with normal weight. There have been few studies with the findings of increased volumes in some brain structures including thalamus, putamen, pallidus and hippocampus in the obese people compared to people with normal weight. Obesity has also been associated with deficits in white matter integrity. In cross-sectional studies decreased white matter microstructure was found to be related to obesity in several white matter tracts including corpus callosum and limbic system related tracts. The effects of dietary and surgical interventions against obesity has been investigated in several studies. Restrained eating has been associated with volume increase in left insula, orbitofrontal cortex and dorsolateral prefrontal cortex. The same phenomenon was negatively correlated with posterior cingulate and putamen volumes. A successful diet was found to be related to volume increases in the right parahippocampal gyrus and orbitofrontal cortex. Obesity surgery resulted in increases in the volumes of putamen, amygdala, left precuneus, right frontal pole, left superior temporal gyrus, insula, inferior frontal gyrus, left hemisphere gray matter and white matter and decreases in the volumes of bilateral nucleus accumbens. Obesity is mostly considered as a risk factor for cognitive decline and brain atrophy in aging. Inflammatory processes have been primarily blamed as mediating this relation. A relation between inflammatory markers and volume loss in the Alzheimer’s disease related structures have been demonstrated. Some studies, particularly in females, claim that obesity is actually a protective factor for brain atrophy in older life. In obese children and adolescents higher BMI has been reported as associated with volume loss in several brain structures

including pallidum, left hippocampus with also changes in white matter volumes in several regions. Boys were found to have a negative relation between maternal pregnancy BMI and total hippocampus volume. As a summary, obesity has been related to volume changes in brain structures which is reversed following weight loss. More longitudinal studies are required.

Keywords: Obesity; MRI; Volume; Brain; Anatomy.

Full-text (ID-205)

The concept of “Body Mass Index (BMI)” was first suggested by Keys et al. (1) almost 50 years ago and the index is calculated by dividing the weight of the person (kg.) by the squared meters as the height of the person. BMI with its simplicity has been popular worldwide to evaluate the state of the weight. A person with a BMI ranging between 20 and 24.9 is considered as a person with normal weight, a person with a BMI less than 20 is lean, an overweight person has a BMI ranging between 25 and 29.9, where a person equal to or higher than 30 is considered as obese (2). Morbid obesity is defined as BMI equal or higher than 40, and these people are candidates for obesity surgery (3). Obesity is a severe condition affecting millions of people worldwide. Obesity is a rapidly growing threat to the human health. In USA the prevalence of obesity jumped from 30.5 % to 42.4 % in the 18 years between 1999-2017 (4). According to the data of the World Health Organization obesity has tripled since 1975 (5). The rate of obesity in adults is 13 % in the world (5). Obesity has been related to increased risk of type 2 diabetes mellitus, insulin resistance, osteoarthritis, certain types of cancers such as colon cancer, renal cell carcinoma, endometrial, breast, ovarian, prostate, liver, gallbladder cancers, hypertension, liver and kidney disease, sleep apnea, major depressive disorder, coronary heart disease, stroke and Alzheimer’s disease (4-6).

Obesity has been linked with decreases in gray matter volume in the temporal and occipital lobes over time in the longitudinal structural/volumetric magnetic resonance imaging (MRI) studies (7). In cross-sectional volumetric MRI studies decreases in volumes of several brain structures including orbitofrontal cortex (OFC;8), pituitary gland (9) in the obese group of people have been reported when compared with the lean people. When comparing the obese with the normal weighted people and people with overweight, volume reductions have been found in left prefrontal cortex, bilateral cingulate gyrus, right temporal lobe, ventral diencephalon, brainstem (10-11). Morbid obesity has been associated with decreased volumes in inferior frontal gyrus, temporal regions including inferior temporal gyri, middle temporal gyri, postcentral gyrus, and occipital gyri (12). Enlarged putamen was detected in the obese people compared to the controls (11,14).

The effects of dietary and surgical interventions against obesity has been investigated in several studies. Restrained eating has been associated with volume increases in the left insula, OFC and dorsolateral prefrontal cortex and volume decreases in the posterior cingulate and putamen (15,16). A successful diet was found to be related to volume increases in the right parahippocampal gyrus and OFC (17). Obesity

surgery resulted in increases in the volumes of putamen, amygdala, left precuneus, right frontal pole, left superior temporal gyrus, insula, inferior frontal gyrus, left hemisphere gray matter (18-22).

Obesity in midlife has been related to cognitive decline and greater brain atrophy during aging (24,25). Dysregulated glucose metabolism and systemic inflammation are among the factors blamed for mediating the relation between obesity and brain atrophy in aging (26). In a nine-year follow-up quantitative MRI study the baseline serum CRP was reported to be correlated with the year-9 mean cortical thickness in the bilateral posterior cingulate cortex (27). Furthermore, the FTO gene also has been related to volume deficits in the gray matter and white matter in the obese cognitively healthy aged adults (28). Frontal, temporal, parietal, occipital regions including hippocampus and amygdala and cerebellum were reported as affected in the obese older adults in several studies (29-31). Higher amygdala volume was found to be related to higher levels of serum leptin in older adults (31).

In volumetric MRI studies with children obesity has been associated with an increase in globus pallidus volume (32-34) olfactory bulb volume (35), nucleus accumbens and amygdala volumes (36), decreased hypothalamus volume (in insulin resistant-obese females;37) and OFC volume (38) and cortical thickness (39). Increasing physical activity resulted in larger hippocampal volume in the overweight/obese pediatric population in a recent follow-up study (40). Boys were found to have a negative relation between maternal pregnancy BMI and total hippocampus volume, and the volume of each hippocampal subregion (41). Rasmussen et al. (42) reported a negative relation between insula volume in the newborn and the change percent body fat in the first six months of life. The weight loss following a disciplinary diet resulted in cerebellar volume increase in a quantitative MRI study with children (43).

Obesity has been associated with deficits not only in gray matter but in white matter integrity as well. The deficits in the connections between OFC and inferior frontal gyrus (44), nucleus accumbens and amygdala (45), OFC and thalamus (46) were demonstrated in the obese population. In a study with two large cohorts higher BMI was found as related to reductions in the integrity of the white matter tracts measured by diffusion tensor imaging (DTI) including corpus callosum, bilateral posterior thalamic radiation, bilateral internal capsule and external capsule, bilateral inferior longitudinal fasciculus and inferior fronto-occipital fasciculus (47) and that of the genu, splenium, and fornix in another study (48). Bolzenius et al. (49,50) reported deficits in the white matter tracts in the temporal lobe vulnerable to neurodegenerative diseases as well as a correlation between increased BMI levels and lower white matter integrity in the uncinate fasciculus in the obese people. A relation among cognition, obesity and white matter tracts in the frontal, temporal and parietal regions has been demonstrated in the older adults (51). In a recent study Hu et al. (52) concluded that obesity surgery resulted in strengthening top-down control over food intake by increasing the connectivity between dorsolateral prefrontal cortex and anterior cingulate cortex.

There have been two meta-analyses on the volumetric MRI studies with the obese population (53,54). García-García (53) found volume decreases in the medial prefrontal cortex, bilateral cerebellum, and left temporal pole in the obese. Herrmann (54) reported reductions in the volumes of the left, middle, and right inferior frontal gyrus (including the insula), the left middle temporal cortex, the left precentral gyrus,

and the cerebellum and increased volumes in the left cuneus, left middle frontal gyrus, left inferior occipital gyrus, and corpus callosum in the obese people.

In a recent meta-analysis on DTI studies in obesity Daoust et al. (55) found a decreased white matter integrity in the genu of the corpus callosum; an area connecting frontal regions associated with executive function.

The findings of negative correlations between BMI values and basal ganglia structures like putamen, globus pallidus and nucleus accumbens in the obese people are intriguing (33,56). Actually Zhang et al. (14) reported a direct relation between left putamen volume and BMI, plasma insulin and insulin resistance level. The waist-hip-ratio was found to be negatively correlated with the volumes of the thalamus, caudate, and globus pallidus in a pediatric obese group (33). The percentage of total body fat was found to be associated with volumes of the thalamus, caudate, nucleus, putamen, globus pallidus, hippocampus, and amygdala in men, and only with globus pallidus volume in women in another study (57). The insula and OFC are important core structures in the reward circuit as well all the basal ganglia structures, particularly nucleus accumbens. All these correlations highlight the deficit in the reward circuit in obesity. Actually food addiction is an important factor in the development of obesity (58). In a functional MRI study a decrease in the connectivity between the precuneus and putamen following laparoscopic sleeve gastrectomy was associated with the Yale Food Addiction Scale score (21). The deficits in the frontal regions including dorsolateral prefrontal cortex has been related to deficits in cognitive inhibition, parietal lobe deficits including those in the postcentral gyrus related to sensorial deficits, deficits in the hypothalamus related to homeostatic regulation of intake, deficits in the hippocampus related with memory deficits, deficits in the prefrontal cortex and cingulate cortex associated with deficits in the cognitive control and attention, and the deficits in the limbic regions with emotional problems (59). The deficits in the white matter integrity in this population point out emotional and cognitive problems.

Dementia is believed to be affecting 150 million of people worldwide by 2050 (60) and exercise is related to improvement in cognition and increase in hippocampal volumes in aged adults (61). Although one study (62) found obesity as protective against volume loss in the hippocampus, entorhinal cortex, and parahippocampal gyrus in older males and volume loss in temporal gray matter in older females and another study (63) found that lower BMI values were associated with reduced brain volumes in older females over time, in general midlife obesity is linked to brain atrophy in aging. Following more longitudinal studies in the obesity in aging literature, in a decade or so, there might be an ongoing worldwide public campaign for regular exercise programs for the elderly to decrease the incidence of both obesity and Alzheimer's disease.

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ID-206 / PP: “A Morbid And Mortal Course in A Case With Isolated Esophageal Atresia: Sudden Cardiopulmonary Arrest Three Months After Retrosternal Gastric Tube Replacement”

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Abstract (ID-206)

Introduction and Purpose: In isolated esophageal atresia (EA), the distance between proximal and distal ends of the esophagus is long, which prevents primary repair and requires esophageal replacement. We present a case who underwent gastric tube replacement due to isolated EA and died at the second postoperative month.

Case report: A gastrostomy was placed in a female with isolated esophageal atresia. Echocardiography revealed Atrial Septal Defect, Patent Foramen Ovale, and Patent Ductus Arteriosus. She was discharged with continuous upper pouch aspiration.

Esophageal replacement was performed at the 13th month in the patient whose upper esophageal pouch was at the 7th cervical vertebra level. Distal esophagus was 2cm, a new, 17-cm esophageal tube with a diameter of 2.5cm was created from the great curvature and the fundus, which was antiperistaltically pulled up retrosternally, and anastomosed with no tension. The circulation of the gastric tube was well. The abdomen was closed after diamond shaped pyloroplasty and gastrostomy revision. She was extubated at the 6th postoperative hour. Right tube thoracostomy was performed due to sudden pneumothorax on the 2nd postoperative day. Oesophago-pleural leak was observed on contrast graphy on the 7th postoperative day. Esophagogastrosctopy on the 22nd day revealed a 17 mm esophago-pleural fistula at 17 cm; pleural and esophageal repair was performed with sternotomy. The patient was extubated on the 11th day.

Control esophagosctopy on the 33rd PO day revealed the fistula shrank. Fibrin glue was applied. 3 ml of autologous blood and 10 ml %10 povidone iodine were infused from the NGT and thorax tube, respectively, twice. Thorax tube was clamped on the 48th postoperative day and removed. On chest radiograph, both lungs expanded and breathing sounds were normal. Antibiotherapy, which started 1 month before the operation, was continued in accordance with the blood cultures. However, after high fever that started at night, sudden cardiac arrest developed in the morning on the 58th postoperative day. The patient did not respond to resuscitation.

Discussion and Conclusion: Esophageal replacement is an operation with high mortality and morbidity. Disruption of circulation in replaced tissue may result in mortality. However, the loss of our patient with sudden high fever in the third postoperative month suggested sepsis.

Keywords: Isolated esophageal atresia; Esophageal replacement; Gastric tube; Child.

ID-207 / OP: “Tissue Expressions of NGAL and KIM1 in Breast Cancers”

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Abstract (ID-207)

Introduction and Aims: Breast cancer is the most common cancer among women worldwide. The development of breast carcinoma is regulated by many factors such as hormonal effects, advanced age, alcohol consumption, obesity, dietary habits, and genetic factors. Kidney Injury Molecule-1 (KIM-1) and Neutrophil Gelatinase-Associated Lipocalin (NGAL) have important roles in both immunity and cell proliferation. But their roles in tumorigenesis of breast carcinomas have not been evaluated widely before. The aim of this study is to determine the prognostic values of KIM1 and NGAL expressions in tumor cells and to detect the presence of NGAL- positive neutrophils in the tumor microenvironment.

Material and Method: We examined the expressions of NGAL and KIM1 proteins by immunohistochemical staining in tissue specimens harvested from 412 primary breast cancer cases.

Results: In this series, the mean age of the patients was 55.6 ± 12.4 years. In 104 (25.2%) cases, there was KIM1 expressions in tumor cells. In 218 (53 %) cases, there were NGAL expressions in tumor cells. NGAL- positive inflammatory cells were seen in tumors of 45 (10.9 %) cases. There was no significant relationship between NGAL positive PNL presence in the tumor microenvironment and other clinicopathological features. But there was statistical significance between the presence of in-situ carcinomas and the presence of both NGAL expressions ($p=0.008$) and KIM1 expressions ($p=0.020$) of tumor cells.

Conclusion: This study has demonstrated that the NGAL and KIM1 positivities will be effective on breast cancer. Considering the development of anti-KIM 1 therapies, the presence of KIM 1 expression may be a new treatment option in breast cancer, especially in-situ component-rich ones. But these findings should be confirmed in larger series.

Keywords: Breast carcinomas; NGAL, KIM1, therapy, prognosis.

Full-text (ID-207)

Introduction: Breast cancer is the most frequently seen cancer type in women, and it is the second most frequent cause of cancer-related deaths. Multiple numbers of factors play important roles in its etiopathogenesis including mainly hormonal factors followed by family history, advanced age, alcohol consumption, obesity, dietary habits, and genetic factors. While the traditional classification of malignant breast tumors by the World Health Organization (WHO) was made based on histological features of the tumor, nowadays some subtypes have been described according to molecular characteristics of the tumors. Firstly, in the year 2000, subtypes of breast cancers were described based on the presence of estrogen receptor (ER) in the light of gene expression studies. As a result of studies and meta-analyses performed, breast cancers were classified according to the molecular subtypes. It has been understood that 75% of breast tumors contain ER and/ or progesterone (PR) receptors, in other words, they belong to the luminal group. However, since tumors in the luminal group manifest diverse behaviors, this group is divided into luminal A and B subgroups. Nowadays immunohistochemically cut-off value discriminating between luminal A, and luminal B tumors is accepted as nuclear Ki67 expression demonstrated by less than 14 % of tumor cells. Other subtypes are Her2 -positive and triple-negative or basal cell-like tumors.

The kidney injury molecule-1 (KIM -1) firstly was determined in 1998, as a sensitive and specific biomarker in predicting injury of the proximal tubules. Nowadays this biomarker is preferred to name as T-cell immunoglobulin and mucin domain 1 (TIM-1). It is expressed at a low level in the normal kidney; however, its expression increases dramatically in the post-ischemic kidney. Its expression is also upregulated in several human cancers, most notably in renal and ovarian carcinomas, but has very restricted expression in healthy tissues, thus representing a promising target for antibody-mediated therapy. Recently, a human monoclonal IgG1 antibody specific for the extracellular domain of TIM-1 was developed. This antibody (CDX-O14) was shown to bind purified recombinant chimeric TIM-1-Fc protein and TIM-1 expressed on a variety of transformed cell lines. However, it has not been included in the routine treatment regimen yet.

As a member of the lipocalin superfamily, neutrophil gelatinase-associated lipocalin (NGAL, also called lipocalin 2 or 24p3), was first isolated as a 25 kDA glycoprotein covalently bound to matrix metalloproteinase 9 (MMP9) in neutrophils. NGAL is an acute-phase protein, and it is rapidly released from both neutrophils and a variety of cell types as a response to inflammation and tissue injury. NGAL is expressed in neutrophils, and as recently discovered in most epithelial cells, and involves in diverse processes of growth, development, and tumorigenesis.

Hitherto, as relevant markers for assessing the proliferative activity and tumor cell dynamics of breast carcinomas, many parameters have been suggested. However, among these parameters NGAL and

TIM1 have not been investigated extensively. In this study we have aimed to explore the statistical significance of NGAL and TIM1 expressions in breast cancers.

Material and Methods: A total of We examined the expressions of NGAL and KIM1 proteins by immunohistochemical staining in tissue specimens harvested from 412 primary breast cancer cases who underwent mastectomy, and excisional breast biopsy between the years 2011, and 2018, and histopathologically diagnosed as breast carcinoma in the Pathology Laboratory of Tepecik Education and Research Hospital were included in the study. Patients' files were retrospectively evaluated. This study was approved by the local Ethics Committee. Hematoxylin-Eosin (H&E) stained archived slides were re-evaluated based on 2012 breast tumor classification of the The World Health Organization. For immunohistochemistry (IHC), hematoxylin -eosin staining was used to select appropriate paraffin blocks and to identify the viable tumor areas. The paraffin block most suitable for immunohistochemical evaluation was selected, and labeled firstly on the slide, and then the block, and 2 mm thick cylindrical paraffined tissue samples were harvested from donor blocks. Then multiple blocks were prepared using mapping, and addressing techniques, then IHC was performed using the diluted monoclonal rabbit antibodies Affinity-purified monoclonal mouse antibodies against NGAL (Novus Biologicals, Littleton, USA, NDP1- 90331) and KIM-1 (Bioss, Philadelphia, USA, HAVCRI) were used at a dilution of 1: 300. As a positive control for KIM-1, renal tissue damaged by acute tubular necrosis, and for NGAL, a splenic tissue was used. The pathologists who were blinded to the clinical features of the patients examined the slides and staining patterns were classified according to the intensity of staining. KIM-1 positivity was defined as cytoplasmic staining intensity comparable to that of renal proximal tubules in control tissues. Focal staining occupying less than 5 % of the high-power field (HPF) of view or weak staining visible under a microscope was considered as KIM-1 negativity. In previous studies, authors have reported the presence of strong cytoplasmic and membranous expressions of NGAL in tumor cells. Contrary to the other studies, in the present study very weak expression of NGAL was detected in tumor cells. We considered the very weak NGAL expression compared with the staining of inflammatory cells as false background staining. To assess the intensity of NGAL expression, we counted the NGAL-positive neutrophils that infiltrated the tumors in every high-power field (HPF).

Results: Median age of the patients at the time of diagnosis was 56.5 years. Mean ages of the patients in different groups were close to each other ($p=0.377$). In this series, the mean age of the patients was 55.6 ± 12.4 years. In 104 (25.2%) cases, there was KIM1 expressions in tumor cells. In 218 (53 %) cases, there were NGAL expressions in tumor cells. NGAL- positive inflammatory cells were seen in tumors of 45 (10.9 %) cases. There was no significant relationship between NGAL positive PNL presence in the tumor microenvironment and other clinicopathological features. But there was statistical significance between the presence of in-situ carcinomas and the presence of both NGAL expressions ($p=0.008$) and KIM1 expressions ($p=0.020$) of tumor cells.

Discussion: This study has demonstrated that the NGAL and KIM1 positivities will be effective on breast cancer. Considering the development of anti- KIM 1 therapies, the presence of KIM 1 expression may be a new treatment option in breast cancer, especially in-situ component-rich ones. But these findings should be confirmed in the larger series.

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ID-208 / OP: “Can Impaired Glucose Tolerance Be Detected in Obese And Overweight Individuals With A Machine Learning Model Instead of an Oral Glucose Tolerance Test?”

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Abstract (ID-208)

Introduction and Purpose: Obesity leads to insulin resistance and increased circulating insulin concentrations over time, thereby decreasing insulin sensitivity and impairing pancreatic β -cell function that both the two main components in the pathogenesis of type 2 diabetes (T2DM). In adults, it is argued that an Oral Glucose Tolerance Test (OGTT) may be a better method because it can identify those with impaired glucose tolerance (IGT), a risk factor for cardiovascular disease and a precursor of T2DM, who would not be picked up otherwise by a fasting glucose level. OGTT is applied to obese patients to detect IGT. However, alternative methods are needed due to the limitations of the test and the paradox in its application to obese people. In our study, we aimed to predict IGT using machine learning models in obese and overweight people who underwent the OGTT test.

Materials and Methods: 225 overweight and obese patients defined by body mass index (BMI) and who underwent 75 g OGTT were included in the study. American Diabetes Association (ADA) criteria were used to determine IGT. Age, gender, fasting glucose, insulin, hsCRP, total cholesterol, triglyceride, HDL, LDL levels of the patients were measured and insulin resistance was calculated with HOMA-IR. Machine learning models were analyzed in Jupyter Notebook 6.4.0 software using Python Pandas, Numpy, and Scikit-learn libraries. Logistic regression, linear discriminant analysis, K-nearest neighbor, decision tree, random forest, gaussian naive bayes (NB), support vector, and XGBoost machine learning models were created and the model performances of the classifiers were evaluated with accuracy percentages. ROC analysis was also performed.

Results: IGT was detected in 36% (n=81) of the study participants. The female/male ratio was 172/53, and the mean age was 45.3 (min-max: 25-63). The accuracy performances of the models in the test set were determined as 77%, 68%, 59%, 67%, 68%, 62%, 70% and 78%, respectively. The area under curve (AUC) value of the XGBoost classification, which is the model with the highest accuracy, was determined as 81%.

Conclusion: Although the XGBoost classifier is successful in estimating IGT in obese and overweight individuals undergoing the OGTT test, there is still a need to perform OGTT for determining IGT. However, our machine learning model can be considered as an alternative for individuals who cannot undergo OGTT.

Keywords: Obesity; Impaired glucose tolerance; Oral glucose tolerance test; Machine learning.

ID-209 / OP: “Relationsheep Between Obesity and Pelvic Organ Prolapse”

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Abstract (ID-209)

Introduction and Aim: The aim of study was to examine the frequency of overweight and obesity in pelvic organ prolapse patients. In addition, some features of prolapsed patients were examined in this observational cross-sectional study.

Materials and Methods: Three hundred forty nine patients with pelvic organ prolapse were identified between January 2018 and November 2021 in Isparta City Hospital. One hundred and forty one patients whose data were available were included in the study. Body mass indexes (BMI) of the patients were calculated and the patients were categorized. Overweight was categorized as a BMI 25-29,9 and obesity as a BMI ≥ 30 . Age, parity, previous surgery, comorbidity are other parameters which investigated in prolapsed patients. Chi-square, Kruskal-Wallis and Spearman's correlation were used for analysis.

Results: Median age was 61 years, median BMI was 27,34 kg/m² in 141 patients of study. Thirty six patients (25,4%) were obese and 75 patients (52,8%) were overweighted. Median parity was 3 (range 0-7). Twenty seven percent of patients (n:38) had at least one previous surgery (mean 0,34, range 0–3). Fifty seven percent of patients (n:82) had comorbidities. There was no significant differences between categorizes of BMI for comorbidities.

Discussion and Conclusion: Obesity is an important health problem. The prevalence of obesity is increasing worldwide and obesity is a predisposing factor for many diseases. The effect of obesity on pelvic organ prolapse has been shown in many studies. But some studies indicated no association obesity and pelvic organ prolapsed. In this observational cross-sectional study, patients with prolapse were examined and the majority of these patients were found to be overweight or obese. In conclusion, overweight or obesity is a preventable predisposing factor for pelvic organ prolapse as like most diseases.

Keywords: Obesity, pelvic organ prolapse.

ID-210 / PP: “Examination of Neuroplasticity in Children”

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Abstract (ID-210)

Neuroplasticity, also known as brain plasticity or neural plasticity, is the brain's ability to undergo structural or physiological changes. It is defined as the ability of the nervous system to change its activity in response to internal or external stimuli by rearranging its structure, functions, or connections. A key feature of neurons is their ability to alter the strength and efficiency of synaptic transmission through a variety of activity-dependent mechanisms, typically referred to as synaptic plasticity. Neuroplasticity, or neural flexibility, allows neurons to regenerate both anatomically and functionally and to form new synaptic connections. Brain flexibility or neuroplasticity is the brain's ability to heal and restructure itself. This adaptive potential of the nervous system allows the brain to recover from impairment or injury. Children acquire vast amounts of new information, and their brains undergo profound changes during these intense times of new learning. New learning may also be needed in the case of neurobiological damage caused by lesions or stroke when functions supported by a damaged area of the brain are impaired and relearning is necessary. Therefore, it has been suggested by studies that the child's brain is more prone to neuroplasticity.

In our study, we examined the effects of neuroplasticity on the child's brain from a broad perspective and compiled the studies. We reviewed the clinical studies in 20 of 107 studies on neuroplasticity in children between 2020-2021 on Pubmed and compiled the findings on this subject. According to our findings, it is possible to encourage and maximize the development of neuroplasticity at these ages, especially since early childhood is the critical period for neuroplasticity development. It is emerging that appropriate intervention for the structure and nature of early childhood education can increase the development of neuroplasticity, and accordingly, more emphasis should be placed on pre-school education.

Keywords: Neuroplasticity, child, brain, neural flexibility.

ID-211 / OP: “Comparative Evaluation of 75 Medical Faculties According to the TUS Success”

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Abstract (ID-211)

Introduction: The aim of this study was to evaluate the educational quality of 75 Turkish Medical Faculty according to the TUS success.

Material and Method: The special study modules (SSM) have been integrated into Izmir Democracy University Medical Faculty’s educational activities for the first three years. One of them is the Scientific Research Group and its members aimed to compare the educational quality of the Turkish medical schools according to several parameters such as the number of students ($p=0.005$), academic personals, cadavers, scientific publications and success of TUS.

Results: It was determined that the university entrance score and the success of TUS were closely related ($p=0.001$), and the number of cadavers ($p<0.01$), the number of academicians ($p=0.03$), students ($p=0.005$) and the number of international publications per academician ($p<0.001$) also increased the success of TUS. However, the success of TUS was found to be unrelated to criteria such as the number of national publications per academician (0.680), whether the university has its own hospital ($p=0.406$), and education in English ($p=0.113$).

Discussion: In this study, we tried to determine the necessary elements to increase the quality of medical education. Our findings revealed that the training to be given with sufficient training materials and academic staff increases the success of TUS.

Keywords: Medical faculty student, Education quality, TUS success.

Full-text (ID-211)

Giriş: Tıp eğitiminde amaç donanımlı, bilgili ve deneyimli tıp doktorları yetiştirmektir. Ancak tıp eğitiminde fakülteye ait hangi özelliklerin eğitim kalitesini arttırdığına ilişkin objektif hesaplamalar yapmak çok zordur. Ülkemizde yirminci yüzyılın sonunda nüfusa düşen tıp doktoru sayısının yetersiz olduğu ortaya konmuş ve tıp doktoru sayısını arttırmaya yönelik bazı değişiklikler yapılmıştır. Bu değişikliklerin en önemlileri tıp fakülte sayısını arttırmak ve yeni tıp fakültesi hastaneleri açmak yerine Sağlık Bakanlığına bağlı eğitim ve araştırma hastaneleriyle tıp fakültelerinin işbirliğine izin vermektir. Tüm bu değişiklikler ülkemizdeki hekim sayısını arttırarak gelişmiş ülkeler düzeyine ulaştırmak amacıyla yapılmıştır. Ancak tıp eğitimi ile ilgilenen bilim insanları, eğitimde sadece niceliksel artışın yeterli olmadığını ve mutlaka niteliksel artışın da dikkate alınması gerektiğini vurgulamaktadırlar. Niceliksel gelişimin objektif ölçümü, sayısal artışın ölçümü kadar kolay değildir.

Tıpta Uzmanlık Eğitimi Giriş Sınavı ya da Tıpta Uzmanlık Sınavı (TUS), Türkiye'de tıp fakültesi mezunlarının uzmanlık eğitimi için gereken branş seçme sınavıdır. Tıp Fakültesi mezunu pratisyen hekimlerin herhangi bir dalda uzmanlık yapabilmek için 1986 yılından beri, ÖSYM tarafından yılda 2 kez yapılan TUS sınavında başarılı olmaları gerekmektedir. Sadece teorik yeterliliğin ölçüldüğü bir sınav olması açısından eleştirilse de göreceli olarak objektif bir değerlendirme sağlayan TUS başarı sıralamaları Yüksek öğrenim Kurumu (YÖK) tarafından da fakülte değerlendirme ölçeği olarak kullanılmaktadır. Bu çalışmada tıp fakültelerine ait bazı eğitim verileri karşılaştırılmış ve bu faktörlerin TUS başarısına etkilerinin belirlenmesi amaçlanmıştır.

Materyal ve Metot: Özel çalışma modülleri (ÖÇM), İzmir Demokrasi Üniversitesi Tıp Fakültesi'nin ilk üç yılında eğitim faaliyetlerine entegre edilmiştir. Bunlardan biri olan Bilimsel Araştırma Grubunun Dönem 1 öğrencileri (N=20), ÖÇM sorumlusu öğretim üyesi ve Tıp Eğitimi Anabilim Dalının desteğiyle bu araştırmayı planlayıp gerçekleştirmiştir. Bu çalışmada ülkemizde ilk mezunlarını vermiş 6 yaş ve üzerindeki 76 tıp fakültesi kendine ait hastanesi olup olmaması, üniversiteye giriş sınavına göre başarı sıralaması, TUS başarı sıralaması, öğrenci ve akademisyen sayısı, anatomi pratiklerinde kullanılan kadavra sayısı, devlet veya vakıf üniversitesi olması, öğrenci başına düşen akademisyen ve akademisyen başına düşen yayın sayısı benzeri kriterler açısından karşılaştırılmıştır. Kaynak olarak ÖSYM verileri, YÖK verileri ve üniversite veya kurumların kendi resmi sitelerindeki veriler temel alınmıştır.

Bulgular: Tüm fakültelerde araştırılan kriterlerin ortalamalarına bakıldığında Üniversite giriş puan ortalaması 2015 yılında 468,23 iken, 2020 yılında ortalama 508,91 bulundu. Ortalama TUS puanı klinik olarak 48,69, temel bilimlerde 48,83 bulundu. Ortalama öğrenci mevcudu sınıf başına 167,1 kişi, ortalama akademisyen sayısı 210,9 idi. Fakülte başına düşen kullanılan kadavra sayısı 4,75 bulundu. Karşılaştırılan tıp fakültelerinden 58'i (%76,3) devlet, 18'i (%23,7) vakıf üniversitesiydi. Devlet ve vakıf üniversiteleri karşılaştırıldığında, vakıf üniversitelerinde öğrenci başına düşen

akademisyen sayısı ve akademisyen başına düşen yayın sayısı daha fazla olmasına karşın TUS başarılarının farklı olmadığı görüldü. Yirmi bir (%27,6) tıp fakültesinde hem Türkçe hem de İngilizce dilinde eğitim yapılmaktaydı. Kuruluşu daha eski 61 (%80,3) tıp fakültesinin kendine ait bir tıp fakültesi hastanesi varken, 15 fakülte (%19,7) bir eğitim araştırma hastanesiyle afiliasyon yapmıştı.

Ortalama öğrenci başına düşen kadavra sayısı 0,031, ortalama öğrenci başına düşen akademisyen sayısı 1,38 idi. Akademisyen başına ortalama yayın sayısı ise ulusal indekslerde taranan yayınlar için 0,216, uluslararası indekslerde taranan dergiler için 0,456 bulundu. Üniversiteye giriş puanı ile TUS başarısının yakından ilişkili olduğu ($p=0.001$) ve kadavra sayısı ($p<0.01$), akademisyen sayısı ($p=0.03$), öğrenci sayısı ($p=0.005$) ve akademisyen başına düşen uluslararası yayın sayısının ($p<0,001$) TUS'un başarısını da artırdığı görüldü. Ancak TUS başarısının akademisyen başına düşen ulusal yayın sayısı (0.680), üniversitenin kendine ait hastanesi olup olmadığı ($p=0.406$) ve İngilizce eğitim ($p=0.113$) gibi kriterlerle ilişkili olmadığı bulundu.

Tartışma: Türkiye Cumhuriyeti'nde tıp eğitimi üniversiteler ve Sağlık Bakanlığı'na bağlı eğitim ve araştırma hastanelerinde verilmektedir. Yirmi birinci yüzyılın başında Dünya Sağlık Örgütü (DSÖ) verilerine göre 100.000 kişiye düşen hekim sayısına göre Türkiye oldukça geri sıralarda yer almıştır. İki binlerin başında hekim sayısını arttırmak amacıyla sağlık politikalarında bazı değişiklikler yapılmış ve yeni tıp fakülteleri açılmıştır. Şubat 2011 tarihli 27850 sayılı Resmi Gazetede yayımlanan yönetmelikle de üniversitelere ve Sağlık Bakanlığına bağlı Sağlık Tesislerinin birlikte kullanımının önü açılmıştır. Afiliasyon olarak tanımlanan bu anlaşmaya göre Devlet Üniversitesi Tıp Fakültesi elemanları Sağlık Bakanlığına bağlı bir hastanede, o hastanenin bakanlık emrindeki personeliyle birlikte hizmet verebilmektedir. Hatta bu tarihten sonra açılan tıp fakültelerinin hiçbirine kendi hastanesini açma izni verilmemiştir. Nisan 2015 tarihli 29327 sayılı Resmi Gazetede yayımlanan kanunla Sağlık Bilimleri Üniversitesi kurulmuş ve eğitim veren Sağlık Bakanlığına bağlı hemen tüm eğitim araştırma hastaneleri bu yeni üniversitenin çatısı altında toplanmıştır. Tüm bu değişikliklerle ülkemizdeki hekim sayısında belirgin artış sağlanmıştır. Ancak unutulmaması gereken eğitimde sadece niceliksel artışın yeterli olmadığını ve mutlaka niteliksel artışın da hedeflenmesi gerektiğidir.

Bu çalışmada toplam 76 kamu ve vakıf üniversitesi tıp fakültesi incelenmiştir. Afiliasyonlarla, tıp fakültesindeki öğretim üyesi doktorlar Bakanlık hastanelerinde görev yaparak hem tıp eğitimine hem de hasta hasta bakım hizmetlerinde görev almaktadırlar. Afiliasyon olan hastaneler ile kendi hastanesi olan tıp fakülteleri arasında, öğrenci başına düşen akademisyen sayısı açısından fark vardır ve bu sayı kendi hastanesi olan eski- köklü tıp fakülteleri ve vakıf üniversitelerinde daha yüksek görülmektedir. Ancak afiliye hastanelerinde çalışan sağlık bakanlığı personeli sayısı YÖK verilerine yansımadığı için bu durum yalancı bir farklılık olabilir. Eğitim kalitesi ile ilgili yeterli çalışma olmamakla birlikte bu iki grup hastanelerin tıpta uzmanlık sınav (TUS) başarı puanlarına bakıldığında bu iki farklı yönetime sahip eğitim kurumları arasında anlamlı fark saptanmamıştır.

Kendi hastanesine sahip tıp fakültelerinin daha köklü üniversiteler olması, kıdemli öğretim üyelerinin daha fazla olması ve eğitim anlayışlarının bir ekol oluşturabilecek potansiyele ulaşmaları onların avantajları iken, daha fazla hasta profilinin olması, tam zamanlı öğretim üyesi sayısının çok daha fazla olması ve her iki kurumun olanaklarından da faydalanabilme imkanları da afiliye hastanelerin avantajları olarak düşünülebilir.

Çalışmamızda ortaya çıkan bir diğer bulgu da aslında tıp eğitiminin en önemli ayaklarından birinin öğrencinin öğrenmeye istekli ve çalışkan olmasıdır. Çünkü TUS ortalama puanı ile üniversiteye giriş puanı arasında çok yakın bir pozitif korelasyon vardır. Hekimlik mesleğini yapma hevesiyle yıllarca emek vermiş ve yüksek puanlarla tıp fakültelerine yerleşmiş öğrenciler tıp doktoru olduktan sonra da önceki başarı düzeylerine yakın bir başarıyla uzmanlık eğitimine yerleşmektedirler. Benzer şekilde yüksek uluslararası yayın ortalamalarına sahip yetkin akademisyenlerin varlığı, öğrenci başına düşen akademisyen sayısından bağımsız bir şekilde öğrencinin TUS başarısını arttırmaktadır.

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D-212 / OP: “Evaluation of the Topographic Features of Anterior Ethmoidal Foramen with Radiological Imaging Methods”

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Abstract (ID-212)

Introduction and Purpose: Anterior ethmoidal foramen (AEF) mostly located medial to the lower end of the superior oblique muscle, at the upper border of the orbital lamina of ethmoid bone(1). The locations of the anterior and posterior ethmoidal foramen have a great importance in the clinical approach to the arteries of the same name passing through foramens. In cases where endonasal flap placement or endoscopic approach to higher diameter meningiomas are required, ligation of anterior and posterior ethmoidal arteries with an external approach is performed preoperatively or intraoperatively. In this method, after the anterior lacrimal crest is found, the AEF at 24mm depth and the posterior ethmoidal foramen at 36mm depth are found (2,8). Based on its importance in the clinical approach, we aimed to examine the topographic anatomy of the anterior and posterior ethmoidal foramens with differences according to age and gender.

Materials and Methods: In our study, 0,6 mm cross-section CT images of 200 adult patients who applied to Ege University Medical Faculty Hospital between January 1st 2018 and June 10th 2020 were evaluated retrospectively. Exclusion criteria from the study were: History of skull base or paranasal sinus surgery, congenital facial anomaly, history of current or previous disease causing erosion of the ethmoid roof, being younger than 18 years old and older than 70 years of age at the time of image acquisition, and poor image quality in imaging methods. The mean horizontal distance from AEF to the midsagittal line (D1), distance from AEF to anterior orifice of the optic canal (D2), distance between the anterior and posterior ethmoidal foramen (D3), distance between the AEF and upper border of the orbita (D4) and from the anterior lacrimal crest to the AEF (D5) were measured.

Results: The mean age of the subjects included in the study was 46 ± 14 years. The mean value of parameter D1 was 12.1 ± 1.1 mm (16.4-9.2). D1 was found significantly higher in men ($p=0.001$). The average value of D2 was figured out as 19.5 mm. There was no statistically significant difference was found between gender, age groups, and sides of D2 distance ($p>0.05$). The mean distance between the

anterior and posterior ethmoidal foramen (D3) was 12.5mm. Minimal differences between gender, sides and age groups were found not statistically significant ($p>0.05$). The mean value of D4 was 11.5 mm. Distance between AEF and anterior lacrimal crest (D5) was 21.0. D5 had no significant difference in both sides, gender or age groups.

Discussion and Conclusion: In this study, the mean distance from the anterior lacrimal crista to the AEF (D5), from there to the posterior ethmoid foramen (D3) and from the posterior ethmoid foramen to the optic canal was calculated as 21-12-7mm, respectively. In previous studies, these values are as follows: Karakas et al. (Turkey, 2002) 24-10-7 (6); Abed et al. (UK, 2011) 26-14-7 (7); Celik et al. (Turkey, 2015) 28-11-5 (3); Piagkou et al. (Greece, 2014) 24-10-4 (4); Felding et al. (Denmark, 2019) found an average of 21-14-6 (5). Naidoo et al. evaluated these values as 24-12-6 mm (2) in their publications, which they cited as a source for ESC. Our values were consistent with the results of Naidoo's and Felding's studies.

Keywords: Anterior ethmoidal foramen; Posterior ethmoidal foramen; Optic canal; Orbital lamina; CT.

Full-text (ID-212)

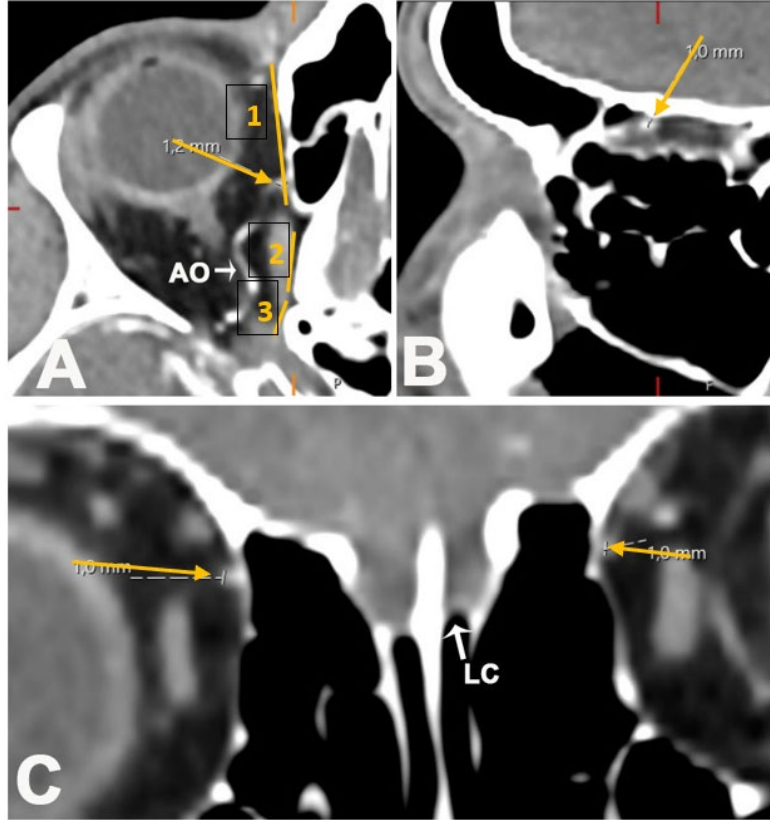
Giriş ve Amaç: For. ethmoidale anterius çoğunlukla m. obliquus superior'un alt ucunun medialinde, lamina orbitalis ossis ethmoidalis'in üst sınırında yerleşmiştir (1). Foramen ethmoidale anterius ve posterius orbita medial duvarının en zayıf bölgeleridir.

For. ethmoidale anterius ve posterius'un yerleşimi içinden geçen aynı isimli arterlere klinik yaklaşımda büyük önem arz etmektedir. A. ethmoidalis anterior ve posterior'un eksternal yaklaşımla ligasyonu, endonazal flep yerleştirilmesi veya büyük çaplı meningiomlara endoskopik yaklaşılması gereken olgularda preoperatif; cerrahi girişim sırasında oluşan zedelenmelerde intraoperatif uygulanan önemli bir yöntemdir (2). Bu yöntemde orbita medial duvarına önden yaklaşılr; crista lacrimalis anterior bulunduktan sonra bazı kaynaklarca 24 mm derinde for. ethmoidale anterius, 36 mm derinde de for. ethmoidale posterius; diğer bazı kaynaklarca da 21 mm sonra for. ethmoidale anterius ve 35 mm sonra for. ethmoidale posterius (2,8) bulunarak gerekli müdahale uygulanır. Klinik yaklaşımdaki önemini baz alarak bu çalışmamızda for. ethmoidale anterius ve posterius'un topografik anatomisini yaş ve cinsiyete göre gösterdiği farklılıklarla incelemeyi amaçladık.

Gereç ve Yöntem: Bu tanımlayıcı çalışmada 1 Ocak 2018 - 10 Haziran 2020 tarihleri arasında çeşitli şikayetler nedeniyle Ege Üniversitesi Tıp Fakültesi Hastanesi'ne başvuran hastaların; Ege Üniversitesi Tıp Fakültesi Radyoloji Anabilim Dalı'nda çekilen çok düzlemli ince kesit BT görüntüleri retrospektif olarak taranmıştır. Çalışmaya 18-70 yaş arası 200 olgu dahil edilmiştir. 100 olguda Kranial BT Anjiyo, 100 olguda da Paranasal Sinüs BT görüntüleri üzerinden çalışılmıştır. Olgular cinsiyet dağılımı eşit olacak şekilde seçilmiştir. Geçirilmiş kafa tabanı veya paranasal sinüs cerrahisi öyküsü, konjenital yüz anomalisi, etmoid çatıda erozyona neden olan mevcut ya da geçirilmiş hastalık öyküsü, kromozomal anomali mevcudiyeti, görüntü elde edildiği sırada 18 yaşından küçük ve 70 yaşından büyük olma ve görüntüleme yöntemlerindeki yetersiz görüntü kalitesi çalışmadan çıkarılma kriterleri olarak kabul edilmiştir.

Horizontal planda a. ethmoidalis anterior'un foramen'i terkettiğinin izlendiği kesitte, FEA'nın crista lacrimalis anterior'a (Resim 1A, 1) for. ethmoidale posterius'a (Resim 1A, 2) ve midsagittal hatta uzaklığı ölçülmüştür. Ayrıca for. ethmoidale posterius ile canalis opticus arasındaki uzaklık (Resim 1A, 3) da aynı düzlem ve seviyeden ölçülmüştür (Resim 1).

Koronal planda yine arterin foramen'den çıkışının izlendiği kesitte orbita tavanına uzaklığı ölçülmüştür. Her ölçüm iki kere kör tekrarlanmıştır.



Resim 1: A: Horizontal kesitte a. ethmoidale anterior'un foramen'den ayrıldığı kesitte ölçüm yapılan aralıklar. B: Sagittal kesitte arterin takibi ve foramen'in yerleşiminin cavitas nasi içerisinden medialden görünüşü. C. Koronal kesitte arterin foramen'e giriş yaptığı seviyenin izlenmesi. Ok: A. ethmoidalis anterior'un foramen'e girişi.

Çalışma verileri değerlendirilirken 'SPSS Statistics 23' programı kullanılmış olup, değişkenlerin dağılımı Kolmogorov-Smirnov testi, iki grup değerlendirmelerinde Mann-Whitney U testi kullanılarak belirlenmiştir. Sonuçlar %95'lik güven aralığında hesaplanmıştır.

Bulgular: For. ethmoidale anterior'un midsagittal hatta olan yatay uzaklığı ortalama $12,1 \pm 1,1$ mm (sağ ve solda eşit), en büyük 16,4; en küçük 9,2 mm idi. Kadınlarda bu değer $11,8 \pm 1,1$ mm iken erkeklerde $12,3 \pm 1,1$ mm olarak ölçüldü. Cinsiyetler arasındaki bu fark istatistiksel olarak anlamlı bulundu ($p=0,001$). Vücut yarımları ile yaş grupları arasında for. ethmoidale anterior'un midsagittal hatta uzaklığı açısından anlamlı bir farklılık yoktu ($p>0,05$).

For. ethmoidale anterius'un canalis opticus'a uzaklığı (FEA-CO); 400 örnekte $19,5 \pm 2,5$ mm (9,7 - 27,2) ölçüldü. Bu uzaklık; sağ ve sol tarafta, farklı yaş gruplarında ve cinsiyete göre istatistiksel olarak anlamlı farklılık göstermiyordu (solda $19,6 \pm 2,7$, sağda $19,5 \pm 2,3$ mm; kadınlarda $19,4 \pm 2,6$, erkeklerde $19,6 \pm 2,4$ mm; Tablo 1), $p>0,05$.

Yine horizontal düzlemde AEA'nın intraetmoidal seyrinin net olarak izlendiği kesitte, orbita medial duvarı boyunca for. ethmoidale anterius ile crista lacrimalis anterior arasındaki uzaklık (FEA-CLA); ortalama $21,0 \pm 2,9$ mm olarak hesaplandı (10,8 - 34,8). Bu değer farklı cinsiyetlerde, yaş gruplarında ve vücut yarımalarında anlamlı farklılık göstermedi (sağda $21,0 \pm 2,9$, solda $21,0 \pm 3$ mm; kadınlarda $21,0 \pm 3,1$; erkeklerde $21,1 \pm 2,7$ mm, Tablo 1), $p>0,05$.

For. ethmoidale anterius ile posterius arasındaki uzaklık (FEA-FEP); 400 arterde ortalama $12,5 \pm 1,4$ mm (3,8 - 16,4) bulundu. Sağda bu uzaklık ortalama $12,5 \pm 1,4$ mm (3,8 - 16,4); solda $12,4 \pm 1,4$ mm (4,8 - 16,4) idi. Yine iki boşluk arasındaki uzaklık erkeklerde ortalama $12,5 \pm 1,2$ mm; kadınlarda $12,4 \pm 1,6$ mm bulundu (Tablo 1). Bu değerlerde kadın erkek, sağ sol yarımı ve yaş grupları arasında saptanan minimal farklılıklar istatistiksel olarak anlamlı değildi ($p>0,05$).

Horizontal düzlemde for. ethmoidale anterius'tan ayrıldığı yerin orbita tavanına uzaklığı (FEA-OT); 400 arterde ortalama $11,5 \pm 1,5$ mm (6,4 - 19,6) bulundu. Sağ tarafta bu değer $11,6 \pm 1,6$ mm (8,2 - 19,6); solda $11,3 \pm 1,5$ mm (6,4 - 15,7) idi. Kadınlarda bu değer $11,2 \pm 1,4$ mm; erkeklerde $11,7 \pm 1,7$ mm bulundu (Tablo 1). Bu verilerin vücut yarımaları ve cinsiyete göre minimal değişimi istatistiksel olarak anlamlı bulundu (cinsiyet değişkeni için $p=0,017$, vücut yarımaları arasında $p<0,001$).

Tablo 1. FEA'nın orbita'daki yerleşimi ile ilişkili verilerin cinsiyet ve vücut yarımalarına göre karşılaştırılması.

Ölçümler; Ort $\pm$ SS (Aralık), mm	Cinsiyet		Vücut yarımaları		Toplam
	Kadın	Erkek	Sağ	Sol	
FEA-CO	$19,4 \pm 2,6$	$19,6 \pm 2,4$	$19,5 \pm 2,3$	$19,6 \pm 2,7$	$19,5 \pm 2,5$ (9,7-27,2)
FEA-CLA	$21 \pm 3,1$	$21,1 \pm 2,7$	$21 \pm 2,9$	$21 \pm 3,0$	$21 \pm 2,9$ (10,8-34,8)
FEA-FEP	$12,4 \pm 1,6$	$12,5 \pm 1,2$	$12,5 \pm 1,4$	$12,4 \pm 1,4$	$12,47 \pm 1,4$ (3,8-16,4)
FEA-OT	$11,2 \pm 1,4^*$	$11,7 \pm 1,7^*$	$11,6 \pm 1,6^{**}$	$11,3 \pm 1,5^{**}$	$11,5 \pm 1,5$ (6,4-19,6)

*: $p<0,05$, **: $p<0,001$.

Tartışma ve Sonuç: For. ethmoidale anterius ile crista lacrimalis anterior uzaklığını, 2008 yılında McDonald ve ark. yaptığı çalışmada ortalama $22,4 \pm 3,7$ mm; Abed ve ark. 2011 yılında $25,6 \pm 2,3$ mm (7); 2014 yılında Çelik ve ark $27,7 \pm 2,8$ mm bulmuşlardır (3). Yunanistan’da 2014 yılında yapılan bir çalışmada Piagkou ve ark. bu değeri cinsiyet arasında anlamlı farklılık olmakla beraber ortalama $23,2 \pm 3,1$ mm bulmuşlardır (4). Genel olarak for. ethmoidale anterius ile crista lacrimalis anterior uzaklığı ortalama 24 mm olarak bilinse de (2), 21 mm olduğunu öne süren kaynaklar da mevcuttur (8). Felding ve ark. 2018 yılında yaptıkları çalışmada bu değeri ortalama $21,5 \pm 2,1$ mm bulmuşlardır (5). Bizim çalışmamızda bu değer ortalama $21,0 \pm 2,9$ mm ($10,8 - 34,8$) olarak hesaplanmış olup cinsiyet ve vücut yarımları değişkenlerinden etkilenmiyordu. Çalışma sonuçlarımız Naidoo ve ark. ile Danimarka’da Felding ve ark. yaptıkları çalışmaya yakın bulunmuştur (2,5), (Tablo 2).

For. ethmoidale anterius ve posterius arasındaki uzaklık; çalışmamızda sağ sol ve kadın erkek arasında anlamlı bir farklılık gözetmeden 400 örnekte ortalama $12,5 \pm 1,4$ mm saptandı. Monjas Canovas ve ark. 2011 yılında 20 kadavra kafasıyla BT üzerinden yaptıkları çalışmada bu uzaklığı $11,2 \pm 2,1$ mm (1); yine 2011 yılında Abed ve ark. bu değeri $13,9 \pm 3,5$ mm (7); 2014 yılında Çelik ve ark. bu değeri $10,6 \pm 3,3$ mm, aynı yıl Piagkou ve ark. $9,8 \pm 3,1$ mm olarak bulmuşlardır (3, 4). 2015 yılında yayınlanan bir literatür özetinde bu değer 14 mm’ye yakın olarak tanımlanırken (9); 2019 yılında ESC için rehber olarak yayınlanan bir çalışmada olduğu gibi for. ethmoidale anterius ve posterius arasındaki uzaklık genelde 12 mm olarak kabul edilmektedir (2).

For. ethmoidale anterius’un canalis opticus’a uzaklığı 400 örnekte $19,5 \pm 2,5$ mm ($9,7-27,2$); for. ethmoidale posterius’un canalis opticus’a uzaklığı ise $7,2 \pm 2,1$ mm bulundu. Bu değerler sağ ve sol tarafta veya cinsiyete göre belirgin farklılık göstermedi. Monjas Canovas ve ark. 2011 yılında yaptıkları radyoanatomik çalışmada for. ethmoidale posterius ile canalis opticus arasındaki uzaklığı ort. $7,26 \pm 1,33$ (10); Abed ve ark. $7,25 \pm 2,59$ mm (7); 2015 yılında Çelik ve ark. $5,4 \pm 1,0$ mm bulmuşlardır (3). Çalışmamızda elde ettiğimiz sonuçlar genel olarak literatürle uyumludur.

Orbita medial duvarı boyunca crista lacrimalis anterior, for. ethmoidale anterius, posterius ve canalis opticus arasındaki ilişki; Crista lacrimalis anterior’dan for. ethmoidale anterius’a, for. ethmoidale anterius’tan posterius’a ve for. ethmoidale posterius’tan canalis opticus’a uzaklığının ortalaması çalışmamızda sırasıyla 21 – 12 - 7 olarak hesaplanırken; 2002 yılında Karakas ve ark. Türkiye’de yaptıkları çalışmada 24 – 10 - 7 (6); 2011 yılında Abed ve ark 26 – 14 - 7 (7); Çelik ve ark. 28 – 11 - 5 (3); Piagkou ve ark. 24 – 10 - 4 (4); Felding ve ark. BT üzerinden 2019 yılında yaptıkları çalışmada bu değerler ortalama 21 – 14 - 6 (5); Naidoo ve ark. ESC için kaynak olarak gösterdikleri yayınlarında bu değerleri 24 – 12 - 6 mm (2) olarak değerlendirmişlerdir (Tablo 2). Değerlerimiz Monjas-Canovas ile Felding ve ark. yaptıkları çalışmaların sonuçlarına yakın bulunmuştur.

Tablo 2. Crista lacrimalis anterior, for. ethmoidale anterius, posterius ve canalis opticus ilişkisine ait değerlerin literatürle karşılaştırılması.

Literatür karşılaştırması	CLA-FEA Ort.±SS, mm	FEA-FEP Ort.±SS, mm	FEP-CO Ort.±SS, mm	Toplam
2003, Karakaş ve ark.	23,9±3,3	9,8±2,9	6,8±2,2	24-10-7
2011, Monjas-Canovas ve ark.	-*	11,2±2,1	7,3±1,3	*-11-7
2011, Abed ve ark.	25,6±2,3	13,9±3,5	7,3±2,6	26-14-7
2014, Çelik ve ark.	27,7±2,8	10,6±3,3	5,4±1,0	28-11-5
2014, Piagkou ve ark.	23,2± 3,1	9,8±3,1	4,3±1,7	23-10-4
2019, Felding ve ark.	21,5±2,1	13,6±2,6	6,0±2,6	21-14-6
Çalışmamız	21,0±2,9	12,5±1,4	7,2±2,1	21-12-7

*Monjas-Canovas ve ark. çalışmalarında bu ölçümü gerçekleştirmemişlerdir. CLA: Crista lacrimalis anterior, FEA: For. ethmoidale anterius, FEP: For. ethmoidale posterius, CO: Canalis opticus

For. ethmoidale anterius'un midsagittal hatta olan yatay uzaklığı ortalama $12,1 \pm 1,1$ mm (sağ ve solda eşit), en büyük 16,4; en küçük 9,2 mm idi. Bu uzaklık Modifiye Lothrop Frontal sinüzotomi gibi; arterin orta hattan uzaklığının belirlenmesi gereken girişimlerde akılda tutulmalıdır (9). Girişim sırasında navigasyon için kullanılan görüntüleme yöntemleri her zaman mevcut veya güvenilir olmayabilir. Bu nedenle, güvenilir ve tutarlı bir anatomik dönüm noktasının tanımlanması, cerrahın orta hat yaklaşımı yoluyla revizyon ve karmaşık genişletilmiş frontal sinüzotomilerde yardımcı olabilir.

Daha ayrıntılı değerlerle bölgeye yapılacak cerrahilerde güvenli alanların belirlenmesine katkı sunmak açısından kuru kemikler ve radyolojik görüntüleme yöntemleri ile yapılacak, geniş örneklemli çalışmalara ihtiyaç sürmektedir.

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ID-213 / OP: “Complete Blood Count As a Biomarker For Breast Cancer”

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Abstract (ID-213)

Introduction and Purpose: Breast cancer is the most frequent type of malignancy among women. It constitutes majority of newly diagnosed malignancies and stays as a leading cause for mortality (1). Breast cancer oncogenesis is a multifactorial entity linked with numerous components such as family history, genetic, age, ethnicity, age at menarche/menopause, hormone replacement therapy, irradiation, body mass index, alcohol consumption, type of breast tissue, first pregnancy/lactation age. Inflammation is the common pathway in all types of malignancies. Furthermore, it is a central component in all hallmarks of cancer like invasion, tumor promotion, metastasis and angiogenesis (2). Neutrophil-lymphocyte ratio (NLR) on peripheral blood counts was significantly correlated with breast, lung, colorectal, gastric and urothelial carcinomas, further current studies evidenced it as a worse survival predictor not only for advanced cancers, also in early stages of breast cancer (3). Platelet-lymphocyte ratio (PLR) is another valuable inflammatory index which is suggested as a prognostic biomarker for some malignancies such as cholangiocarcinomas and gastric, ovarian, colorectal, pancreatic cancers. PLR may be predictor for poor survival (4). Mostly correlation of NLR was studied for breast cancer, data investigating concurrent role of NLR, PLR and other hematologic parameters are even scarcer. Aim of this study was to investigate the role of inflammatory indices in peripheral blood count of preoperative breast cancer patients as a diagnostic biomarker.

Materials and Methods: After approval of Çiğli Training Hospital local ethical committee, patient records between July 2020 and May 2017 retrieved and data was analyzed retrospectively. Female patients who have complete blood count within 1 month interval before histopathological evidence were selected. Patients' reports were surveyed for age, histopathological status, stage and hematological parameters. Patients who have simultaneous inflammatory condition were excluded. Age and sex matched healthy controls were obtained for comparison.

Data were analyzed by SPSS (IBM Corp., Armonk, NY, USA) statistical package. After testing for normality, continuous variables were compared with student-t test.

Results: Retrospective records of 82 breast cancer patients and 82 healthy controls were compared. Patient characteristics are shown in Table 1. Neutrophil count (4,95±1,54 vs. 4,02±0,8; p<0,001), platelet count (284,54±82,14 vs. 263,18±54,23; p=0,003), NLR value (2,58±1,53 vs. 1,85±0,52; p <0,001) and

PLR value (147,31+86,98 vs. 120,75+36,01 $p=0,011$) are found to be significantly higher in breast cancer group. MPV/plt score did not show statistical significance.

Discussion and Conclusion: This pilot study aimed to investigate inflammatory parameters of complete blood count as a biomarker for breast cancer. NLR, PLR scores along with neutrophil and platelet counts were significantly higher in breast cancer group concordant with previous studies. Inflammation has a central role carcinogenesis and takes place in each aspect of tumor progression. Complete blood count is cheap, easy-to-access tool to evaluate inflammatory state. Findings may suggest inflammatory parameters as an adjunct instrument for breast cancer screening (5).

Keywords: Breast cancer; Complete blood count; Lymphocyte count; Platelet count.

Full-text (ID-213): “Complete Blood Count As a Biomarker For Breast Cancer”

Introduction and Purpose: Breast cancer is the most frequent type of malignancy among women. It constitutes majority of newly diagnosed malignancies and stays as a leading cause for mortality (1). Breast cancer oncogenesis is a multifactorial entity linked with numerous components such as family history, genetic, age, ethnicity, age at menarche/menopause, hormone replacement therapy, irradiation, body mass index, alcohol consumption, type of breast tissue, first pregnancy/lactation age. Inflammation is the common pathway in all types of malignancies. Furthermore, it is a central component in all hallmarks of cancer like invasion, tumor promotion, metastasis and angiogenesis (2). Neutrophil-lymphocyte ratio (NLR) on peripheral blood counts was significantly correlated with breast, lung, colorectal, gastric and urothelial carcinomas, further current studies evidenced it as a worse survival predictor not only for advanced cancers, also in early stages of breast cancer (3). Platelet-lymphocyte ratio (PLR) is another valuable inflammatory index which is suggested as a prognostic biomarker for some malignancies such as cholangiocarcinomas and gastric, ovarian, colorectal, pancreatic cancers. PLR may be predictor for poor survival (4). Mostly correlation of NLR was studied for breast cancer, data investigating concurrent role of NLR, PLR and other hematologic parameters are even scarcer. Aim of this study was to investigate the role of inflammatory indices in peripheral blood count of preoperative breast cancer patients as a diagnostic biomarker.

Materials and Methods: After approval of Çiğli Training Hospital local ethical committee, patient records between July 2020 and May 2017 retrieved and data was analyzed retrospectively. Total of 82 female patients who have complete blood count within 1 month interval before histopathological evidence were selected. Patients' reports were surveyed for age, histopathological status, stage and hematological parameters. Patients who have discordance between recorded ICD code and histopathologic diagnosis, who have defined simultaneous inflammatory condition (*i.e.* infection, surgical intervention, trauma, inflammatory disease) and who have not got blood test in one month interval between radiologic assessment and surgical intervention were excluded. Age and sex matched 82 healthy controls were obtained for comparison. Data were analyzed by SPSS (IBM Corp., Armonk, NY, USA) statistical

package. After testing for normality, continuous variables were compared with student-*t* test. Statistical significance was determined as *p* values less than 0.05.

Results: Retrospective records of 82 breast cancer patients and 82 healthy controls were compared. There was no statistical significance between patients and healthy controls in terms of mean age. Patients were staged as stage I (34,1%), stage II (51,2%); stage III (8,5%) and stage IV (6%). Patient characteristics are shown in Table 1.

Neutrophil count ($4,95 \pm 1,54$ vs. $4,02 \pm 0,8$; $p < 0,001$), platelet count ($284,54 \pm 82,14$ vs. $263,18 \pm 54,23$; $p = 0,003$), NLR value ($2,58 \pm 1,53$ vs. $1,85 \pm 0,52$; $p < 0,001$) and PLR value ($147,31 \pm 86,98$ vs. $120,75 \pm 36,01$ $p = 0,011$) are found to be significantly higher in breast cancer group. MPV/plt score did not show statistical significance. Statistical results were presented in Table 2.

Discussion and Conclusion: This pilot study aimed to investigate inflammatory parameters of complete blood count as a biomarker for breast cancer. NLR, PLR scores along with neutrophil and platelet counts were significantly higher in breast cancer group concordant with previous studies. Inflammation has a central role carcinogenesis and takes place in each aspect of tumor progression. Immune cells are predominant in many types of malignant tissues. Intense neutrophil infiltration is known to be indicator for poor prognosis. Neutrophils as immune cells are source for cytokines and tissue factors as well as other blood elements such as platelets. Tumor promotion, angiogenesis, metastasis and malignant differentiation take place with change of molecular milieu mediated by blood elements. Alteration of peripheral blood component rates have shown in many types of cancers. Complete blood count is cheap, easy-to-access tool to evaluate inflammatory state. Findings may suggest inflammatory parameters as an adjunct instrument for breast cancer screening (5).

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Table 1. Patient Characteristics

Stage	I	28(34,1%)
	II	42(51,2%)
	III	7(8,5%)
	IV	5(6%)
Histopathology	Ductal	61(74.3%)
	Lobular	10(12.1%)
	Other	11(13.4%)
Tumor side	Right	33(40%)
	Left	48(58.5%)
	Bilateral	1(1%)

Table 2. Statistical comparison of hematologic indices.

	Patients n=82	Healthy controls n=82	<i>p</i> value
Age	56,5±12,7	56,6±12,4	0,804
Neu	4,95±1,54	4,02±0,8	<0,001*
Lym	2,19±0,7	2,25±0,5	0,089
Plt	284,54±82,14	263,18±54,23	0,003*
MPV	8,68±1,19	8,76±0,87	0,061
NLR	2,58±1,53	1,85±0,52	<0,001*
PLR	147,31±86,98	120,75±36,01	0,011*
MPV/PLT	0,07±0,028	0,04±0,03	0,097
*Denotes statistical significance			

ID-214 / OP: “Effect of Probiotics on Diabetic Rat Skin Wound Healing”

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Abstract (ID-214)

Introduction and Aim: Alterations in gut microbiota by Probiotics (PB) have good effects on skin wound healing process. The pathology of skin wound becomes chronic, difficult to treat and high cost problem with diabetes. In this study, the contribution of PB to diabetic skin wound was examined for mechanisms such as oxidative stress, apoptosis, and wound healing parameters.

Materials and Methods: Rats were made diabetic by using 50 mg/kg intraperitoneal Streptozotocin and values with fasting blood glucose above 250mg/dL were included in this study. A 1x1cm full-thickness skin defect was made in the back area and PBs in NBL Probiotic Gold preparation were applied as oral gavage 5 days before the operation until the end of the experiment. Samples were obtained by skin biopsies on the 7th day of wound healing. Morphological examination was produced with HE and MT staining histochemically. Oxidative stress with eNOS, apoptotic pathway with Kaspas 3, inflammatory response with IL-10, vascularization with VEGF and matrix formation with Collagen1 were examined by immunohistochemical staining.

Results: It was found that PB application made a significant contribution for wound healing in all parameters.

Conclusion: Results showed that PB accelerated diabetic wound healing by reducing oxidative stress, apoptosis and inflammation, increasing vascularization and collagen formation. It was thought that the positive effect of PB on chronic, difficult, and costly wound healing in the skin would increase the quality of life of the patients in the clinic.

Keywords: Experimental Diabetes, Probiotic, Skin, Wound Healing, Oxidative Stress, Apoptosis, Inflammation, Vascularization, Collagen.

Özet (ID-214): “Diyabetik Sıçan Deri Yara İyileşmesinde Probiyotiklerin Etkisi”

Amaç: Probiyotiklerle (PB) barsak mikrobiyotasının manüple edilmesi deri yara iyileşme sürecini olumlu yönde etkilemektedir. Diyabetik deri yarası kronikleşen, tedavisi zor ve maliyetli bir patolojidir. Bu çalışmada diyabetik sıçan deri yarasına PB katkısı incelendi ve oksidatif stres, apoptoz ve yara parametresi mekanizmaları araştırıldı.

Gereç ve Yöntem: Sıçanlar 50 mg/kg intraperitoneal Streptozotosin kullanılarak diyabetik hale getirildi ve açlık kan şekeri 250mg/dL üzeri olan değerler çalışmaya alındı. Sırt bölgesinde yapılan 1x1cm tam kat deri defekti yapıp operasyon öncesi 5 gün ve sonrasında deney sonuna kadar NBL Probiotic Gold preparatındaki PB’ler oral gavaj olarak uygulandı. Yara iyileşmesinin 7. Gününde deri biyopsileriyle örnekler alındı. Histokimyasal olarak HE ve MT boyamaları ile morfolojik inceleme, immünohistokimyasal olarak eNOS ile oksidatif stres, Kaspas 3 ile apoptotik yolak, IL-10 ile inflamatuvar cevap, VEGF ile damarlanma ve Kollagen1 ile matriks oluşumuna bakıldı.

Bulgular: PB uygulamasının tüm parametrelerde anlamlı bir katkı sağladığı bulundu.

Tartışma: PB’nin oksidatif stres, apoptoz ve inflamasyonu azaltması, damarlanma ve kollagen oluşumunu arttırması ile özellikle diyabetik yara iyileşmesini hızlandırdığı anlaşıldı. PB’nin deride kronik, zor ve maliyetli yara iyileşmesi üzerindeki olumlu etkisinin klinikte hasta yaşam kalitesini arttıracakı düşünüldü.

Anahtar Kelimeler: Deneysel diyabet; Probiyotik; Deri; Yara iyileşmesi; Oksidatif stres; Apoptoz; İnflamasyon; Damarlanma; Kollajen 1.

Full-text (ID-214)

Giriş: Mikrobiyata ile oluşan biyolojik süreçlerin değişimleri özellikle probiyotik (PB) uygulamalarına bağlı farklı etkiler son zamanlarda önemli araştırma konusu olmuştur. PB kullanımı barsak florasını değiştirerek diğer organ ve dokularda etki göstermektedir. Deride bulunan mikrobiyata hem barsakta olan değişikliklerden hem de ilaca bağlı etkileşimlerden dolayı patolojik durumlarda önemli olabilmektedir¹.

Diyabetik cilt hasarının onarım süreci, geçici olarak örtüşen pıhtılaşma, inflamasyon, migrasyon-proliferasyon ve yeniden şekillenme aşamalarını içerir. Bu tür kusurların altında yatan moleküler mekanizmalar henüz açıklığa kavuşturulmamış olsa da bazıları hiperglisemik durumun doğrudan hastalığı etkilediğini bildirmiştir. Keratinosit ve fibroblast aktivitesi, protein sentezinde, proliferasyonda

ve göçte değişiklikleri indükler, antimikrobiyal peptit ekspresyonunu azaltır ve oksidatif stresi artırır. Bu sayısız değişiklik, cildi hasara ve enfeksiyona duyarlı hale getiren cilt bariyer fonksiyonunun yaranmasına neden olabilir. Dengeli bir redoks durumu, hızlı iyileşme için muhtemelen kritiktir. Diyabetik cilt, normal cilde göre daha fazla inflamatuvar hücre, ödem ve daha az granülasyon dokusu oluşumu ile infiltre görünmektedir, bu da diyabetik ülser iyileşme rezervinde bir bozulma olduğunu düşündürür. Ayrıca diyabetli kişilerde yara çevresi aşırı oksidatif stres ve hasara daha yatkın olup iyileşmeyi geciktirir².

PB hem inflamasyonu hem de immün cevabı modüle ederek birçok farklı mekanizma deride etki göstermektedir. PB barsakta bulunan bakterilerin deride gösterdiği olumlu etkilerin yanı sıra deri mikrobiyotası üzerinden de yara iyileşmesine olumlu katkılar sağlayan ve yeni araştırılmaya başlanan önemli bir üründür. İyileştirmeyi hızlandırması, olgunlaştırılması, enfeksiyonları önlemesi ve immün hücreleri uyarak özellikle kronik yaralarda umut vaat eden etkileri içermektedir. Bu etkileri araştırmaların yanı sıra yaklaşık yirmi klinik çalışmada da gösterilmiştir. En çok kullanılan PB suşları *Lactobacillus* *Lactobacillus plantarum*, *Lactobacillus casei*, *Lactobacillus acidophilus* ve *Lactobacillus rhamnosus* olup sıçan, fare ve tavşan gibi birçok hayvan modelinde ^{2,3} ve insan klinik çalışmalarında⁴ etkisi gösterilmiştir⁵. Deride yara iyileşmesi etkileri bilinmesine karşın günümüzde önemli problem olan kontrol edilmeyen diyabetiklerde iyileşmeyen yaralar üzerindeki etkisi bilinmemektedir^{6,7}. Bu çalışmada, PB kullanımının diyabetik sıçan deri örneğinde yara iyileşmesi üzerine etkileri histolojik açıdan incelendi.

Yöntem: Tüm deney boyunca MCBÜ Deney Hayvanları Uygulama ve Araştırma Merkezinden temin edilen 250 g ağırlığında toplam 20 adet yetişkin erkek Wistar albino rat kullanıldı. Denekler özel kafeslerde ad libitum beslendi. 22°C'lik sabit sıcaklıkta, nem kontrollü ve otomatik olarak kontrol edilen günde 12 saat ışık parlaklığına maruz bırakılan klimalı bir odada tutuldu. Sıçanlar tartıldı ve her biri 4 gruba ayrıldı.

Grup 1 ND-K: Diyabetik olmayan deneklerde yara yeri boş bırakılarak kontrol olarak kullanıldı. (n:5)

Grup 2 ND-PB: Diyabetik olmayan deneklerde yara yeri boş bırakılarak kontrol olarak kullanılacak ancak operasyon öncesi beş gün ve sonrası deney tamamlana kadar oral gavaj ile 200mg/kg/gün olarak PB kullanıldı. (n:5)

Grup 3 D-K: Diyabetik deneklerde yara yeri boş bırakılarak kontrol olarak kullanıldı. (n:5)

Grup 4 D-PB: Diyabetik deneklerde yara yeri boş bırakılarak kontrol olarak kullanılacak ancak operasyon öncesi beş gün ve sonrası deney tamamlana kadar oral gavaj ile 200mg/kg/gün olarak PB kullanıldı (n:5).

Erişkin erkek sıçanlarda 50 mg/kg tek doz intraperitoneal STZ uygulaması ile diyabet oluşturulup iki hafta sonrası açlık kan şekeri ile doğrulandı. 250mg/dL üzeri olan değerler diyabetik kabul edildi. Her

bir denekte sırt bölgesinde 1 adet 1x1 cm tam kat deri defekti yapıp her bir grupta 5 denek kullanılarak diyabetik olmayanlarla karşılaştırıldı.

Probiyotik grubu, Nobel-Farma'dan temin edilen enfektif olmayan ve içinde 2.5×10^9 *Enterococcus faecium*, 2.5×10^9 *Lactobacillus acidophilus*, 2.5×10^9 *Lactobacillus rhamnosus*, 2.5×10^9 *Bifidobacterium longum*, 2.5×10^9 *Bifidobacterium bifidum* probiyotik bakterileri içeren NBL Probiotic Gold Preparatı ile oral gavaj yoluyla beslendi. *Lactobacillus rhamnosus* HN001, *Lactobacillus acidophilus* NCFM®, yaklaşık 200.000 ila 210.000 CFU'luk (koloni oluşturan birim) doza karşılık gelen 200 mg/gün dozunda, deneyden beş gün önce başlayıp ötenaziye kadar günde bir kez oral olarak uygulandı.

Yara iyileşmesinin 3., 7. ve 10. gününde deri biyopsileri alındı. Histokimyasal olarak Hematoksilen Eozin (HE) ve Masson Trikrom (MT) boyamaları ile morfolojik inceleme, immünohistokimyasal olarak eNOS ile oksidatif stres, Kaspas 3 ile apoptotik yolak, IL-10 ile inflamatuvar cevap, VEGF ile damarlanma ve Kollagen1 ile matriks oluşumu bakıldı.

Parafin bloklardan mikrotom ile yaklaşık 5 µm kalınlığında kesitler alındı. Kesitler 56°C derecede etüv içinde deparafinize edildikten sonra azalan alkol serilerinden geçirildi ve sonra akar su altında yıkanıp, histopatolojik inceleme için HE ve MT boyaları kit protokolüne göre yapıldı. İmmünohistokimyasal boyama primer antikorlar e-NOS, Kaspas 3, VEGF, IL10, Kollagen 1, CD90, CD45, PI3K ve mTOR ile gerçekleştirildi. Sonuçları H-skor ile semi kantitatif olarak değerlendirildi. Apoptotik indeks hesaplandı.

Bulgular: Diyabetik deri yarası kronikleşen ve tedavisi zor ve maliyetli bir patolojidir. Bu çalışmada diyabetik sıçan deri yara PB katkısı incelendi ve oksidatif stress, apoptosis ve yara parametresi mekanizmaları araştırıldı. Diyabetik olmayan (ND) örneklerle karşılaştırıldığında D örneklerde yaranın daha geç iyileştiği makroskobik ve mikroskobik HE ve MT ile gösterildi. PB ile bu iyileşmenin hızlandığı ve birlikteliklerinin daha etkin olduğu saptandı. Yara yerinde artan eNOS, Kaspas 3 ve IL-10 ile hasarın oluştuğu, VEGF, Kollajen1 artışı ile hasarın önlenip daha hızlı ve iyi bir tedavinin oluştuğu gözlemlendi.

Makroskobik değerlendirme amacı ile yapılan inceleme sonrasında tüm gruplarda 3., 7. ve 10. gün sonuçları arasında fark olduğu gözlemlendi (**Şekil 1**). ND örneklerde PB etkisi anlamlı bulundu. D örneklerinde PB etkisinin oldukça anlamlı ($p < 0,001$) birlikteliklerinin daha etkin olduğu gözlemlendi (**Tablo 1**).

Yara mikroskobik iyileşmesine parametreleri 7. gün için incelendiğinde PB lerin re-epitelizasyon, yağ bezi, yeni kan damarları oluşumunun önemli ölçüde arttığı gözlemlendi. Ayrıca uygulamalar ile derilerde skar dokusu oluşmadan bir iyileşmenin gerçekleştiği saptandı. Mikroskobik değerlendirmede amacı ile yapılan inceleme sonrasında alınan deri örneklerinde yapılan HE boyamaları reepitelizasyon (RE), kapiller sayısı (KS), enflamatuvar hücre (EH), fibroblast sayısı (FS), kollajen fibriller (KF) ve yağ

bezleri (YB) açısından incelendi (**Şekil 2**). Morfometrik analizde ND örneklerde PB etkisi anlamlı bulundu. D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) ve birlikteliklerinin daha etkin olduğu gözlemlendi (Tablo 2).

Yapılan uygulamaların oksidatif stres ile ilişkisini göstermek için yapılan e-NOS İHK örneklerinde ND grupta PB tedavi edici oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) bulundu. Hasara neden olan serbest radikallerin uygulamalar ile azaltılarak yara iyileşmesini hızlandırdığı görüldü (**Şekil 3**). Yara iyileşmesinde eNOS boyanmaların H-skor ile değerlendirilmesinde PB uygulamalarının oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) bir şekilde oksidatif stresi azaltıldığı izlendi (Tablo 3).

Yapılan uygulamaların apoptoz ile ilişkisini göstermek için yapılan Kaspas 3 İHK örneklerinde ND grupta PB tedavi edici oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı, ($p<0,001$) bulundu. Hasara neden olan serbest radikallerin uygulamalar ile azaltılarak yara iyileşmesini hızlandırdığı görüldü (**Şekil 4**). Yara iyileşmesinde Kaspaz 3 boyanmaların h-skor ile değerlendirilmesinde PB uygulamalarının oldukça anlamlı ($p<0,001$) bir şekilde apoptozu azaltıldığı izlendi (Tablo 4).

VEGF İHK örneklerinde ND grupta PB tedavi edici oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) bulundu. Hasarda damarlanmanın artarak yara iyileşmesini hızlandırdığı görüldü (**Şekil 5**). Yara iyileşmesinde VEGF boyanmaların h-skor ile değerlendirilmesinde PB uygulamalarının oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) bir şekilde damarlanmayı arttırdığı izlendi (Tablo 5).

Yapılan uygulamaların inflamasyon ile ilişkisini göstermek için yapılan IL-10 İHK örneklerinde ND grupta PB tedavi edici oldukça anlamlı ($p<0,001$) bulundu. Hasara neden olan inflamasyon PB uygulamalar ile azaltılarak yara iyileşmesini hızlandırdığı görüldü (**Şekil 6**). Yara iyileşmesinde IL-10 boyanmaların H-skor ile değerlendirilmesinde PB uygulamalarının oldukça anlamlı D örneklerinde PB etkisinin oldukça anlamlı, ($p<0,001$) bir şekilde inflamasyonu azaltıldığı izlendi (Tablo 6).

Yapılan uygulamaların bağ dokusu ile ilişkisini göstermek için yapılan Kollajen 1 İHK örneklerinde ND grupta PB tedavi edici oldukça anlamlı, D örneklerinde PB etkisinin oldukça anlamlı ($p<0,001$) bulundu. Hasara neden olan alanda kollajen lif sayısını artırarak yara iyileşmesini hızlandırdığı görüldü (**Şekil 7**). Yara iyileşmesinde Kollajen 1 boyanmaların H-skor ile değerlendirilmesinde PB uygulamalarının oldukça anlamlı D örneklerinde PB etkisinin oldukça anlamlı, ($p<0,001$) bir şekilde bağ dokuyu güçlendirdiği izlendi (Tablo 7).

Tartışma: Bu çalışmada probiyotiklerin oksidatif stres, apoptoz ve inflamasyonu azalttığı, artan damarlanma, bağ dokusu yapımı ve sinyal yolağı mekanizmaları üzerinden iyileşmeyi hızlandırarak daha kaliteli bir tedavinin sağlandığı anlaşıldı. PB desteğinin deride kronik, zor ve maliyetli yara

iyileşmesi için kaliteli iyileşmeyi sağlayacağı düşünüldü. Probiyotiklerle (PB) barsak mikrobiyotasının manüple edilmesi deri yara iyileşme sürecini olumlu yönde etkilemektedir^{7,8}.

Yara iyileşmesi çalışmaları, esas olarak yara ortamının çok yönlü doğası ve inflamasyon, çoğalma, yeniden epitelizasyon ve yeniden şekillenme dahil olmak üzere çeşitli hücrel ve onarım aşamalarını bütünleştiren karmaşık bir süreçtir. Farelerde, tavşanlarda ve domuzlarda diyabetik ve beslenmeyle ilgili akut veya kronik yaraları taklit etmek için kullanılabilecek çeşitli olası klinik öncesi modeller bulunmaktadır. Bunlar eksizyon veya insizyon olmak üzere birçok farklı teknikle indüklenebilir. Bir çalışma için uygun bir model belirledikten sonra, araştırmacıların yara ilerlemesinin zaman içinde izlenmesini sağlayacak uygun ve tekrarlanabilir yöntemleri seçmesi gerekir⁹⁻¹⁰. Değerlendirme, yara takibi, fotoğraflı dökümantasyon (görüntü analizi dahil), biyofiziksel teknikler ve/veya yara biyopsisi gerektirecek invaziv protokoller gibi invaziv olmayan protokollerle yapılabilir. Bunlar, insizyonel, eksizyonel, yanık ve kronik yaralar dahil klinik öncesi / hayvan modelleri ile yara iyileşme hızı, görüntü ile yara analizi, biyofiziksel değerlendirme, histopatolojik, immünolojik ve biyokimyasal testler gibi iyileşme ilerlemesini değerlendirme yöntemleridir¹¹. Amaç, yara iyileştirme çalışmalarının tasarımı ve yürütülmesi sırasında araştırmacıları yönlendirmektir. Çalışmamızda kullandığımız model öncekilerle uyumlu bulundu.

Bağırsak mikrobiyotasını probiyotiklerle desteklemek cilt tepkisini uyarabilir. İyileşme sürecinin tüm aşamalarını ve ayrıca bağırsak-cilt iyileşme tepkisini anlamak, cilt iyileşme sürecini iyileştirebilir¹². Sıçanlarda perioperatif oral probiyotik uygulamasının cilt yaralarının iyileşmesi üzerindeki etkisini değerlendirmek için yapılan bir çalışmada, yetişkin sıçanlar ve her biri 36'lı iki gruba, bir kontrol grubu (günde 250 mg oral maltodekstrin ile desteklenmiş) ve bir probiyotik grubu (*Lactobacillus paracasei* LPC-37, *Bifidobacterium lactis* HN0019, *Lactobacillus rhamnosus* ile desteklenmiş) olarak iki gruba ayrılmıştır. HN001, *Lactobacillus acidophilus* NCFM® 250 mg/gün dozunda), her ikisi de 15 gün boyunca ağızdan verilmiştir. İki grup daha sonra ötenazi anına göre postoperatif 3., 7. ve 10. günlerde üç alt gruba ayrılmıştır. Her iki grupta da ağırlıkta önemli bir değişiklik olmamıştır. Yara kontraksiyonu probiyotik grupta kontrollere göre daha hızlı ve postoperatif 7. günde yara alanı küçük bulunmuştur. Probiyotik grup, postoperatif 3. günden 7. güne kadar artan fibrozis göstermiştir. Probiyotik grupta postoperatif 10. günde tip I kollajen üretimi daha yüksek, 7. günde ise tip III kollajen üretimi artmıştır. Oral olarak uygulanan probiyotiğin perioperatif kullanımı, muhtemelen inflamatuvar fazı azaltarak, fibrozis sürecini hızlandırarak ve kollajen birikimini hızlandırarak sıçanlarda yara alanının daha hızlı azalmasıyla ilişkilendirilmiştir^{13,14}.

PB kullanımının tip 2 DM'lu hastalarda ayak ülserlerinde oluşan yaraların tedavisi amaçlı bir çalışmada 10 hafta boyunca iki hafta boyunca alınan sürüntü ve debritleme örnekleri de yapılan 16 sRNA PCR örneklerinde diyabetik grupta oldukça azalan bir mikrobiyom saptanırken oldukça düşük yoğunlukta bir grubun anlamlı bir şekilde farklı olduğu saptandı. Bu tür yaralarda büyük çoğunlukla deri stafilokokları

saptanırken diğer grupların hastaya göre değiştiği saptandı. Ancak bu değişiklikler anlamlı bulunmamıştır^{15,16}.

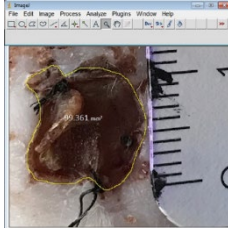
Deri yara iyileşmesinde PB etkisinin bakıldığı bir çalışmada 2x2cm'lik tam kat tek yara modelinde kontrolle karşılaştırıldığında PB kullanılan örneklerde 3.günde diyabetik grupta %15 luk, PB grubunda %10 lik anlamsız iyileşme görülmüştür. 7.günde kontrolde %20 iken, PB grubunda %30 anlamdı iyileşme saptanmıştır. 10.gün örneklerinde her iki grupta %80 lik benzer iyileşme gösterilmiştir. Deve sütünün antidiyabetik etkisinin araştırıldığı bir çalışmada sütte bulunan 14 tür içeren PB'nin diyabetik farelere verilmesi sonucunda farelerde şekeri ve lipid düzeylerinin düştüğü, pankreas, karaciğer ve böbrek morfolojisinin düzeldiği, claudin-1 ve mucin 2 üzerinden epitel bütünlüğünün korunduğu ve *E.coli* ile LPS düzeylerinin azaldığı saptanmıştır. Ayrıca PB kullanımının farelerde PI3K/AKT yolağı üzerinden engellediği gösterilmiştir. Deri yara iyileşmesinde PB etkisinin bakıldığı bir çalışmada 2x 2cm lik tam kat tek yara modelinde kontrolle karşılaştırıldığında PB kullanılan örneklerde 3.günde diyabetik grupta %15 luk, PB grubunda %10 lik anlamsız iyileşme görülmüştür. 7.günde kontrolde %20 iken, PB grubunda %30 anlamdı iyileşme saptanmıştır. 10.gün örneklerinde her iki grup ta %80 lik benzer iyileşme gösterilmiştir¹⁷.

İyileşme süreci ile cilt mikrobiyotası ile etkileşim arasındaki ilişki zaten iyi kurulmuş durumda. Lokal mikrobiyotanın, konağın bağışıklık sistemine tonik uyarım sağlayabileceği ve diğer patojenik mikropların istilasını önleyebileceği gösterilmiştir. Mikrobiyal çeşitliliğin kaybı genellikle uzun süreli inflamasyona ve yara iyileşme sürecinin gecikmesine neden olur. Son araştırmalar, yerel mikrobiyota ile etkileşime ek olarak, bağırsak mikrobiyotasındaki değişikliklerin, antimikrobiyal moleküller üreterek ve bağışıklık ve inflamatuvar yanıtı düzenleyerek yara iyileşme sürecini olumlu veya olumsuz yönde etkileyebileceğini düşündürmektedir¹⁸. Önceki çalışmalarda “beyin-bağırsak-deri ekseninin” varlığını öne sürülmüştür. Bu teoriye göre, bağırsak bakterileri, inflamatuvar sitokin ekspresyonunun salınımını modüle ederek uzaktan cilt iyileşmesine müdahale edebilir. Bu nedenle, bağırsak mikroflorasını modüle etmek, cilt iyileşme sürecini iyileştirmek için önemli bir strateji olabilir. Bağırsak mikrobiyotasının modülasyonu için araçlar, diyet değişikliklerine ek olarak prebiyotikler, probiyotikler, simbiyotikler ve dışkı naklidir. Ticari probiyotik ürünler bilinen ve miktarı belirlenmiş bakterileri içerir ve klinik durumlarda en uygun suşlar Laktobasiller (*Lactobacillus casei*, *Lactobacillus acidophilus*, *Lactobacillus rhamnosus*) ve Bifidobacterium (*Bifidobacterium lactis*). Probiyotik kullanımı ve iyileşme arasındaki ana bağlantı, doku onarımı üzerinde olumlu etkileri olabilen inflamasyonun modülasyonudur^{19,20,21,22}. Literatürdeki tüm bulgular ile sonuçlarımız uyumlu olmasının yanısıra diyabetik olgularda etkinin daha belirgin olması önemli bir fark olarak düşünüldü.

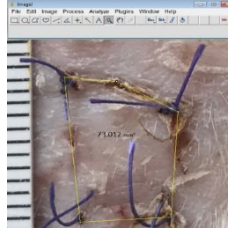
PB'nin oksidatif stres, apoptoz ve inflamasyonu azaltması, damarlanma ve kollagen oluşumunu artırması ile özellikle diyabetik yara iyileşmesini hızlandırdığı anlaşıldı. PB'nin deride kronik, zor ve

maliyetli yara iyileşmesi üzerindeki olumlu etkisinin klinikte hasta yaşam kalitesini arttıracığı varsayılmaktadır.

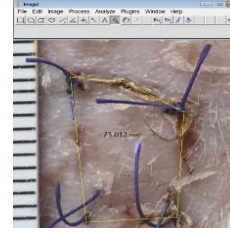
3G



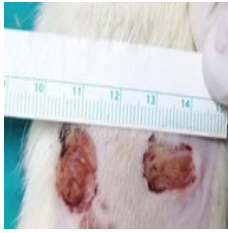
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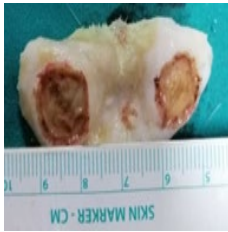
10G



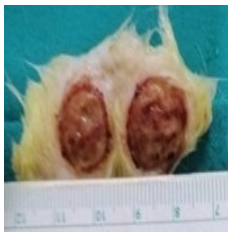
ND - K



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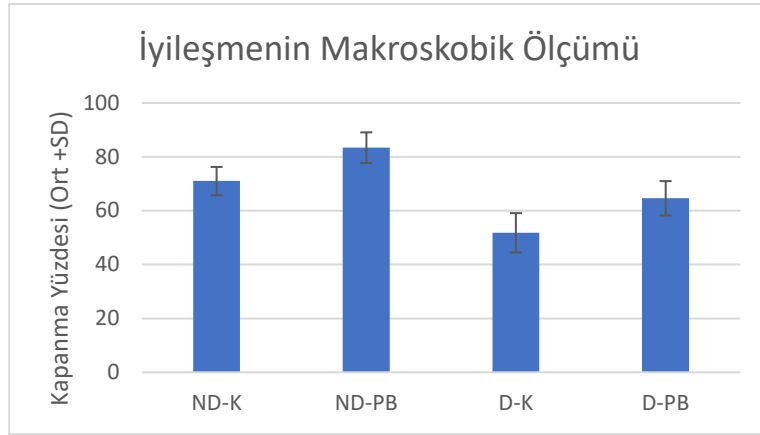
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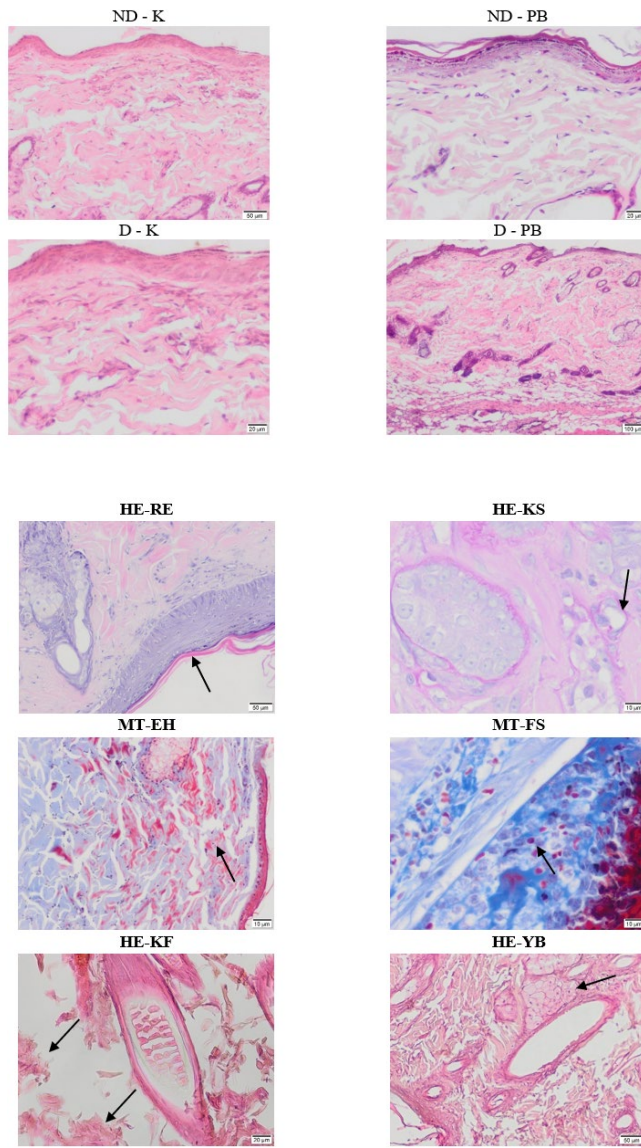


Şekil 1. Deney Gruplarında 7. gün yara makroskobik iyileşmesine PB etkisi

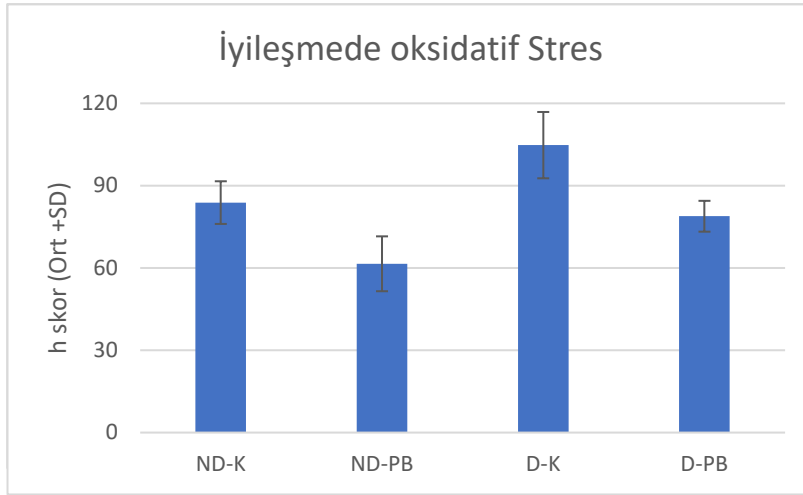


Tablo 1. Makroskopik PB etkisi

Deney Gruplarında 7. gün yara makroskopik iyileşmesine PB etkisi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,05$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,05$ olacak şekilde anlamlılık bulundu.



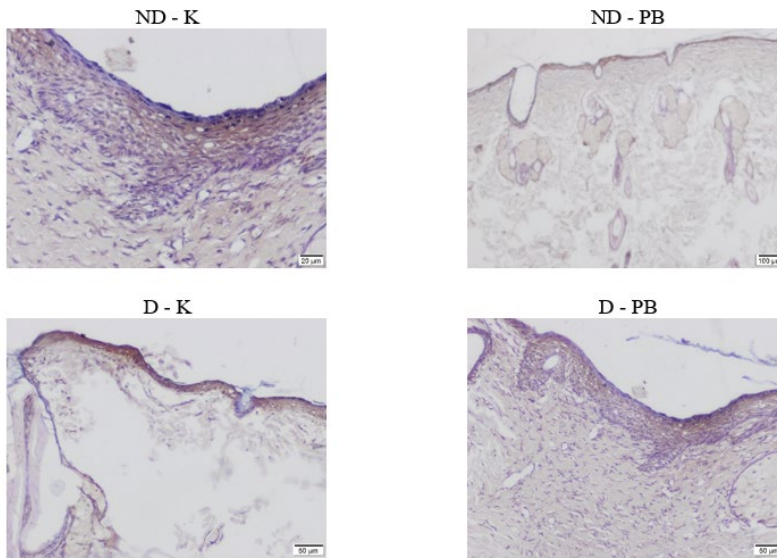
Şekil 2. Deney Gruplarında yara mikroskopik iyileşmesine parametreler. HE ve MT boyamaları ile reepitelizasyon (RE), kapiller sayısı (KS), enflamatuvar hücre (EH), fibroblast sayısı (FS), kollajen fibriller (KF) ve yağ bezleri (YB).



Tablo 2. Mikroskopik PB etkisi

Her parametre için +1 ile +5 arasında değerlendirilen deney gruplarında 7.gün yara mikroskopik iyileşmesine PB etkisi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,05$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,05$ olacak

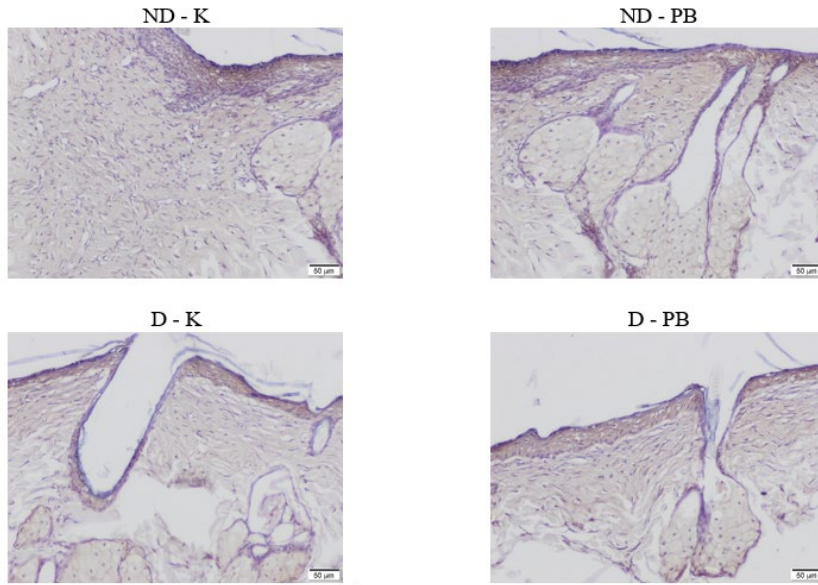
şekilde anlamlılık bulundu,



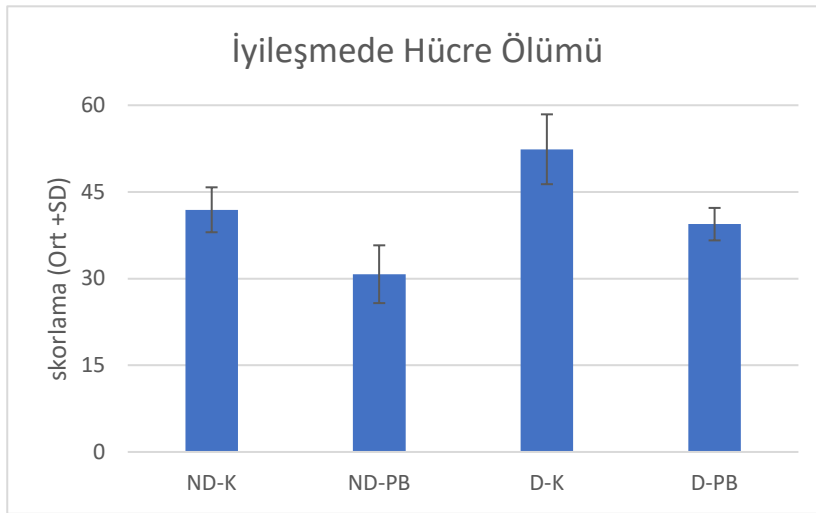
Şekil 3 Yara iyileşmesinde eNOS İHK boyanma görüntüleri.

Tablo 3. Oksidatif stres için PB etkisi

Yara iyileşmesinde eNOS İHK boyanma görüntülerinin H-skor ile değerlendirilmesi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,01$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,01$ olacak şekilde anlamlılık bulundu.



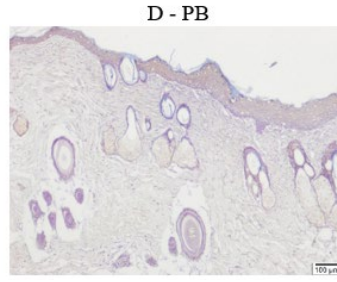
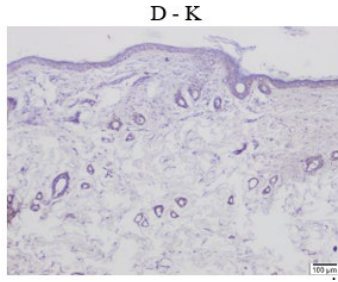
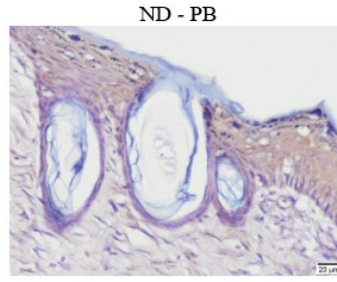
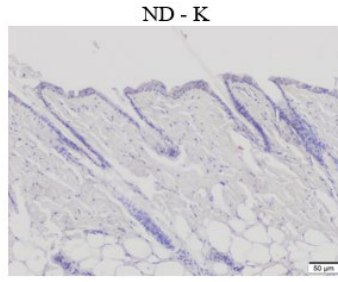
Şekil 4. Yara iyileşmesinde Kaspaz 3 İHK boyanma görüntüleri.



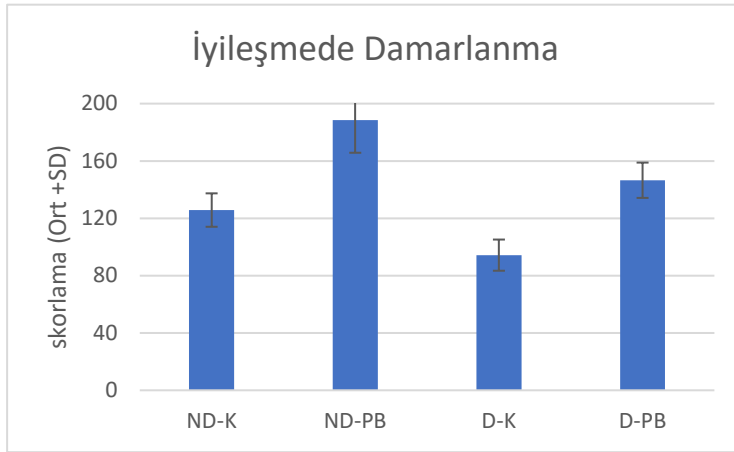
Tablo 4. Apoptoz için PB etkisi

Yara iyileşmesinde Kaspaz 3 İHK boyanma görüntülerinin H-skor ile değerlendirilmesi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,01$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,01$ olacak

şekilde anlamlılık bulundu.

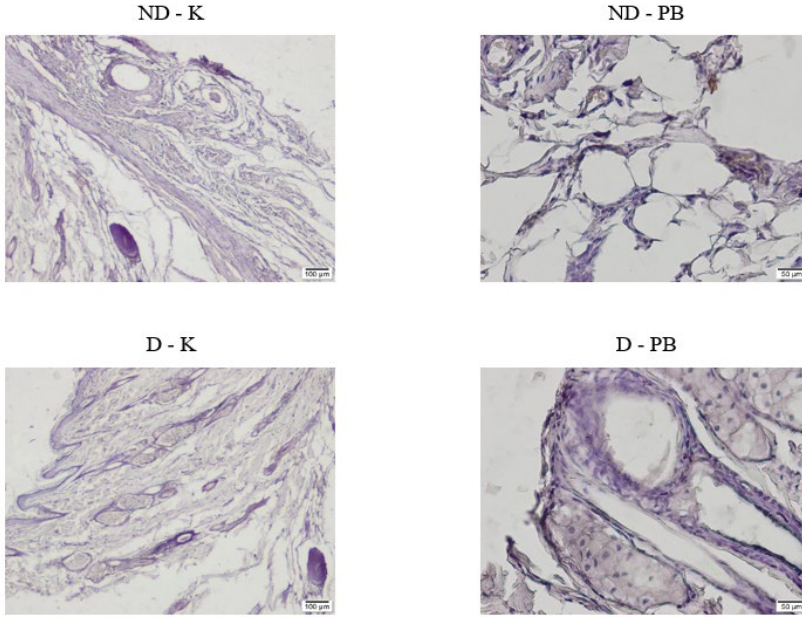


Şekil 5. Yara iyileşmesinde VEGF İHK boyanma görüntüleri.

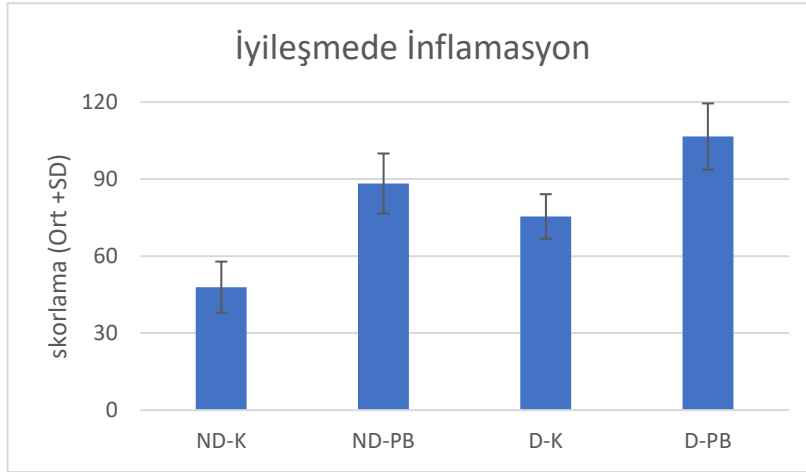


Tablo 5. Damarlanma için PB etkisi

Yara iyileşmesinde VEGF İHK boyanma görüntülerinin H-skor ile değerlendirilmesi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,05$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,001$ olacak şekilde anlamlılık bulundu.

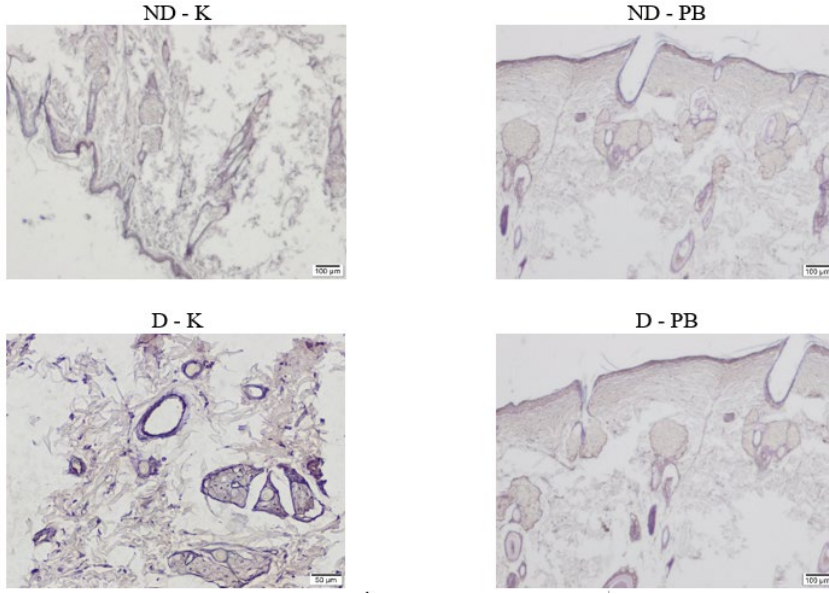


Şekil 6. Yara iyileşmesinde IL-10 İHK boyanma görüntüleri.

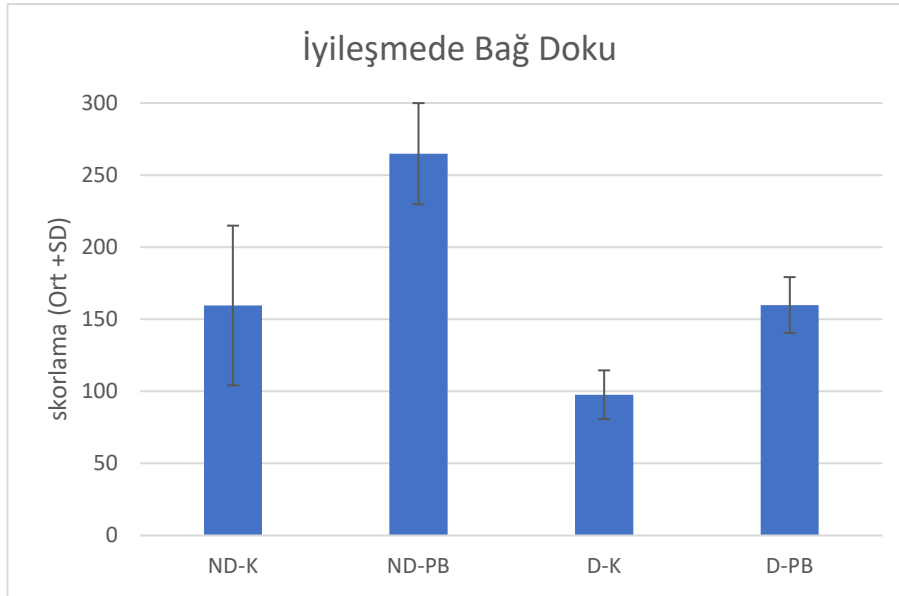


Tablo 6. İnflamasyon için PB etkisi

Yara iyileşmesinde IL-10 İHK boyanma görüntülerinin H-skor ile değerlendirilmesi. ND-K ile D-K arasında $p<0,001$, ND-K ile ND-PB arasında $p<0,05$, ND-PB ile D-PB arasında $p<0,01$, D-K ile D-PB arasında $p<0,001$ olacak şekilde anlamlılık bulundu.



Şekil 7 Yara iyileşmesinde Kollajen 1 İHK boyanma görüntüleri.



Tablo 7. Bağ doku için PB etkisi

Yara iyileşmesinde Kollajen 1 İHK boyanma görüntülerinin H-skor ile değerlendirilmesi. ND-K ile D-K arasında $p<0,01$, ND-K ile ND-PB arasında $p<0,05$, ND-PB ile D-PB arasında $p<0,01$, D-K

ile D-PB arasında $p<0,05$ olacak şekilde anlamlılık bulundu,

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ID-215 / OP: “Deneyisel Diyabetik Modelde K lt rde Hasara Uğramış Spermilere H cresel Tedavinin Etkisi”

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 zet (ID-215)

Diyabete baėlı erkek infertilitesi giderek artan  nemli bir sorundur. H cresel tedaviler son zamanlarda klinik karřılık bulan  nemli tedavi y ntemleridir. Bu  alıřmada saėlıklı hayvanlardan alınan spermelerde k lt r ortamında y ksek glikozlu besiyeri kullanılarak diyabetik (DH) hasar oluřturuldu. Aynı ortamda spermilere mezenkimal k k h cre (MKH), 48 saatlik salgıladıkları fakt rler olan kořullu besiyeri (KBY), Trombosit Zengin Plazma (PRP) ile Stromal Vask ler Fraksiyon (SVF) uygulamaları yapılarak hasarının azaltılması ve etkinliklerinin karřılařtırılması ama landı.

12 haftalık Wistar Albino cinsi erkek sı andan elde edilen spermeler k lt r ortamında 6 g zl  flasklara alınarak Kontrol 0 saat (KG0S), Kontrol 3 saat (KG0S), DH, DH+PBS, DH+ MKH, DH + KBY, DH+ PRP ve DH+ SVF, uygulamaları yapıldı.    saatlik uygulamada morfoloji, canlılık ve hareket deėerlendirilmeleri yapılarak yaymaları hazırlanan  rnekler oksidatif stres i in endotel Nitr z Oksit Sentaz (e-NOS) ve ind kylenebilir (i) NOS ile apoptoz i in Terminal Transferased UTP Nick End Labeling (TUNEL) ile imm nohistokimyasal olarak analiz edildi.

DH ile olduk a zarar g ren spermelerin, canlılık, hareket ve morfolojik bozukluklarının artan eNOS, iNOS ve TUNEL ile iliřkili olduėu belirlendi. Uygulamaların istatistiksel olarak anlamlı bir bi imde sperm morfoloji, canlılık ve hareketini koruyarak oksidatif stres ve apoptozu azalttıėı g r ld . Bireysel uygulamalarda en olumlu PRP ile izlenirken MKH, KBY ve SVF kombinasyonunun daha az ama olduk a anlamlı bir řekilde daha etkin olduėu saptandı.

K lt r ortamında sperm hasarı yapması ve uygulamalar ile bu hasarın  nlenebilmesi model olarak diėer tedavi olasılıkları i in  nemli olabileceėini g sterdi. MKH, PRP, KB ve SVF olarak h cresel tedavinin oksidatif stres ve apoptozu azaltarak etkili olduėu anlařıldı. Toplumda y ksek prevalansta g r len ve giderek artan erkek infertilitesine y nelik h cresel tedavi gibi maliyetleri az ve etkinliėi y ksek yeni rejeneratif y ntemin geliřmesine katkı saėlayacak sonu larımız  ocuk sahibi olmak isteyen ailelere  mit olacaktır.

Anahtar Kelimeler: İnfertilite; Deneysel diyabet; Kök hücre; Trombosit Zengin Plazma; Koşullu besiyeri; Stromal vasküler fraksiyon.

Full-text (ID-215): “Deneysel Diyabetik Modelde Kültürde Hasara Uğramış Spermilere Hücresel Tedavinin Etkisi”

Giriş: Diyabete bağlı erkek infertilitesi giderek artan önemli bir sorundur. Hücresel tedaviler son zamanlarda klinik karşılık bulan önemli tedavi yöntemleridir. Kronik hiperglisemi, diabetin bir özelliğidir. Uzun süreli hiperglisemi, oksidatif stres ve reaktif oksijen türleri oluşturabilir. Bu durumun sperm kalitesi ve spermatogenez üzerindeki etkisi erkek infertilitesine ve üreme bozukluklarına yol açar (Ding GL ve ark 2015).

Nitrik oksit (NO), esas olarak nitrik oksit sentazları (NOS'lar) tarafından sentezlenen bir serbest radikaldir. NO, farklı türlerde sperm fizyolojisindeki birçok yönü düzenler. Ancak, NOS dağılımını ve NO'nun hücre tedavilerinde sperm kapasitesini ve fertilizasyonunu (IVF) nasıl etkilediğini araştıran in vitro çalışmalar eksiktir. Spermatozoa, zengin mitokondriyal konsantrasyona sahip bir yerdur ve bu nedenle sürekli bir oksijen kaynağına ihtiyaç duyar. Dolayısıyla spermatozoa, O₂ paradoksunun bir bölgesi ve burada ROS'un belirgin bir üretimi olarak düşünülebilir. Orta derecede yüksek hidrojen peroksit konsantrasyonları, sperm canlılığını etkilemez, ancak sperm hareketsizleşmesine neden olmaktadır. Plazma zarında ve sitoplazmada çok miktarda çoklu doymamış yağ asitlerinin varlığı da spermilerin hassas doğasının önde gelen nedenidir. Oksidatif hasar, nükleotid bozulmasına, DNA parçalanmasına ve proteinlerin çapraz bağlanmasına neden olarak infertiliteye neden olur (Farias, J. G ve ark 2010).

Memeli spermatogenezi sırasında germ hücre apoptozu, sperm çıkışını kontrol etmek ve hasarlı veya istenmeyen hücreleri ortadan kaldırmak için önemli bir süreçtir. Sperm DNA fragmentasyonu sonuçlarındaki zorluklardan biri, farklı tekniklerle elde edilen sonuçlardaki tutarsızlık ve büyük değişkenliktir. Terminal deoksinükleotidil transferaz dUTP nick uç etiketleme (TUNEL) tahlili, 3'-OH terminalini TdT ile etiketleyerek floresanlı dUTP'nin tek ve çift zincirli DNA kırılmalarına dahil edilmesini ölçen bir yöntemdir. Bu nedenle bu çalışmada apoptoz oranının tespiti için TUNEL yöntemi kullanıldı (Hassan AI. ve Alam, SS 2014).

Yağ dokusundan elde edilen SVF, MKH dahil olmak üzere çeşitli hücreler içerir ve birçok onarımda etkili olduğu gösterilmiştir. PRP gibi otolog kan ürünleri, tedavinin adjuvanı olarak işlev görür ve verilmesi, birçok tedavi için, özellikle DM için yararlı etkiler göstermiştir. Kök hücrelerin kültüre edildikleri ortama salgıladıkları sekretom, mikrovezikül, eksozom, trofik faktörler gibi salgıların tümünü içeren besiyeri ortamı KBY olarak adlandırılır. KBY içinde VEGF, PDGF, EGF gibi büyüme faktörleri, TGFβ1, IL-6, IL-10, IL-8, IL-9 gibi pro- ve anti-inflamatuvar sitokinler, FGF2, HGF gibi anjiyogenik faktörler

bulunmaktadır ve bu salgılanan faktörler çeşitli proteomik çalışmalarla gösterilmiştir (Bräunig, P ve ark 2018).

Bu çalışmada sağlıklı hayvanlardan alınan spermelerde kültür ortamında yüksek glikozlu besiyeri kullanılarak DH oluşturuldu. Aynı ortamda spermlere MKH, 48 saatlik salgıladıkları faktörler KBY, PRP ve SVF uygulamaları yapılarak hasarının azaltılmasına ve oksidatif stres ile apoptoza olan etkinliklerinin karşılaştırılması amaçlandı.

Yöntem: 12 haftalık Wistar Albino cinsi erkek sıçandan elde edilen spermier kültür ortamında 6 gözlü flasklara alınarak Kontrol (KR-BY), Sham (5 mM glukoz), DH (20 mM glukoz), DH+ MKH, DH + KBY, DH+ PRP ve DH+ SVF, uygulamaları yapıldı. Bir saatlik uygulamada morfoloji, canlılık ve hareket değerlendirilmeleri yapılarak yaymaları hazırlanan örnekler oksidatif stres için endotelyal Nitrik Oksit Sentaz (e-NOS) ve indüklenabilir Nitrik Oksit Sentaz (i-NOS) ile immünohistokimyasal olarak, apoptozun belirlenmesi için ise Terminal Transferased UTP Nick End Labeling (TUNEL) boyaması yapıldı.

Diyabetik gruplar için denekler, diyabet oluşturulmadan önce 12 saat aç bırakıldı. 50 mg/kg streptozotosin (STZ) intraperitoneal olacak şekilde enjekte edildi (Mercan ve ark 2020). PRP, sıçan sağ ventrikülünden alınan kanın santrifüjlenmesi ile elde edildi (Samy ve ark 2020). SVF,sıçan inguinal yağ yastıkçıklarının mekanik olarak parçalanıp santrifüj edilerek dipte çökmüş haldeki matür adipositlerden ayrılarak elde edildi. MKH için sıçanın subkutan inguinal yağı mekanik olarak parçalanıp santrifüj edilerek hücreler alındı ve kültürde çoğaltıldı. KBY için pasajlanmış konfluent MKH'lere taze besiyeri eklenip 24 saat inkübe edildikten sonra bu besiyeri toplanarak KBY olarak kullanıldı. Spermier hazırlanması ve analizi için kaudal epididimis 1 mL %10 FBS ilave edilmiş DMEM F12 besiyeri içerisine alındı ve bisturi yardımıyla kesim yapılarak küçük parçalara ayrıldı. İzole edilen spermier Makler lamı ile sayıldı. Spermier yayma yapılarak kaspazlar için immunohistokimya ve apoptoz için TUNEL işaretlemesi yapıldı. İşaretlemler h-skor ve apoptotik indeks ile değerlendirildi. İstatistiksel analiz için Graphpad Prism 8.3.1 programı kullanıldı. Gruplardan elde edilen ortalama değerler, standart sapmalar ve istatistiksel sonuçlar tablo ve grafik şeklinde gösterildi. $p<0.05$ istatistiksel olarak anlamlı kabul edildi.

Sonuçlar: DH-YG ile oldukça zarar gören spermierin, canlılık, hareket ve morfolojik bozukluklarının artan e-NOS, i-NOS ve TUNEL ile ilişkili olduğu belirlendi. HT ürünlerinin istatistiksel olarak anlamlı bir biçimde sperm morfolojisini, canlılığını ve hareketini koruyarak oksidatif stres ve apoptozu azalttığı görüldü. Ayrıca, tekli HT uygulamaların farklı düzeylerde ama oldukça anlamlı bir şekilde daha etkin olduğu saptandı.

Bu çalışmada sağlıklı hayvanlardan alınan spermierde kültür ortamında yüksek glikozlu besiyeri kullanılarak DH oluşturuldu. Spermier MKH, 48 saatlik salgıladıkları faktörler olan KBY ve PRP ile desteklenmiş SVF uygulamaları yapılarak deneysel diyabetik modelde sperm hasarının azaltılması incelendi (Şekil 1).

Tekli HT uygulamalarının etkinlik açısından PRP>MKH>SVF>KBY şeklinde canlılığı koruduğu saptandı (**Tablo 1**).

Tekli HT Uygulamalarının Hareket Bulguları: Faz kontrast mikroskobu ile yapılan hareket değerlendirmesinde. KR-BY grubunda saptanan hareketliliğin 1 saat sonunda oldukça anlamlı bir şekilde azaldığı ve diyabet grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha az olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT a uygulamaların anlamlı bir şekilde hareketliliği koruduğu saptandı (**Şekil 2**). Tekli HT uygulamalarının etkinlik açısından PRP>MKH>SVF>KBY şeklinde hareketliliği koruduğu saptandı (**Tablo 2**).

Tekli HT Uygulamalarının Morfoloji Bulguları: Morfoloji değerlendirmesi Diff Quick boyama kiti ile yapıldı. DH-YG grubunda saptanan morfolojinin 1 saat sonunda oldukça anlamlı bir şekilde bozulduğu ve KR-BY grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha az olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde morfolojiyi koruduğu saptandı (**Şekil 3**). Tekli HT uygulamalarında sırası ile tekli uygulamaların anlamlı bir şekildemorfolojiyi koruduğu saptandı (**Tablo 3**).

Tekli HT Uygulamaların eNOS İmmunohistokimyasal Bulguları: Oksidatif stres değerlendirmesi eNOS antikorunun immünohistokimyasal analizi ile yapıldı. DH-YG grubunda saptanan stresin 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve KR-BY grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde oksidatif stresten koruduğu saptandı (**Şekil 4**). Yapılan H-skor analizi ile uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde oksidatif stresi azalttığı saptandı (**Tablo 4**).

Tekli HT Uygulamaların iNOS İmmunohistokimyasal Bulguları: Oksidatif stres değerlendirmesi iNOS antikorunun immunohistokimyasal analizi ile yapıldı. DH-YG grubunda saptanan stresin 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve KR-BY grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde oksidatif stresten koruduğu saptandı (**Şekil 5**). Yapılan H-skor analizi ile uygulamalarda sırası ile tekli HT uygulamalarının anlamlı bir şekilde oksidatif stresi azalttığı saptandı (**Tablo 5**).

TUNEL Yöntemi: Apoptoz değerlendirmesi TUNEL yöntemi ile yapıldı. DH-YG grubunda saptanan apoptozun 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve KR-BY grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli uygulamaların anlamlı bir şekilde apoptozu azalttığı saptandı (**Şekil 6**). Apoptotik indeks sonuçlarının değerlendirilmesi ile HT ürünlerinin uygulamalarının anlamlı bir şekilde apoptozu azalttığı saptandı (**Tablo 6**).

Tartışma: Diyabetik in vitro modelin sperm hasarına neden olduğu ve bu hasarın diğer tedavi seçenekleri için bir model olarak kullanılmasıyla önlenebileceği kanıtlanmıştır. HT'ler hücre sayısını

çoğaltma, büyüme faktörlerini artırma ve sinyalizasyon mekanizmalarını güçlendirme ile oksidatif stres ve apoptoz azaltarak tedavide anlamlı bir iyileşme sağladı. Bu çalışmada MKH, PRP, KBY ve SVF olarak HT için oldukça etkili olabileceği bulundu.

Diyabet, küresel sağlık için en büyük endişelerden birini temsil eder ve üreme işlev bozukluğu dahil olmak üzere çeşitli klinik komplikasyonlarla ilişkilidir. Hipergliseminin hastalık patofizyolojisinin önemli bir etkeni olarak tanımlandığını göz önünde bulundurarak, yüksek glikoz koşullarının insan sperm fonksiyonu üzerindeki izole etkisini ele almak için in vitro bir yaklaşım kullandık. YG için sperm fonksiyonu üzerindeki etkisine yönelik birçok çalışma yapılmıştır. Genellikle in vitro sperm hazırlığı için optimal konsantrasyon için 5 mM (Mahadevan ve ark. 1997, Amaral ve ark. 2011), diyabet durumunu taklit etmek için 25 mM veya yüksek dozlarda glukozu hücre yanıtını değerlendirmek için 50 mM kullanır. Diyabetik durumu taklit etmek için 25 mM kullandık ve oksidatif stres ile apoptozu inceledik (Hsiao, CH ve ark 2019, Zhou, L ve ark., 2019).

SVF, PRP, KBY ve MKH gibi hücre tedavilerinin in vivo ve in vitro diyabetik hasarı azaltabildiğini gösteren birçok çalışma bulunmaktadır.

Nonobstrüktif azosperminin tedavisinde MKH ve KBY etkisini inceleyen bir çalışmada tedavi gruplarının seminifer tübüllerinin çoğunun normal morfoloji gösterdiği ve spermatogenezin başarılı bir şekilde geri kazanıldığı gösterilmiştir (de Oliveira Tongu ve ark., 2021).

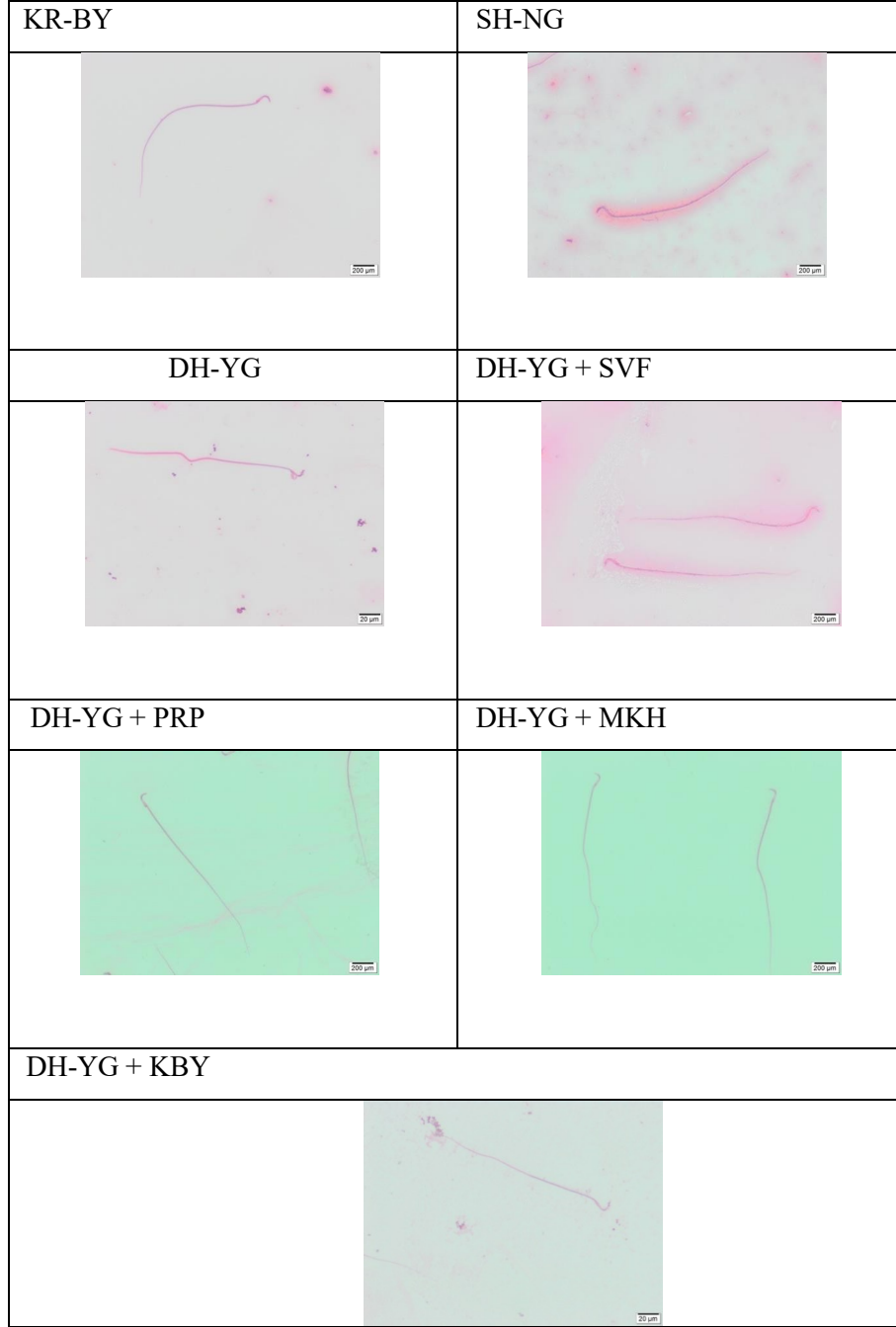
Yapılan başka bir çalışmada PRP'nin busulfan (BUS) uygulanan hayvanda spermatojenik kök hücre sayısını, sperm sayısını, hareketliliğini ve kuyruk uzunluğunu ve testosteron seviyesini önemli ölçüde artırmıştır ancak testis hacmi, germinal epitel yüksekliği, Sertoli ve Leydig hücre sayısı ve seminifer tübüllerin uzunluğu üzerinde herhangi bir etkisi olmamıştır. PRP'nin BUS ile tedavide testisin yapısal ve fonksiyonel bozukluğunu iyileştirebileceği sonucuna varılmıştır (Dehghani ve ark., 2019).

Dejeneratif hastalıklar, otoimmün hastalıklar, travma, yaşlanma ve etiyolojisi bilinmeyen diğer hastalıkları taşıyan kişilere infüzyon, spinal ve intraartiküler enjeksiyon yoluyla yüksek dozda verilen SVF ve PRP' nin herhangi bir yan etkiye yol açmadan uygulanabilir olduğu gösterilmiştir (Karina ve ark., 2020).

Bu çalışmalarda önemli ölçüde başarılı hücre tedavilerinin tek bir uygulaması kullanıldı ama karşılaştırılması yapılmadı. Sonuçlarımız, bireysel uygulamaların değişik düzeylerde ama oldukça anlamlı iyileşme sağladığını gösterdi. Diyabetik spermelerde oksidatif hasara ve apoptozu karşı büyük bir başarı sağladı.

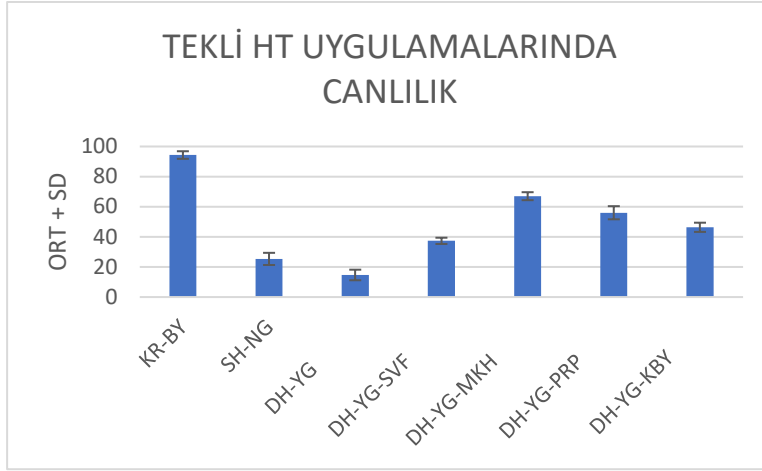
Yorum: Kültür ortamında yüksek glikozun sperm hasarı yapması ve PRP, MKH, KBY ve SVF uygulamaları ile bu hasarın önlenmesi diyabetik kültür modelinin diğer tedavi olasılıklarının araştırılmasında önemli olabileceğini gösterdi. HT oksidatif stres ve apoptozu azaltarak etkili oldu. Toplumda yüksek prevalansta görülen ve giderek artan erkek infertilitesine yönelik hücresel tedavi gibi

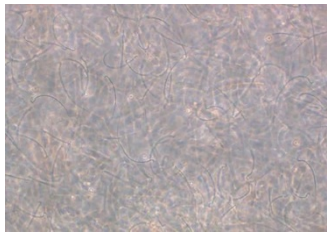
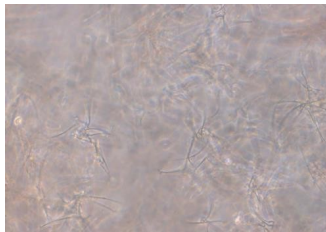
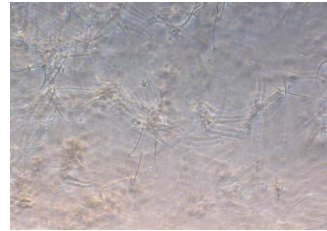
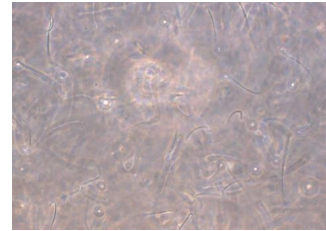
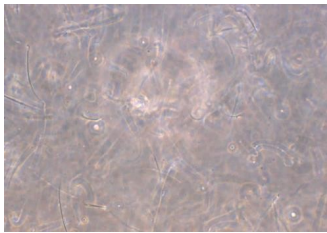
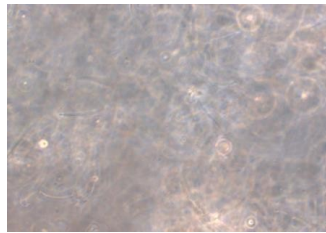
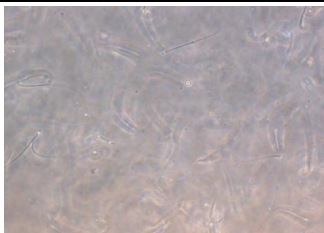
maliyetleri az ve etkinliđi yüksek yeni rejeneratif yöntemin gelişmesine katkı sağlayacak sonuçlarımız çocuk sahibi olmak isteyen ailelere ümit olacaktır.



Şekil 1. Tekli HT uygulamaları için canlılık boyaması.

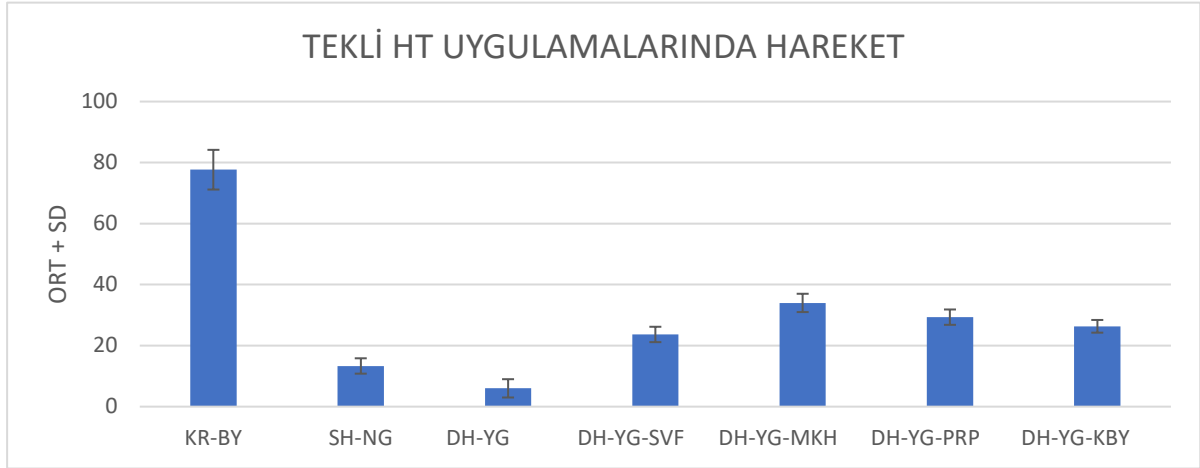
Tablo 1. Tekli HT Uygulamaları için canlılık testi bulguları

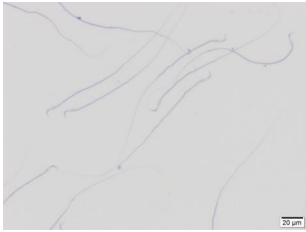
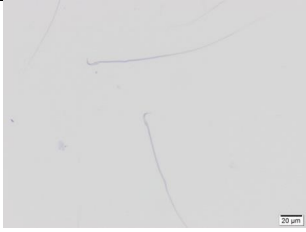
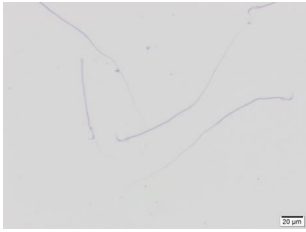
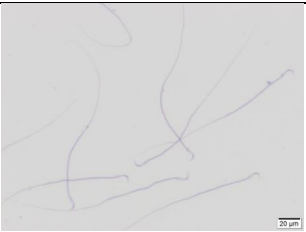
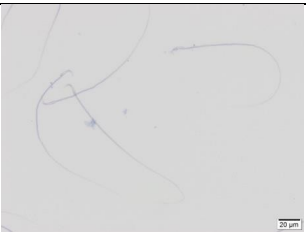


KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

Şekil 2. Tekli HT uygulamaları için hareketliliğin faz kontrast görüntüleri, büyütme: 20 µm.

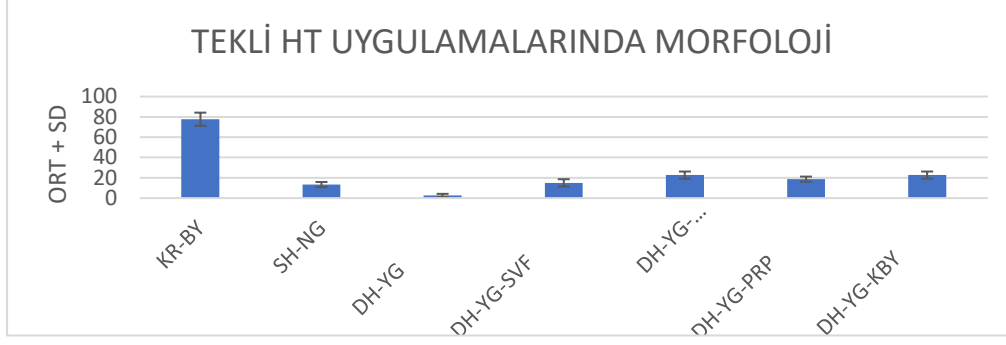
Tablo 2. Tekli HT uygulamaları için hareketlilik testi sonuçları.



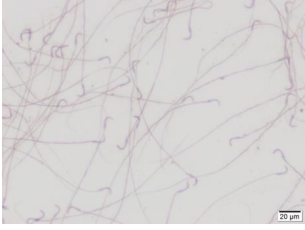
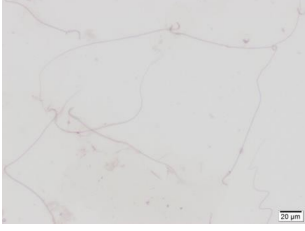
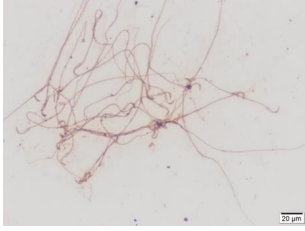
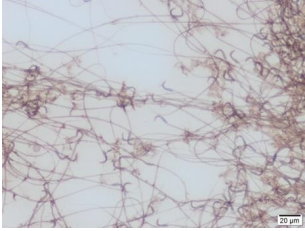
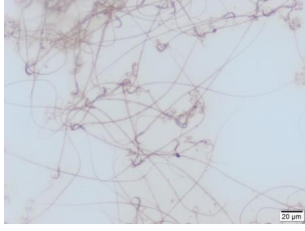
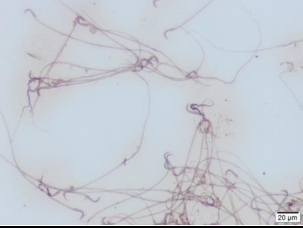
KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

Şekil 3. Diff Quick ile yapılan morfoloji değerlendirmesi .

Tablo 3. Örnekler arasında morfoloji değerlendirmesinde oldukça anlamlı($p<0,001$) farklılığın olduğu

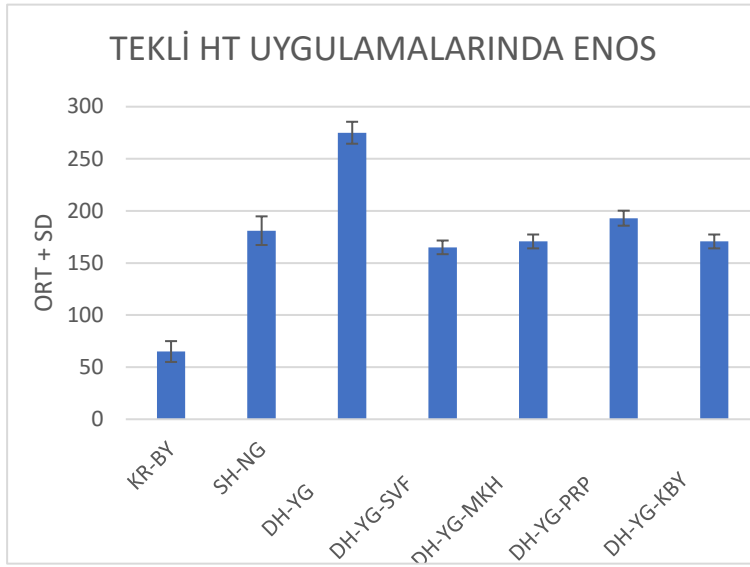


görüldü..

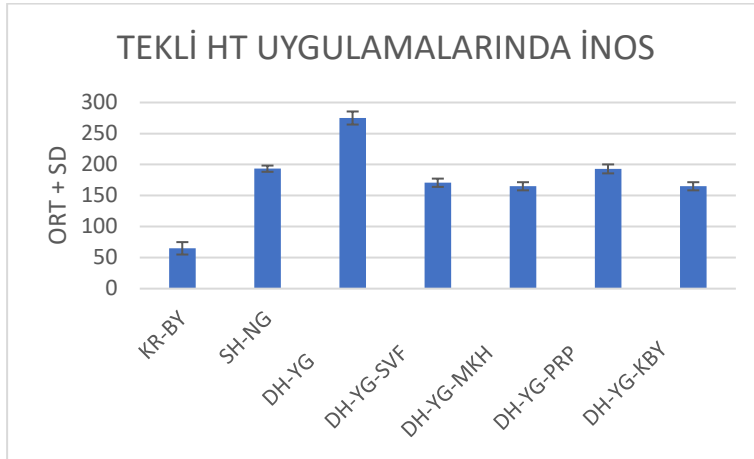
KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

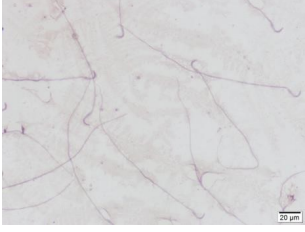
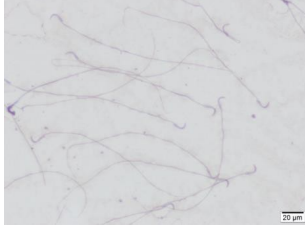
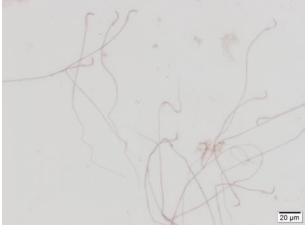
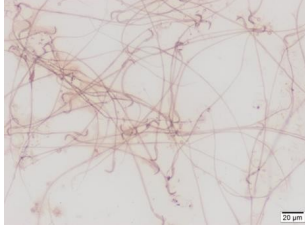
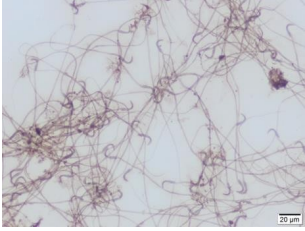
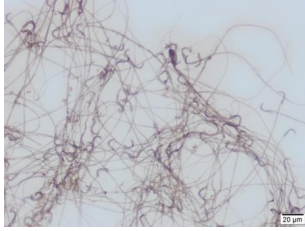
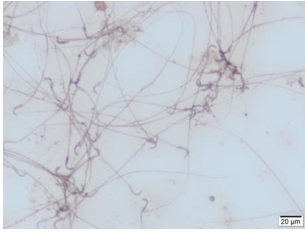
Şekil 4. Oksidatif stresin eNOS ile yapılan değerlendirme

Tablo 4. Yapılan H-skor ile eNOS İHK değerlendirmesi

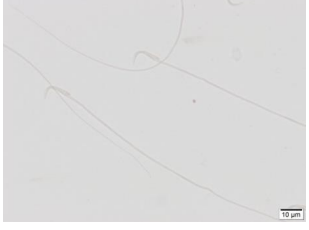
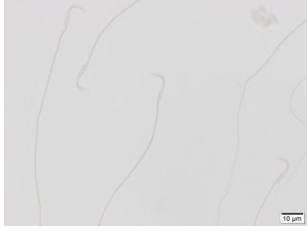
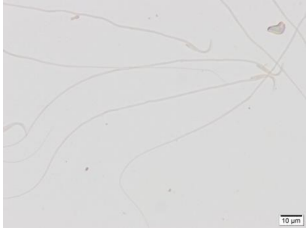


Tablo 5. Yapılan H-skor ile iNOS İHK değerlendirmesi



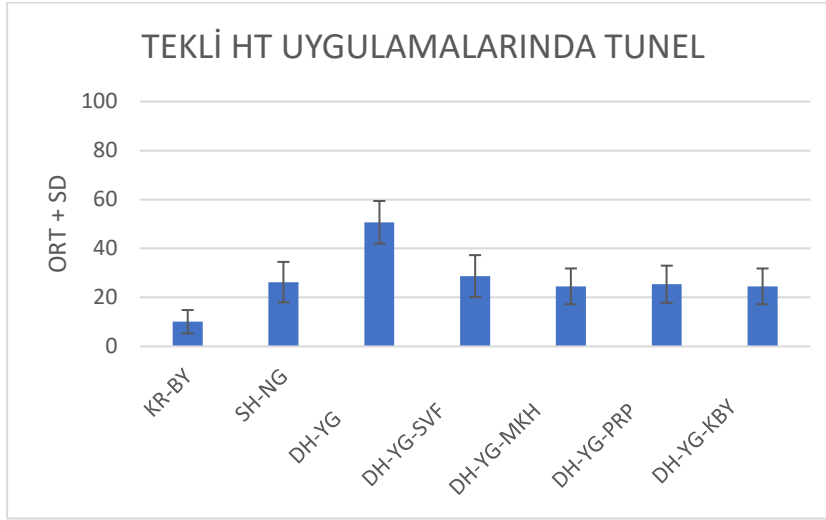
KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

Şekil 5. Oksidatif stresin iNOS ile yapılan değeriendirmesi

KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

Şekil 6. Tüm gruplara ait TUNEL boyaması

Tablo 6. HT ürünlerinin tekli uygulanması sonrası yapılan apoptotik indeks ile TUNEL değerlendirmesi.



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ID-216 / OP: “Hücresel Tedavinin Diyabetik Kültür Ortamında Sperm Ölümüne Etkisi”

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Abstract (ID-216)

Apoptoz, oksidatif saldırı ve kromatin olgunlaşmasındaki kusurlar sonucu oluşan sperm DNA fragmantasyonu, erkek doğurganlığı, insan üremesi ve yavruların sağlığı için bir tehdit oluşturur. Diyabete bağlı erkek infertilitesi için önemli bir mekanizmadır. Apoptozun en erken ve sık görülen özelliği sitozolik sistein proteaz olan kaspazların (KP) aktifleşmesi özellikle yürütücü olan KP3, Fas/CD95 yolak için KP9 ve mitokondriyal yolak için KP9 üzerinden gerçekleşmesidir. Kök hücre ve hücresel tedaviler (HT) son zamanlarda klinik karşılık bulan önemli tedavi yöntemleri olup bu çalışmada sperm ölümüne etkileri incelendi.

Sıçan epididiminden alınan spermier kültür ortamında yüksek glikozlu besiyeri kullanılarak diyabetik (DH) hasar ve apoptoza yönlendirildi. Spermier mezenkimal kök hücre (MKH), 48 saatlik salgıladıkları faktörler olan koşullu besiyeri (KBY), Trombosit Zengin Plazma (PRP) ile Stromal Vasküler Fraksiyon (SVF) uygulamaları yapılarak ölümün azaltılması ve etkinliklerinin karşılaştırılması amaçlandı.

12 haftalık Wistar Albino cinsi erkek sıçandan elde edilen spermier kültür ortamında 6 gözlü flaslara alınarak Kontrol 0 saat (KG0S), Kontrol 3 saat (KG0S), DH, DH+PBS, DH+ MKH, DH + KBY, DH+ PRP ve DH+ SVF, uygulamaları yapıldı. Üç saatlik uygulamada morfoloji, canlılık ve hareket değerlendirilmeleri yapılarak yaymaları hazırlanan örnekler apoptoz için Terminal Transferased UTP Nick End Labeling (TUNEL), KP3, KP8 ve KP9 ile immünohistokimyasal olarak analiz edildi.

DH ile ölüme zorlanan spermierin, canlılık, hareket ve morfolojik olarak bozuldukları ayrıca TUNEL, KP3, KP8 ve KP9 işaretlemelerinin anlamlı bir şekilde arttığı belirlendi. HT ürünlerinin istatistiksel olarak anlamlı bir biçimde sperm morfoloji, canlılık ve hareketini koruyarak apoptozu azalttığı görüldü. Bireysel uygulamalarda en olumlu PRP ile izlenirken MKH, KBY ve SVF kombinasyonunun daha az ama oldukça anlamlı bir şekilde daha etkin olduğu saptandı.

Kültür ortamında sperm hasarına bağlı ölümden apoptozun KP üzerinden gerçekleştiği ve HT ürünleri ile bunun geriletilmesinin erkek infertilitesinde önemli olacağını gösterdi. Tek bir spermin invitro fertilizasyon ile bebek yapabilmesi gerçeği bunun sağlanmasında hücre ölüm mekanizmalarının anlaşılmasının geliştirilecek tedaviler ve mutlu aileler için ümit verici olduğu düşünüldü. **Anahtar Kelimeler:** İnfertilite; Deneysel diyabet; Kök hücre; Trombosit Zengin Plazma; Koşullu besiyeri; Stromal vasküler fraksiyon.

Full-text (ID-216): “Hücre Tedavinin Diyabetik Kültür Ortamında Sperm Ölümüne Etkisi”

Giriş: Programlanmış hücre ölümü olarak da adlandırılan apoptoz, farklı biyokimyasal ve morfolojik değişiklikleri içeren düzenlenmiş bir hücre ölümü şeklidir. Apoptoz hem iç hem de dış faktörler tarafından tetiklenebilir. İç faktörler arasında hatalı proteinler ve düzensiz sinyalleşme bulunurken, besin kaybı, radyasyon, ısı ve hücre yüzeyi reseptörlerinin aktivasyonu dış tetikleyicilerdir (Cavalcante GC ve ark 2019).

Kanonik olarak apoptoz, BAD ve BCL-21 dahil olmak üzere BCL-2 ailesinin pro-apoptotik ve anti-apoptotik üyelerinin etkileşimi ile başlatılır. Bu, hücre iskeletini, organelleri ve DNA'yı parçalayan, diğer proteinleri aktive eden bir proteolitik enzim ailesi olan kaspaz (KP) 3 proteinlerinin aktivasyonuna yol açar. Bu kontrollü süreç, bitişik dokunun minimum düzeyde hasar görmesine izin verir (D'Arcy MS, 2019).

Diyabette invivo vasküler komplikasyonlarla bağlantılı olarak kültürde besiyerinde yüksek glukoz (YG) konsantrasyonu, fibronektin, kollajen, doku tipi plazminojen aktivatör ve plazminojen aktivatör inhibitörünün mRNA ekspresyonunu modüle eder ve kültürlenmiş vasküler endotelial hücrelerde gecikmiş çoğalma ile aşırı hücre ölümüne neden olur. Apoptozda yüksek ortam glukozunun (30 mmol/l) rolünü belirlemek için, insan göbek veni endotel hücrelerinin (HUVEC'ler) ayrı ayrı izolatlarının eşleştirilmiş kültürleri hem yüksek (30 mmol/l) hem de düşük (5 mmol/l) maruz bırakılmıştır. YG ile HUVEC'lerin 48 saat inkübasyonu, 5 mmol/l glukozda tutulan kültürlerle kıyasla DNA fragmentasyonunu arttırmıştır. Sonuçlar, yüksek ortam glukozunun HUVEC'lerde in vitro apoptozu destekleyebileceğini ve diyabetik hastalarda hiperglisemi ile potansiyel endotelial hasar önerebileceğini göstermiştir (Sabina M ve ark 1995). Diabetes mellitus (DM), birincil veya idiyopatik karbonhidrat, lipid ve protein metabolizmasının kronik bir bozukluğudur. DM, erkek üreme fonksiyonunu birkaç düzeyde etkileyebilir. DM'nin insan ve deney hayvanlarında sperm parametreleri üzerinde zararlı etkileri olduğu gösterilmiştir. Bir başka çalışmada, diyabetin farelerde canlılık, sayı, morfoloji ve motilite gibi sperm parametreleri ve sperm kromatin kalitesi incelenmiş ve STZ kaynaklı diyabetin farelerde sperm parametrelerini ve DNA bütünlüğünü etkileyerek erkek fertilitate potansiyelini etkileyebileceğini göstermiştir (Mangoli E ve ark 2013). YG koşullarının spermatogenez üzerindeki etkileri için invitro testis fragmanları, 3 hafta boyunca 5, 25 ya da 50 mM D-glukoz ile bir gaz-sıvı ara yüzeyinde agar jel standları üzerinde kültürlenmiştir. YG

sertoli hücre sayısını artırmaya karşılık fonksiyonunu azaltmış ve spermatojenik düzeni bozmuştur (Tavares RS ve ark 2016).

Bir metaanaliz çalışmasında 32 klinik ve 165 hayvan çalışmasında incelenen toplam 890 makalede hiperglisemiye bağlı üreme disfonksiyonu olan erkeklerde artan DNA hasarı, gelişmiş glikasyon son ürünleri ve bunların reseptör sistemindeki bozulmalar, oksidatif stres, artan endoplazmik retikulum stresi, hücrel yolların modülasyonu, bozulmuş mitokondriyal işlev ve bozulmuş sempatik innervasyon saptanmıştır (Constanze C ve ark 2018). STZ ile indüklenen diyabetik sıçanların üreme profilindeki oksidatif stres aracılı değişikliklerinin incelendiği bir çalışmada serum insülin seviyelerinde bir değişiklik ve karbonhidrat metabolik parametrelerinde bir modülasyon, yani artan açlık kan şekeri seviyesi, yükselmiş glikoz-6-fosfat ve laktat dehidrogenaz aktiviteleri ile birlikte karaciğerde hekzokinaz ve glikoz-6-fosfat dehidrogenaz aktivitelerinde bir azalma bulunmuştur. Diyabetik durumda üreme işlevindeki azalma, üreme organo-somatik indeksleri, sperm sayısı ve hareketliliği ile birlikte serum testosteronundaki önemli düşük değerler, ancak yüksek seviyelerde testis kolesterolü ve seminal veziküller fruktoz ile yansıtılmıştır. Spermelerde artan serbest radikal ürünleri seviyeleri ile erkek üreme organlarında oksidatif stresin gelişimini de doğrulamıştır. Bitki ekstraktı ile diyabetin neden olduğu testis bozuklukları iyileştirilmiş ve umut verici antihiperglisemik, antioksidan ve antiapoptotik aktiviteler gösterilmiştir (Kazi KC ve ark 2013). Diyabetik testislerde oksidatif hasar ve inflamasyon saptanmış olup reseptör ve mitokondriyal yollar yoluyla testiküler hücre ölümünde artan kaspaz-3 ve kaspaz-8 ile değişen Bax/Bcl2 ifadesi bulunmuş ancak endoplazmik retikulum stresinde önemli değişiklik görülmemiştir (Wang Y ve ark 2013). Bir başka çalışmada TUNEL sonucu, normal semenderde spontan germ hücre apoptozunun gerçekleştiği ile ısı şoku (40°C, 2 saat) ve soğuğa maruz kalma (4°C, 12 saat), kadmiyum (Cd, 36 saat) maruziyetine yanıt olarak spermatidlerde ve spermde stres kaynaklı şiddetli apoptoz olduğu gösterilmiştir. Kaspaz 3 veya Kaspaz 7 gen ekspresyonlarının stres maruziyeti sonrası anlamlı olarak arttığı. Apaf1, gen ekspresyon seviyesinin değişmediği ve p53'ün önemli ölçüde azaldığı belirlenmiştir. Ayrıca, testisteki Kaspaz-3, -8, -9 enzim aktiviteleri önemli ölçüde artmıştır (Wang DH ve ark 2012).

Yağ dokusundan elde edilen SVF, MKH dahil olmak üzere çeşitli hücreler içerir ve birçok onarımda etkili olduğu gösterilmiştir. PRP gibi otolog kan ürünleri, tedavinin adjuvanı olarak işlev görür ve verilmesi, birçok tedavi için, özellikle DM için yararlı etkiler göstermiştir. KBY MKH tarafından 24 saatlik salgılarını içerip büyüme faktörleri, sitokinler, eksozom ve sinyal faktörlerini içermektedir.

Bu çalışmada, sıçan epididiminden alınan spermeler kültür ortamında YG besiyeri kullanılarak DH ve apoptoza yönlendirildi. Spermelere MKH, 48 saatlik salgıladıkları faktörler olan KBY, PRP ile SVF uygulamaları yapılarak ölümün azaltılması ve etkinliklerinin karşılaştırılması amaçlandı.

Yöntem: 12 haftalık Wistar Albino cinsi erkek sıçandan elde edilen spermier kùltür ortamında 6 gözlü flasklara alınarak Kontrol (KR-BY), Sham (SG, 5 mM glukoz), DH (20 mM glukoz), DH+ MKH, DH + KBY, DH+ PRP ve DH+ SVF, uygulamaları yapıldı. Bir saatlik uygulamada morfoloji, canlılık ve hareket değeriendirilmeleri yapılarak yaymaları hazırlanan örnekler apoptoz için Terminal Transferased UTP Nick End Labeling (TUNEL), KP3, KP8 ve KP9 ile immünohistokimyasal olarak analiz edildi ve H-skor ile değeriendirildi.

Diyabetik gruplar için denekler, diyabet oluşturulmadan önce 12 saat aç bırakıldı. 50 mg/kg streptozotosin (STZ) intraperitoneal olacak şekilde enjekte edildi (Mercan ve ark 2020). PRP, sıçan sağ ventrikülünden alınan kanın santrifüjlenmesi ile elde edildi (Samy ve ark 2020). SVF, sıçan inguinal yağ yastıkçıklarının mekanik olarak parçalanıp santrifüj edilerek dipte çökmüş haldeki matür adipositlerden ayrılarak elde edildi. MKH için sıçanın subkutan inguinal yağı mekanik olarak parçalanıp santrifüj edilerek hücreler alındı ve kùltürde çoğaltıldı. KBY için pasajlanmış konfluent MKH'lere taze besiyeri eklenip 24 saat inkübe edildikten sonra bu besiyeri toplanarak KBY olarak kullanıldı. Spermierin hazırlanması ve analizi için kaudal epididimis 1 mL %10 FBS ilave edilmiş DMEM F12 besiyeri içerisine alındı ve bisturi yardımıyla kesim yapılarak küçük parçalara ayrıldı. İzole edilen spermier Makler lamı ile sayıldı. Spermier yayma yapılarak kaspazlar için immunohistokimya ve apoptoz için TUNEL işaretleme yapıldı. İşaretleme h-skor ve apoptotik indeks ile değeriendirildi. İstatistiksel analiz için Graphpad Prism 8.3.1 programı kullanıldı. Gruplardan elde edilen ortalama değerieler, standart sapmalar ve istatistiksel sonuçlar tablo ve grafik şeklinde gösterildi. $p < 0.05$ istatistiksel olarak anlamlı kabul edildi.

Sonuçlar: Apoptoz değeriendirmesi TUNEL yöntemi ile yapıldı. KR-BY grubunda saptanan apoptozun 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve diyabet grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli uygulamaların anlamlı bir şekilde apoptozu azalttığı saptandı (**Şekil 1**). Apoptotik indeks sonuçlarının değeriendirilmesi ile HT ürünlerinin tekli uygulamalarının anlamlı bir şekilde apoptozu azalttığı saptandı (**Tablo 1**).

Tekli HT Uygulamalarının Kaspaz 3 İmmunohistokimyasal Bulguları: Apoptoz değeriendirmesi Kaspaz 3 antikorunun immunohistokimyasal analizi ile yapıldı. KR-BY grubunda saptanan apoptozun 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve diyabet grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde apoptozu azalttığı saptandı (**Şekil 2**). Yapılan H-skor analizi ile tekli HT uygulamalarının anlamlı bir şekilde apoptozu azalttığı saptandı (**Tablo 2**).

Tekli HT Uygulamalarının Kaspaz 8 İmmunohistokimyasal Bulguları: Apoptoz değeriendirmesi Kaspaz 8 antikorunun immunohistokimyasal analizi ile yapıldı. KR-BY grubunda saptanan apoptozun 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve diyabet grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT

uygulamaların anlamlı bir şekilde apoptozu azalttığı saptandı (**Şekil 3**). Yapılan H-skor analizi ile tekli HT uygulamalarının anlamlı bir şekilde apoptozu azalttığı saptandı (**Tablo 3**).

Tekli HT Uygulamaların Caspase 9 İmmunohistokimyasal Bulguları: Apoptoz değerlendirmesi Kaspaz 9 antikorunun immunohistokimyasal analizi ile yapıldı. KR-BY grubunda saptanan apoptozun 1 saat sonunda oldukça anlamlı bir şekilde arttığı ve diyabet grubu ile karşılaştırıldığında yine anlamlı bir şekilde daha fazla olduğu bulundu. Yapılan uygulamalarda sırası ile tekli HT uygulamaların anlamlı bir şekilde apoptozu azalttığı saptandı (**Şekil 4**). Yapılan H-skor analizi ile uygulamalarda sırası ile tekli HT uygulamalarının anlamlı bir şekilde apoptozu azalttığı saptandı (**Tablo 4**).

Tartışma: DH ile ölüme zorlanan spermelerin, canlılık, hareket ve morfolojik olarak bozuldukları ayrıca TUNEL, KP3, KP8 ve KP9 işaretlemelerinin anlamlı bir şekilde arttığı belirlendi. HT ürünlerinin istatistiksel olarak anlamlı bir biçimde sperm morfolojisini, canlılığını ve hareketini koruduğu görüldü. Ayrıca, HT uygulamalarının değişik düzeylerde ama oldukça anlamlı ($p<0,0001$) bir şekilde apoptoz belirteçlerini azalttığı saptandı.

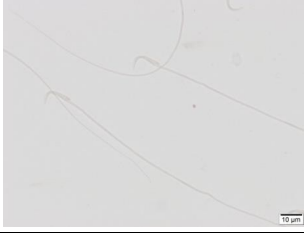
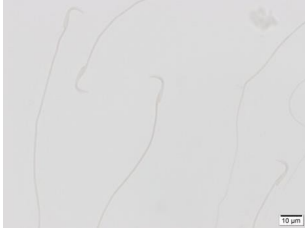
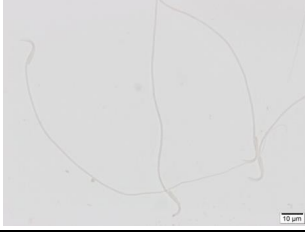
Testis torsiyonu-detorsiyonu ile hasar görmüş bir testise MKH' lerin lokal enjeksiyonu, esas olarak sperm hareketliliğini ve enerjisini geliştirerek sperm fonksiyonunu eski haline getirmektedir. MKH' ler, Akt/GSK3 eksenini düzenleyerek spermdeki glikojenez ve glukoliz dengesizliğini tersine çevirmektedir. Bu nedenle, MKH' ler, lokal enjeksiyon yoluyla torsiyon-detorsiyonun neden olduğu infertiliteyi potansiyel olarak kurtarabilir. DH, germ hücrelerinde ve olgun spermelerde DNA hasarı ve düşük kaliteli spermatozoa dahil olmak üzere testis üzerinde zararlı etkileri var olup hücre ölümüne yol açmaktadır. Bazı çalışmalar, mitokondriye bağlı apoptotik yolun, DH nedenli olduğu germ hücre ölümünde başlatıcı kaspaz-9 ve yürütücü kaspaz-3'ün aktivasyonunda yer aldığına dair kanıtlar sağlamıştır (Hsiao, C. H ve ark 2019).

Fertil erkeklerde, DH sırasında, sperm motilitesi, sayısı ve normal morfolojisi azalırken, oksidatif stres, anormal kromatin yoğunlaşması ve kaspaz-3 aktivitesi oranları artmıştır. Kaspaz 8 ve 9'un aktiviteleri de önemli ölçüde yükselmiştir. Bu gözlemler, sperm hasarı ile yapılan birkaç çalışmada gösterilmiştir. Bu çalışmalardan birinde Erkek Balb/c farelerde ısıtmadan (42 °C, 30 dakika) sonra, TUNEL-pozitif hücre sayısı (spermatojenik hücrelerin apoptotik indeksi) ve kaspaz 3, 8, 9 ekspresyonları artarken ekspresyon mRNA seviyesindeki Bcl-2 AKT azaldığı saptanmıştır (Karina ve ark ve ark 2020).

PRP, Busulfan uygulanan hayvanda spermatojenik kök hücre sayısını, sperm sayısını, hareketliliğini ve kuyruk uzunluğunu ve testosteron seviyesini önemli ölçüde artırmıştır ancak testis hacmi, germinal epitel yüksekliği, Sertoli ve Leydig hücre sayısı ve seminifer tübüllerin uzunluğu üzerinde herhangi bir etkisi olmamıştır. PRP'nin Busulfan ile tedavide testisin yapısal ve fonksiyonel bozukluğunu iyileştirebileceği sonucuna varılmıştır (Dehghani, F ve ark 2019).

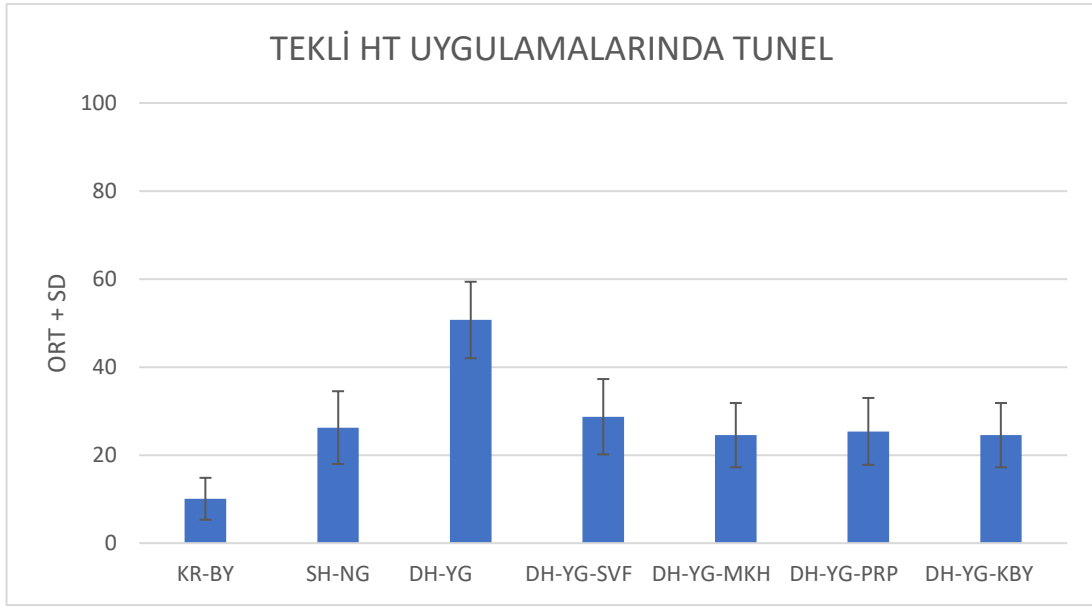
SVF tedavisinin esas olarak interstisyel bölgeye ve seminifer tübüllere verilerek, testiste temel fibroblast büyüme faktörü ve kök hücre faktörünün salgılanmasını arttırmıştır, malondialdehit seviyesinin düşmesine ve hormonal homeostazın düzenlenmesine katkıda bulunarak, Leydig hücrelerinin hasarlanmasını azaltmış, germ hücrelerinin yanı sıra spermatogenezi teşvik etmiştir. Son bulgular, otolog kültürlenmemiş SVF' nin testisleri testiküler iskemi-reperfüzyon hasarından koruyabildiğini ve testiküler T/D'nin neden olduğu infertilitenin önlenmesi için önemli klinik çıkarımlar sağlayan spermatogenezi teşvik edebileceğini göstermiştir (Zhou ve ark 2019).

Yorum: Kültür ortamında sperm hasarına bağlı ölümden, apoptozun KP üzerinden gerçekleştiği ve HT ürünleri ile bunun geriletilmesinin erkek infertilitesinde önemli olacağını gösterdi. Tek bir spermin invitro fertilizasyon ile bebek yapabilmesi gerçeği bunun sağlanmasında hücre ölüm mekanizmalarının anlaşılmasının geliştirilecek tedaviler ve mutlu aileler için ümit verici olduğu düşünüldü.

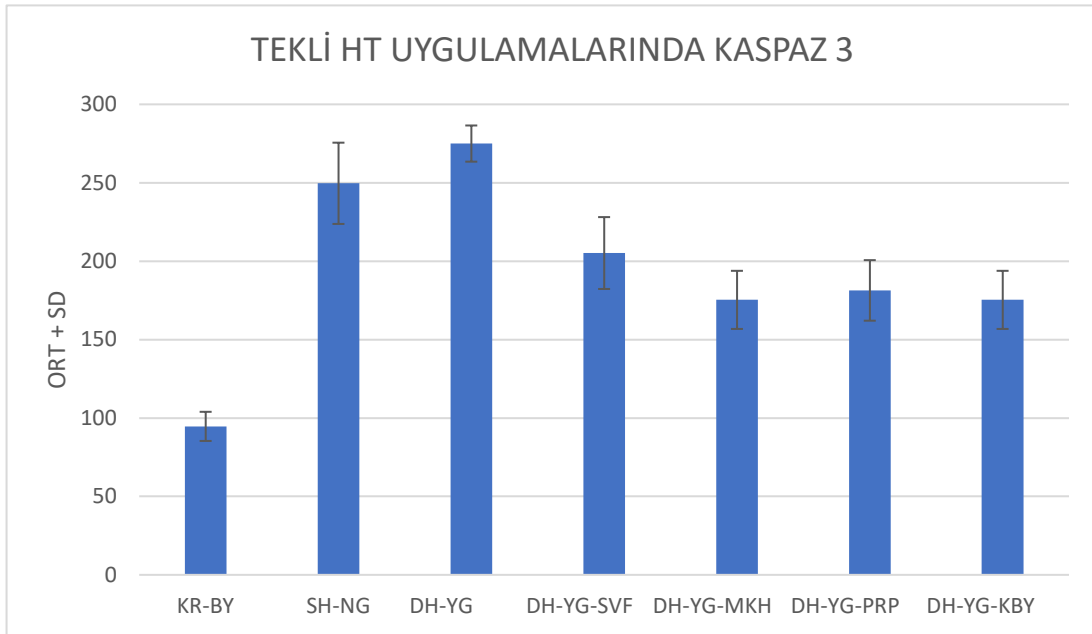
KR-BY	SH-NG
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
	
DH-YG + KBY	
	

Şekil 1. Tüm gruplara ait TUNEL boyaması.

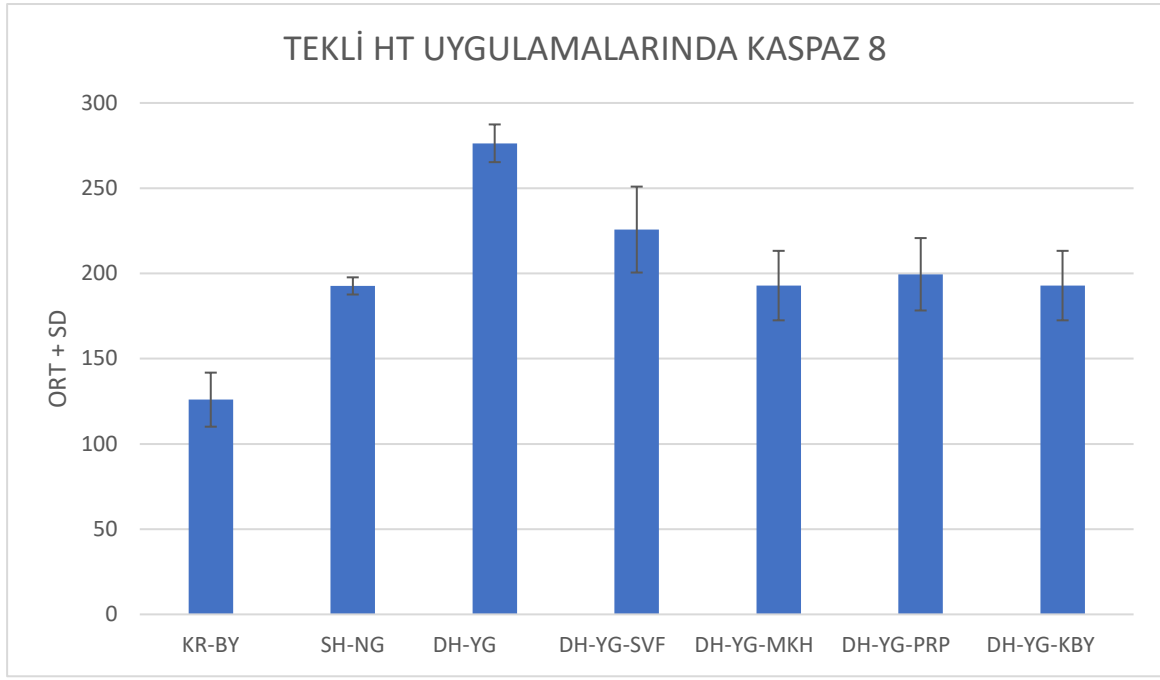
Tablo 1. HT ürünlerinin tekli uygulanması sonrası yapılan apoptotik indeks ile TUNEL değerlendirmesi.



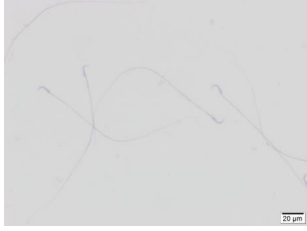
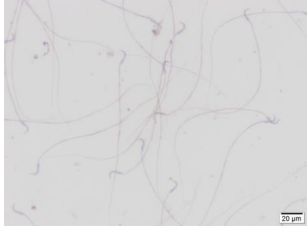
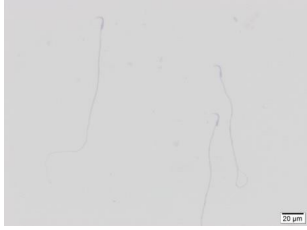
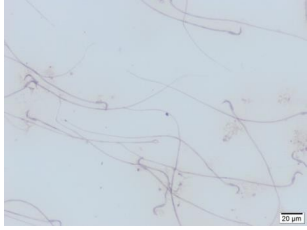
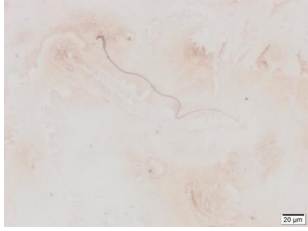
Tablo 2. Kaspaz 3 immunoreaktivitesinin H-skor analizi ile değ erlendirmesi.



Tablo 3. Kaspaz 8 immunoreaktivitesinin H-skor analizi ile değ erlendirmesi

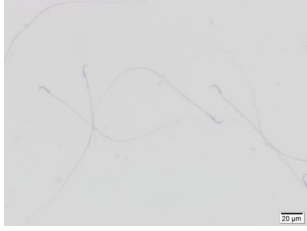
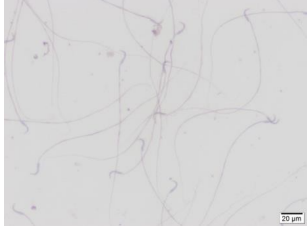
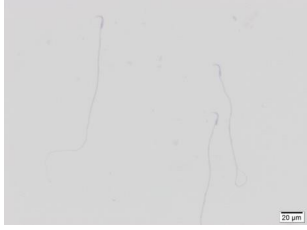
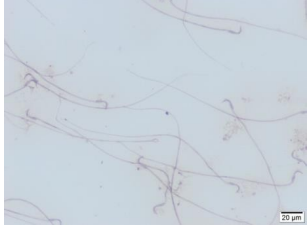
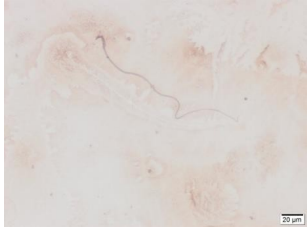


KR-BY	SG

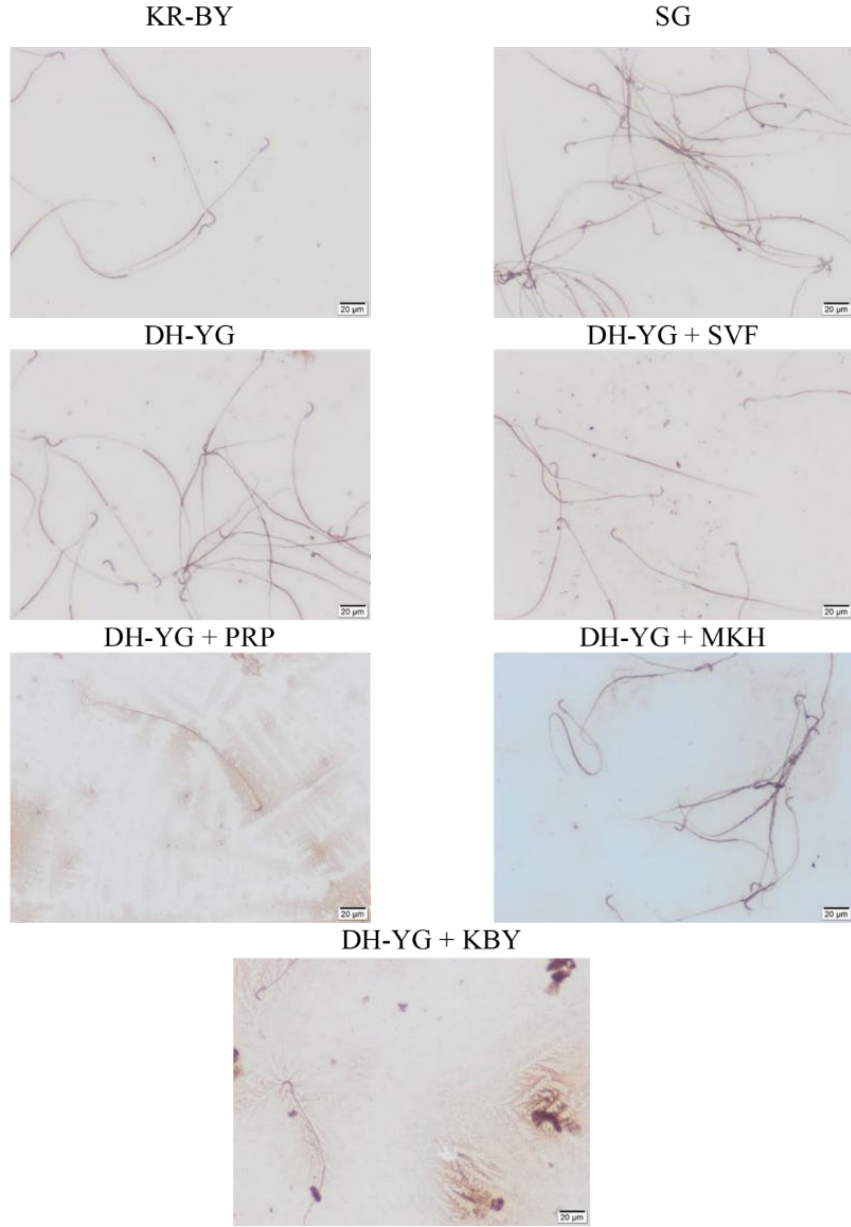
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
DH-YG + KBY	
	

Şekil 2. Kaspaz 3 immunoreaktivitesi.

KR-BY	SG

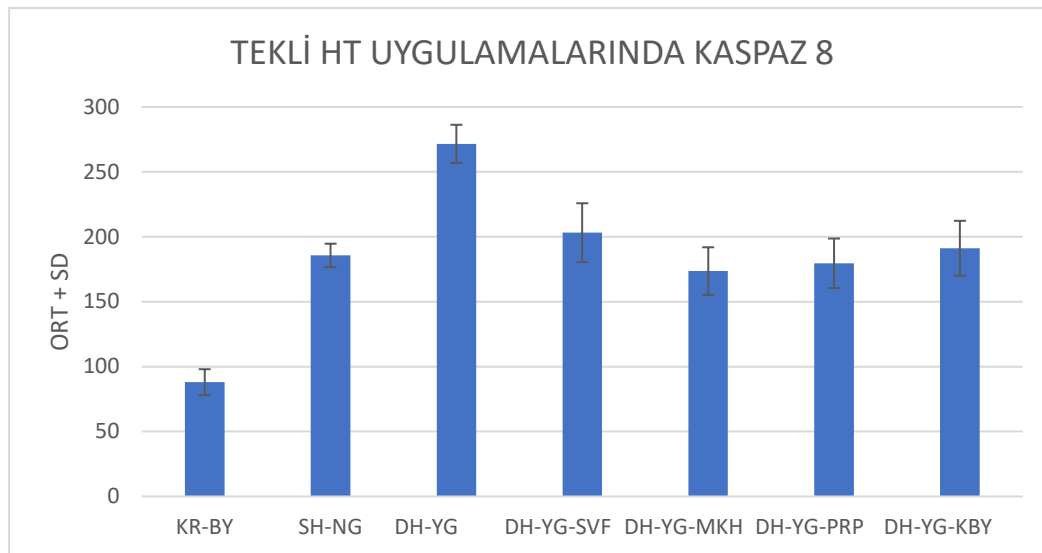
	
DH-YG	DH-YG + SVF
	
DH-YG + PRP	DH-YG + MKH
DH-YG + KBY	
	

Şekil 3. Kaspaz 8 immunoreaktivitesi.



Şekil 4. Apoptozun kaspaz 9 ile yapılan değerlendirmesi.

Tablo 4. Kaspaz 9 immunoreaktivitesinin H-skor analizi ile değerlendirmesi.



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ID-217 / OP: “Probiyotiklerin K lt rde Mezenkimal K k H cre Davranışına Etkisi”

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Abstract (ID-217)

Aim: Probiotic (PB) and Mesenchymal Stem Cell (MSC) are new treatment ideas for diseases. Alterations of microbiota made by PB produce different effects. MSC as the scope of cellular therapy takes place in clinical practice in many diseases such as Graft Versus Host (GVD) within the scope of cellular therapy. In this study, the effects of PB application on MSC behavior in culture in terms of proliferation, migration, differentiation and wound healing were investigated.

Material and Method: Frozen adipose tissue-derived (AD) MSC cells were cultured and produced at 2.5×10^4 cells/cm² in a twelve-well culture dish. They were examined for proliferation by MTT, migration by the closure of the wound after the creation of a scratch, and differentiation by transforming the bone cell osteoblast. NBL Probiotic Gold as PB was used as bacteria which include 2.5×10^9 *Enterococcus faecium*, 2.5×10^9 *Lactobacillus acidophilus*, 2.5×10^9 *Lactobacillus rhamnosus*, 2.5×10^9 *Bifidobacterium longum*, 2.5×10^9 *Bifidobacterium bifidum* and examined in terms of behavioral parameters for MSC in the same environment. The relationship between PB and MSC was also investigated by Scanning Electron Microscopy (SEM).

Result: It was determined that use of PB caused an increase in proliferation, faster wound closure by increase of migration and higher differentiation to osteoblast. The ultrastructural examination of MSC by SEM showed that MSCs interacted with PB are more spread, more adherent, and have more active cell morphology.

Conclusion: The results showed that the addition of PB to the culture medium increased the MSC efficiency. It was thought that PB would be more beneficial for the clinic to see of MSC if the same positive effect results in studies with experimental animals.

Keywords: Probiyotic; Mesenchymal stem cell; Culture; Behaviour; Differentiation.

Full-text (ID-217)

Özet

Amaç: Probiyotik (PB) ve Mezenkimal Kök Hücre (MKH) yeni tedavi fikirleridir. PB ile değiştirilen mikrobiyaya farklı etkiler yapmaktadır. Son zamanlarda önemli araştırma konusu olmuştur. MKH hücresel tedavi kapsamında MKH Graft Versus Host (GVH) gibi hastalıklarda klinik uygulamada yerini almaktadır. Bu çalışmada kültür ortamında MKH davranışına çoğalma, göç etme, farklanma ve yara iyileşmesi açılarından PB uygulamasının yapacağı etkiler araştırıldı.

Gereç ve Yöntem: Dondurulmuş yağ dokusu kökenli MKH (YDMKH) hücre kültüre alınarak oniki kuyucuklu kültür tabağında 2.5×10^4 hücre/cm² olacak şekilde üretildi. Çoğalmasa MTT ile, göç etmesi çizik oluşturulması sonrası yara yerinin kapanması ile, farklanması kemik hücresi osteoblasta dönüştürülmesi ile incelendi. PB olarak NBL Probiotic Gold. Preparatı içerisindeki *2.5 \times 10^9 Enterococcus faecium*, *2.5 \times 10^9 lactobacillus acidophilus*, *2.5 \times 10^9 lactobacillus rhamnosus*, *2.5 \times 10^9 Bifidobacterium longum*, *2.5 \times 10^9 Bifidobacterium bifidum* bakterileri eklenip aynı ortamdaki MKH için davranış parametreleri açısından incelendi. PB ve MKH ilişkisi taramalı elektron mikroskopi ile de araştırıldı.

Bulgular: PB eklenmesinin çoğalmayı hızlandırdığı, göç etmeyi arttırarak yara iyileşmesini çabuklaştırdığı ve osteoblastik kemiksi yapıya farklanmada olumlu katkısının olduğu saptandı. İnce yapı incelemesinde PB ile etkileşmiş MKH için daha canlı, daha çok tutunan ve daha aktif hücre morfolojisinde olduğu bulundu.

Sonuç: Alınan sonuçlar kültür ortamına PB eklenmesinin MKH etkinliğini arttırdığını gösterdi. Deney hayvanı ile yapılacak çalışmalarda aynı olumlu etkinin görülmesinin klinik için yararlı olacağı düşünüldü.

Anahtar Kelimeler: Probiyotik, mezenkimal kök hücre, kültür; davranış, farklanma.

Giriş: Memeliler birçok bakteri, virüs ve ökaryot hücre içermekte olup mikrobiyaya diye isimlendirilmektedirler. Mikrobiyaya insan hücre sayısının 10 katı kadardır. Bulundukları dokularda ve oluşturdıkları çevrede kan oluşumunda, immün sistemlerin, metabolizmanın ve kemik yeniden yapılanmasında etkili olduğu bilinmektedir. Mikrobiyatanın immün sistemdeki etkisi ve metabolizmadaki yaptığı değişiklikler iyi bilinmekte olup mikrobiyataya bağlı değişikliklerin kemik üzerindeki etkileri birçok çalışmada ortaya konmuştur (1). Mikrobiyatanın barsakta gösterdiği etkileri epigenom ve gen ekspresyonu üzerinden gerçekleştirildiği gösterilmiştir. Mikrobiyal biyoaktif bileşik üretimine bağlı etkileri hücrelerde transkripsiyonel çalışmayı başlattığı saptanmıştır. Barsak mikrobiyatası ile hücre epigenomunun DNA metilasyonu ve histon modifikasyonu ve kodlanmayan RNA ları kullanarak ilişki kurdukları bilinmektedir. Bu durumun anlaşılması ve mekanizmaların incelenmesi klinik kullanımlarını sağlayacak bilgiler getirecektir (2).

PB, sindirim sisteminde belirli sayıda bulunan ve tüketildiğinde bireyin bağırsaklarındaki bakterilerin sayıca dengesini sağlayarak sindirim sistemi ve bağırsak sağlığını koruyan canlı mikroorganizmalar ve/veya bileşenleri tanımlamaktadır. PB gıda ise içerisinde yeterli miktarda canlı PB mikroorganizma bulunduran ve raf ömrü sonuna kadar bu canlılığı muhafaza eden üründür. Bağırsak florası bozulduğu yani PB azaldığı zaman patojen mikroorganizmalar hızla ürer. Bağırsak florası bozulduğu yani PB azaldığı zaman patojen mikroorganizmalar hızla ürer. Etkin bir PB besinin konakçıya yararlı etkisi olmalı, patojen ve toksik olmamalı ve yüksek oranda canlı mikroorganizma içermelidir. Ayrıca gastrointestinal kanalda asit pH ve safra tuzlarına dirençli olması gereken probiyotik stoklama ve kullanım süresince canlı kalabilmeli ve metabolize etme yeteneğini korumalıdır. PB ve prebiyotik tedavileri ile kemik iyileşmesi barsak mikrobiyotasının kemik metabolizmasında ve sağlıklı kalmasında önemli olduğunu göstermektedir (3).

Hematopoetik kök hücre transplantasyonu hayat kurtarıcı bir yaklaşım olup önemli komplikasyonlarından birisi transplantasyonlar sonrası enfeksiyonlardır. Bu komplikasyonun oluşmasında barsak mikrobiyotasının önemli bir rol oynadığı ve kullanılan antibiyotikler ile değişen mikrobiyatanın etkili bir faktör olduğu saptanmıştır. Pro ve prebiyotiklerin kullanımı ile daha sağlıklı bir mikrobiyatanın oluşturulmasının bu enfeksiyonların önlenmesinde yararlı olduğu düşünülmüştür (4). Mikrobiyatanın barsakta yaptığı bir başka etkide barsak davranış düzenlenmesinde önemli bir etken olan kök hücre ve Nişi üzerindeki etkileridir. Bu etki ile besin absorpsiyonu, endokrin sinyal, enerji dengesi, immün cevap ve sistemik dengenin gerçekleştiği görülmektedir (5). Bu düzenin bozulması obesiteden başlayan inflamatuvar barsak hastalıkları ve kanser gibi birçok önemli patalojiyi ortaya çıkarmaktadır. Barsak kök hücresinde olan bu olumsuz değişikliklerin mikrobiyata ile düzeltilebilmesi geleceğin tıbbında önemli olacaktır (6).

MKH başlıca kemik iliğinde bulunan pluripotent bir hücre topluluğudur. Bundan başka yağ dokusu, plasenta, amnion sıvısı ve fetal dokularda da bulunur. MKH “ex vivo” kolaylıkla çoğaltılabilir. MKH kesin tanımlayabilen bir hücre belirteci yoktur. Hematopoietik kök hücreden farklı olarak CD34–, CD45–dirler. Henüz tam belirlenememekle beraber tipik yüzey belirteçleri; CD29, CD44, CD71, CD90, CD106, CD124, CD105 (SH2) ve CD73 (SH3/SH4) olarak bildirilmiştir (7). Rejeneratif tıp hasara uğramış dokuların ve organların biyolojik ürünlerle tedavi edilebilmesine olanak sağlamıştır. Vücudun hasarlanmış hücre, doku ve organlarını kendi kendine onarabilme yeteneği ve kök hücrelerin etkisi incelenerek bu sonuca varılmıştır. Yaşlanma, hastalıklar, travma veya doğuştan bozukluklar nedeni ile fonksiyonlarını yitiren doku ya da organların tamiri ve değişimi için canlı işlevsel dokular üretilmektedir. Yenileyici tıp sadece problem geliştikten sonra hasarın tedavisinde değil aynı zamanda problemlerin oluşmasını engelleyici koruyucu tıp alanında da önemli rol oynamaktadır. KH farklı doku kaynaklarından kolayca elde edilip çok miktarda üretilerek tedavide kullanılacak hale gelen multipotent mezenkimal hücrelerdir. Birçok hastalık için tedavi aşamasına gelmiş ve giderek artan bir şekilde klinikte yer almaktadır. Yağ Kökenli MKH (YKMKH) rejeneratif tıpta özellikle enflamasyonda ve otoimmün hastalıklarda giderek artan önem kazanmaktadır. Osteomiyelit ve kistik fibrosis gibi hastalıklarda

bakterinin yavaş üremesine ve koloni oluşturma yeteneğinin azalmasına neden olduğu düşünülmektedir. KH ve salgıladığı faktörler yan etkileri olmayan tedavi ürünleri olarak klinikte yerlerini almakta ve her geçen gün değişik modifikasyonları ortaya çıkmaktadır (8). Hasarlı dokularda inflamasyonu azaltıp immün modülasyon ile rejenerasyonu sağlayabilmektedirler. Yağ dokusu gibi çok farklı kaynaklardan kolayca elde edilebilen KH standardı iyi olan laboratuvarlarda hızlı bir şekilde üretilip hasta için kullanılmak üzere hazır hale getirilmektedir. İskemi, Chron, ülseratif kolit ve karaciğer hastalıkları gibi birçok patolojik durumda faz çalışmaları tamamlanmış ve tedaviler uygulanmaya başlanmıştır (9).

Kemik iliği kökenli MKH (KİMKH) multipotent farklılaşma yeteneklerinin yanı sıra önemli bir immün modüler kapasiteye sahiplerdir (3). PB etkilerinin in vivo fare deneyinde gösterildiği bir çalışmada tenofovir indüklenmiş kemik kaybında osteogenez ve proliferasyonu ayrıca osteogenik gen ekspresyonunu artırarak kemik kaybını önlediği anlaşılmıştır (10). Bir başka çalışmada PB kullanılarak insan periferik mononükleer kan hücreleri kültür ortamında 24 saat inkübasyon sonrasında immün hücreleri aktive ettiği ve antiinflamatuvar sitokinler ile kemokinleri dramatik bir şekilde artırdığı görülmüştür. Bu çalışmada görülen ilginç sonuç PB için immünolojik hücre duvarında bulunan lipoteikoik asit üzerinden biyolojik aktivitesini gösterdiği düşünülmüştür (11). Üç boyutlu organoid yapılan bir çalışmada barsak kök hücrelerinin epitel oluşumunda ve miyofibroblast gelişiminde Toll like receptor (TLR) ve Prostaglandin olumlu etki gösterdiği bulunmuştur (12).

Hastalıkların tedavisinde yeni yaklaşım arayışları probiyotik (PB) ve mezenkimal kök hücre (MKH) tedavisi gibi farklı düşünceleri gündeme getirmektedir. Mikrobiyata ile oluşan biyolojik süreçlerin değişimleri özellikle PB uygulamalarına bağlı farklı etkiler son zamanlarda önemli araştırma konusu olmuştur. Benzer şekilde hücresel tedavi kapsamında MKH Graft Versus Host (GVH) gibi hastalıklarda da olmak üzere birçok tedavide klinik uygulamada yerini almaktadır. Bu çalışmada kültür ortamında MKH davranışına çoğalma, göç etme, farklılaşma ve yara iyileşmesi açılarından PB uygulamasının yapacağı etkiler araştırıldı.

Yöntem: Probiotic Gold. Preparatı içerisindeki 2.5×10^9 *Enterococcus faecium*, 2.5×10^9 *Lactobacillus acidophilus*, 2.5×10^9 *Lactobacillus rhamnosus*, 2.5×10^9 *Bifidobacterium longum*, 2.5×10^9 *Bifidobacterium bifidum* bakterileri kullanıldı. Değişik dilüsyonda PB uygulaması 1/10, 1/100, 1/1000 konsantrasyonlarında kültür ortamına uygulandı.

Çalışmamızda -80°C 'de dondurularak saklanmış dördüncü pasajdaki yağ dokusu mezenkimal kök hücreleri kullanılacak. -80°C den alınan vial içerisindeki hücreler 37°C deki su banyosunda oda sıcaklığına getirilerek çoğalması ve konfluent olmasını sağlamak için %15 fetal buzağı serumu (FCS), 50 µg/ml. Gentamisin, 100 UI/ml. Penisilin, 100 UI/ml. Streptomisin, 100 UI/ml. Amfoterisin içeren α -MEM kültür ortamına bırakıldı ve 37°C de ve %5 CO_2 koşulunda inkübe edildi. Morfolojik olarak faz kontrast ataçmanlı inverted mikroskopta incelenerek fotoğrafı çekildi (13).

MTT Assay Sitotoksik etkiler, sitotoksitenin değerlendirilmesinde yaygın olarak kullanılan enzimatik test yöntemlerinden biri olan MTT [3-(4,5-dimetiltiazol-2-il)- difenil tetrazolium bromid] assay yöntemi ile belirlendi. Bu yöntem, MTT boyasının tetrazolium halkasını parçalayabilmesi ilkesine dayanmaktadır.

Bu yöntemde, MTT canlı hücrelere aktif olarak absorbe olur ve reaksiyon mitokondriyal süksinat dehidrogenaz tarafından katalize edilerek mavi-mor renkli, suda çözünmeyen formazana indirgenir. Formazan oluşumu, yalnızca aktif mitokondrinin bulunduğu canlı hücrelerde görülmektedir. Bu da hücre canlılığının bir belirteci olarak kabul edilmekte ve spektrofotometrik olarak belirlenen değer yasayan hücre sayısı ile ilişkilendirilmektedir. Steril PBS içerisinde hazırlanan stok MTT solüsyonundan, 0,5 mg/mL MTT çalışma solüsyonu hazırlandı ve 96 kuyucuklu plaklara ilave edildi. İnkübatörde 3 saat bekletildikten sonra plakalardaki hücrelerin optik dansiteleri ELISA cihazında (Bio-Rad, ABD) 540 nm dalga boyunda okutuldu. Kontrol kuyucukları okutulurken elde edilen absorbans değerlerinin ortalaması alındı ve bu değer %100 canlı hücre olarak kabul edildi. Çözücü ve ajan uygulanan kuyucuklardan elde edilen absorbans değerleri kontrol absorbans değerine oranlandı ve yüzde canlılık olarak kabul edildi. MTT denemeleri farklı günlerde en az 10 kez tekrarlandı ve test maddelerinin prostat kanseri hücreleri üzerine sitotoksik etkilerinin olup olmadığı tespit edilmeye çalışıldı (14).

MKH kültür ortamında konfluent olduğunda pipet ucu ile yapılacak çizik fotoğraflanarak uygulama sonrası yaranın kapanması için geçen süre hesaplanacaktır. Altı kuyucuklu plate'e alınan MKH 200µl lik pipet ucuyla yapılan yara sonrasında besiyeri değiştirilerek iyileşme sürecine bırakıldı. Kapanmanın tamamlandığı ilk örnekte diğer örneklerin fotoğrafları çekilerek iyileşme süreci incelendi (15).

MKH için osteojenik farklanmada askorbik asit, beta gliserofosfat ve dexamethazon ilavesi yapılan besiyeri kullanıldı. Farklanmanın belirteçleri olarak Alizerin Red (AR) ve Von kossa (VK) ile osteokalsin (OK) ve Osteonektin (ON) belirteçleri kullanıldı (13).

Bulgular: MKH kültür ortamında üretilip semikonfluent ve konfluent hale getirildi. Karakterizasyon için Stro-1, CD73 ve CD90 pozitifliği ve CD34 ile CD45 negatifliği kullanıldı (Şekil 1). Büyük çoğunlukla homojen bir MKH oluştuğu ve PB uygulamasının parametreleri olumlu etkilediği saptandı (Tablo 1).

MTT ile yapılan ölçümlerde PB kullanımının hücre çoğalmasını (Şekil 2) anlamlı bir şekilde arttırdığı (Tablo 2) görüldü.

MKH kültür ortamında konfluent olduğunda pipet ucu ile yapılan çizik yara modelinde (Şekil 3) PB kullanımının yaranın kapanması için geçen süreyi kısalttığı ve iyileşmeyi hızlandırdığı (Tablo 3) bulundu. PB uygulamasının osteojenik farklanmaya olan etkisini incelemek için yapılan AR ve VK ile ON ve OK (Şekil 4) boyamalarında anlamlı bir etki (Tablo 4) izlendi.

PB uygulamasının EM incelemesinde (Şekil 5) hücrelerin morfolojisinin, adezyonunun ve canlılığının belirgin olarak daha iyi olduğu görüldü.

Tartışma: Hastalıkların tedavisinde yeni yaklaşım arayışları PB ve MKH tedavisi gibi farklı düşünceleri gündeme getirmektedir. Mikrobiyotika ile oluşan biyolojik süreçlerin değişimleri özellikle PB uygulamalarına bağlı farklı etkiler son zamanlarda önemli araştırma konusu olmuştur. Benzer şekilde hücresel tedavi kapsamında MKH Graft Versus Host (GVH) gibi hastalıklarda da olmak üzere birçok tedavide klinik uygulamada yerini almaktadır. Bu çalışmada kültür ortamında MKH davranışına çoğalma, göç etme, farklanma ve yara iyileşmesi açılarından PB uygulamasının yapacağı etkilerin incelenmesi amaçlandı. PB eklenmesinin çoğalmayı hızlandırdığı, göç etmeyi arttırarak yara iyileşmesini

abuklařtırdığı ve osteoblastik kemiksi yapıya farkanmada olumlu katkısının oluřtuđu saptandı. İnce yapı incelemesinde PB ile etkileřmiř MKH iin daha canlı, daha ok tutunan ve daha aktif hcre morfolojisinde olduđu bulundu.

PB verilen dokunun saėlıklı olması iin patojen bakterilerle mcadele eden mikroorganizmalardır. *Lactobacillus*, *Bifido*, *E coli*, *Enterococcus fecalis* gibi PBler uygun doz ve karıřımda kullanıldıėında antimikrobiyal faktrler salgılayarak ve immn cevabı modle ederek dokunun iyileřmesine ve saėlıklı olmasını saėlarlar. Birok alıřmada PB iin zellikle karsinojenik bakteriler aısından oėalma ve adezyonu azalttıkları gsterilmiřtir. zellikle oral muloza enfeksiyonlarından candidiasizde kltr ortamında kullanılan PB iin byme, oėalma ve adezyonu azalttığı ayrıca biyofilm formasyonunu dřrdė saptanmıřtır. Yara iyileřme srecinde yara kenarlarında adezyon, g ve farklılařmayı ynlendirerek in vivo iyileřmeyi hızlandırdığı gsterilmiřtir (16).

MKH iin g etmenin ve gittiėi doku uyum saėlamanın rejeneratif tıp aısından nemi ok byktr. PB kullanımının migrasyon kapasitesini arttırması etki mekanizmalarından birisi olmaktadır. *Lactobacillus* iin kltr ortamında makrofaj ve lenfositleri oėalmak zere sitmle ettiėi ve bylelikle kemotaksis ve anjiogenesizi ynlendirdiėi gsterilmiřtir. Yapılan bir alıřmada yzey belirteleri ile karakterize edilen umblikal kord MKH ları iin adipojenik ve osteojenik farkanma arařtırımıřtır. Yapılan uygulamalarda farklı etkenler kullanılmasına raėmen MKH iin morfolojik bir farklılık gzlenmez iken g belirtelerini farklı bir řekilde eksprese etmiřlerdir. Deėiřik dzeylerde VLA-4 ve VCAM-1 g belirtelerini PCR ile tanımlamıřlardır. *L. asidop* ile *VEGF* ve *MMP-2* artarken *CXCR-4* bir deėiřiklik oluřmamıřtır. Bu alıřmadan PB kullanımının migrasyon iin nemli bir faktr olduėu ortaya konmuřtur. PB ile artan migrasyon kapasitesinin adipojenik ve osteojenik farkanmayı da arttırdığı dřnlmřtir (17). Kltr ortamında izik oluřturma yntemi MKH iin g etme yeteneėinin arařtırılmasında kullanılmaktadır. Bu amala yapılan bir alıřmada *Lactobacillus reuteri* ve *Porphyromonas* ekstraktı kullanımının MKH oėalma ve farkanma aktivitesinin yanı sıra g etme yeteneėini de arttırdığı bulunmuřtur. Kltr ortamında izik yarasının kapanmasını hızlandırdığı gibi invivo deri yara iyileřmesinde benzer řekilde yaptıėı saptanmıřtır. Her iki durumda da *P.gingivalis* iindeki LPS ile *NLPR3* inflamasyonun aktive olup MKH fonksiyonu inhibe edildiėinde bu g etkisinin oradan kalktığı gzlenmiřtir. PB etkisinin mikrobiyata dengesini saėlayarak inflamasyonu ve yara iyileřmesini olumlu ynde etkilediėi dřnlmřtir (16).

PB kullanımının mikrobiyata homeostazını saėlamanın dıřında patolojik durumlarda da hcre proliferasyonunu ve osteojenik farkanmayı arttırarak hasarı nleyici zelliėide bulunmaktadır. *Tenofovir* ile indklenmiř mandibula kemik kaybında PB kullanımının mandibuler MKH iin indkleyici zelliėinden yararlanarak kemik kaybının azaltıldıėı gsterilmiřtir. Mandibular histomorfometri iin yapılan mikroCT ile yapılan osteojenik belirteler iin yapılan PCR ve spernatanttan yapılan ALP retimi ile *L.rhamnosus GG* PB iin supernatant a salgıladıėı faktrlerin osteogenezi yeniden yapılandırđı gsterilmiřtir (10). PB tarından salgılanan faktrler aısından bakıldıėında farkın metabolitlerden kaynaklandıėı belirlenmiřtir. Farklı PB kltr ortamına eklenip bir sre sonraki

süpernatant toplanarak MKH için uygulandığında çoğalmanın ve farklanmanın arttırıldığı saptanmıştır. Çoğalma için PCNA ve kök hücre içinde SOX-2, OCT-4 ve NANOG transkripleri için kullanılmış ve İPKH için farklanması saptanmıştır (18).

Yapılan bir çalışmada *P.gingivalis* ve *L. reuteri* olarak PB kullanımının kültür ortamında gingival MKH için çoğalma, göç etme ve osteojenik farklanmayı hızlandırdığı saptanmıştır. Osteojenik farklanmanın kritik transkripsiyon faktörlerinde olan OSX, OPN, OCN ve RUNX2 belirteçlerini Real time RT-PCR ile gösterildiği üzere anlamlı bir şekilde artırmıştır. Red O boyaması ile patojenik bakteri ile PB arasında kurulan dengeye bağlı olarak MKH için adipojenik farklanmanın baskılandığı gösterilmiştir. Bu sonuçlara ilişkin olarak fare damağında yapılan yara iyileşmesi deneyinde *L.reuteri* ve *P.gingivalis* gruplarının iyileşmeyi hızlandırdığı gösterilmiştir. Böylelikle oral mikrobiyom dengesinin sağlanması ile yara iyileşmesinin sağlandığı düşünülmüştür. NLRP3 aktivatörü olarak kullanılan LPS ile MKH göçünü anlamlı bir şekilde inhibe ettiği saptanmıştır. Benzer şekilde OSX, OPN, OCN ve RUNX2 belirteçleri baskılanmıştır. *L.reuteri* kullanımı ile MKH için oluşan tüm olumsuzluklar geri döndürülmüştür. *L.reuteri* nin *P.gingivalis* teki LPS yi nötralize ederek patojenik bakteri ve PB arasındaki dengeyi sağlayarak yara iyileşmesini hızlandırmaktadır (16).

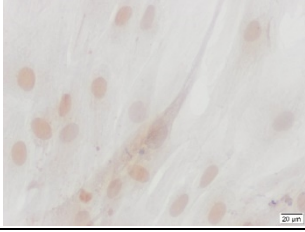
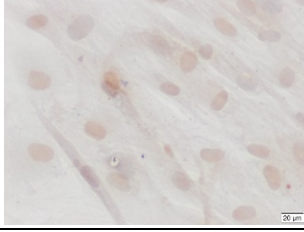
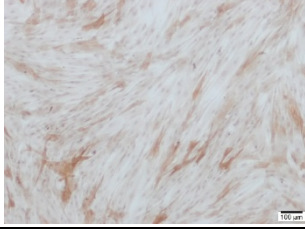
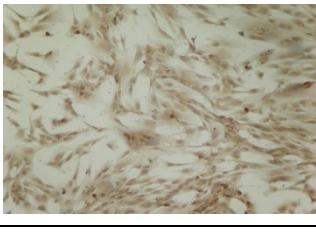
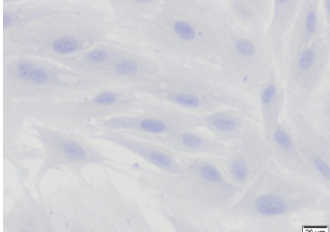
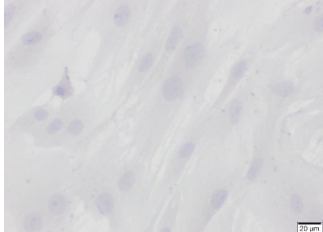
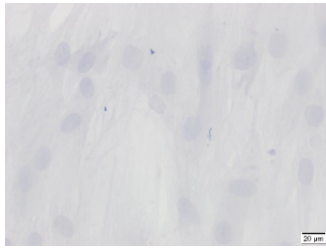
Osteoblastik farklanma kemik bütünlüğünün korunmasında önemli bir faktör olup *Propionibacterium freudenreichii* ile ilişkisinin araştırıldığı bir çalışmada çiğ süttten elde edilen MJ2 izolatının osteoblastik farklanma, mineralizasyon ve sinyal yolağını etkilediği invitro ve invivo gösterilmiştir. Osteoblastik farklanma ve minealizasyon q-PCR ve western blot ile incelendiğinde osteoprotegerin osteoblastik belirtecinin ve nuklear faktör kB ligandının anlamlı bir şekilde arttığı ayrıca BMP2 nin yükseldiği saptanmıştır. Alizerin red boyaması ile mineralizasyonu artırdığı bulunmuştur. Overektomili sıçanlarda ağızdan MJ2 beslemesinin oluşan osteoporozu azalttığı bulunmuştur (19). Osteopozlu hastalardan alınan 25-OH vitamin D ve prokollajen tip 1 enterterminal peptid örneklerinde *Lactobacillus acidophilus* ve ramnossus etkisi MC3T3-E1 ve osteoblastlar ve RAW 264.7 osteoklaslar etkisi incelendiğinde bütirik asit üzerinden osteoblastik olgunlaşmayı sağladıkları saptanmıştır. ALP aktivitesinin arttığı OK konsantrasyonunun yükseldiği ve RUNX2, RANK, NFATc1, cathepsin K, DC-STAMP, OSCAR, WNT2 ve CTNNB1 yükseldiği osteoblastlarda gösterilmiştir. Osteoklastlar içinde tersi gerçekleşmiştir (20).

İnsan kemik iliği MKH osteoblastik farklanmasında PLLA scaffoldu ile verilen probiyotik nisin tedavisinin osteoblastik farklanmada etkili olduğu gösterilmiştir. MTT ölçümleri ile kültürün birinci ve 3., 5. Günlerinde nişin tedavisinin çoğalmayı artırıcı etkisi saptanmıştır. RT-PCR ile ALP, ON, OK ve kollajen 1 ekspresyonlarının anlamlı bir şekilde arttığı buna karşılık RUNX2 gen ekspresyonunun azaldığı gösterilmiştir. AR ve vonkossa testleri ile minerilizasyonun arttığı saptanmıştır. SEM ile hücrelerin çoğalma eğiliminde olduğu ve daha aktif bir hücre yapısı gösterdiği belirlenmiştir (21). Bu çalışmanın sonuçları bizim bulgularımız ile oldukça paralel olup bir scaffold kullanmadan ve PB karışımı ile daha iyi sonuçlar aldığımız görülmektedir.

Yorum: Bu çalışmada kültür ortamında MKH karakteristiği ve osteoblastik farklılaşma üzerine probiyotik karışımının etkisi incelendi. PB karışımının MKH belirteçlerini anlamlı bir şekilde yükselttiği h-Skorlama ile bulundu.

MKH farklılaşması için osteoblastik değişim süreci incelendi ve PB lerin MTT ile çoğalmanın, çizik atma ile göç etmenin, AR ve VK ile mineralizasyonun ayrıca ON ve OK ile osteoblastik farklılaşmanın anlamlı bir şekilde arttırıldığı saptandı.

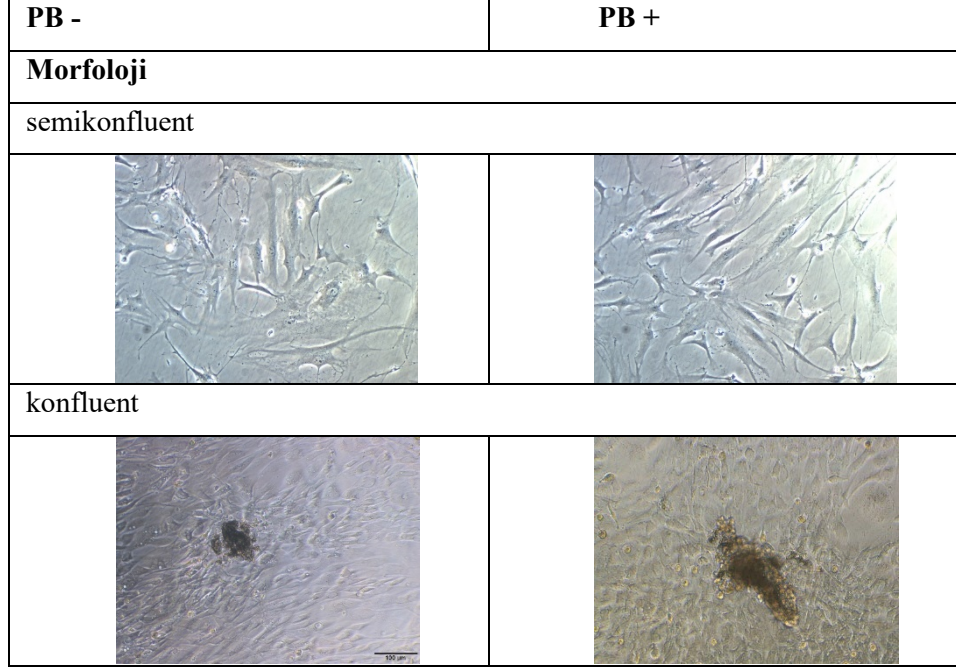
Alınan sonuçların kemik gelişimi, patolojik durumları ve özellikle osteoporoz için önemli bir anlam ifade ettiği düşünüldü. Alınan sonuçlar MKH tedavisi gerektiren durumlarda PB kullanılmasının tedavi etkinliğini arttırdığı kültür ortamında anlaşıldı. Deney hayvanı ile yapılacak çalışmalarda aynı olumlu etkinin görülmesinin klinik için yararlı olacağı düşünüldü.

PB -	PB +
Stro-1	
	
CD90	
	
CD73	
	
CD45	
	
CD34	
	

Şekil 1. MKH belirteçlerinin İHK ile tanımlanması PB etkisi

Tablo 1. MKH belirteçlerinin İHK ile tanımlanması sonrasında PB etkisi h-Skor ile yapılan değerlendirme

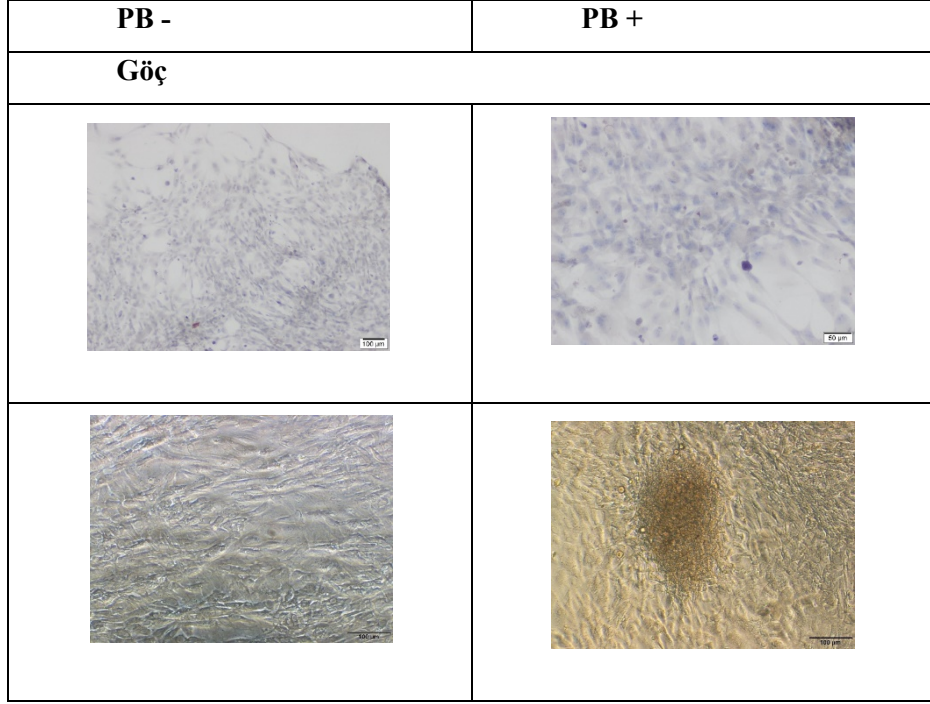
h-skor	Stro-1	CD90	CD73	CD45	Cd34
PB-	155,78 ±24,86	226,85 ±22,92	205,84 ±18,42	11,96 ±4,78	6,05 ±2,88
PB+	198,22 ±18,36	266,66 ±16,91	228,24 ±16,45	16,28 ±3,86	9,12 ±3,14



Şekil 2. MKH Farklanma sürecinde Osteoblastik değişim (G3) ve kemiksi koloni oluşumu (G7)

Tablo 2 MKH Farklanma sürecinde Osteoblastik değişim (G3) ve kemiksi koloni oluşumu (G7) PB etkisi için MTT

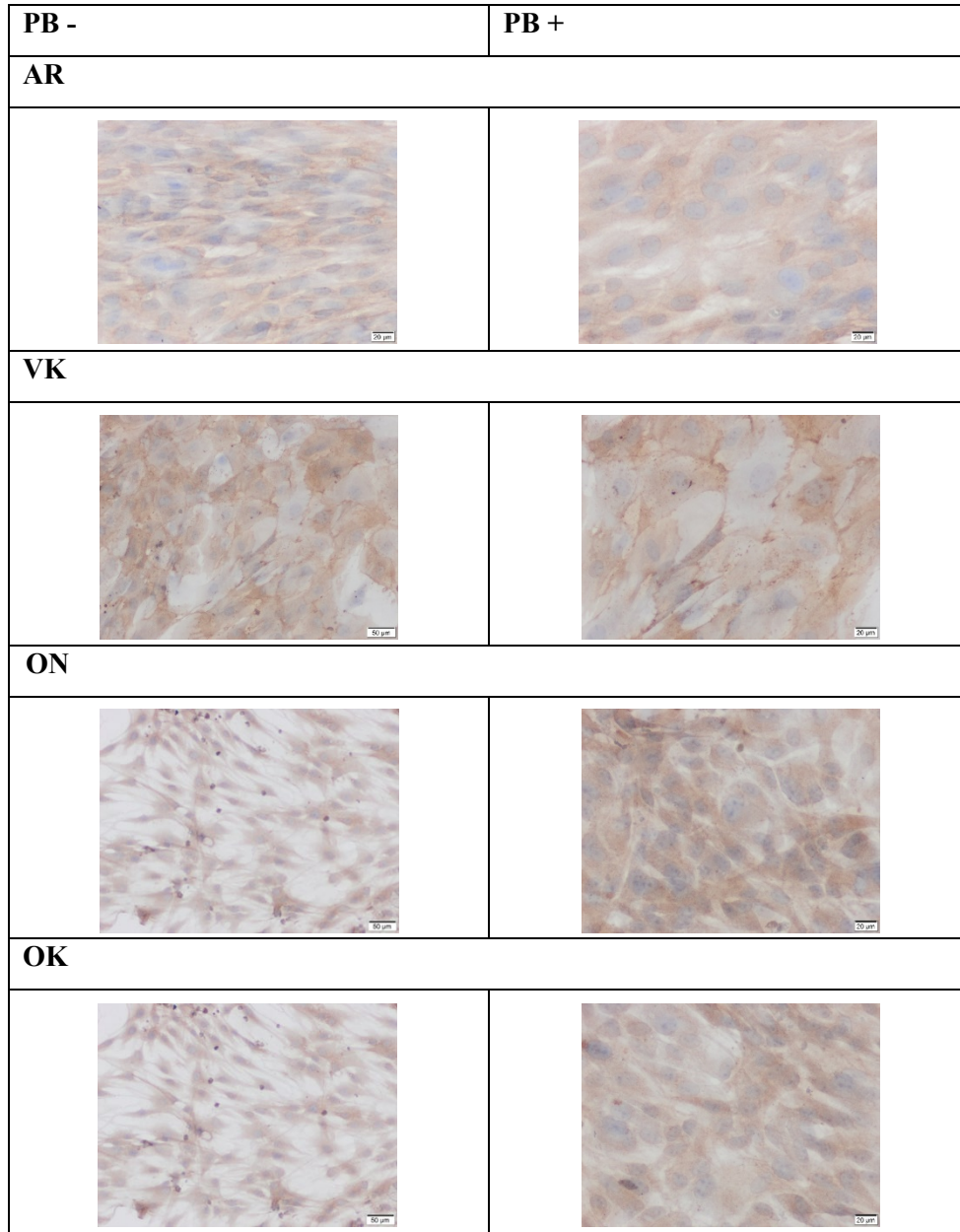
MTT	G3	G7
PB-	564,46±124,22	1244,48 ±148,12
PB+	778,36 ±128,77	1366,26 ±154,68



Şekil 3. MKH Farklanma sürecinde çizik sonrası göç etme ve farklanmanın saptanması.

Tablo 3. MKH Farklanma sürecinde çizik sonrası göç etme ve farklanmanın morfometrik analizinde yara kenarından başlayan çoğalma ve göçün yara kapanmasını sağlaması ve oluşan kemiksi adacıkların ölçümleri ile PB etkisinin gösterilmesi.

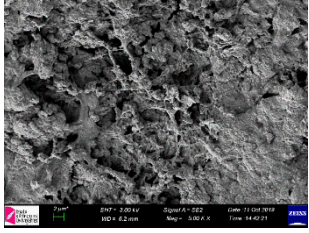
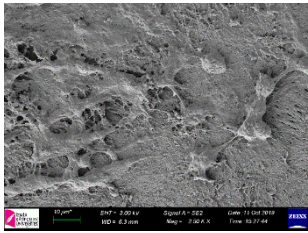
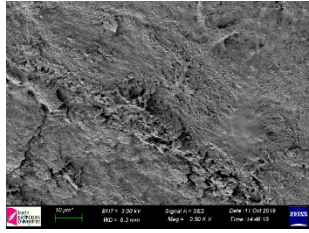
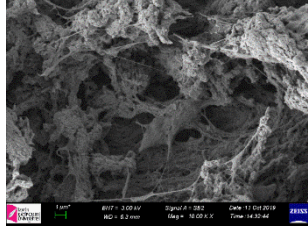
Çizik	Yara kapanması	Kemiksi Adacık Oluşumu
PB -	$0,48 \pm 0,17 \mu\text{m}$	$23,22 \pm 8,94$
PB +	$0,31 \pm 0,11 \mu\text{m}$	$32,18 \pm 7,64$



Şekil 4. MKH için osteoblastik farklanma kriterleri olan AR ve VK Histokimyası ile ON ve OK immünohistokimya görüntüleri

Tablo 4. MKH için osteoblastik farklanma kriterleri olan AR ve VK Histokimyası ile ON ve OK immünohistokimya görüntülerinde yapılan h-Skor analizi ile PB etkisinin gösterilmesi

h-skor	AR	VK	ON	OK
PB -	65,78 ± 16,92	55,77 ± 11,45	148,84 ± 24,37	124,66 ± 15,44
PB +	94,98± 18,88	68,87 ± 13,42	162,66 ± 18,48	138,11 ± 12,94

PB -	PB +
Morfoloji	
	
	

Şekil 5. SEM ile kültür ortamında PB etkisinin gösterilmesi. PB eklenmesinin çoğalmayı hızlandırdığı, göç etmeyi artırarak yara iyileşmesini çabuklaştırdığı ve osteoblastik kemiksi yapıya farklılaşmada olumlu katkısının olduğu saptandı. İnce yapı incelemesinde PB ile etkileşmiş MKH için daha canlı, daha çok tutunan ve daha aktif hücre morfolojisinde olduğu bulundu.

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Osteogenic Differentiation of Pre-Conditioned Bone Marrow Mesenchymal Stem Cells with Nisin on the Modified Poly-L-Lactic-Acid Nanofibers Research Square, 2021.

ID-218 / OP: “Evaluation of Relationship Between Natal First Month Ultrasound Results And Postnatal Diagnosis of Children Antenatally Diagnosed As Hydronephrosis”

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Full-text (ID-218): “Antenatal Hidronefroz Tanısı Alan Olguların Postnatal İlk Ay Ultrasonografi Sonuçları İle Postnatal Tanı Arasındaki İlişkinin Değerlendirilmesi”

Giriş: Antenatal hidronefroz (AH),intrauterin böbrek pelvis çapının 5 mm ve üzerinde olması olarak tanımlanmıştır. Antenatal ultrasonografinin (US) yaygın kullanımı ile birlikte fetal hidornefroz giderek artan sıklıkla tanımlanmaya başlanmıştır. Antenatal US’lerin 1:100-1:500’ün de hidronefroz saptanmaktadır (1). Hidronefrozun prenatal dönemde tanınması ve saptanan ürolojik patolojinin erken tedavisi, piyelonefrit ve obstruksiyon komplikasyonları ile sonuçta hastaların hem kronik böbrek hastalığı (KBH) gelişmesinin önlenmesi, hem de tubulointersitisyel disfonksiyon, anoreksi, artmış katabolizma, sık idrar yolu enfeksiyonu gibi büyüme gelişme geriliğine neden olabilecek sebeplerin ortadan kaldırması açısından son derece önemlidir.

Gereç ve Yöntem: Antenatal dönemde hidronefroz tanısı aldıktan sonra Çocuk Nefroloji Polikliniğimizde, 1998-2011 tarihleri arasında 225 hasta alınmıştır. Postnatal US ilk 3 gün veya hastayla ilk karşılaşıldığında yapılmıştır.Tüm hastalardan başlangıçta idrar kültürü alınarak profilaktik antibiyotik amoksisilin 10 mg/kg gece dozunda başlanmıştır.Hastaların yakınmalarına bakılmaksızın idrara kültürleri aylık olarak alınmıştır. Altıncı ayını doldurduğunda profilaksi gereken hastalara trimetoprim sulfametoksazol ile devam edilmiştir.

Birinci ayda US tekrar yapılmış ve normal saptansa bile her hastaya 1.ayın sonunda MSUG çekilmiştir. Vezikoüreteral reflü saptanan hastalara statik böbrek sintigrafisi (DMSA) çekilmiştir. Ultrasonografi sonucuna göre hidronefrozu saptanan hastalara VUR saptanmadıysa 1. aydan sonra pelvis çapı artan veya tekrالayan İYE geçiren olgulara ileri tetkik yapılmıştır.

Bulgular: Çalışmamızda gebeliğin herhangi bir döneminde böbrek pelvis ön-arka çapı 5mm ve üzeri olan 225 hasta izlenmiştir. 225 hasta içerisinde 169 hasta erkek, 56 hasta ise kız olup erkek/kız oranı 3.01 olarak bulundu. Tüm hastalar yenidoğan döneminden itibaren izlenmiş olup ortalama izlem süresi en az 5

,en fazla 120 ay olark saptandı. Ortalama IU tanı yaşı 30.58 ± 5.53 hafta olarak saptandı. Postnatal dönemde hidronefroz gözlenmeyen ünite sayısı 188 (%38.4)'dır. Bu hastaların ortalama fetal fetal böbrek pelvis ön-arka çapları sağda 8.8mm, solda ise 8.5 mm olarak bulunmuştur. Sağ böbrekte hidronefroz saptanan sayısı 56 (%24.9), sadece sol böbrekte hidronefroz olan hasta sayısı 87 (%38.7) olarak bulunmuş, 82 (%36.4) hasta da ise bilateral etkilenme saptanmıştır. 225 olgunun postnatal dönemde 90'ına (%39.9) obstruktif üropati, 41'ine ise VUR olduğu saptanmıştır. Postnatal dönemde obstruktif uropati saptanan olgularda VUR saptanan olgulara göre böbrek pelvis ön arka çapı anlamlı bir biçimde yüksek bulundu.

Postnatal dönemde patoloji saptanan olgularda 49'u (%21.7) opere olurken, 94'ünün (%41.7) opere olmadığı saptandı. 49 opere edilen olgunun 20'si (%40.8) üreteroneosisostomi, 18'i (%36.7) pyleoplasti, 6'sı (%12.2) nefrektomi, 3'ü (%6.2) PUV rezeksiyonu, 2'sinin enjeksiyon operasyonu geçirdiği belirtildi.

Tablo 1. Postnatal dönemde patoloji saptanan ve saptanmayan olguların karşılaştırılması

Parametre	Normal	Patolojik	P
Hasta sayısı (n), (%)	82 (36.4)	143 (63.6)	
Ünite sayısı (n), (%)	118 (38.4)	189 (61.6)	
Cins (erkek(n), (%)/kız (n)(%)	59 (71.9)/23 (28.1)	110 (65)/33 (35)	0.4
İU ort. tanı yaşı (hft)	30.6 ± 4.5	30.5 ± 6	0.5
Ortalama İYE sıklığı (n/12 ay); (ort $\pm$ SD)	0.44 ± 0.65	1.07 ± 1.1	0.000
Unilateral/bilateral hidronefroz (n, (%))/(n, (%))	46 (56)/36 (44)	97 (67.8)/ 46 (32.2)	0.1
İU ort böbrek pelvis çapı			
Sağ	8.8 ± 3.6	10.6 ± 4.1	0.02
Sol	8.5 ± 1.7	10.1 ± 3.2	0.004
1.ay ort pelvis çapı			
Sağ	7.5 ± 5	12.3 ± 7	0.000
Sol	8.4 ± 2.7	12.3 ± 5.2	0.000

Tablo 2. Postnatal dönemde konulan tanılar (n=225)

Tanı	Hasta sayısı	%
Normal	82	36,4
Geçici pelviyektazi	66	29.3
Ekstrarenal pelvis	16	7.1
Anormal	143	63.6
Obstrüktif üropati	90	39.9
UPD	73	32.4
UVD	14	6.2
PUV	3	1.3
VUR	41	18.2
Diğer	12	5.5
Toplam	225	100

Tartışma: Antenatal US'nin yaygın olarak kullanılmaya başlanması ile AH'UN tanınması sonucunda yakın izlem ve erken dönemde tedavi sayesinde oluşabilecek böbrek hasarlanmasının önüne geçilmesi mümkün olmuştur.Çeşitli çalışmalarda izleme alınacak AH'un tanı kriterleri farklı olarak belirlenmiştir. En sık kabul olan ölçüm ön arka çapın antenatal herhangi bir dönemde 5mm ve üzerine saptanmasının anlamlı olduğudur (2,3,4,5). Antenatal dönemde renal pelvis ön arka çapı 5mm ve üzerine ise anlamlı kabul edilmekte ve postnatal inceleme önerilmektedir. Antenatal dönemde saptanan böbrek pelvisi ön arka çapı genişliği postnatal dönemdeki patoloji ile ilişkili patolojinin türü konusunda bilgi vermemektedir (4) .

Yenidoğanlarda yaşamın ilk 48-72 saatinde fizyolojik idrar miktarı az olduğundan bu dönemde çekilecek US'nin yanlış negatif sonuç verebileceği unutulmamalıdır.Birçok çalışma US'nin birinci hafta ve birinci ayda tekrarını önermektedir (2, 6,4,7). Engle ve arkadaşlarının çalışmasında 6.gün ve 6.haftada yapılan US'lar karşılaştırıldığında 6.haftada yapılan US'da obstruksiyonun daha yüksek oranda saptandığı belirlenmiştir (8).

Yapılan çalışmalarda 6.haftada US'ları normal saptanan olguların takibine gerek olmadığı belirtilmiştir. Ancak çalışmamızda 1.ayda US'ları normal saptansa bile tüm hastalara MSUG ve 6. ayda US tekrarı yapılmıştır. Ancak bu dönemden sonra pelvis ön arka çapı genişliği normal saptanan olguların takibi bırakılmıştır. Çalışmamızda ilk US normal 104 hastanın izleminde 53'ü normal olarak değerlendirildi. Olguların 9'u ekstrarenal pelvis, 20'si VUR, 19'u UPD,3'ü ise UVD olarak saptanmıştır.

Antenatal hidronefroz saptanan olguların postnatal izlem süreciyle ilgili olarak yayınlar genel anlamda hastalığın tanı ve tedavi seçenekleri üzerine yoğunlaştığından, bu tür hastaların İYE geçirme sıklığı, gerekse İYE prevalansı üzerine sınırlı sayıda literatür bilgisi mevcuttur. Çalışmamızda yıllık enfeksiyon oranı toplam 0.84 ± 1.9 atak/yıl ,normal olarak değerlendirilen olgularda 0.44 ± 0.65 atak/yıl, VUR saptanan olgularda 1.4 ± 1.1 atak/yıl, obstrüktif üropati saptanan olgularda ise 0.8 ± 1 atak/yıl olarak hesaplanmıştır.Bu sonuçlarla yola çıkarak , AH saptanan bebeklerin postnatal izleminde özellikle görüntüleme tetkiklerinin azaltılması isteniyor ise bu çocukların bizim protokolümüzde olduğu gibi İYE açısından yakın izlemin çok faydalı olacağını düşünmekteyiz.

Sonuç olarak, günümüzde kolaylıkla uygulanabilen antenatal US'nin tüm gebelere uygulanması üriner sistem patolojilerinin çok erken dönemde saptanmasında önemlidir. Gerek tıbbi gerekse cerrahi tedavi yaklaşımları ile böbrek parankim hasarlanması önlenebileceğinden bu hastaların kronik böbrek yetmezliği gibi önemli bir tabloya girmeleri engellemiş olacaktır.

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ID-219 / OP: “Evaluation of the Paranasal Sinus Anatomy and Variations: A CT-scan Based Anatomical Study”

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Abstract (ID-219)

Introduction: Nasal cavities and paranasal sinuses are one of the regions where anatomical variations are frequently seen in the human body. Paranasal sinuses, which have complex three-dimensional structures and important anatomical neighborhoods, differ in age, gender, and even in the right and left body halves of the same person. In terms of paranasal sinus surgery and endoscopic accesses, it is imperative to master the anatomy of the region.

Materials and Methods: In our descriptive study, multiplane thin-section CT images of patients who applied to Ege University Medical Faculty Hospital between January 1, 2018 and June 10, 2020 due to various complaints were retrospectively analyzed. CT or Cranial CT Angiography examinations with the appropriate number of sections covering the Paranasal Sinus region were also included in the study. and radiological images of 200 different people between the ages of 18-70 years were examined. Exclusion criteria from the study were: Medical history of skull base or paranasal sinus surgery, congenital facial anomaly, existence of current or previous disease causing erosion of the ethmoid roof, presence of chromosomal anomaly, being younger than 18 years old and older than 70 years of age at the time of image acquisition, and poor image quality in imaging methods. The presence of frontal, supraorbital, infraorbital, interlamellar sinuses, concha bullosa and agger nasi was evaluated over 3 planes.

Results: The ages of the subjects in the study ranged from 18 to 70 years. The mean age was 46 ± 14 . We divided the cases into two groups according to their age group-1 (18-45 ages) and group 2 (46-70 ages). %49 of the cases were in group 1 and 51% of them were in group 2. In the images obtained from cranial CT Angiographies, Agger nasi cells were found in 157 (78.5%) of 200 samples; Concha Bullosa were detected in 62 (31%). From Paranasal Sinus CTs, Agger nasi cell were detected in 149 of 200 samples (74.5%); concha bullosa were detected in 60 (30%). In our study, a total of 306 (76.5%) Agger Nasi cells (AN) were detected; 89% of them were symmetrical and the numbers were equal on the right and left. There was no significant difference in the incidence of Agger Nasi between age and gender

($p=0.355$, $p=0.471$, respectively). The incidence of Haller cells was 33.5%, and no significant difference was observed between age and gender ($p=0.480$, $p=0.496$, respectively).

Discussion and Conclusion: Of 183 (45.8%) of the cases, sinus supraorbitalis was detected, 98 of them were on the right and 85 were on the left ($p=0.016$). Sinus supraorbitalis is an important anatomical formation that should be considered in frontal sinusotomy or resistant headache. Haller cell was described in a study conducted by Bolger in 1991 and the incidence was found as 45%; in 2005, Pata et al. was evaluated as 2.5% in 281 cases (562 sides); in 2014, Orhan et al. defined the incidence as 11.9%. In our study, this variation was detected in 134 patients (33.5%) out of 400 samples. In our study, Sinus IL was present in 110 samples (27.5%), lateral and inferolateral to the lamina cribrosa. Although sinus IL was mostly (78%) symmetrical, it was detected in equal numbers on the right and left. Although the rate of concha bullosa varies between 13 and 73% in the literature; in our study, concha bullosa was detected in a total of 122 (30.5%) concha nasalis media in 400 samples. Concha Bullosa, which was approximately 70% symmetrical, numbered 62 on the right and 60 on the left, a total of 122. It was statistically significant that Concha Bullosa was more common in women on the left side and with age ($p=0.813$ and $p=0.586$, respectively). Considering that the anatomy of the region is multivariate and the rate of variation is high, studies with large sample numbers are needed.

ID-221 / OP: “The relationship between ureteropelvic junction obstruction and sex hormone receptor distribution”

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Abstract (ID-221)

Introduction and Aim: The sex hormone receptors are demonstrated in extra gonadal tissues. In this study; investigate the existence and if present the distribution of sex hormone receptors in patients with ureteropelvic junction obstruction (UPJO) were aimed.

Material and Methods: Biopsy samples were prepared prospectively from the excised stenotic region of children who were operated for UPJO over a one-year period. The presence of the Estrogen Receptor (ER), Progesterone Receptor (PR) and Androgen Receptor (AR) with Avidin-Biotin Horseradish Peroxidase Technique, and the presence of fibrosis with the Hematoxylin-Eosin staining were investigated by a light microscope. Reactions were interpreted as positive based on nuclear staining for each receptor.

Results: The mean age was 9,5-month (8 days-5,5 years) in 20 children (8-female, 12-male) operated for UPJO. Total 3-specimen was taken a 3 mm²’s tissue (from the renal pelvis, ureteropelvic junction and ureter upper tip) in extracted of each materials from patients during the pyeloplasty.

In regard to receptor expression the ER, PR and AR were found positive in 22-specimen (36%), 33-specimen (55%) and 11-specimen (18%) respectively. The ER stained in 7-renal pelvis, 7-UPJ and 8-ureter; the PR stained in 14-renal pelvis, 11-UPJ and 8-ureter; and the AR stained in 5-pelvis, 3-UPJ and 3-ureter.

In 8 girls, the ER stained in pelvis(50%), UPJ(37%), ureter(50%); the PR stained in pelvis(87%), UPJ(75%), ureter(25%); and the AR stained in pelvis(37%), UPJ(12%), ureter(12%). In 12 boys, the ER stained in pelvis (25%), UPJ(33%), ureter(33%); the PR stained in pelvis(58%), UPJ(41%), ureter(50%); and the AR stained in pelvis(16%), UPJ(16%), ureter (16%).

Conclusions: This study demonstrated the presence of all three sex hormone receptors in the pelvis, ureteropelvic junction and ureter in male and females with UPJ stenosis. But, to show whether androgen, estrogen and progesterone receptors have an effect on the etiology of ureteropelvic obstruction; large case studies are needed.

Keywords: UPJ obstruction; Hormone; Receptor; Estrogen; Androgen; Progesterone; Fibrosis.

Özet (ID-221): “Üreteropelvik Bileşke Darlığı İle Sex Hormon Reseptörleri Dağılımı Arasındaki İlişki”

Giriş ve Amaçlar: Ekstra gonadal dokularda seks hormon reseptörlerinin varlığı önceki çalışmalarda gösterilmişti. Bu çalışmada; üreteropelvik bileşke darlığı gelişiminde, seks hormon reseptörlerinin dağılımının bir rolü olup olmadığının gösterilmesi amaçlandı.

Materyal ve Metot: Bir yıllık sürede UPJ Obstruksiyonu nedeniyle opera edilen çocuklarda eksize edilen darlık bölgesinden biyopsi örnekleri prospektif olarak hazırlandı. Androjen, östrojen ve progesteron hormon reseptör varlığı Avidin-Biotin Horseradish Peroxidase Tekniğiyle, fibrozis derecesi ise hematoksilin eozin boyama ile eş zamanda yapıldı; ışık mikroskopu ile araştırıldı. Reaksiyonlar, her bir androjen östrojen progesteron reseptörleri için nükleer boyanma varlığı pozitif; nükleer boyanma yokluğu negatif olarak yorumlandı.

Bulgular: 12 erkek, 8 kız olgudan UPJ nedeniyle pyeplasti yapılırken eksize edilen materyallerden renal pelvis, UPJ ve üreterden üçer mm²'lik toplam 60 örnek alındı. Ameliyat esnasında yaş ortalaması 9,6 ay (8 gün-5,5 yaş) idi.

Reseptör ekspresyonu ile ilgili olarak östrojen reseptörü (ER), progesterone reseptörü (PR) ve androjen reseptörü (AR) sırasıyla 22 (% 36), 33 (% 55) ve 11 örnekte (% 18) pozitif bulundu. ER 7-renal pelvis, 7-UPJ ve 8-üreterde boyandı; PR 14-renal pelvis, 11-UPJ ve 8-üreterde boyandı; AR 5-renal pelvis, 3-UPJ ve 3-üreterde boyandı.

8 kızda ER pelviste (%50), UPJ'de (%37), üreterde (%50); PR pelviste (%87), UPJ (%75), ureter (%25); AR pelviste (%37), UPJ'de (%12), üreterde (%12) oranında boyandı. 12 erkekte ER pelviste (%25), UPJ'de (%33), üreterde (%33); PR pelviste (%58), UPJ (%41), ureter (%50); AR pelviste (%16), UPJ'de (%16), üreterde (%16) oranında boyandı.

Sonuç: Bu çalışma, UPJ darlıklı kız ve erkek çocuklarında pelvis, üreteropelvik bileşke ve üreterde her üç seks hormonu reseptörlerinin varlığını göstermiştir. Ancak üreteropelvik darlık etyolojisinde androjen, östrojen ve progesteron reseptörlerinin etkisi olup olmadığının gösterilmesi için geniş olgulu çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: UPJ Obstruksiyonu; Hormon; Receptor; Östrojen; Androjen; Progesteron; Fibrozis.

Full-text (ID-221)

Introduction: Gender hormones also play a role in the realization of many important functions in many system as well as sex differentiation. It is shown that sex hormone receptors are found in extra gonadal tissues and not only the gonadal structures but also the development of the urinary system are affected by these hormones in those previous studies [1-12]. Especially the regulation and control of voiding are different parts of the brain, bladder, urethra, and is mediated by hormone receptors in the pelvic floor.

The presence of sex hormone receptors in the bladder, foreskin, penile tissues of hypospadias cases, and urinary tract (renal pelvis, ureteropelvic junction and upper ureter) of human tissues have been shown in some previous studies [8-12] and also in our previous studies [13-15]. But, roles of androgens, estrogens and progesterone hormones and receptors in the development of the urogenital system are still a matter of research and debate. In addition, the mechanisms of effect by which the development of the genitourinary system with sex hormones such as estrogen, progesterone and androgens, have not been shown clearly in those studies. The presence of androgen, estrogen and progesterone hormone receptors in the renal pelvis, ureteropelvic junction (UPJ) or ureter were shown in previous study [15], but there is no enough information about or their role of etiopathogenesis in the development of hydronephrosis due to ureteropelvic junction obstruction of these hormone receptors.

This study was designed due to absence enough studies on the presence of androgen, estrogen and progesterone hormone receptors in the renal pelvis, ureteropelvic junction (UPJ) or ureter; and it was made from the materials of patients with ureteropelvic junction stenosis, the renal pelvis and upper ureter on the structuring of hormone receptors and their effects; and it is aimed to create a foresight.

Material and Methods: This study is a blind study, which is designed in children with with ureteropelvic junction obstruction prospectively. The hospital ethical committee approved this study, dated and number 10.11.2017/150; and the consent to collect and investigate the specimens during their child operation, which were removed as a redundant excess tissue during the surgery of correction of the ureteropelvic junction obstruction were given by their parents. The study, which received a grant from the University's Scientific Research Program, was launched in January 2018.

This study was designed on the samples prepared from the materials sent to pathology of the excess tissues removed during the urethropelvic junction obstruction correction surgery of children. Biopsy samples were collected and prepared prospectively from the excised stenotic region of UPJ in children who were operated for UPJO during the 18-month period (in between 2018 January - 2019 July). All patients were operated with dismembered pyeloplasty. All biopsy samples were obtained in the form of a 3 mm's tissue pieces from extracted specimens. Tissue specimens obtained from pyeloplasty were divided into 3 sections; 1-renal pelvis above the obstruction, 2-obstructed ureteropelvic junction and 3-ureter below the obstructed region. Locations of the sample (renal pelvis, ureteropelvic junction, and upper tip of the ureter) were demonstrated with arrows marked as RP, UPJ, and UU respectively in Figure 1 (Figure 1).

Each sample was given a code blindly by a pediatric surgeon. All samples stored in formalin fixative were delivered to pathologist who considered being blind. Staining properties were assessed under standard light microscope by the same pathologists in a semiquantitatively manner. To show of the existence and expressions of androgen, estrogen and progesterone receptors an immune-staining technique (*Avidin-Biotin Horseradish Peroxidase*) was used by one pathologist. All steps of staining according to the Avidin-Biotin Horseradish Peroxidase Technique as described in the article of Hsu SM and his friends [16], were completed gradually, and all sections were prepared. The Avidin-Biotin Horseradish Peroxidase staining is a useful technique to localize of receptors expressions for Estrogen, Progesterone and Androgen hormones in tissue samples via these receptors antibodies for each of [16]. Estrogen receptors as ER, progesterone receptors as PR and androgen receptors as AR were demonstrated in figures (Figures 2A, 2B, 2C).

Finally, all sections were examined under the light microscope by same pathologist. Reactions were interpreted as positive based on nuclear staining with color brown for receptors of androgen and estrogen, progesterone according to the Avidin-Biotin Horseradish Peroxidase, and as negative if there was not nuclear staining. Reactions were interpreted as positive or negative based on nuclear staining for each receptor.

The presence of fibrosis and inflammatory changes in the samples were evaluated with Hematoxylin & Eosin staining. After fixing in formalin, embedding in paraffin and obtaining 5 μ sections, the slides were stained with Hematoxylin&Eosin and evaluated for chronic inflammatory cellular infiltration and subepithelial fibrosis, as well as to rule out presence of any other pathology.

Results: Twenty children, 8 females (8 days-5.5 years) and 12 males (14 days-3.5 years) were operated for UPJO during the 18 months. The mean age was 9,5 months (8 days-5.5 years). There was no patient with disorder of the sex development in this selected group, only one patient had additional undescended testes.

During pyeloplasty, 3-mm samples were taken from the renal pelvis, ureteropelvic junction, and ureter from the specimen removed from each patient; Thus, a total of 60 samples were obtained from 20 patients. That is, out of 60 biopsy specimens taken from 20 patients, 20 were from the renal pelvis, 20 from the ureteropelvic junction, and 20 from the upper ureteral tip.

In regard to expression of the estrogen hormone receptors (ER), progesterone hormone receptors (PR) and androgen hormone receptors (AR) were found positive in 22-specimen (36%), 33-specimen (55%) and 11-specimen (18%) respectively. The ER stained in 7-renal pelvis (35%), 7-UPJ (35%) and 8-ureter (40%); the PR stained in 14-renal pelvis (70%), 11-UPJ (55%) and 8-ureter (40%); and the AR stained in 5-renal pelvis (25%), 3-UPJ (15%) and 3-ureter (15%). Results of the Avidin-Biotin Horseradish Peroxidase immuno-staining in all biopsy specimens were shown according to the site of the specimens in Table 1 (Table 1).

In regard to expression of the ER, PR and AR according to the gender of patients were found positive in 11-specimen (45%), 15-specimen (62%) and 5-specimen (20%) in 8 girls respectively, and in 11-specimen (30%), 18-specimen (50%) and 6-specimen (16%) in 12 boys respectively. The results of the Avidin-Biotin Horseradish Peroxidase immuno-staining in all biopsy specimens according to the gender distribution were shown in Table 2 (Table 2).

In 8 girls, 24 specimens of each sites were taken; the ER stained in 4-renal pelvis (50%), 3-UPJ (37%) and 4-ureter (50%); the PR stained in 7-renal pelvis (87%), 6-UPJ (75%) and 2-ureter (25%); and the AR stained in 3-renal pelvis (37%), 1-UPJ (12%) and 1-ureter (12%). In 12 boys, 36 specimens of each sites were taken; the ER stained in 3-renal pelvis (25%), 4-UPJ (33%) and 4-ureter (33%); the PR stained in 7-renal pelvis (58%), 5-UPJ (41%) and 6-ureter (50%); and the AR stained in 2-renal pelvis (16%), 2-UPJ (16%) and 2-ureter (16%). Results of the Avidin-Biotin Horseradish Peroxidase immuno-staining in all biopsy specimens according to the sex distribution and biopsy sites were shown in Table 3 (Table 3).

Chronic inflammatory changes and fibrosis were observed in all samples, especially in the materials extracted from the UPJO area by hematoxylin-eosin staining.

Discussion: The urogenital system needs steroid hormones during both prenatal and postnatal development. In this group, androgens, estrogens and progesterone hormones are active through receptors in these developmental processes [1-6]. The presence and distribution of sex hormone receptors in the foreskin, penile tissues, hypospadias cases and bladder, and urinary tract (renal pelvis, ureteropelvic junction and upper ureter) of cases with UPJO have been shown in some previous studies; but roles of androgens, estrogens and progesterone hormones and their receptors in the development of the urogenital system are still a matter of research and debate. [1-15]. However, there are not enough studies on the presence or expressions of androgen, estrogen and progesterone hormone receptors in the renal pelvis, ureteropelvic junction (UPJ) or ureter. Since this study was not possible in healthy patients, it was planned to conduct this study from materials excised during pyeloplasty. It raised the question whether the presence or absence of sex hormone receptors in the upper urinary tract has a role in the etiopathogenesis of UPJ stenosis.

In this study, totally positivity of sex hormone receptors were shown %36.7 in all samples. The results of receptors positivity according to sites of the biopsy specimens were showed 43.3%, 35%, and 31.7% positivity in the renal pelvis, in the upper stenosis region and in the ureter respectively. 43.3% samples from the renal pelvis had positive stainings; and 35% ER, 70% PR, and 25% AR were found to be positive. 35% biopsy samples from the ureteropelvic stenosis region had positive stainings of receptors; and 35% ER, 55% PR, and 15% AR are found to be positive. 31.7% biopsy samples from the upper ureter had positive stainings of receptors; and 40% ER, 40% PR, and 15% AR are found to be positive.

The results of the receptor positivity according to the each receptor were even more interesting; totally positivity of estrogen receptors, progesterone receptors and androgene reseptors in all samples were shown 36.6%, 55%, and 18.3% respectively. The positivity of estrogen reseptors, progesterone reseptors and androgene reseptors in renal pelvis were shown 35%, 70%, and 25% respectively. The positivity of estrogen reseptors, progesterone reseptors and androgene reseptors in ureteropelvic area were shown 35%, 55%, and 15% respectively. The positivity of estrogen reseptors, progesterone reseptors and androgene reseptors in upper ureter were shown 40% 40%, and 15% respectively. As progesterone passes from mother to baby after pregnancy, its effect on newborns is likely to continue for a while; However, it is particularly interesting that our study demonstrated the presence of progesterone hormone receptors in the upper urinary tract in older children with UPJ stenosis.

Pregnancy hormones in the mother during pregnancy temporary hydronephrosis due to its effect, also in babies affect hormone receptors in these areas. Similarly, it suggests the possibility that it may create a picture of hydronephrosis. Especially baby-By questioning the receptor hormone relationships in early transient hydronephrosis that can be seen in the on the occurrence and course of hydronephrosis of hormones effects can be revealed. Many hydronephrosis diagnosed antenatally in the prenatal period or known to regress in early postnatal periods. Predictions of the positive progesterone receptors in the renal pelvis area will be reached, whereas ureteropelvic junction stenosis if it is known to be congenital or acquired; it could be suggested that different cause and effect relationships could be played a role in both possibilities. The relationship between hydronephrosis developing during pregnancy in women with progesterone hormone levels has been questioned, but there has been no study on the receptor structuring of in the urinary system of adult women neither in pregnant nor unpregnant [12, 26-28].

Dentifying sex hormone receptors in tissues with the avidin-biotin horseradish peroxidase technique used in our study, immunohistochemical examination; for the detection of classical receptors known for androgen, estrogen and progesterone; however, estrogen receptors such as Beta1, Beta2 can not show groups [2, 8-10, 16]. Probably, estrogen receptor subgroups, doing the distribution of estrogen receptor subgroups in the ureteropelvic region tissues could be demonstrated permanent, temporary or temporary obstructions of this region. That it is progressive can clarify their situation. As a result, it was not possible to say according to this study that the reasons of ureteropelvic Junction stenosis is either a lack or absence of receptors or a result of a receptor hormone balance defect definitely.

Studies on humans explaining that the gender mechanisms of UPJ stenosis are performed experimentally are very limited in the English medical literature. Our results of the receptor positivity according to gender were even more interesting. Totally positivity of estrogen reseptors, progesterone reseptors and androgene reseptors were shown 36.6%, 55%, and 18.5% respectively. The positivity of estrogen reseptors, progesterone reseptors and androgene reseptors in girls were shown 45.8%, 62.5%, and 20.8% respectively. The positivity of estrogen reseptors, progesterone reseptors and androgene reseptors in

boys were shown 30.5%, 50%, and 16.6% respectively. It was striking that progesterone hormone receptors were positive in male, androgen hormone receptors were positive in females.

In many studies in the literature, patients with UPJ stenosis were examined in biopsy materials, especially in the stenosis region, it has been shown to be intense fibrosis [17-25]. Histopathologically, insufficient or irregularly structured smooth muscle fibers, abnormal collagen deposition, increased muscle cell apoptosis, abnormal innervation and irregular distribution of Cajal cells were found in UPJ stenosis samples taken during surgery. In addition, the gene expressions of (SHH), TBX18,8 and TSZH39 have been shown to play a primary role in UPJ development, particularly in smooth muscle formation. However, studies on the effects of the production of these genes on UPJ occlusion in humans are quite limited [17-25]. Lamina propria in the natural structure of the ureteropelvic junction especially in the deep parts of the organ, when the organ contracts allow for thick mucosal folds to form the connective tissue is quite loose. But as a result of abnormal stimuli such as chronic inflammation, as a result of tissue damage, this damage is caused by collagen. This may result in fibrosis characterized by accumulation. Fibrosis; although it is a tissue repair mechanism, important function and structure according to the organ, where it develops. The expression of sex hormones on the urogenital region and their presence in the upper urinary system are known, but their effects and whether it may have a role of etiopathogenesis of UPJO are still unclear.

In our study, the intense fibrosis was significantly available at the obstructed segments of ureteropelvic junction compared to renal pelvis and ureter. However, it was not possible to perform fibrosis grading by H&E staining and light microscopy. While the positivity of sex hormone receptors were significantly lower at the obstructed segments of ureteropelvic junction compared to renal pelvis and ureter. Interestingly, there was negative correlation between fibrosis and expression of sex hormones receptors as well as amount of fibrosis at the site of ureteropelvic junction obstruction and renal pelvis or upper ureter. Although there was no apparent correlation of the absence or presence of sex hormone receptors associated with fibrosis, the presence of a prominent receptor in urinary tract tissues in both genders was demonstrated and estrogen and progesterone and androgen receptors were present in the urinary tract in this study, and therefore estrogen, progesterone and androgen hormone or other sex hormones in the development of ureteropelvic junctional stenosis suggest that it may have an active role. There is no idea about the density of sex hormone receptors in the urethropelvic mucosa in a normal child; but, it is clear that sex hormone receptors in the ureter and pelvis are affected by fibrotic changes in the ureteropelvic stenosis region. The lower proportion of hormone receptors in the UPJO region may be associated with a higher degree of fibrosis here.

In this study, the presence of all three sex hormone receptors in tissues extracted from female and male UPJ cases was demonstrated by light staining in stromal cells in the submucosal area. Although the staining rates of hormone receptors differ from each other; the existence of estrogen, progesterone and

androgen hormone receptors in male and female tissues is an important determination. It is not possible to say for certain whether this determination has a role in the development of UPJ stenosis. However, showing the distribution and density of these hormone receptors in the ureteropelvic regions of normal healthy children and showing whether there is a difference from those in patients with ureteropelvic stenosis may illuminate whether sex hormone receptors have an etiological role in the development of UPJ stenosis.

This study raises some questions about whether sex hormones play a role in UPJ obstruction since it is not possible to obtain biopsy from the healthy urinary system. The main ones are; “What is the distribution of sex hormone receptors in normal urinary system tissue? What is the distribution of sex hormone receptors in fibrous tissues? Do sex hormone receptors decrease in parallel as the degree of fibrosis increases? Does the scarcity of sex hormone receptors from the beginning result in stenosis? Do the sex hormone receptors UPJ that were initially available gradually decrease when the stenosis develops due to inflammation and fibrosis?”. Our study results raise many questions such as; unfortunately, none of them have been clarified. Many questions still remain unanswered, as seen can sort many questions including why male’s UPJ obstruction is more than females; or where sex hormone receptors have a role in the development and progression of the UPJ obstruction. However, a lot of further studies are needed to understand how sex hormones, sometimes all expressed in the same cell, work together to regulate cellular activity, as well as how understanding of sex hormones and roles of their receptors.

Although it is not clear whether it is associated with the development of UPJO stenosis as our results, it has been an important study in terms of showing sex hormones in the urinary system in girls and boys with stenosis. The limitations of the study; because it is a prospective study, data can be collected in a long time; in samples, immunohistochemistry studies should be performed in fresh tissues, the number of cases is relatively small as 20, and sampling could not be taken from the normal urinary system.

Similar additional experimental and clinical studies could be planned in postmortem neonatal tissues or animal tissues to guide in the illumination of the etiology of uretero pelvic junction stenosis may be. Life in hormone receptor reconstruction in normal or hydronephrosis urinary system samples during prenatal and / or postnatal periods as it may differ according to the periods; experimental or clinical studies could ne designed in abortion materials or neonatal early period receptor reconstruction in postmortem tissues. Therefore, independent and complementary studies are needed.

Conclusion: This study demonstrated the presence of sex hormone receptors in the pelvis, ureteropelvic junction and ureter, but these findings could not fully explain whether hormone receptor distribution has an effect on the etiology of UPJ stenosis. These findings suggest that the impaired progesterone, androgen and estrogen receptor interaction and/or balance could play a role during the development of

UPJ obstruction. It also suggests that sex hormone receptor distribution in the urinary system may be independent of gender.

Table 1: Receptor positivity according to the biopsy site and distributions of the receptor positivity in total specimens: Biopsy specimens taken from excision materials in 20 patients (8-female, 12-male) during the surgery. Receptors positivity according to sites of the biopsy specimens are 26 specimens from renal pelvis, 21 specimens from ureteropelvic junction, and 19 specimens from upper tip of the ureter.

	ER + n (%)	PR + n (%)	AR + n (%)	Total + Samples (n:60)
Renal Pelvis (n:20)	7 (%35)	14 (%70)	5 (%25)	26/60 (43.3%)
Ureteropelvic Junction (n:20)	7 (%35)	11 (%55)	3 (%15)	21/60 (35%)
Upper Ureter (n:20)	8 (%40)	8 (%40)	3 (%15)	19/60 (31.7%)
Total Samples (n:60)	22 (36.6%)	33 (55%)	11 (18.3%)	66/180 (36.7%)

Table 2: Receptor positivity according to the sex: Biopsy specimens taken from excision materials in 8 girls and 12 boys during the surgery. (Estrogen hormone receptor as ER and progesterone hormone receptor as PR and androgen hormone receptor as AR were demonstrated).

<i>Sites</i>	<i>ER +</i>	<i>PR +</i>	<i>AR +</i>	<i>Total +</i>	<i>Fem ale ER +</i>	<i>Femal e PR +</i>	<i>Fem ale AR +</i>	<i>Fem ale Total +</i>	<i>Male ER +</i>	<i>Male PR +</i>	<i>Male AR +</i>	<i>Male Total +</i>
<i>RP</i>	7 (%35)	14 (%70)	5 (%25)	26/60 (43.3%)	4 (50%)	7 (87.5%)	3 (37%)	14/24 (58.3%)	3 (25%)	7 (58.3%)	2 (16.6%)	12/36 (33.3%)
<i>UP J</i>	7 (%35)	11 (%55)	3 (%15)	21/60 (35%)	3 (37.5%)	6 (75%)	1 (12.5%)	10/24 (41.6%)	4 (33.3%)	5 (41.6%)	2 (16.6%)	11/36 (30.5%)
<i>UU</i>	8 (%40)	8 (%40)	3 (%15)	19/60 (31.7%)	4 (50%)	2 (25%)	1 (12.5%)	7/24 (29.1%)	4 (33.3%)	6 (50%)	2 (16.6%)	12/36 (33.3%)
<i>Total</i>	22 (36.6%)	33 (55%)	11 (18.3%)	66/180 (36.7%)	11 (45.8%)	15 (62.5%)	5 (20.8%)	31/72 (40.3%)	11 (30.5%)	18 (50%)	6 (16.6%)	35/108 (32.4%)

Table 3: Results of the Avidin-Biotin Horseradish Peroxidase immuno-staining in all biopsy specimens according to the gender and biopsy sites were shown.

<i>Samples</i>	<i>Female Samples (n:24)</i>	<i>Male Samples (n:36)</i>	<i>p value</i>
<i>ER + (n:60)</i>	<i>11/24 (45.8%)</i>	<i>11/36 (30.5%)</i>	<i>0,599</i>
<i>PR + (n:60)</i>	<i>15/24 (62.5%)</i>	<i>18/36 (50%)</i>	<i>0,609</i>
<i>AR + (n:60)</i>	<i>5 /25 (20.8%)</i>	<i>6/36 (16.6%)</i>	<i>1,000</i>
<i>Total (n:180)</i>	<i>31/72 (40.3%)</i>	<i>35/108 (32.4%)</i>	

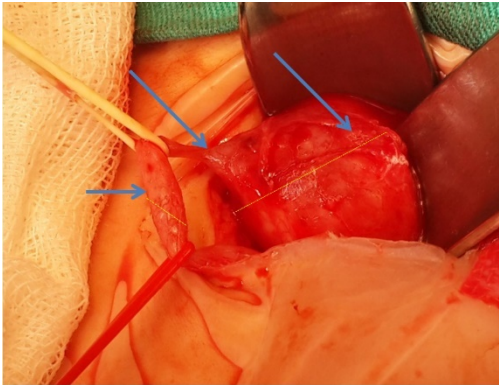


Figure 1: Biopsy specimens taken from excision materials in patients during the surgery. In a photograph taken from a patient's surgery, the area excised and removed during the pyeloplasty was shown with a yellow dashed line; and biopsy sampling sites were shown as renal pelvis (RP), ureteropelvic junction (UPJ), and the tip of the upper ureter (U).

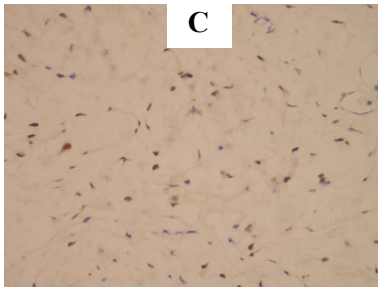
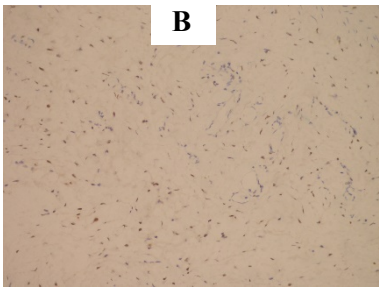
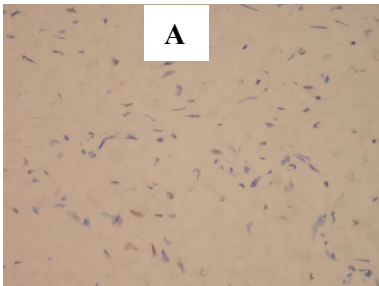


Figure 2A, 2B, 2C: Reactions interpreted as positive based on nuclear staining (as brown color) and negative if there was not nuclear staining for estrogen receptors as ER+ (Fig 2A x400) and progesterone receptors as PR+ (Fig 2B x100) and androgen receptors as AR+ (Fig 2C x400) in specimens.

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ID-222 / OP: “Childhood Teratomas: An Evaluation Of 16 Years”

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Abstract (ID-222)

Introduction and Aim: Teratomas are the most common germ cell tumors in children. In this study, we aimed to evaluate the teratoma cases treated in our department and to determine the prognosis.

Material and Methods: Demographic characteristics, laboratory results, mass imaging findings, surgical findings, pathology results and final results of the patients who were operated with teratoma between January 2004 and July 2019 were evaluated retrospectively.

Results: Of 68 patients with teratomas, 51 (%75) were female and 17 (%25) were male. 25 (%75,7) of 33 newborns were prenatally diagnosed. In all cases, the teratoma mass was head and neck in 3 (%4,4), thoracoabdominal in 1 (%1,4), gonadal in 24 (%35,2), retroperitoneal in 2 (%2,9) and 38 (%55,8) were sacrococcygeal. Histopathology results were mature teratoma in 54 (79.4%), immature teratoma in 12 (17.6%), and malignancy in 2 (2.9%) patients. 29 (%76,3) of the cases with sacrococcygeal teratoma were newborn. 5 (%17,2) patients with sacrococcygeal teratoma died in the early postoperative period and 2 (%66,6) patients with head and neck teratomas were lost in the first postnatal hours.

Conclusion: Teratomas in children are most often located in gonadal or sacrococcygeal. Children with head and neck region or sacrococcygeal teratoma may have a mortal course.

Keywords: Teratoma, mortality, child.

Özet (ID-222)

Giriş ve Amaç: Teratomlar, çocuklarda en sık rastlanan germ hücreli tümörlerdir. Bu çalışmada, kliniğimizde tedavi edilen teratom olgularının dağılımlarının ve değerlendirilmesi belirlenmesi amaçlandı.

Materyal ve Metot: Ocak 2004 – Temmuz 2019 yılları arasında kliniğimizde teratom tanısı ile opere edilen olguların demografik özellikleri, laboratuvar sonuçları, kitle görüntüleme bulguları, ameliyat bulguları, patoloji sonuçları ve nihai sonuçlarına ait veriler retrospektif olarak değerlendirildi.

Bulgular: 68 teratomlu hastanın 51’i (%75) kız, 17’si (%25) erkekti. 33 yenidoğan olgunun 25’i (%75,7) prenatal tanılı idi. Tüm olgular içerisinde, teratom kitlesi 3 olguda (%4,4) baş boyun, 1 olguda (%1,4) torakoabdominal, 24 olguda (%35,2) gonadal, 2 olguda (%2,9) retroperitoneal ve 38 olguda (%55,8)

sakrokoksigeal yerleşimliydi. Histopatoloji sonuçları; 54 olguda (%79,4) matür teratom, 12 olguda (%17,6) immatür teratom, 2 olguda (%2,9) ise malignite uyumluydu. Sakrokoksigeal teratomlu olguların 29'u (%76,3) yenidoğandı. Baş boyun teratomlu 2 olgu (%66,6) postnatal ilk saatlerde, sakrokoksigeal teratomlu 5 olgu (%17,2) postoperatif erken dönemde olmak üzere toplam 7 olgu (%10,2) kaybedildi.

Sonuç: Çocuklarda teratomlar en sıklıkla gonadal veya sakrokoksigeal yerleşimlidir. Baş boyun bölgesi veya sakrokoksigeal teratomlu olgular mortal seyredebilmektedir.

Anahtar kelimeler: Teratom; Mortalite; Çocuk.

Full Text (ID-222): “Teratomların Retrospektif Değerlendirmesi”

Giriş: Teratomlar, çocuklarda en sık rastlanan germ hücreli tümörlerdir. Erken embriyonik hücrelerden kaynaklanmaları sebebiyle gerçek anlamda konjenital bir tümördür ve klasik olarak her üç embriyonik germ tabakasına ait dokular içerir. Bunlar, ektoderm (çok katlı yassı epitelyum, sinir dokusu), mezoderm (kas, diş, kemik, kıkırdak dokuları) ve endoderm (müköz bezler, sindirim ve solunum sistemi mukozaları) kaynaklı dokulardır (1).

Teratomlar genellikle dışarıdan görülen kitle sebebiyle tanı alırlar. Geç başvuran olgularda ise kitle genellikle basıya bağlı semptomlar ile bulgu vermektedir. Hastalar karın ağrısı, şişkinlik, kabızlık ya da idrar yapmada zorlanma gibi geç dönem semptomları ile de başvurabilirler (2).

Teratomların tanısında hasta öyküsü ve dikkatli fizik muayene, özellikle rektal tuşe ile presakral alanın değerlendirilmesi önemli olmakla birlikte, özellikle dışarıdan görülmeyen kitlelerde düz karın grafisindeki kalsifikasyon, kemik-diş benzeri yapılar; Ultrason (US), Doppler Ultrason, Bilgisayarlı Tomografi (BT) ve Manyetik Rezonans Görüntüleme (MRG) tanı konulmasında yardımcı olmaktadır (3,4). Kesin tanı ise kitlenin eksize edilmesi sonrası histopatolojik inceleme ile konulmaktadır. Teratomlar histolojik olarak matür, immatür ve malign olarak sınıflandırılmaktadır (4). Teratomların tedavisi kitlenin total olarak eksizyonudur (5).

Totipotansiyel hücrelerden kaynaklanmaları sebebiyle sakrokoksigeal, gonadal, mediastinal, retroperitoneal, servikal ve intrakranial bölgelerde yerleşebilmektedirler (6). Teratomların görülme sıklığı yerleştikleri bölgelere göre değişiklik göstermektedir. Bölgelerine göre teratomların morbiditesi ve mortalitesi değişebilmektedir.

Çocuk Cerrahisi Kliniği'nde teratom tanısı ile opere edilen olgularda teratom kitlesinin bölgesel dağılımları, yerleştikleri bölgelere göre prognozları, morbidite ve mortaliteyi etkileyen faktörlerin saptanması amaçlandı.

Materyal/Metod: Bu çalışma, Ocak 2004 ile Temmuz 2019 yılları arasında Hastanemiz Çocuk Cerrahisi Kliniği'nde teratom tanısı ile opere edilen olgularda geriye dönük olarak yapıldı. 24.03.2017 Tarih/ 65

Sayıli Hastanemiz Klinik Arařtırmalar Etik Kurulu onayı ile retrospektif olarak arřiv dosyaları ve hastane biliřim sistemindeki verilerden hastalara ait tm bilgilere ulařıldı.

Olguların yař, cinsiyet, teratom yerleřim yeri, tarafı, bařvuru řikâyeti, řikâyetin sresi, hikâyesi, prenatal tanı ve takip olup olmadıęı, muayene bulguları, preoperatif tmr belirteçleri (AFP, β -HCG, İnhibin A, CEA, CA 15,3, CA 125, CA 19,9, CRP, LDH, Ferritin, sT3, sT4, TSH), preoperatif grntleme bulguları, preoperatif rntgende kalsifikasyon varlıęı, operasyon yařı, operasyon teknięi, peroperatif bulgular, peroperatif ek patolojiler, histopatolojik sonuç, eřlik eden hastalıklar, taburculuk sresi, operasyon sonrası AFP, β -HCG deęerleri ve nihai sonuç kaydedildi. Bulgular, yzdelik daęılımları ve istatistiksel olarak analiz edildi.

Teratomların cinsiyete gre daęılımları, vcut blgelerine gre daęılımları, tedavi sonuçları yzdelik olarak deęerlendirildi. İstatistiksel analizler iin NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) programı kullanıldı. alıřma verileri deęerlendirilirken tanımlayıcı istatistiksel metotların (Ortalama, Standart Sapma, Medyan, Frekans, Oran, Minimum, Maksimum) yanı sıra verilerin daęılımı Shapiro-Wilk Testi ile deęerlendirilmiřtir. Niceliksel verilerin normal daęılım gstermeyen baęımsız iki grubun karřılařtırmasında Mann-Whitney U Testi, nitel olan verilerin karřılařtırılmasında Fisher-Exact Testi kullanıldı. Anlamlılık $p < 0.01$ ve $p < 0.05$ dzeylerinde deęerlendirildi.

Bulgular: Ocak 2004- Temmuz 2019 tarihleri arasında 15,5 yıllık srede klinięimizde teratom tanısı alan 68 ocuktan 51'i (%75) kız ve 17'si (%25) erkek olup kız erkek oranı e birdi. Hastaların ortalama operasyon yařları 8,2 yıl (1 gn-17 yıl) olup, 33' (%48,5) yařamın ilk birinci ayında bařvurmuřlardı. 33 yenidoęan olgudan 25'inde (%75,7) prenatal tanı konulmuřtu. Over teratomları ile birlikte testikler, abdominal, torakal, retroperitoneal ve sakrokoksigeal teratom tanısı alan 35 olgu (%51,4) ge tanı almıřtı; bunlarda ortalama tanı yařı 8 yıl (1,5 ay-17 yıl) idi. Teratom olgularımızın demografik zellikleri Tablo 1'de zetlenmiřtir (Tablo 1).

Teratomlar yerleřtikleri blgeye gre 1 olgu (%1,4) orofaringeal, 2 olgu (%2,9) servikal, 1 olgu (%1,4) torakoabdominal, 24 olgu (%35,2) gonadal (21 olgu over, 3 olgu testis), 2 olgu (%2,9) retroperitoneal, 38 olgu (%55,8) sakrokoksigeal yerleřimliydi. Sakrokoksigeal teratom olgularından 1'i retroperitonealden batına uzanarak (Tip IV), ileri derecede batın distansiyonu yapmıřtı. 51 kız olgunun 1'i (%1,9) orofarengeal, 1'i (%1,9) servikal, 1'i (%1,9) torakal (torakoabdominal), 27'si (%52,9) sakrokoksigeal, 21'i (%41,1) over yerleřimliydi. 17 erkek olgunun 1'i (%5,8) servikal, 2'si (%11,7) retroperitoneal, 1'i retroperitoneal uzanımlı olmak zere 11'i (%64,7) sakrokoksigeal, 3' (%17,6) testis yerleřimliydi. Kız ve erkeklerde teratomların yerleřim yerlerine gre daęılımları Tablo 2'de zetlenmiřtir (Tablo 2).

Bař-boyun blgesi teratomlarından 2 servikal teratom ve 1 orofarengeal teratomlu olgu prenatal tanılı idi. Torakoabdominal yerleřimli bir olgu sık alt solunum yolu enfeksiyonu řikâyeti ile iki yařında bařvurmuřtu. Over teratomlarında en sık karın aęrısı řikâyeti mevcuttu (14 olgu, %66,6); 4'nde (%19)

kusma, 3'ünde (%14,2) adet düzensizliği, 2'sinde (%9,5) karında şişlik, 1'inde (%4,7) her iki memede şişlik, 1'inde (%4,7) meme ağrısı ve kıllanma, 1'inde (%4,7) aşırı kilo alma şikayetleri mevcuttu. 3 skrotal teratomun 2'sinde (%66,6) skrotal şişlik mevcuttu, birinde (%33) ise kitle rutin kontrol sırasında yapılan ultrasonda insidental saptanmıştı. Retroperitoneal teratomlu 1 olgu (%50) prenatal tanı idi, diğer olguda (%50) ise karında kitle şikâyeti mevcuttu. Retroperitonealden batına uzanan 1 sakrokoksigeal teratom olgusu prenatal ultrasonla abdominal kistik kitle tanısı almıştı. 38 sakrokoksigeal teratomlu olgudan 21'inde (%55,2) prenatal tanı mevcuttu, 15'i (%39,4) gluteal bölgede şişlik ile başvurdu. Geç tanı alan olgulardan 2'si (%5,2) idrar-gaita yaparken zorlanma, 1'i (%2,6) ise rektal kanama ve bacak ağrısı şikâyeti ile başvurmuştu. Olguların başvuru şikâyetleri Tablo 3'te özetlenmiştir (Tablo 3).

Baş-boyun teratomlarının tümü orta hat yerleşimliydi. Sakrokoksigeal teratomlardan retroperitoneal yerleşimli olan 1'i (%2,6) soldan tüm batını doldurmaktaydı; diğer 37'si (%97,3) ise orta hat yerleşimliydi. Taraf gösteren tüm teratomlardan 14'ü (%20,5) sağ, 12'si (%17,6) sol, 2'si (%2,9) bilateral yerleşimliydi. Torakoabdominal teratom ise sağ hemitoraksı doldurup diyafragmayı penetre ederek subdiyafragmatik alana da uzanım göstermekteydi. Over teratomlarının 11'i (%52,3) sağ, 8'i (%38) sol, 2'si (%9,5) bilateral yerleşimliydi; 3 (%100) testis teratomu sol taraf yerleşimliydi. Retroperitoneal teratomlu 2 olgu (%100) da orta hattın sağında yer almaktaydı. Teratomların yerleşim taraflarına göre dağılımları Tablo 4'te özetlenmiştir (Tablo 4).

Hastaların ameliyat öncesi ortalama AFP değerleri 26.041 ng/dl (1-183.924 ng/dl) iken; ameliyat sonrası ortalama 5,9 ayda (2 hafta-5 yıl) ortalama 6.605 ng/dl (0,8-66.916 ng/dl) olmuştu. 68 hastada 70 teratom değerlendirilmesi sebebiyle, histopatolojik tanı 56 (%80) materyalde matür olup, 12 (%17,1) materyalde immatür teratom idi, 2 (%2,8) materyalde ise endodermal sinüs tümörü saptandı. Orofarengeal teratom olan hastanın postnatal erken dönem kaybedilmesi sebebiyle hasta opere edilemedi, ancak tümör görüntüsü *fetus in fetu* olması sebebiyle histopatolojisi matür teratom olarak kabul edildi. 61 hasta (%89,7) taburcu edildi; 7 hasta (%10,2) erken dönem kaybedildi. Yaşayan hastaların ortalama hastanede kalış süreleri 6,2 gün (1 gün-26 gün) idi (Tablo 1).

Servikal teratomların 1'i kız, 1'i erkek, olup ikisi sol üst servikal yerleşimliydi; erkek olguda submandibuler alandan aşağıya doğru, orta hattı önden sağa doğru hafif geçen dev kitle mevcuttu. Kız olguda 10x12 cm çapındaki kitle orta hattı geçmiyordu. Her iki olgu da prenatal tanı konularak hastanemize doğum için yönlendirilmiş olgulardı. Bu olguların AFP değerleri 183.924 ng/dl ve 134.495 ng/dl olup, histopatolojik değerlendirmeleri matür teratom olarak raporlandırıldı. Kız hasta doğumu takiben aynı gün kaybedildi ve patolojisi postmortem biyopsi şeklinde gönderildi. Erkek hasta ise 6 yıldır takipte olup AFP değerleri normal sınırlardadır. Baş boyun teratomlu olguların özellikleri Tablo 5'te özetlenmiştir (Tablo 5).

Gonadal teratomlu 24 olgunun 21'i (%87,5) kız olup 3'ü (%12,5) erkekti. Kızlarda over teratomlarının 11'i (%52,3) sağ, 8'i (%38) sol, 2'si (%9,5) bilateral yerleşimliydi, toplamda 23 over kitlesi değerlendirildi. 3 testis teratomu ise sol taraf yerleşimliydi. 24 olguda başvurudaki ortalama yakınma süresi 29 gün (1 gün-5 ay), ortalama operasyon yaşı 10,9 yıl (1-17yıl) idi. Kız olguların başvurudaki ortalama yakınma süresi 23 gün (1gün-5 ay), ortalama operasyon yaşı 12,3 yıl (7-17 yıl) idi. 2 erkek olgunun başvurudaki ortalama yakınma süresi 3,5 ay (1-6 ay) idi, birinde ise kitle insidental saptanmıştı, ortalama operasyon yaşı 1,3 yıl (1-2 yıl) idi. Over teratomlu hastalarda 2 hastaya eşlik eden obezite ve *Polikistik Over Sendromu* (PKOS), testis teratomlu 1 hastada ise ipsilateral kordon kisti, diğer hastada kontralateral inguinal herni sebebiyle daha önceden operasyon öyküsü mevcuttu.

Gonadal teratomlu olgularda ortalama AFP değerleri 2,4 ng/dl olup, tüm hastaların AFP değerleri normal sınırlar aralığındaydı. Over teratomlu bir hastada CA125 değeri 103 U/ml olarak, 4 hastada ise CA19-9 değeri ortalama 506,2 U/ml olarak yüksek bulundu, β -HCG ve İnhibin-A değerleri tüm hastalarda normal sınırlardaydı.

Radyolojik görüntülemelerde sadece bir hastanın düz karın grafisinde kalsifikasyon saptandı. Ultrason ve Doppler US tüm hastalarda yapılmıştı. Kızlarda ultrason ile ortalama 84,5 x 64,3 mm boyutlarında (41-300 x 27-200 mm) overde lezyon, erkeklerde ultrason ile ortalama 24,9 x 19,2 mm boyutlarında (14,7-40 x 8-40 mm) sol testiste lezyon saptanmıştı.

Over teratomlu 12 (%57,1) hastaya kitle eksizyonu ile over koruyucu cerrahi; 5 torsiyondan 1'inde olmak üzere 9 (%42,8) hastaya da ooferektomi yapıldı; 2 (%9,5) hastanın karşı overinden biyopsi alındı. 11 (%52,3) hasta laparoskopik, 10 (%47,6) hasta laparotomi ile (Pfannenstiel - göbek altı transvers - median insizyon) opere edildi. 3 testis teratomu da inguinal yaklaşım ile opere edildi; 2 (%66,6) hastaya orşiektomi, 1 (%33,3) hastaya testis koruyucu cerrahi yapıldı. Orşiektomi yapılan hastaların 1'inden lenf nodu örneklemesi de yapıldı. Tüm patolojiler matür kistik teratomla uyumlu idi, patolojik sitoloji bulgusu saptanmadı. Ortalama hastanede kalış süresi 1,9 gün (1-5 gün) idi. Gonadal teratom olgularının özellikleri Tablo 6'da özetlenmiştir (Tablo 6).

Sakrokoksigeal teratomlu 38 olgunun 27'si (%71) kız, 11'i (%28,9) erkek olup 1 erkek olguda Tip IV teratom retroperitonealden abdomene uzanmaktaydı. 21 (%55,2) olguda prenatal tanı mevcut olup yenidoğan döneminde opere edilmiş olan 29 (%76,3) olgunun ortalama operasyon yaşı 4,5 gün (1-30 gün) idi. Geç tanı alan ve bir yaşından önce opere edilen 5 (%13,1) sakrokoksigeal teratomlu olgunun başvuru şikâyeti; 3 olguda gluteal kitle, 1 olguda anüsün önde olması, 1 olguda ise huzursuzluk ve karında kitle idi. Bir yaşından sonra opere edilen 5 (%13,1) olgudan ise 3'ü gluteal bölgede kitle, 1'i idrar ve gaita yaparken zorlanma, 1'i bacak ağrısı ve rektal kanama sebebiyle başvurmuşlardı. Sakrokoksigeal teratomlu olguların genel özellikleri Tablo 7'de özetlenmiştir (Tablo 7). Sakrokoksigeal teratom tanılı 38

olgunun Altman sınıflamasına göre dağılımları 27 olgu (%71) Tip I, 4 olgu (%10,5) Tip II-III, 7 olgu (%18,4) Tip IV teratom olup; Tip IV olan 7 olgunun ortalama başvuru yaşı 13,1 ay (1 gün-4,5 yaş) idi.

Preoperatif dönemde AFP değeri, tetkikleri alınan 22 (%57,8) hastadan 19'unda (%86,3) yüksek, 3 (%13,6) hastada ise normal sınırlar aralığındaydı; bu üç hasta 4 yaş, 4,5 yaş ve 5 yaşındaki geç dönem tanı alan olgulardı. Ortalama AFP değerleri 43.756 ng/dl olup postoperatif AFP değerlerinin normale dönüş süresi ortalama 8,5 ay (3-15 ay) idi. 8 (%36,3) hastanın preoperatif β -HCG değeri yüksek bulundu; ikisinde β -HCG'nin kitle eksizyonu sonrası normal değerlere gerilediği görüldü. Bu 8 hastanın 5'inin patolojik incelemesi matür teratom, 3'ü ise; 1'i Grade 1, 1'i Grade 3, diğerinin evresi saptanmamış olmak üzere immatür teratom uyumlu olarak raporlandı (Tablo 7).

38 sakrokoksigeal teratom olgusunun 4'ü cerrahi işlem sonrası aynı gün 1'i ise postoperatif 3. gün olmak üzere 5'i (%13,1) kaybedildi. Kaybedilen 5 hastanın tümü yenidoğan döneminde tanı almış hastalardı, 1 hasta hariç tümü erkekti. 5 hastanın 4'ü prematüreydi ve ortalama doğum haftası 33,1 (28-39) haftaydı. 3 hastanın (%60) patoloji sonucu Tip I, 2 hastanın (%40) ise Tip IV teratom ile uyumlu idi.

Tüm hastalarda erkek hastaların 10'u (%58,8) matür, 7'si (%41,1) immatür, kız hastaların ise 44'ü (%86,2) matür, 5'i (%9,8) immatür teratom, 2'si (%3,9) ise malign teratom tanısı almıştı. Patoloji sonuçları yaşa göre sınıflandırıldığında; yenidoğan 22 olgunun (%66,6) matür, 11 olgunun (%33,3) immatür; süt çocuklarından 4'ünün (%80) matür, 1'inin (%20) immatür teratom; çocukluk çağına ise 28'inin (%93,3) matür teratom, 2'sinin (%6,6) ise malign olarak sonuçlandığı görüldü. Bölge dağılımlarına bakıldığında baş-boyun, torakal ve gonadal bölge teratomu olgularının tümünün patolojisinin benign olduğu; retroperitoneal yerleşimli 2 (%100) olgunun ve sakrokoksigeal teratomlu 10 olgunun (%26,3) immatür teratom, 2 (%5,2) sakrokoksigeal teratomun ise malign olduğu saptandı. Teratomların patoloji sonuçlarının cinsiyet, yaş ve bölge dağılımı Tablo 8'de özetlenmiştir (Tablo 8). Sakrokoksigeal teratomlardan patolojisi immatür teratom saptanan 10 hastanın Altman sınıflamasına göre %70'i tip 1, %10'u tip 2, %20'si tip 4 teratom uyumlu idi. Malignite mevcut 2 hasta ise tip 2 ve tip 4 teratom, exitus olan 5 hastanın iste %30'u tip 1, %20'si tip 4 teratom tanılı idi.

Tartışma: Teratomların toplumda görülme insidansı 1/35.000-40.000 canlı doğum olarak bildirilmektedir (7). Kızlarda ve erkelerde görülme oranı ise 4:1 olarak kız predominansı göstermektedir (8). Terenziani ve ark. yaptığı 10 yıllık 219 hastayı kapsayan bir çalışmada kız hasta sayısı erkek hastalardan 2,5 kat fazla olarak saptanmıştı (9). Çalışmamızda teratom tanısı ile takip ve tedavi edilen 68 hastanın %75'i kız, %25'i erkekti. Olgularımızın kız/erkek oranının 3:1 olarak literatür ile uyumlu olduğu görüldü. Testis teratomları hariç tüm teratomlar sıklıkla %80 oranında kız hastalarda görülmektedir. Literatürde sakrokoksigeal teratomların kız:erkek insidansı 4:1, retroperitoneal teratomların 2:1, servikofasyal teratomlarda oranın eşit olduğu bildirilmiştir (10). Çalışmamızdaki baş boyun

teratomlarının %66,6'sı, torakoabdominal teratomların %100'ü, sakrokoksigeal teratomların %71'i kız hastalarda saptandı ve bu bulgular literatürle uyumlu bulundu.

Teratomların tanı alma yaşı lokalizasyonlarına göre değişmektedir. Ekstragonadal tümörler öncelikle yenidoğan ve erken çocukluk döneminde, gonadal tümörler ise adölesan dönemde sık görülmektedir. Gonadal tümörlerden olan, testiküler tümörler bimodal dağılım gösterir; sıklıkla 2 yaş öncesi ve adölesan/genç yetişkinlik döneminde tanı alırlar (10). Over teratomu 15 yaşına kadar olan büyük çocuklarda görülür. Germ hücre tümörlerinin en sık görülen tipi olan sakrokoksigeal teratomlar ise ağırlıklı olarak yenidoğan ve bebeklerde gözlenirler (9). Tapper ve ark. 54 yıllık süreçte opere edilen 254 teratomun yerleşim bölgelerinin en sık sakrokoksigeal (%40), ikinci sıklıkta over (%37) ve sonrasında sırasıyla baş-boyun, retroperiton, mediasten ve diğer bölgeler olarak dağıldığını bildirmişlerdir (11). Çalışmamızda teratomların bölgesel dağılımı (%55,8 sakrokoksigeal, %30,8 over) literatür ile uyumlu bulundu. Bu çalışmada yenidoğan döneminde tanı alan %49 hasta mevcut iken çalışmamızdaki hastaların %47'si yenidoğan döneminde tanı almış olup Tapper ve ark. çalışmasındaki oranlar ile benzerlik göstermekteydi. Çalışmamızda hastalarımızın ortalama tanı yaşı 8,2 yıl (1 gün-17 yıl) olup %48,5'i yaşamın ilk bir ay'ı içinde başvurmuşlardı; yenidoğanların %75,7'sinde prenatal tanı konulmuştu. Sıklıkla geç dönemde tanı alan over teratomları dışlandığında kalan 47 testiküler, abdominal, torakal, retroperitoneal ve sakrokoksigeal teratomlu olgularımızdan 14'ü (%29,7) ise geç tanı almıştı; bu olguların ortalama tanı yaşı 1,7 yıl (1,5 ay-5,1 yıl) idi. Geç tanı alan teratomlar değerlendirildiğinde testis teratomlarının sıklıkla 2 yaş öncesi, retroperitoneal teratomların abdominal kitle ile ilk 1 yıl içinde, özellikle Tip IV sakrokoksigeal teratomların da çocukluk döneminde tanı alabilmesi sebebiyle bulgularımız literatür ile uyumluydu.

Klinik prezentasyon ve prognoz teratomun bulunduğu bölgelere göre değişmekle birlikte baş boyun teratomları genellikle perinatal periodda başvurmaktadır ve perinatal mortalite ve morbidite açısından yüksek riske sahiptir. Retroperitoneal teratomlar ise sıklıkla yaşamın ilk yılında palpabl abdominal kitle ile saptanırlar. Testis teratomları erkek bebeklerde ağrısız skrotal kitle, over teratomları ise kız hastalarda tipik olarak ağırlı abdominal ya da pelvik kitle ile başvurmaktadır. "American Academy of Pediatrics" tarafından yapılan prepubertal testis tümörlerinde başvurunun sıklıkla hasta, aile ya da sağlık çalışanı tarafından fark edilen ağrısız, sert kıvamlı testiküler kitle ile olduğu belirtilmektedir. Ancak ekstratestiküler kitle (örneğin epidermal kist) ile ayırımı iyi yapılması gerektiği vurgulanmaktadır (12). Çalışmamızdaki 3 skrotal teratomun başvuru şikâyeti %66,6'sında skrotal şişlik, %33,3'ünde ise başka bir sebeple yapılan ultrasonda insidental saptanan kitleydi Over teratomlu hastaların ilk başvurusunda over torsiyonu yaklaşık %25 olguda mevcuttur. Sakrokoksigeal teratomlar ise genellikle doğumda büyük ekzofitik kitle sebebiyle tanı almaktadır (10). 9-15 yaş arası 58 over teratomlu olguluk bir çalışmada en sık kronik şikâyetler ile başvuru mevcutken, hastaların %58,6'sında ilk başvuru şikâyetinin karın ağrısı, ikinci sıklıkta %44,8 ile palpabl kitle varlığı olduğu saptanmıştır (12). Çalışmamızda hastalarımızın

başvuru şikâyetleri over teratomlarında en sıklıkla %66,6 karın ağrısı, ikinci sırada ise %19 oran ile kusma idi.

Teratomlar prenatal dönemde de tanı alabilmektedir. Prenatal ultrasonun yaygın kullanımı ile doğumdan önce tanı konulan teratom yüzdesi belirgin şekilde artmıştır. Sakrokoksigeal teratomların çoğunluğu, 22. ve 34. gebelik haftaları arasında saptanabilmektedir (13). Prenatal tanı alan kistik kitleler sıklıkla baş boyun bölgesi ve sakrokoksigeal bölge teratomlarıdır. Baş boyun teratomları genellikle kitle boyutu ve eksternal yerleşim ile paralel olarak prenatal tanı almakta ve bazı bulgularına göre ex utero intrapartum tedavi (EXIT) için hazırlığa olanak sağlamaktadır (14). Neonatal dönemde tanı alan 33 hastamızın 25'i (%75,7) prenatal tanı idi; prenatal tanı alan olguların %12'si baş boyun bölgesi; %4'ü retroperitoneal, %84'ü ise sakrokoksigeal yerleşimliydi. Çalışmamızda yer alan 3 baş boyun teratomlu olgunun tümü prenatal tanı olması sebebiyle EXIT için hazırlık yapılması mümkün olmuştur.

20 hastalık bir sakrokoksigeal teratom serisinde %45 prenatal tanı, %45 doğumda ve %10 neonatal dönem sonrası tanı alan olgu olduğu bildirilmiştir (15). Wang ve ark. yaptıkları çalışmada, sakrokoksigeal teratom tanısı olan 105 olgunun %20,6'sının prenatal takipli olmak üzere %27'sinin yenidoğan döneminde, %33,3'ünün süt çocuğu döneminde, %39'unun ise sonraki yaşlarda tanı aldığını bildirmişlerdir (16). Bu çalışma ile kıyaslandığında, yenidoğan döneminde tanı alan olgularımızın %75,7'sinde prenatal tanı bulunması sebebiyle erken dönem tanı ve tedavi alan hasta sayımız belirgin yüksek bulunmuştur. Bu erken tanı oranları, hastanemizde sistematik çalışan perinatoloji ünitesinin bulunmasının önemini vurgulamaktadır. Serimizdeki sakrokoksigeal teratom tanı 38 hastamızın %55,2'sinde prenatal tanı mevcuttu, antenatal tanısı olmayan yenidoğan sakrokoksigeal teratom olgularının tümü (%39,4) gluteal bölgede şişlik şikâyeti ile başvuru sonrası tanı alarak opere edildi.

Varma ve ark. yaptığı 8 yıllık retrospektif çalışmada gonadal teratomlarda taraf değerlendirildiğinde özellikle over yerleşiminde sağ tarafın çoğunlukta olduğu gösterilmiştir (17). 956 over teratomu ile yapılan bir yetişkin çalışmasında sağ, sol ve bilateral yerleşimin oranları sırası ile %44,5, %44,9 ve %6,5 bulunmuştur (18). Unilateral over teratomları sıklıkla (%72,2) sağ taraf yerleşimlidir (19). Acién ve ark. yaptığı 174 over teratomlu seri çalışmasında ise taraf belirtilmeyen 52 hasta dışında %32,1 sağ, %26,4 sol ve %11,4 bilateral teratom lokalizasyonu olduğu ve sağ taraf olguların sayıca fazla olmasına rağmen istatistiksel olarak anlamlı fark olmadığı belirtilmiştir (20). Kistik teratomların daha çok sağ overde (%72,2) yerleşim gösterdiği sonucuna varan başka bir çalışmada ise çeşitli genetik ve çevresel faktörlerin buna sebep olabileceği, aynı zamanda sağ adneksiyal bölgede boşluğun daha fazla olması, sol tarafta sigmoid kolonun alanı doldurması sebebiyle sağ lezyonların daha erken tanı alabildiğine dair teoriler ifade edilmektedir (21). Barksdale ve ark. yaptığı çalışmada ise over teratomlarının sağ-sol taraf farkı göstermediği, bilateral görülme ihtimalinin ise %10 olduğu belirtilmiştir (10). Çalışmamızda lateralite değerlendirildiğinde ise sırası ile sağ over teratomu %52,3, sol %38, bilateral ise %9,5 oranında

saptanmıştır. Over teratomlarında sağ yerleşimin baskın olduğu görüldü ve bu bulgular literatür bulguları ile uyumlu bulundu.

Testis tümörlerinde tarafın değerlendirildiği 230 olgulu ve %53,7 oranında matür-immatür teratom içeren bir çalışmada ise benign tümörlerde %51,6 oranında sol yerleşim, %47,6 oranında ise sağ yerleşim saptanmıştır (22). 422 skrotal germ hücre tümör tanılı hasta ile yapılan bir yetişkin taramasında ise sağ - sol oranları sırasıyla %47,6 - %47,4 oran ile benzer bulunmuştur. Bu çalışmada sadece tümör boyutlarında lateralitenin anlamlı olduğuna dair bir sonuç elde edilmiş ve sol taraf teratomlarında tümör boyutunun anlamlı olarak daha büyük olduğu tespit edilmiştir (22). Bizim çalışmamızdaki olgu sayısı az olmakla birlikte testis teratomları benign ve sol taraf yerleşimli idi. Testis teratomlu olgu sayımızın az olması, taraf oranlarının literatürden farklı olmasını açıklayabilir.

Teratomlar çocuklarda en sık görülen germ hücreli tümörlerdir ve diferansiye olma derecelerine göre matür veya immatür olarak sınıflandırılır. İmmatür doku yoğunluğuna göre teratomların evreleme sistemi Gonzales-Crussi ve arkadaşları tarafından modifiye edilmiştir, Norris tarafından sunulan derecelendirme sistemine göre puanlanan nöroektodermal veya blastemal doku içermektedirler. Bu sisteme göre Grade 0: matür-benign, Grade 1: muhtemelen benign, Grade 2: muhtemelen malign, Grade 3: malign olarak sınıflandırılmaktadır (9). Teratomların tanı ve takibinde en çok kullanılan serum markeri alfa-fetoprotein (AFP) düzeyidir. Fetal karaciğer, en büyük AFP kaynağıdır; yolk sak da erken fetal gelişim sırasında AFP sentezinde aktiftir. AFP yolk sak kesesi kaynaklı tümörlerin iyi bir belirtecidir (23,24). Serum AFP mutlak düzeyi başlangıçtaki malignite derecesi ile ilişkili olabilirken, AFP seviyelerindeki eğilimleri takip etmek rezeksiyon sonrası tümör nüksünü izlemek için yararlıdır (25). Deborah ve ark. yaptığı 25 yıllık 142 olgudan oluşan bir çalışmada preoperatif AFP değerlerinin malign teratomlu 4 hastada, 19 matür teratomun 1'inde ve 6 immatür teratomun 3'ünde yüksek olduğu saptanmış ve 1 hastada malign transformasyon görülmüştür (26).

Sakrokoksigeal teratomlar genellikle doğumda veya bebeklik döneminde teşhis edilir. Bu dönemde serum AFP düzeyi normal olarak yüksektir, çünkü AFP yolk sak kesesi, fetal karaciğer ve fetal gastrointestinal sistem tarafından üretilir. Bu nedenle, yüksek AFP seviyesinin doğumda veya bebeklik döneminde dikkatli bir şekilde yorumlanması gereklidir. Normal olarak, artmış serum AFP seviyesi doğumdan yaklaşık 8 ay sonra azalır ve yetişkin seviyesine geriler (13). Ameliyat edilen tüm sakrokoksigeal teratomlu olguların, tümör nüksü açısından ameliyattan sonra en az 36 ay süreyle ve 2 ay aralıklarla kan AFP düzeyleri ve rektal muayene ile izlenmeleri gereklidir (27). Çalışmamızda sakrokoksigeal teratom olgularının preoperatif dönemde AFP değeri, %86,3'sında yüksekti; bunların 4'ünde immatür teratom mevcuttu. Yüksek AFP saptanan 19 hastanın 15'i (%78,9) matür teratom tanısı almıştı ve 17'si yenidoğan yenidoğan döneminde olması sebebiyle yüksek bulunan AFP değerlerinin fizyolojik olabileceği düşünüldü. AFP değeri normal aralıkta olan %13,6 hasta ise geç dönem tanı alan olgulardı (ortalama 4-5 yaş).

Niramiş ve ark. yaptığı çalışmada 8 aydan önce opere edilen 33 hastanın AFP değeri 125,6 - 179,185 ng/ml aralığında değişmekte olup normal değerin üzerinde, 8 aydan sonra opere edilen 8 hastada ise normal aralıkta olduğu saptanmıştır. Bu çalışmada yüksek AFP değeri olan hastaların normale dönüş süresi operasyondan 8 ay sonra olduğu belirtilmiştir ve çocukluk çağındaki hastalarda normal AFP değerleri saptanmıştır (28). Başka bir retrospektif çalışmada ise AFP seviyelerinin ilk 8 ay yüksek olabileceği ve teratom rezeksiyonu sonrası AFP'nin normale dönmesi için gereken ortalama sürenin yaklaşık 9 ay olduğu belirtilmektedir (29,30). Hussam ve ark. yaptığı çalışmada 6 ay ile 5 yıl arası süren takiplerde, AFP seviyelerinin 3-9 ayda normal değere gerilediği gösterilmektedir (15). Çalışmamızda sakrokoksigeal teratomlu olgularda ortalama AFP değerleri 43.756 ng/dl olup postoperatif AFP değerlerinin normale dönüş süresi ortalama 8,5 aydı (3-15 ay). Bulgularımız literatürle uyumlu bulundu.

9 immatür 11 matür teratomla yapılan bir çalışmada immatür teratomlarda preoperatif ortalama AFP değerinin 80.800 ng/dl, matür teratomlarda 24.400 olmak üzere immatür teratomlarda daha yüksek olduğu saptanmıştır (31). Operasyon sırasında 3-45 günlük olan immatür teratomlu 4 olgunun AFP değerinin 1.000-50.000 ng/ml arasında değiştiği saptanan bir çalışmada, hastaların 1 yaşında AFP değerlerinin normal aralığa gerilediği görülmüştür (28). Çalışmamızda immatür teratomlu olguların AFP değerleri ameliyat öncesi ortalama 76.431 ng/dl (5,4-160.548), matür teratomlu olguların 21.224 ng/dl (1-183.924 ng/dl) olmak üzere ortalama AFP değeri immatür teratomlu olgularda literatür ile uyumlu olarak daha yüksek bulundu; iki grupta da nüks gözlenmedi.

Bilmire ve ark. yaptığı 142 hastalık taramada β -HCG ve AFP yüksekliğinin malignite göstergesi olabileceği ancak benign teratomlu hastaların çoğunda bu değerlerin referans aralıkları içinde olduğu ifade edilmektedir (26). Gonadal teratomlu olgularımızın tümü benign teratoma sahipti ve ortalama AFP değerleri 2,4 ng/dl olmak üzere tüm hastalarda AFP değerleri normal sınırlar aralığındaydı.

Gonadal teratomlar için, β -HCG ve daha nadir olarak karsinoembriyonik antijen (CEA) embriyonik malignite belirteçleri olarak kullanılmıştır. β -HCG ve CEA tespit edildiğinde, yolk sak tümörde olduğu gibi ekstraembriyonik bileşen var olabilir (32). Bu belirteçler, matür teratomlu hastalarda dahi nüks veya malign transformasyonu öngörmede tamamen güvenilirdir ve uzun süreli takip için önerilmektedir (5). Çalışmamızda gonadal teratomlarda β -HCG değeri normal sınırlar aralığındaydı. Sakrokoksigeal teratomlu 8 (%21) hastanın preoperatif β -HCG değeri yüksek bulundu; bu hastaların %37,5'i patolojik incelemede immatür teratoma sahipti. %25'inde ise operasyon sonrası β -HCG normal değerlere geriledi.

Gonadal teratomların tanısında ultrason ucuz ve kolay ulaşılabilir olması sebebiyle önemli bir görüntüleme yöntemidir. Over teratomlarında ultrasonda iki ya da daha fazla karakteristik özelliğin saptanması yüksek prediktif değerde tanı koydurucudur (19). Mais ve ark. matür kistik teratom tanısında, ultrasonun %58 duyarlılık ve %99 özgüllüğü olduğunu saptamışlardır (34). Ultrasonun testis

malignitesinde %92-98 duyarlılığa ve %95-99,8 özgüllüğe sahip olduğu gösterilmiştir (35). Olgularımızın tümünde kitleler ultrason ile saptanmıştır.

Gonadal teratomların tedavisinde gonad koruyucu cerrahi ile eksizyon yapılması önerilmektedir (36-38). Ancak olası bir yolk sak komponenti açısından dikkatli olunmalıdır ve mümkünse “frozen” eşliğinde operasyon yapılmalıdır. Jinekoloji operasyonlarında intraoperatif konsültasyonun değerini araştıran Wang ve arkadaşlarının serisinde 15 malign germ hücreli over neoplazmı yer almaktadır; bir disgerminom olgusu hariç tümüne “frozen” kesit ile tanı konulmuştur (16). Fırat ve arkadaşlarının yaptığı çalışmanın sonuçları, overin germ hücreli neoplazmlarında, intraoperatif konsültasyonun güvenle kullanılabileceğini göstermektedir (39).

Over teratomları çocuklarda en sık görülen over tümörleridir ve çoğunlukla matür patolojidedir. Son çalışmalara göre, matür teratom saptanması durumunda over koruyucu prosedürler önerilmektedir (40). Çalışmalar tek taraflı salpingo-oforektomi yapılan adölesanlarda üreme morbiditesinin arttığını göstermiştir, çünkü bu hastalarda yaşam boyu %15'e varan oranda kontralateral torsiyon veya over neoplazisi gelişme riski mevcuttur, azalmış over rezervi sebebiyle infertilite kliniğine başvuru daha yaygındır. 5-21 yaş arası 165 benign over patolojisine sahip vakanın dâhil edildiği bir çalışmada pediatrik cerrahların opere ettiği dönem ile jinekologların operasyona dâhil olduğu iki dönem kıyaslandığında, sadece pediatrik cerrahların opere ettiği olgularda ooforektomi oranının 8 kat daha fazla olduğu (%45) saptanmıştır. Bu çalışmada genç yaş, iskemik görünüm, torsiyon ve matür teratom varlığı ooforektomi ile yüksek ilişkili bulunmuştur (41). Over teratomu sebebiyle opere edilen 21 hastamızdan eksize edilen 23 teratom materyalinin tümü matür teratom uyumlu olmasına rağmen %42,8 hastada torsiyon, overin nekrotik görünümü ve viable over dokusu görülmemesi sebebiyle ooforektomi yapıldı.

Sakrokoksigeal teratomlar lezyonu internal ve/veya eksternal komponentinin derecesine göre tiplere ayıran Altman sınıflandırması ile tiplendirilirler (42). Doğumda görülen sakrokoksigeal teratomlar genellikle Altman Tip I ve II'dir (%87). Yenidoğanlarda nadiren Tip III'de görülebilir. Tip IV eksternal bir bileşen olmadığından, tipik olarak yaşamın geç döneminde görülür. Ortalama operasyon yaşı 10,2 ay olan 105 sakrokoksigeal teratom tanılı hastadan oluşan bir çalışmada; Tip I %46,7, Tip II-III %37,2, Tip IV ise %14,3 oranında saptanmıştır (16). Sıklıkla Tip I (%71) görülmesi sebebiyle çalışmamız da benzer oranlara sahiptir. Ancak literatürde Tip IV görülme sıklığı erken çocukluk döneminde nadirdir ve bizim çalışmamızda sakrokoksigeal teratomlarda ortalama operasyon yaşı 5,2 ay ile düşük olmasına rağmen Tip IV olgularımızın oranı literatüre göre yüksek bulunmuştur. Çalışmamızdaki sakrokoksigeal teratom tanılı 38 olgunun Altman sınıflamasına göre dağılımları %71 Tip I, %10,5 Tip II-III, %18,4 Tip IV teratom olup; Tip IV olan 7 olgunun ortalama başvuru yaşı 13,1 ay (1 gün-4,5 yaş) idi.

Bölgesel olarak teratomların mortaliteleri incelendiğinde literatürde baş boyun teratomlarında sıklıkla benign olmalarına rağmen mortalitenin %12,5-23 aralığında daha yüksek oranda olduğu bildirilmektedir;

mortalite sebebi olarak obstrüktif fenomen ile doğum ya da yüksek kardiyak outputa bağlı gelişen hidrops ile doğum gösterilmektedir (43). Baş ve boyun bölgesindeki teratomlar nadirdir (bildirilen tüm teratomların %2-9'u), çoğunluğu servikal bölge yerleşimlidir ve orofarinkste daha da nadir görülür. Her ne kadar teratomlar iyi huylu histopatolojik yapıya sahip olsalar da, yenidoğan döneminde en sık görülen solunum sıkıntısı nedenlerinden biri olan üst solunum yolu basısı nedeniyle yaşamı tehdit edici olabilirler. Kist içine kanama ile aniden boyutlarını artırabilir, kitle basısı ile solunumu aniden kötüleştirebilir ve yaşamı tehdit eden hava yolu tıkanıklığına neden olabilirler (44). Son yayınlarda ise baş boyun bölgesi teratomlarında %33 mortalite oranı bildirilmektedir (45). Fasyal kemiklerin deformasyonları da hızla gelişebilir ve fonksiyonel prognozu tehlikeye atabilir. Kaybedilen hastalarımızın 1'i postmortem biyopsisi matür teratom olarak sonuçlanan dev servikal teratomlu, diğeri ise doğumdan birkaç saat sonra eksitus olan dev orofarengeal teratomlu olgu olmak üzere baş boyun yerleşimli teratoma sahipti. Çalışmamızda baş boyun teratomlarında mortalite oranı %66 ile literatüre göre oldukça yüksekti. Yüksek mortalite oranı örneklem grubumuzun küçük olmasına bağlandı.

Gonadal teratomlarda ise eşlik eden patoloji bulunmaması halinde tam rezeksiyon sonrası nüksüz sağkalım oranları yüksektir (9). Çalışmamızdaki gonadal teratomlu olguların tümü benign patolojiye sahipti ve mortalite bulunmamaktadır.

Sakrokoksigeal teratomlarda yüksek kardiyak outputa bağlı kardiyak yetmezlik gelişmediği sürece mortalite oranları oldukça düşük bildirilmektedir. 36 sakrokoksigeal teratom ile yapılan bir çalışmada mortalite oranı %8,3 saptanmıştır, ancak tüm olgularda exitusun anesteziye bağlı olduğu raporlanmıştır (46). 20 hastalık başka bir sakrokoksigeal teratom serisinde ise %5 mortalite saptanmış, kaybedilen olgunun malign teratomu olduğu ve adjuvan kemoterapi aldığı bildirilmiştir (15). Prenatal tanı alan hastaların postnatal tanı alanlara göre daha mortal seyrettiği bildirilmektedir (47). Çalışmamızdaki sakrokoksigeal teratomlarda kitle eksizyonu sonrası kardiyak yetmezliğe bağlı kaybedilen olgular bulunması sebebiyle mortalite %13,1 ile yüksek bulunmuştur. Aynı zamanda kaybedilen hastaların %80'inde prenatal tanı mevcuttu.

Sakrokoksigeal teratom ile ilişkili yüksek neonatal mortalite ve morbidite oranları, erken doğum ve malign invazyon, tümör içine kanama, umbilikal akım obstrüksiyonu, yüksek çıkışlı kalp yetmezliği, hidrops fetalis gibi komplikasyonlara bağlanmaktadır. Bu komplikasyonların bazıları doğum öncesi tespit edilebilir ve uygun şekilde tedavi edilebilir (50).

Sonuç: Kliniğimizde tedavi edilen 68 teratom olgusunun %4,4'ü baş-boyun, %1,4'ü torakoabdominal, %35,2'si gonadal, %2,9'u retroperitoneal, %55,8'i sakrokoksigeal yerleşimliydi. Olguların kaybedilen %10,2'si baş-boyun ve sakrokoksigeal bölge yerleşimliydi. Baş-boyun bölgesi teratomları nadir görülmesine rağmen exitus sıklıkla obstrüktif fenomen ve hidropsa, sakrokoksigeal teratomlarda ise yüksek kardiyak outputa bağlı hidropsa ve post operatif kardiyak yetmezliğe bağlı gelişebilmektedir.

Sakrokoksigeal teratomlu olgulardan ise özellikle tip 3 teratomlar morbid ve mortal seyirli olup, lezyonun tamamen eksize edilememesi veya malign transformasyon göstermesi nedeniyle kaybedilmektedirler.

Tablo 1: Teratomların genel özellikleri, ortalama laboratuvar değerleri ve histopatolojik tanıya göre dağılımları

	n:68	%
Cinsiyet	51 Kız 17 Erkek	%75 %25
Ortalama tanı yaşı	8,2 yıl (1 gün-17 yıl)	
Prenatal tanı alan olgu sayısı	25 hasta	%75,7
İlk bir ay içinde başvuran olgu sayısı (prenatal tanısı olan + olmayan hastalar)	33 hasta	%48,5
Geç tanı alan olgu sayısı (>1 ay)	35 hasta	%51,4
Geç tanı alan olguların ortalama tanı yaşı	8 yıl (1,5 ay-17 yıl)	
Ameliyat öncesi ortalama AFP değeri	26.041 ng/dl (1-183.924 ng/dl)	
Ameliyat sonrası ortalama AFP değeri	6.605 ng/dl (0,8-66.916 ng/dl)	
Histopatolojik Tanı	56 matür teratom 12 immatür teratom 2 endodermal sinüs tümörü	%80 %17,1 %2,8
Taburcu edilen olgu sayısı	61 hasta	%89,7
Ex olgu sayısı	7 hasta	%10,2
Ortalama hastanede kalış süresi	6,2 gün (1 gün-26 gün)	

Tablo 2: Teratomların anatomik bölgelere ve cinsiyete göre dağılımları

Lokalizasyon n	n:68 (%)	Cinsiyet	
		Kız n:51 (%)	Erkek n:17 (%)
Baş-boyun	3 (%4,4)	2 (%3,9)	1 (%5,8)
Torakoabdominal	1 (%1,4)	1 (%1,9)	
Gonadal	24 (%35,2)	21 (%41,1)	3 (%17,6)
Retroperitoneal	2 (%2,9)		2 (%11,7)
Sakrokoksigeal	38 (%55,8)	27 (%52,9)	11 (%64,7)

Tablo 3: Teratomların lokalizasyonuna göre başvuru şikayetleri

Lokalizasyon	Başvuru Şikayeti	n	%
Baş-boyun n:3	Prenatal tanı	3	%100
Torakal n:1	Sık akciğer enfeksiyonu, ateş, öksürük	1	%100
Over n:21	Karın ağrısı	14	%66,6
	Kusma	4	%19
	Karında şişlik	2	%9,5
	Adet düzensizliği	3	%14,2
	Her iki memede şişlik	1	%4,7
	Meme ağrısı ve kıllanma	1	%4,7
	Kilo alma	1	%4,7
Skrotal n:3	Skrotumda şişlik	2	%66,6
	İnsidental	1	%33,3
Retroperitoneal n:2	Prenatal tanı	1	%50
	Karında kitle	1	%50
Sakrokoksigeal	Prenatal tanı	21	%55,2

n:38	Gluteal bölgede şişlik/kitle	15	%39,4
	İdrar/ gaita yaparken zorlanma	2	%5,2
	Bacak Ağrısı-Rektal Kanama	1	%2,6

Tablo 4: Teratomların lokalizasyonuna göre taraf yerleşimleri

Teratom yerleşim bölgesi	Sağ n:14 (%20,5)	Sol n:12 (%17,6)	Bilateral n:2 (%2,9)	Orta hat n:40 (%58,8)	Toplam
Orofaringeal				1 (%100)	1
Servikal				2 (%100)	2
Torakoabdominal	1 (%100)				1
Over	11 (%52,3)	8 (%38)	2 (%9,5)		21
Testis		3 (%100)			3
Retroperitoneal	2 (%100)				2
Sakrokoksigeal		1 (%2,6)		37 (%97,3)	38
Tümü	14	12	2	40	

Tablo 5: Baş-boyun teratomlarının genel özellikleri

Baş- Boyun Teratomları n:3		%
Cinsiyet	2 kız	%66,6
	1 erkek	%33
Prenatal tanı alan olgu sayısı	3	%100
AFP ortalama değeri	159,209 ng/dl	
Histopatolojik inceleme	3 matür teratom	%100
Exitus	2	%66,6
Taburcu	1	%33,3

Tablo 6: Gonadal teratomların genel özellikleri

Gonadal Teratomlar n:24	Ortalama yakınma süresi	29 gün (1 gün-5 ay)
	Ortalama operasyon yaşı	10,9 yıl (1-17)
	Patoloji sonucu	Matür teratom
	Ortalama hastanede kalış süresi	1,9 gün (1-5 gün)
	Ortalama AFP değeri	2,4 ng/dl
Over Teratomu n:21	Ortalama yakınma süresi	23 gün (1gün-5 ay)
	Ortalama operasyon yaşı	12,3 yıl (7-17 yıl)
	Taraf	11 sağ 8 sol 2 bilateral
	Yüksek tümör marker	1 hastada CA 125; 103U/ml 4 hastada CA 19-9 ortalama; 506,2 U/ml
	Eşlik eden hastalık	1 hastada obezite 1 hastada PKOS
	Ultrasonda lezyon boyutu	84,5 x 64,3 mm (41-300 x 27-200 mm)
	Operasyon	9 ooferektomi (%42,8) 12 kitle eksizyonu (%57,1) 2 karşı overden biyopsi (%9,5) +1 appendektomi (%4,7)
	Operasyon şekli	10 laparotomi (%47,6) 11 laparoskopi (%52,3)

Testis teratomu n:3	Ortalama yakınma süresi	3,5 ay (1-6 ay)
	Ortalama operasyon yaşı	1,3 yıl (1-2 yıl)
	Taraf	3 sol
	Eşlik eden hastalık	1 hastada ipsilateral kordon kisti, 1 hastada kontralateral inguinal herni op
	Ultrasonda lezyon boyutu	24,9 x 19,2 mm (14,7-40 x 8-40 mm)
	Operasyon	2 orşiektomi (%66,6) 1 testis koruyucu cerrahi (%33,3)1 lenf nodu örnekleme (%33,3)
	Operasyon şekli	İnguinal yaklaşım (%100)

Tablo 7: Sakrokoksigeal teratomların genel özellikleri

Sakrokoksigeal teratomlar n:38		
Cinsiyet	27 kız (%71) 11 erkek (%28,9)	
Taraf	1 sol (%2,6) 37 orta hat (%97,3)	
Prenatal tanı	21 (%55,2)	
Yenidoğan döneminde opere edilen	29 (%76,3)	Ortalama operasyon yaşı; 4.5 gün (1-30 gün)
Geç tanı alan	İlk 1 yıl içinde opere edilen olgu sayısı	5 (%13,1)
	1 yaşından sonra opere edilen olgu sayısı	5 (%13,1)
AFP değeri yüksek olan	19 (%86,3)	
Preoperatif ortalama AFP değeri	43.756 ng/dl	
Postop AFP değeri ortalama normale dönüş süresi	8,5 ay (3-15 ay)	
β-HCG değeri yüksek olan	8 (%36,3)	
Postoperatif enteral beslenme başlama süresi	2. gün (0-16 gün)	
Postoperatif ortalama gaita çıkış süresi	1,6 gün (0-4 gün)	
Kan ürünü replasmanı yapılan hasta sayısı	16	
Ortalama hastane yatış süresi	8,8 gün (1-26 gün)	

Tablo 8: Teratomların histopatolojik özelliklerine göre cinsiyet, yaş ve bölge dağılımları

n:68		Matür	İmmatür	Malign
Cinsiyet	Kız	44 (%86,2)	5 (%9,8)	2 (%3,9)
	Erkek	10 (%58,8)	7 (%41,1)	
Yaş	Yenidoğan	22 (%66,6)	11 (%33,3)	
	1 ay-1 yaş	4 (%80)	1 (%20)	
	1-18 yaş	28 (%93,3)		2 (%6,6)
Bölge	Baş-boyun	3 (%100)		
	Torakal	1 (%100)		
	Gonadal	24 (%100)		
	Retroperitoneal		2 (%100)	
	Sakrokoksigeal	26 (%68,4)	10 (%26,3)	2 (%5,2)

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ID-223 / OP: “Prediction of Postnatal Prognosis in Newborn with Sacrococcygeal Teratomas.”

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Abstract (ID-223):

Introduction and Aim: Teratomas are a truly congenital tumors due to their origin from early embryonic cells and classically contain tissues from all three embryonic germ layers, ectoderm, mesoderm and endoderm. The aim of this study was to determine prognostic factors affecting of survive and to predict of postnatal prognosis in neonates with sacrococcygeal teratoma treated in our department.

Material and Method: Demographic characteristics, laboratory results, mass imaging findings, surgical findings, pathology results and final results of the patients who were operated with sacrococcygeal teratoma between January 2004 and July 2019 were evaluated retrospectively.

Results: Of 38 patients with sacrococcygeal teratoma, 27 (71%) were female and 11 (28.9%) were male. 21 (70%) of 30 newborns were prenatally diagnosed. 30 (78.9%) of the cases with sacrococcygeal teratoma were newborn; the mean birth week of the newborns was 36.3 weeks (28- 40 weeks) and the mean birth weight was 3740 grams (2030- 9000 grams). 5 (16.6%) of them died in the early postoperative period.

Among the groups of 5 died and 25 living neonates; respectively the mean birth week was 33.1 weeks and 37 weeks; the mean birth weight 4400 gr and 3603 gr; the mean mass volume was 1780 ml and 430 ml; the mean mass weight 2866 gr and 706 gr; the mean mass volume/birth weight ratio was 0.37 and 0.09, the mean mass weight/birth weight ratio was 0.57 and 0.15.

Conclusion: The prematurity, mass volume and weight were associated with prognosis in newborns with sacrococcygeal teratoma. The threshold value to be determined according to the mean mass volume / birth weight and mass weight / birth weight ratios of the extended series can be used as a prognostic factor.

Keywords: Sacrococcygeal teratoma; Prognostic factor; Mortality; Neonate.

Özet (ID-223)

Giriş ve Amaç: Teratomlar, erken embriyonik hücrelerden kaynaklanmaları sebebiyle gerçek anlamda konjenital bir tümördür ve klasik olarak ektoderm, mezoderm ve endoderm olmak üzere her 3 embriyonik germ tabakasına ait dokular içerir. Bu çalışmada, kliniğimizde tedavi edilen sakrokoksigeal teratomlu yenidoğanların sağkalımını etkileyen faktörlerin belirlenmesi ve prognoz öngörüsü yapılabilmesi amaçlandı.

Materyal ve Metot: Ocak 2004 – Temmuz 2019 yılları arasında kliniğimizde sakrokoksigeal teratom tanısı ile opere edilen olguların demografik özellikleri, laboratuvar sonuçları, kitle görüntüleme bulguları, ameliyat bulguları, patoloji sonuçları ve nihai sonuçlarına ait veriler retrospektif olarak değerlendirildi.

Bulgular: 38 sakrokoksigeal teratomlu hastanın 27'si (%71) kız, 11'i (%28,9) erkekti. 30 yenidoğanın 21'i (%70) prenatal tanılı idi. Sakrokoksigeal teratomlu olguların 30'u (%78,9) yenidoğandı; yenidoğanların ortalama doğum haftası 36,3 hafta (28 hafta - 40 hafta) olup ortalama doğum kilosu 3740 gram (2030 gram – 9000 gram) idi. Bunlardan 5'i (%16,6) postoperatif erken dönemde kaybedildi.

Ameliyat sonrası kaybedilen 5 ve yaşayan 25 yenidoğanın sırasıyla ortalama doğum haftası 33.1 hafta ve 37 hafta; ortalama doğum ağırlığı 4400 gram, 3603 gram; ortalama kitle volümü 1780 ml ve 430 ml; ortalama kitle ağırlığı 2866ml ve 706 gr; ortalama kitle volümü/doğum ağırlığı oranı 0.37 ve 0.09, ortalama kitle ağırlığı/doğum ağırlığı oranı 0.57 ve 0.15 idi.

Sonuç: Sakrokoksigeal teratomlu yenidoğanlarda, prematürite, kitle volümü ve ağırlığı prognoz ile ilişkili bulundu. Genişletilmiş serilerin ortalama kitle volümü/doğum ağırlığı ve kitle ağırlığı/doğum ağırlığı oranlarına göre belirlenecek eşik değer, prognostik faktör olarak öngöründe bulunmak için kullanılabilir.

Anahtar kelimeler: Sakrokoksigeal teratom; Mortalite; Prognoz; Yenidoğan.

Full Text (ID-223)

Giriş: Teratomlar, çocuklarda en sık rastlanan germ hücreli tümörlerdir. Erken embriyonik hücrelerden kaynaklanmaları sebebiyle gerçek anlamda konjenital bir tümördür ve klasik olarak her 3 embriyonik germ tabakasına ait dokular içerir. Bunlar, ektoderm (çok katlı yassı epitelyum, sinir dokusu), mezoderm (kas, diş, kemik, kıkırdak dokuları) ve endoderm (müköz bezler, sindirim ve solunum sistemi mukozaları) kaynaklı dokulardır.

Sakrokoksigeal teratom çocuklarda teratomun en sık görülen tipidir ve yenidoğanların en sık görülen konjenital tümörüdür. Görülme sıklığı 1/35.000-40.0000 canlı doğumdur. Olguların %75-80'i kız çocuklarda görülür. %50-80 bebekte koksiks üzerinde dışarıdan görülebilen ekzofitik bir kitle mevcuttur. Sakrokoksigeal teratomlar tümörün lokalizasyonuna göre Altman sınıflaması ile 4 tipe ayrılmaktadır. Tip I'den Tip IV'e doğru teratomlar tamamen dışarıda yerleşen bir kitleden, lezyonun dışarıdan hiç görülmediği bir kitleye kadar değişmektedir. Geç tanı alan olgular ise sıklıkla Tip IV teratomdur ve konstipasyon, karın ağrısı, ağırlı miksiyon, pubik bölgede şişlik, bacaklarda güçsüzlük gibi şikâyetlerle başvurmaktadırlar. Tedavisi ise total kitle eksizyonu ile birlikte koksiksin çıkarılmasıdır.

Teratomlar genellikle dışarıdan görülen kitle sebebiyle prenatal ya da yenidoğan döneminde tanı alırlar. Geç başvuran olgularda ise kitle genellikle basıya bağlı semptomlar ile bulgu vermektedir. Hastalar karın ağrısı, şişkinlik, kabızlık ya da idrar yapmada zorlanma gibi geç dönem semptomları ile başvurabilirler.

Teratomların tanısında hasta öyküsü ve dikkatli fizik muayene, özellikle rektal tuşe ile presakral alanın değerlendirilmesi önemli olmakla birlikte, özellikle dışarıdan görülmeyen kitlelerde düz karın

grafisindeki kalsifikasyon, kemik-diş benzeri yapılar; ultrason, doppler ultrason, Bilgisayarlı Tomografi (BT) ve Manyetik Rezonans Görüntüleme (MRG) tanı konulmasında yardımcı olmaktadır. Kesin tanı ise kitlenin eksize edilmesi sonrası histopatolojik inceleme ile konulmaktadır. Teratomlar histolojik olarak matür, immatür ve malign olarak sınıflandırılmaktadır. Teratomların tedavisi kitlenin total olarak eksizyonudur.

Ocak 2004 – Temmuz 2019 arasında Zeynep Kamil Kadın ve Çocuk Hastalıkları Sağlık Uygulama ve Araştırma Merkezi, Çocuk Cerrahisi Kliniği'nde teratom tanısı ile opere edilen olgular retrospektif olarak tarandı; prognozlarına dair verilerin toplanması ve sakrokoksigeal teratomlarda mortaliteyi etkileyen faktörlerin saptanması amaçlandı.

Materyal ve Metot: Bu çalışma, Ocak 2004 ile Temmuz 2019 yılları arasında Zeynep Kamil Kadın ve Çocuk Hastalıkları Sağlık Uygulama ve Araştırma Merkezi, Çocuk Cerrahisi Kliniği'nde sakrokoksigeal teratom tanısı ile opere edilen olgularda geriye dönük olarak yapıldı. 24.03.2017 tarihli ve 65 sayılı hastanemiz klinik araştırmalar etik kurul onayı ile retrospektif olarak arşiv dosyaları ve hastane bilişim sistemindeki verilerden hastalara ait tüm bilgilere ulaşıldı.

Olguların yaş, cinsiyet, doğum tarihi, doğum haftası, doğum kilosu (bebek+kitle ağırlığı), doğum şekli, prenatal tanı varlığı, var ise tipi ve kitlenin özelliği, başvuru şikâyeti, şikâyetin süresi, hikâyesi, prenatal tanı ve takip olup olmadığı, muayene bulguları, preoperatif laboratuvar tetkik sonuçları; (AFP, β -HCG, İnhibin A, CEA, CA 15,3, CA 125, CA 19,9, CRP, LDH, Ferritin, sT3, sT4, TSH), preoperatif görüntüleme bulguları, preoperatif röntgende kalsifikasyon varlığı, operasyon tarihi, operasyon yaşı, ameliyat yöntemi, insizyon şekli, drenaj yapılıp yapılmadığı, kitle eksizyonu sonrası olguların tartısı (ve kitlenin ağırlığı), peroperatif bulgular, varsa peroperatif ek patolojiler, histopatolojik sonuç ve alınmış ise sitoloji sonucu, çıkarılan kitlenin hacmi ($V = (4/3) \times \pi \times (L/2) \times (L/2) \times (D/2)$ formülü ile hesaplanan), kan ürünü replasmanı ihtiyacı olmuş ise transfüze edilen ürün ve miktarı, operasyon sonrası ilk gaita çıkışı süresi, operasyon sonrası ilk beslenme süresi, postoperatif komplikasyon varlığı, taburculuk süresi, eşlik eden hastalıklar değerlendirildi. Operasyondan sonra kontrol AFP, β -HCG değerleri ve yüksek çıkan diğer laboratuvar tetkiklerinin normal değere ulaşma süresi, kontrol takiplerde hastanın miksiyon ve defekasyon özellikleri Excel dosyasına kaydedildi.

İstatistiksel analizler için NCSS (Number Cruncher Statistical System) 2007 (Kaysville, Utah, USA) programı kullanıldı. Çalışma verileri değerlendirilirken tanımlayıcı istatistiksel metotların (Ortalama, Standart Sapma, Medyan, Frekans, Oran, Minimum, Maksimum) yanı sıra verilerin dağılımı Shapiro-Wilk Testi ile değerlendirilmiştir. Niceliksel verilerin normal dağılım göstermeyen bağımsız iki grubun karşılaştırılmasında Mann-Whitney U Testi, nitel olan verilerin karşılaştırılmasında Fisher-Exact Testi kullanıldı. Anlamlılık $p < 0.01$ ve $p < 0.05$ düzeylerinde değerlendirildi.

Bulgular: Sakrokoksigeal teratomlu 38 olgunun 27'si (%71) kız, 11'i (%28,9) erkekti. 21 (%55,2) olguda prenatal tanı mevcut olup yenidoğan döneminde opere edilmiş olan 30 (%78,9) olgunun ortalama operasyon yaşı 4,5 gün (1-30 gün) idi. Geç tanı alan ve bir yaşımdan önce opere edilen 5 (%13,1) olgunun başvuru şikâyeti; 3 olguda gluteal kitle, 1 olguda anüsün önde olması, 1 olguda ise huzursuzluk ve karında kitle idi. Bir yaşımdan sonra opere edilen 5 (%13,1) olgudan ise 3'ü gluteal bölgede kitle, 1'i idrar ve gaita yaparken zorlanma, 1'i bacak ağrısı ve rektal kanama sebebiyle başvurmuşlardı.

Preoperatif dönemde AFP değeri, tetkikleri alınan 22 (%57,8) hastadan 19'unda (%86,3) yüksek, 3 (%13,6) hastada ise normal sınırlar aralığındaydı; bu üç hasta 4 yaş, 4,5 yaş ve 5 yaşımdaki geç dönem tanı alan olgulardı. Ortalama AFP değerleri 43.756 ng/dl olup postoperatif AFP değerlerinin normale dönüş süresi ortalama 8,5 ay (3-15 ay) idi. 8 (%36,3) hastanın preoperatif β -HCG değeri yüksek bulundu; ikisinde β HCG'nin kitle eksizyonu sonrası normal değerlere gerilediği görüldü. Bu 8 hastanın 5'inin patolojik incelemesi matür teratom, 3'ü ise; 1'i Grade 1, 1'i Grade 3, diğerinin evresi saptanmamış olmak üzere immatür teratom uyumlu olarak raporlandı.

38 olgunun Altman sınıflamasına göre dağılımları 27 olgu (%71) Tip I, 4 olgu (%10,5) Tip II-III, 7 olgu (%18,4) Tip IV teratom olup; Tip IV olan 7 olgunun ortalama başvuru yaşı 13,1 ay (1 gün-4,5 yaş) idi.

30 (%78,9) olguda chevron insizyon, 6 (%15,7) olguda posterosagittal insizyon ile (bunlardan dördünde ayrıca abdominal yolla), 2 (%5,2) olguda ise laparotomi ile teratom kitlesi total olarak eksize edildi. 1 retroperitoneal uzanımlı kitle abdominal yoldan eksize edildi, hasta postoperatif ilk saatlerde kaybedildi ve koksigektomi yapılamadı. İleri derecede batın distansiyonu olan ve kitlesi diafragma kadar uzanıp tüm batını dolduran bir hastaya sadece göbek üstü ve altı vertikal insizyon ile yapılan kitle eksizyonunun ardından, hastanın batını kapatılmadan resüsitasyon ihtiyacı olması sebebiyle kitlenin teratom olduğu düşünülmesine rağmen koksiks eksizyonu yapılamadı ve acil olarak işlem sonlandırıldı. Hasta operasyondan sonra erken dönemde kaybedildi. Rektal ekstrofi hastada ise sakral agenezi mevcuttu. Bu üç hasta hariç 35 hastada (%92,1) ilk ya da ikinci operasyonda kitle eksizyonu ile birlikte koksigektomi yapılmıştı. Geç dönem koksiks eksizyonu yapılan hastalardan ise birinde hastanın batın içi kitlesi rektal duplikasyon kisti düşünülerek laparotomi ile eksize edildi, kitlenin teratom ile uyumlu gelmesi üzerine post operatif 15. gününde yapılan operasyon ile koksiks eksize edildi. Başka bir hastada ilk operasyonundan 1 yıl sonra koksiks eksizyonu yapıldı.

İki hastaya iki adet olmak üzere 30 (%78,9) hastaya operasyon sırasında cilt altı/presakral bölgeye dren konulmuş olup ortalama dren kalış süresi 4,6 (2-8 gün) gündü.

Postoperatif tartıları alınan hastaların operasyon öncesi ile tartıları kıyaslandığında eksize edilen kitleye bağlı olarak ortalama 1077 gram (10 gram-7556 gram) kayıp olduğu tespit edildi. Çıkarılan kitle hacmi ortalama 662 ml (6-4.445 ml) olarak hesaplandı. Sakrokoksigeal teratomlu olgularda teratom tipleri ve operasyon bilgileri Tablo 1'de özetlenmiştir (Tablo 1).

12 (%31,5) hastada sakrokoksigeal teratoma ek bir patoloji mevcuttu. 1 (%2,6) hastada OEİS sendromu, 1 (%2,6) hastada rektal ekstrofi ve split notokord sendromu, 1 (%2,6) hastada ürogenital sinüs eşlik etmekteydi. En sık görülen ek anomali 3'er (%7,8) hasta ile renal ektazi ve hipotiroidi idi.

Hastalara ortalama postoperatif 2. gün (0-16 gün) enteral beslenme başlandı. Aynı zamanda OEİS sendromu mevcut olan hastanın postoperatif dönemde böbrek yetmezliği gelişmesi, genel durumunun kötü seyretmesi ve insizyon detaşmanı, mesane prolapsusu gelişmesi sebebiyle 2. kez opere olması ve kolostomi açılması üzerine hastanın oral beslenmesine postoperatif 16.gün başlandı.

Hastaların postoperatif dönemde ortalama gaita çıkış süreleri 1,6 gündü (0-4 gün). Bir hastaya rektuma sıkı yapışık kitlenin kolonu perfore etmesi üzerine, bir hastaya eşlik eden rektal ekstrofi sebebiyle, bir hastaya da kitlenin rektuma çok yapışık olması sebebiyle koruyucu olmak üzere eş zamanlı kolostomi ve kitle eksizyonu yapılması gerekti. Üç hastanın da kolostomiden gaita çıkışı postoperatif 3. gün başladı; 2'sinde kolostomi 6 ay sonra kapatıldı. Üçüncü hastanın ise ekstrofi sebebiyle açılmış olan kolostomisi, PSARP'ı 5,5 yaşında yapılmış olmasına rağmen stimülatör ile kontrolde kas kasılmasının yeterli olmaması sebebiyle halen kapatılamadı.

16 hastada preoperatif, peroperatif ve postoperatif dönemde olmak üzere kan ve kan ürünü replasmanı yapıldı. OEİS sendromlu hastada böbrek yetmezliği gelişmesi ve 2. operasyonu sebebiyle taburculuk süresi 42 güne uzadı. Bu hasta dışlandığında ortalama hastane yatış süresi 8,8 gün (1-26 gün) idi.

15 (%39,4) hastada postoperatif dönemde komplikasyon gelişti; en sık görülen komplikasyon 7 hastada (%18,4) insizyon detaşmanı, ikinci sıklıkta ise 4 hastada (%10,5) insizyon bölgesinde enfeksiyondü. Postoperatif dönemde poliklinik kontrolüne başvuran 13 hastadan 4 hastada (%30,7) takip süresi boyunca medikal tedaviye yanıt veren kabızlık şikâyeti mevcuttu.

38 sakrokoksigeal teratom olgusunun 4'ü cerrahi işlem sonrası aynı gün 1'i ise postoperatif 3. gün olmak üzere 5 hasta (%13,1) kaybedildi. Kaybedilen 5 hastanın tümü yenidoğan döneminde tanı almış hastalardı, 1 hasta hariç tümü erkekti. 5 hastanın 4'ü prematüreydi ve ortalama doğum haftası 33,1 (28-39) haftaydı. 3 hastanın (%60) patoloji sonucu Tip I, 2 hastanın (%40) ise Tip IV teratom ile uyumlu idi. Eritrosit süspansiyonu, trombosit süspansiyonu, taze donmuş plazma ve kriopresipitat olmak üzere kaybedilen 5 hastanın 4'ünün (%80) kan ürünü replasmanı ihtiyacı oldu. Exitus olan sakrokoksigeal teratom olgularının özellikleri Tablo 2'de özetlenmiştir (Tablo 2).

Yenidoğan döneminde opere edilen 25'i yaşayan ve 5'i kaybedilen 30 sakrokoksigeal teratomlu hastada; yaşayanların ve kaybedilen grubun ortalama doğum haftaları, ortalama doğum tartıları, preoperatif ve postoperatif tartı farkından hesaplanan ortalama kitle ağırlıkları, ortalama kitle hacimleri (kitlelerinin histopatoloji raporu, ameliyat notu ve ultrason verileri kullanılarak elde edilen 3 boyutlu ölçümlerinin $V = (4/3) \times \pi \times (L/2) \times (L/2) \times (D/2)$ formülü ile hesaplanan) değerlendirildi. Sırası ile kaybedilen,

yaşayan ve sakrokoksigeal teratomlu yenidoğanların ortalama doğum haftası 33,1, 37 ve 36,3 hafta, ortalama doğum tartıları sırasıyla 4400, 3603 ve 3740 gram, ortalama kitle boyutları sırasıyla 15,4x13,3x12,1 cm, 9,4x7,7x6,3 cm ve 10,4x8,6x7,2 cm olarak saptandı. Olguların ortalama kitle hacmi sırasıyla 1780, 430 ve 662 ml, ortalama kitle ağırlığı 2866, 706 ve 1077 gram olarak bulundu. Yaşayanların ve kaybedilenlerin ortalama doğum haftaları, ortalama doğum tartıları, preoperatif ve postoperatif tartı farkından hesaplanan ortalama kitle ağırlıkları, ortalama kitle hacimleri Tablo 3'te gösterildi (Tablo 3).

Yaşayan ve kaybedilen hastalarda doğum haftası kıyaslandığında kaybedilen 5 olgunun 4'ünün prematüre olması sebebiyle, ortalama doğum haftasının yaşayanlara göre daha düşük olduğu görüldü; aralarındaki bu farklılık istatistiksel olarak anlamlı bulundu ($p=0,036$; $p<0,05$).

Yaşayan ve kaybedilen olguların doğum tartıları (bebek+kitle ağırlığı) kıyaslandığında eksitus olan grubun ortalama doğum ağırlığı 4400 gram, yaşayan grubun ise 3603 gram olduğu, eksitus olan grubunun daha yüksek doğum ağırlığına sahip olduğu saptandı. Yaşayan grubun doğum kilosunun kaybedilen gruba göre daha düşük olması istatistiksel olarak anlamlı değildi ($p>0,05$).

Yaşayan ve kaybedilen iki grup arasında ultrasonografi ölçümleri, ameliyat bulguları ve patoloji raporlarına göre hesaplanan kitle volümü kıyaslandığında, kaybedilen grubun kitle volümü ortalama 1780 ml, yaşayan grubun ise 430 ml idi, kaybedilen grubun yaşayan gruba oranla yaklaşık 4 kat daha büyük kitle hacmine sahip olduğu saptandı, aralarındaki bu farklılık istatistiksel olarak anlamlı bulundu ($p=0,039$; $p<0,05$).

Hastaların kitle ağırlığı (ameliyat öncesi ve sonrası alınan tartı farkı ile hesaplanmış) kaybedilen ve yaşayan grupta kıyaslandığında kaybedilen grubun kitle ağırlığı, kitle hacmi ile doğru orantılı olarak daha fazlaydı ve kaybedilen grupta ortalama kitle ağırlığı 2866 gram olup yaşayan grupta 706 gram bulundu. Kaybedilen ve yaşayan olguların ortalama kitle ağırlığı arasındaki farklılık istatistiksel olarak anlamlı bulundu ($p=0,005$; $p<0,05$).

Yaşayan ve kaybedilen iki grup arasında kitle volümü/doğum ağırlığı oranı kaybedilen grupta ortalama 0,37, yaşayan grupta 0,09 idi; kitle ağırlığı/doğum ağırlığı oranı ise kaybedilen grupta ortalama 0,59, yaşayan grupta ise 0,15 olarak bulundu. Kitle volümü/doğum ağırlığı ve kitle ağırlığı/doğum ağırlığı oranları yaşayan ve kaybedilen hasta gruplarında kıyaslandığında aralarındaki ilişki anlamlı bulundu (Kitle Volümü/Doğum Ağırlığı $p=0,002$; Kitle Ağırlığı/Doğum Ağırlığı $p=0,002$; $p<0,05$).

Yaşayan ve kaybedilen hasta gruplarının doğum tartısı, doğum haftası, kitle ağırlığı, kitle hacmi, kitle volümü/doğum ağırlığı ve kitle ağırlığı/doğum ağırlığı oranları açısından karşılaştırma sonuçları Tablo 4'te özetlenmiştir (Tablo 4).

Sakrokoksigeal teratomlu yenidoğan 30 hastada, yaşayan 25 hastanın 12'sine, kaybedilen 5 hastanın ise 4'üne ameliyat öncesi, ameliyat sırasında veya sonrasında kan ve kan ürünü transfüzyonu yapılmıştı. Transfüzyon yapılan bu 16 hastadan kaybedilen ve yaşayan grubun sırasıyla ortalama kitle hacmi 1988 ml, 659 ml; ortalama kitle ağırlığı 3178 gram, 1164 gram; ortalama kitle volümü/doğum ağırlığı 0.41, 0.34 ve ortalama kitle ağırlığı/doğum ağırlığı 0.66, 0.55 idi. Kan transfüzyonu yapılan olguların ortalama kitle hacim ve ağırlıklarının transfüzyon yapılmayan hastalardan daha yüksek olduğu saptandı ancak kitle volümü/doğum ağırlığı ve kitle ağırlığı/doğum ağırlığı oranları ortalamasında iki grup arasında belirgin bir farklılık bulunmadı. Yaşayan ve kaybedilen hasta gruplarından kan transfüzyonu alan olgu sayıları Tablo 3'te özetlenmiştir (Tablo 3).

Kan transfüzyonu yapılan ve yaşayan 12 hasta mevcutken 4 hasta peroperatif ve postoperatif transfüzyona rağmen kaybedilmiştir. Bu iki grup kıyaslandığında yaşam durumu ile kan transfüzyonu arasında istatistiksel olarak anlamlı bir ilişki bulunmadı ($p>0,05$). Kan transfüzyonu ile mortalite arasındaki ilişki Tablo 5'te özetlenmiştir (Tablo 5).

Tartışma: Teratomlar çocuklarda en sık görülen germ hücreli tümörlerdir ve diferansiye olma derecelerine göre matür veya immatür olarak sınıflandırılır. Hastalığın farklı biyolojik davranışıyla ilgili olarak çocukluk ve ergenlikte heterojen epidemiyolojik, klinik ve patolojik yapıya sahiptir (1).

Teratomların tanı alma yaşı lokalizasyonlarına göre değişir. Sakrokoksigeal teratomlar ağırlıklı olarak yenidoğan ve bebeklerde gözlenir (1). Prenatal ultrasonun yaygın kullanımı ile doğumdan önce tanı konulan teratom yüzdesi belirgin şekilde artmıştır. Sakrokoksigeal teratomların çoğunluğu, 22. ve 34. gebelik haftaları arasında saptanabilmektedir (2).

20 hastalık bir sakrokoksigeal teratom serisinde %45 prenatal tanı, %45 doğumda ve %10 neonatal dönem sonrası tanı alan olgu olduğu bildirilmiştir (3). Wang ve ark. yaptıkları çalışmada, sakrokoksigeal teratom tanısı olan 105 olgunun %20,6'sının prenatal takipli olmak üzere %27'sinin yenidoğan döneminde, %33,3'ünün süt çocuğu döneminde, %39'unun ise sonraki yaşlarda tanı aldığını bildirmişlerdir (4). Bu çalışma ile kıyaslandığında, yenidoğan döneminde tanı alan olgularımızın %75,7'sinde prenatal tanı bulunması sebebiyle erken dönem tanı ve tedavi alan hasta sayımız belirgin yüksek bulunmuştur. Bu erken tanı oranları, hastanemizdeki sistematik çalışan perinatoloji ünitesinin bulunmasının önemini vurgulamaktadır. Serimizdeki sakrokoksigeal teratom tanılı 38 hastamızın %55,2'sinde prenatal tanı mevcuttu, antenatal tanısı olmayan yenidoğan sakrokoksigeal teratom olgularının tümü (%39,4) gluteal bölgede şişlik şikâyeti ile başvuru sonrası tanı alarak opere edildi.

Teratomların tanı ve takibinde en çok kullanılan serum markeri alfa-fetoprotein (AFP) düzeyidir. Fetal karaciğer, en büyük AFP kaynağıdır; yolk sak da erken fetal gelişim sırasında AFP sentezinde aktiftir. AFP yolk sak kesesi kaynaklı tümörlerin iyi bir belirtecidir (5,6). Serum AFP mutlak düzeyi başlangıçtaki malignite derecesi ile ilişkili olabilirken, AFP seviyelerindeki eğilimleri takip etmek

rezeksiyon sonrası tümör nüksünü izlemek için yararlıdır (7). Deborah ve ark. yaptığı 25 yıllık 142 olgudan oluşan bir çalışmada preoperatif AFP değerlerinin malign teratomlu 4 hastada, 19 matür teratomun 1'inde ve 6 immatür teratomun 3'ünde yüksek olduğu saptanmış ve 1 hastada malign transformasyon görülmüştür (8).

Sakrokoksigeal teratomlar genellikle doğumda veya bebeklik döneminde teşhis edilir. Bu dönemde serum AFP düzeyi normal olarak yüksektir, çünkü AFP yolk sak kesesi, fetal karaciğer ve fetal gastrointestinal sistem tarafından üretilir. Bu nedenle, yüksek AFP seviyesinin doğumda veya bebeklik döneminde dikkatli bir şekilde yorumlanması gereklidir. Normal olarak, artmış serum AFP seviyesi doğumdan yaklaşık 8 ay sonra azalır ve yetişkin seviyesine geriler. Bu tümör markerini doğru yorumlayabilmek için seri takip seviyeleri ölçülmelidir (9). Ameliyat edilen tüm olguların, tümör nüksü açısından ameliyattan sonra en az 36 ay süreyle ve 2 ay aralıklarla kan AFP düzeyleri ve rektal muayene ile izlenmeleri gereklidir (10). Çalışmamızda sakrokoksigeal teratom olgularının preoperatif dönemde AFP değeri, tetkikleri alınan 22 hastanın 19'unda (%86,3) yüksek saptandı. Bu hastaların 4'ünde immatür teratom mevcuttu. Hastalarımızda yüksek AFP saptanan 19 hastanın 15'i (%78,9) matür teratom tanılı hastalardı ve 2'si dışındakilerin yenidoğan döneminde olması sebebiyle AFP değerinin normalden yüksek sonuçlanmasının fizyolojik olabileceği düşünüldü. AFP değeri normal aralıkta olan %13,6 hasta ise geç dönem tanı alan olgular (ortalama 4-5 yaş).

Niramiş ve ark. yaptığı çalışmada 8 aydan önce opere edilen 33 hastanın AFP değeri 125,6 - 179,185 ng/ml aralığında değişmekte olup normal değer üzerinde, 8 aydan sonra opere edilen 8 hastada ise normal aralıkta olduğu saptanmıştır. Bu çalışmada yüksek AFP değeri olan hastaların normale dönüş süresi operasyondan 8 ay sonra olduğu belirtilmiştir ve çocukluk çağındaki hastalarda normal AFP değerleri saptanmıştır (11). Başka bir retrospektif çalışmada ise AFP seviyelerinin ilk 8 ay yüksek olabileceği ve teratom rezeksiyonu sonrası AFP'nin normale dönmesi için gereken ortalama sürenin yaklaşık 9 ay olduğu belirtilmektedir (12,13). Hussam ve ark. yaptığı çalışmada 6 ay ile 5 yıl arası süren takiplerde, AFP seviyelerinin 3-9 ayda normal değere gerilediği gösterilmektedir (3). Çalışmamızda sakrokoksigeal teratomlu olgularda ortalama AFP değerleri 43.756 ng/dl olup postoperatif AFP değerlerinin normale dönüş süresi ortalama 8,5 aydır (3-15 ay).

Sakrokoksigeal teratomlar lezyonu internal ve/veya eksternal komponentinin derecesine göre tiplere ayıran Altman sınıflandırması ile tiplendirilirler (14). Doğumda görülen sakrokoksigeal teratomlar genellikle Altman Tip I ve II'dir (%87). Yenidoğanlarda nadiren Tip III de görülebilir. Tip IV eksternal bir bileşen olmadığından, tipik olarak yaşamın geç döneminde görülür (15). Ortalama operasyon yaşı 10,2 ay olan 105 sakrokoksigeal teratom tanılı hastadan oluşan bir çalışmada; Tip I %46,7, Tip II-III %37,2, Tip IV ise %14,3 oranında saptanmıştır (4). Sıklıkla Tip I (%71) görülmesi sebebiyle çalışmamız da benzer oranlara sahiptir. Ancak literatürde Tip IV görülme sıklığı erken çocukluk döneminde nadirdir ve bizim çalışmamızda sakrokoksigeal teratomlarda ortalama operasyon yaşı 5,2 ay ile düşük olmasına

rağmen Tip IV olgularımızın oranı literatüre göre yüksek bulunmuştur. Çalışmamızdaki sakrokoksigeal teratom tanılı 38 olgunun Altmann sınıflamasına göre dağılımları %71 Tip I, %10,5 Tip II-III, %18,4 Tip IV teratom olup; Tip IV olan 7 olgunun ortalama başvuru yaşı 13,1 ay (1 gün-4,5 yaş) idi.

Sakrokoksigeal teratom cerrahisinde ana prensip kitle ile birlikte koksiksin çıkarılması ve tümör yayılımından sakınılmasıdır (16). AbouZeid ve ark. chevron insizyonun kozmetik olarak kötü sonuçlar vermesi sebebiyle küçük kitlelerde vertikal insizyonun sonuçlarının iyi olduğuna dair bir çalışması mevcuttur; bu çalışmada 17 hastanın sadece %29'unda chevron insizyon diğerlerinde ise posterosagittal insizyon tercih edilmiş, konservatif tedavi edilen bir hasta dışında vertikal insizyonun herhangi bir komplikasyonuna rastlanmamış ve kozmetik sonuçlarının daha iyi olduğu raporlanmıştır (17). Celayir ve arkadaşları da posterosagittal insizyonla tedavi edilen Tip IV kitleli olgulardan oluşan bir seri sunmuştur (18). Çalışmamızda %15,7 olgu posterosagittal insizyon ile opere edilerek total kitle ve koksiks eksizyonu yapıldı.

Literatürde insizyon altında sıvı birikimini engellemek için penroz dren kullanımının uygun olduğu, postoperatif 4. gün alınabileceği, hastanın postoperatif dönemde insizyon iyileşene ve dren çekilene dek yüzüstü yatırılarak takip edilmesi ve 32 bu sayede insizyon bölgesinin idrar ve gaita ile minimal teması olacağı belirtilmektedir (92). Çalışmamızda chevron insizyonla opere edilen 30 (%78,9) hastanın tümüne operasyon sırasında cilt altı/presakral bölgeye dren konulmuş olup ortalama dren kalış süresi 4,6 (2-8) gündü. Bu 30 olgudan 2'sine iki adet dren konması gerekmişti.

Nıramis ve ark. yaptığı sakrokoksigeal germ hücreli tümörlerin retrospektif taramasında olguların %84'ünde ilk operasyonda tümör ile koksiks eksizyonu yapıldığı, ancak çalışmadaki 41 matür teratom olgusunun tümünde koksiks eksizyonu yapılmış olduğu halde gelişen %7,3 nüksün tümör yayılımına bağlı olduğu saptanmıştır (11). Birçok çalışmada rekürrens oranının %10-21 arasında olduğu ve tümör eksizyonundan sonra 3 yıl içinde geliştiği bildirilmektedir (21,22). Benign teratomlarda ise %7 oranında nüks görülebilmektedir. Bu yüzden 5 yıllık süre boyunca seri AFP monitorizasyonu ile hastaların yakın takip altında tutulması gerektiği bildirilmiştir (11). Koksiks çıkarılmasında başarısızlık durumunda %30-40 rekürrens insidansı mevcuttur ve vakaların %50'den fazlasında malignleşme bildirilmektedir (23).

Serimizdeki teratom vakalarından; bir hastanın peroperatif kardiyak arrest olması, bir hastada sakral agenezi olması ve bir hastanın da operasyondan sonra erken dönemde kaybedilmesi sebebiyle bu üç hasta hariç tutulduğunda, hastaların %92,1'inde hastanın ilk operasyonunda kitle eksizyonu ile birlikte koksiks eksizyonu yapılmıştı. Bir hastanın ilk operasyonda kitlesinin duplikasyon kisti düşünülmesi ve başka bir hastasında nüks ile başvuru sonrasında olmak üzere, %5,2 hastada ise ikinci operasyonda koksiks eksizyonu yapılmıştır. Hastanemizde pediatrik onkoloji bulunmaması sebebiyle hastaların birçoğu operasyon sonrası geç dönemde genellikle takipten çıkmaktadır, ancak postoperatif dönemde

ilk 3 yıl izlenen tüm hastalarımızın, 3 yaşında tanı alan ve opere edilen olmak üzere sadece birinde nüks geliştiği bilinmektedir, bu da hastanın ilk operasyonunda koksiks eskizyonu yapılmamasına bağlanmıştır.

Hussam ve ark. yaptığı çalışmada sakrokoksigeal teratomlu hastalarda eşlik eden anomali %15 hastada saptanmış, bunlardan %66'sı imperfore anüs iken %33'ü sol primer megaüreter olarak raporlanmıştır (3). 19 hastalık uzun dönem sonuçların incelendiği bir çalışmada %26,3 hastada eşlik eden anomali bulunmuş ve tüm hastalarda ürolojik patoloji olmak üzere %80'inde nörojenik mesane, %60 hidronefroz ve daha düşük oranda VUR ve ürogenital sinüsün primer patolojiye eşlik ettiği saptanmış (24). Çalışmamızda %31,5 hastada teratoma eşlik eden bir patoloji mevcuttu, en sık görülen ek anomaliler %7,8'er hasta ile renal ektazi ve hipotiroidi idi. %2,6 hastada OEİS 33 sendromu, %2,6 hastada rektal ekstrofi ve split notokord sendromu, %2,6 hastada ürogenital sinüs eşlik etmekteydi.

Barakat ve ark. yaptığı 22 vakalık sakrokoksigeal teratomlu retrospektif çalışmada 7 hastaya (%31,8) abdominosakral eksizyon sırasında geçici kolostomi açılmıştır (25). Wakhlu ve ark.'nın yaptığı 72 olgu içeren ve yüksek oranda Altman Tip IV tümör içeren çalışmada ise morbiditeyi azaltmak için dev Tip III-IV teratomu olan 11 hastaya (%15,2) kombine abdominosakral eksizyon öncesi kolostomi açılmıştır. Bu hastaların 8'ine malign olması sebebiyle kemoterapi sonrası rezidü tümör dokusu eksizyonu ile birlikte kolostomi kapatılması yapılmıştır (26). Çalışmamızda üç hastaya kitle eksizyonu ile birlikte ikisinde rektuma yapışıklık, birinde split notokord sendromlu rektal ekstrofi olması sebebiyle kolostomi açılmış olup bu hasta dışındakilerin stoması ilk operasyondan 6 ay sonra kapatılmıştır.

Neonatal dönemde sakrokoksigeal teratomların %90'ı benignedir (21). Sakrokoksigeal teratomun malign bileşeninin histolojisi hemen hemen her zaman yolk sak tümördür. Tümörün malign bir bileşeninin görülme sıklığı, tümör tipine bağlı olarak, Tip IV'te %38'e karşın Tip I'de %8'dir (4). Serimizdeki sakrokoksigeal teratomların %94,8'i matür ve immatür olarak benign patolojideydi. Malignitesi mevcut hastalardan 1'i Tip IV (Tip IV teratomların %14,2'si), 1'i Tip II (Tip II-III teratomların %25'i) teratom idi.

Sakrokoksigeal teratomlu olguların prognozu açısından postnatal dönemde boyut, volüm, kitlenin vücut ağırlığına oranları hakkında literatürde pek fazla çalışma bulunmamaktadır. 31 hasta içeren bir çalışmada kaybedilen 7 hastanın tümünün ölüm sebebi yüksek kardiyak output ya da hidrops fetalis olarak bulunmuştur. Total tümör volümü/tahmini fetüs ağırlığı >0,16 olan hastalarda hidrops fetalis ya da yüksek kardiyak output durumu gelişme ihtimalinin 17 kat fazla olduğu, solid tümör volüm indeksinin >0,09 olmasının ise yine hidrops fetalis ve yüksek kardiyak output için 120 kat daha fazla risk oluşturduğu saptanmıştır (27).

24. gebelik haftası öncesi tümör volümü/fetal ağırlık oranı değerlendirildiğinde oranı 0,12'ye eşit ya da küçük olan hastalarda 0,12'den büyük olanlara göre prognozun çok daha iyi seyrettiği, hidrops gelişen dört hastanın da tümör volüm/fetal ağırlık oranı >0,12 olduğu saptanmıştır (28). Yine tümör volümünün

fetal ağırlığa oranının değerlendirildiği 24 hafta ve daha küçük 59 sakrokoksigeal teratomlu fetüsün dahil edildiği bir çalışmada, tümör volümü/fetal ağırlık oranı (TFR) $>0,12$ olan olgularda perinatal prognoz TFR $\leq 0,12$ olan fetüslere göre daha kötü seyrettiği bildirilmiştir (29). Çalışmamızda tahmini fetüs ağırlıkları yerine hastaların doğum ağırlıkları (bebek+kitle ağırlığı) kullanılarak kitle volümü/doğum ağırlığı oranı hesaplanmıştır. Kaybedilen olgularda oranın 0,37, yaşayan olgularda ise 0,09 olduğu, yaşayan grupta bu oranın belirgin düşük olduğu, kitle volümü/doğum ağırlığı oranı $<0,10$ olan hastalarda mortalitenin daha az olduğu saptandı ve bu oran ile mortalite arasındaki ilişki istatistiksel olarak anlamlı bulundu. ($p=0,002$; $p<0,05$) Kitle volümü/doğum ağırlığı ile mortalite arasındaki ilişkinin istatistik sonucu Tablo 4'te özetlenmiştir.

Literatürde hastaların kitle boyutları verilen çalışmalarda, kitlenin boyut arttıkça rüptür ve kanama riskinin artması, kardiyak outputun artarak hastanın kardiyak yetmezliğe girmesi nedeniyle daha mortal seyredeceği bildirilmektedir ve bu durum teratom boyutları ile eksitus arasında bir paralellik olduğunu göstermektedir. Çalışmamızdaki eksize edilen kitle hacimleri yaşayan ve eksitus olan olgularda kıyaslandığında, sırasıyla ortalama 430 ml (6-2667 ml), 1780 ml (713-4445 ml) olmak üzere, kaybedilen olguların kitle hacminin yaşayanlara göre yaklaşık 4 kat fazla olduğu ve bu farklılığın istatistiksel olarak anlamlı olduğu bulundu ($p=0,039$; $p<0,05$). Çalışmamızdaki büyük kiteli olguların daha mortal seyretmesi literatür bulguları ile uyumlu idi. Literatürde postnatal dönemde kitle hacminin ve ağırlığının hesaplandığı çalışma sayısı çok az olduğu için kesin olmamakla birlikte teratom kitlesi boyutu ve ağırlığı ile mortalite arasında bir ilişki olduğu söylenebilir. Kitle boyutu ile mortalite arasındaki paralellik, büyük kitlenin kardiyak outputu artırarak kardiyak yetersizliğe neden olması ile veya daha kolay rüptüre olması ile açıklanabilir.

Kardiyak yetmezliğin yanında, preterm doğum da kötü prognoza katkıda bulunan en büyük sorunlardan biridir. Eğer intrauterin müdahale yapılamayacaksa maternal ve fetal mortalite riski durumunda prematüriteye rağmen hasta doğurtulabilmektedir (30). Prematüritenin sakrokoksigeal teratom üzerine doğrudan etkileri olmamakla birlikte pulmoner gelişimin yetersiz olması, kardiyak problemler gibi prematüriteye eşlik eden anomaliler de mortaliteyi artırmaktadır. Çalışmamızda da eksitus olan grubun ortalama doğum haftasının 33,1, yaşayan grubun ortalama doğum haftasının ise 37 olduğu, prematüritenin mortalite üzerine etkisinin istatistiksel olarak anlamlı olduğu bulundu ($p=0,036$; $p<0,05$). Literatürde sakrokoksigeal teratomlarda doğum haftasının mortalite üzerine etkisine dair yeterli seri çalışması bulunmamaktadır.

Uchiyama ve ark. yaptığı çalışmada, eksize ettikleri 4 teratom olgusu değerlendirildiğinde, kistik materyal aspirasyonu hariç ortalama 333,7 gram ağırlığında kitle eksizyonu yapıldığı sonucu çıkarılmaktadır (24). Çalışmamızda, hastaların preoperatif tartılarından postoperatif tartıları düşüldüğünde ortalama kitle ağırlıkları kaybedilen grupta 2866 gr, yaşayan grupta 706 gr, tüm hastalarda ortalama 1077 gr (10 gram-7556 gram) olduğu tespit edilmişti. Kaybedilen olgulardaki kitle

ağırlığı, kitle volümü ile doğru orantılı olarak yaşayan olgulardan daha fazlaydı ve kitle ağırlığı ile mortalite arasındaki ilişkinin istatistiksel olarak anlamlı olduğu saptandı ($p=0,005$; $p<0,05$).

Sakrokoksigeal teratomlu 30 yenidoğan hastada kaybedilen grubun kitle ağırlığı ve kitleyle bağlantılı olarak doğum ağırlığı fazla idi, kitle ağırlığının doğum ağırlığına oranı, yaşayan ve kaybedilen olgularda kıyaslandığında, eksitus grubunda 0,57; yaşayan grupta 0,15 olmak üzere eksitus grubunda oranın daha yüksek olduğu bulundu. Çalışmamızda; büyük kiteli hastaların kardiyak yetmezlik ve rüptür, hidrops riski taşımaları sebebiyle kitle ağırlığı/doğum ağırlığı $>0,15$ olan hastaların daha mortal seyretmekte olduğu saptandı. Kitle ağırlığı/doğum ağırlığı ile mortalite arasındaki ilişki değerlendirildiğinde sonuç istatistiksel olarak anlamlı bulundu ($p=0,002$; $p<0,05$). Literatürde kitle ağırlığı ile mortalite arasındaki ilişkiyi değerlendiren yeterli sayıda çalışma bulunamamıştır, daha büyük serilerde kitle ağırlığı/doğum ağırlığı oranı hesaplanarak, postnatal hastalar için prognoz belirlenmesi açısından niceliksel bir veri elde edilebileceği ve standardizasyon sağlanabileceğini düşünmekteyiz.

Teratom olgularında kan ve/veya kan ürünleri replasmanı ihtiyacı yüksek oranlarda olmaktadır, bu ihtiyacın genellikle tümör boyutları arttıkça kardiyak outputun fazla olmasına ve eksizyon sonrası vücut kan volümünün belirgin azalmasına paralel olarak arttığı düşünülmektedir. Gestasyonel yaşı >30 hafta ve Altman Tip III-IV teratomu olan hastaların transfüzyon ihtiyacının azaldığı, nonkistik tümörlerde transfüzyon volümünün arttığı gözlenmiştir. Sonuçta prematüritenin genel olarak mortaliteyi artırdığı, nonkistik tümör morfolojisinin transfüzyon volümüne dair tek önemli faktör olduğu ve kaybedilen 6 hastaya ortalama 240 ml ya da daha fazla transfüzyon yapıldığı saptanmıştır. Kaybedilen hastaların 2'sinde preoperatif ve postoperatif dönemde de eritrosit süspansiyonu replasmanı yapılması gerekmiştir. Anestezi ekibinin de bu tip vakalarda masif transfüzyon için hazır bulunması gerektiği bildirilmektedir (31).

Sakrokoksigeal teratomlu hastalarda erken dönem mortalitenin araştırıldığı 235 hasta içeren başka bir çalışmada ise yenidoğan döneminde kaybedilen 9 hastanın 7'sinin tümör ilişkili hemoraji sebebiyle ya da kardiyak yetmezlik sebebiyle kaybedildiği bildirilmiştir. Sakrokoksigeal teratomlu yenidoğanlarda hemorajik mortalite %3,8 ile yüksektir ve tüm yenidoğan mortalitesinin yaklaşık %70'ini oluşturmaktadır (32). Çalışmamızda sakrokoksigeal teratomlu yenidoğanlarımızın %55,1'inde preoperatif, peroperatif veya postoperatif kan veya kan ürünleri replasmanı yapıldı; bu olgulardan %25'i kaybedildi, %75'i yaşadı. 38 sakrokoksigeal teratom olgusunun 4'ü cerrahi işlem sonrası aynı gün, biri ise postoperatif 3.gün olmak üzere 5'i (%12,5) kaybedildi. Kaybedilen olguların %80'i erkekti, ortalama doğum haftası 33,1 hafta olup ortalama kitle boyutu $15,4 \times 13,3 \times 12,1$ cm idi. 4 hastada eritrosit süspansiyonu, trombosit süspansiyonu, taze donmuş plazma ve kriopresipitat olmak üzere kan ve kan ürünü replasmanı yapılmıştı. Kaybedilen yenidoğanların %80'inde, yaşayanların ise %50'sinde kan ve/veya kan ürünü replasmanı yapılmış olmasına ve kaybedilen olguların daha yüksek replasman

ihtiyacı olduğu saptanmasına rağmen; transfüzyon ile yaşam oranı arasında istatistiksel olarak anlamlı bir ilişki saptanmadı ($p>0,05$).

Ortalama kitle volümü ve ağırlığı, dolayısıyla kitle volümü/doğum ağırlığı (0,36) ve kitle ağırlığı/doğum ağırlığı (0,58) oranları yüksek olan hastalarda kan transfüzyonu yapılması gerekmiştir. Literatürde, transfüzyon ihtiyacı olan hastaların kitle boyutlarının daha büyük olduğu ve transfüzyon yapılmayan hastalara göre daha mortal seyrettiği bilinmektedir. Transfüzyon yapılan hastaların kitle ağırlığı/doğum ağırlığı $>0,15$ olması bu sonucu desteklemektedir.

Sakrokoksigeal teratom rezeksiyonu yapılan 45 hastadan oluşan retrospektif bir çalışmada %29 anorektal komplikasyon geliştiği bu hastaların 13'ünde şiddetli kronik konstipasyon, 4'ünde fekal inkontinans ayrıca %33 hastada da nörojenik mesane, vezikoüreteral reflü, üriner inkontinans başta olmak üzere çeşitli üriner komplikasyonların geliştiği saptanmıştır. Bu çalışmada postnatal komplikasyonlar; prenatal görüntüleme, prenatal terapötik girişimler, Altman sınıflaması, perineal rekonstrüksiyon ve tümör nüksü ile ilgili obstrüktif bulgular ile ilişkilendirilmiş ve Altman Tip I tümörlü hastalarda anorektal veya ürolojik komplikasyon görülmediği saptanmıştır (33). Çalışmamızda sakrokoksigeal teratomlu hastalarımızın %37,5'inde postoperatif dönemde komplikasyon gelişti ve en sık görülen komplikasyon insizyon detaşmanı ve enfeksiyonu idi. Bu hastaların çoğunluğu, taburculuk sonrası ev takipleri sırasında detaşman gelişerek poliklinikte tanı alan hastalardı. Hastalar geniş spektrum antibiyoterapi ile taburcu edilmelerine rağmen insizyonun gaita ile yakın teması sebebiyle aile bakımının yeterli olmamasının detaşman ve enfeksiyona yol açtığı düşünülmektedir. Poliklinik takiplerine devam eden hastaların %30,7'sinde konstipasyon mevcuttu. Takipteki hiçbir hastada fekal inkontinans saptanmadı. Çalışmamızda konstipasyonu olan 4 hastanın 3'ü Altman Tip I, 1'i ise Tip IV idi.

Sakrokoksigeal teratomlarda yüksek kardiyak outputa bağlı kardiyak yetmezlik gelişmediği sürece mortalite oranları oldukça düşük bildirilmektedir. 36 sakrokoksigeal teratom ile yapılan bir çalışmada mortalite oranı %8,3 saptanmıştır, ancak tüm olgularda exitusun anesteziye bağlı olduğu raporlanmıştır (34). 20 hastalık başka bir sakrokoksigeal teratom serisinde ise %5 mortalite saptanmış, kaybedilen olgunun malign teratomu olduğu ve adjuvan kemoterapi aldığı bildirilmiştir (3). Prenatal tanı alan hastaların postnatal tanı alanlara göre daha mortal seyrettiği bildirilmektedir (35). Çalışmamızdaki sakrokoksigeal teratomlarda kitle eksizyonu sonrası kardiyak yetmezliğe bağlı kaybedilen olgular bulunması sebebiyle mortalite %13,1 ile yüksek bulunmuştur. Aynı zamanda kaybedilen hastaların %80'inde prenatal tanı mevcuttu.

Sakrokoksigeal teratom ile ilişkili yüksek neonatal mortalite ve morbidite oranları, erken doğum ve malign invazyon, tümör içine kanama, umbilikal akım obstrüksiyonu, yüksek çıkışlı kalp yetmezliği,

hidrops fetalis gibi komplikasyonlara bağlanmaktadır. Bu komplikasyonların bazıları doğum öncesi tespit edilebilir ve uygun şekilde tedavi edilebilir (36).

Sonuç: Kitle ağırlığının ve kitle volümünün kaybedilen grupta yaklaşık 4 kat kadar belirgin yüksek olması ve istatistiksel olarak sonucun anlamlı olması, büyük hacimli (dolayısıyla ağırlık olarak da fazla olan) kitlelerin prognozunun daha mortal seyredeceğini düşündürmektedir. Sakrokoksigeal teratomlu yenidoğanlarda kitle hacmi, ağırlığı ve her ikisinin doğum tartısına oranından oluşan 4 prognoz belirteci hastanın mortalitesi hakkında bize ön bilgi sağlayabilmektedir.

Prenatal dönemde olduğu gibi postnatal dönemde de sakrokoksigeal teratomlu yenidoğan olgular için tanımlanabilecek mortalite kriterleri bulunabilmektedir. Kitle volümü-ağırlığı/doğum ağırlığı oranları bu kriterler arasında yer alabileceğini düşünmemiz sebebiyle çalıştığımız veriler olup, bizim çalışmamızda mortalite hakkında fikir verebilmektedir. Çalışmamız bu konuda öncü çalışma sayılabilir, ancak bu değerlerin rutin kullanıma geçmesi için daha çok olgu ile yapılacak çalışmalar ile fikir birliği sağlanması ve bir sınır değeri saptanması gerekmektedir.

Tablo 1: Sakrokoksigeal teratomların tiplendirmesi, operasyon şekli ve kitle özellikleri

Altman Sınıflandırması	Tip I	27	%67,5	Ortalama başvuru yaşı; 10,8 ay (1 gün-5,1 yaş)
	Tip II-III	4	%10	
	Tip IV	9	%22,5	
İnsizyon tipi	Chevron	30	%75	
	Posterosagittal	2	%5	
	Abdominal	4	%10	
	Posterosagittal+Abdominal	4	%10	
Dren yerleştirilen hasta sayısı		30	%75	
Ortalama dren kalış süresi		4,6 (2-8) gün		
Ortalama kitle boyutu		10,2 x 8,5 x 7,1 cm		
Ortalama kitle volümü		640 ml (6-4.445 ml)		
Postoperatif ortalama tartı kaybı		1042 g (10-7.556 g)		

Tablo 2: Kaybedilen sakrokoksigeal teratomlu olgularının demografik ve klinik özellikleri

Hasta no	Cinsiyet	Doğum haftası	Teratom tipi	Operasyon yaşı	Patoloji	Transfüzyon
10	K	33	Tip I	Pn 1. gün	İmmatür	2 Ü ES, 1 Ü TS-TDP
13	E	35	Tip I	Pn 1. gün	Matür	1 Ü ES
29	E	30+6	Tip IV	Pn 1. gün	İmmatür	
35	E	28	Tip I	Pn 1. gün	İmmatür	Kriopresipitat
39	E	39	Tip IV	Pn 1. gün	İmmatür	1 Ü ES-TDP

Tablo 3: Yenidoğan döneminde opere edilmiş olan sakrokoksigeal teratomlu kaybedilen ve yaşayan olguların doğum ve kitle özelliklerine göre ortalama değerlerinin karşılaştırması

	Toplam n:30	Exitus n:5 (%16,6)	Yaşayan n:25 (%83,3)
Ortalama doğum haftası	36,5	33,1	37,1
Ortalama doğum kilosu	3722 gr	4400 gr	3587 gr
Ortalama kitle ağırlığı	1042 gr	2866 gr	678 gr
Ortalama kitle boyutları	10,2 x 8,5 x 7,1 cm	15,4 x 13,3 x 12,1 cm	9,2 x 7,6 x 6,2 cm
Ortalama kitle volümü	640 ml	1780 ml	413 ml
Kan ürünü replasmanı	16 hasta	4 hasta	12 hasta

Tablo 4: Yenidoğan döneminde opere edilmiş olan sakrokoksigeal teratomlu olguların ortalama doğum haftası, doğum kilosu, kitle ağırlığı-volümü, kitle volüm/bebek ağırlığı ve kitle ağırlığı/bebek ağırlığı oranlarının mortalite ile ilişkisi

Doğum Haftası	<i>Exitus</i>	5	33,16±4,17	28-39 (33)	0,036*
	<i>Yaşayan</i>	25	37,17±2,32	33-40 (37)	
Doğum Kilosu	<i>Exitus</i>	5	4400,0±2770,37	2500-9000 (3000)	0,656
	<i>Yaşayan</i>	25	3587,20±986,01	2030-6700 (3400)	
Kitle Volümü	<i>Exitus</i>	5	1780,8±1707,29	713-4445 (1121)	0,039*
	<i>Yaşayan</i>	25	413,28±611,57	6-2667 (150)	
Kitle Ağırlığı	<i>Exitus</i>	5	2866,2±2711,71	1100-7556 (1616)	0,005*
	<i>Yaşayan</i>	25	678,64±1050,52	10-4534 (284)	
Kitle Volümü/Bebe Ağırlığı	<i>Exitus</i>	5	0,37±0,09	0,28-0,493 (0,34)	0,002*
	<i>Yaşayan</i>	25	0,09±0,11	0,002-0,398 (0,04)	
Kitle Ağırlığı/Bebe Ağırlığı	<i>Exitus</i>	5	0,57±0,16	0,44-0,839 (0,54)	0,002*
	<i>Yaşayan</i>	25	0,15±0,18	0,003-0,676 (0,09)	

*^aMann-Whitney U Testi *p<0,05 **p<0,001*

Tablo 5: Yenidoğan döneminde opere edilmiş olan sakrokoksigeal teratomlu olguların kan transfüzyonu ile mortalite ilişkisi

		Kan Transfüzyonu		^a p
		Yapılmadı	Yapıldı	
Yaşam Durumu	<i>Exitus</i>	1 (%20,0)	4 (%80,0)	0,261
	<i>Yaşayan</i>	13 (%52,0)	12 (%48,0)	

*^aFisher Exact Testi *p<0,05 **p<0,01*

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ID-224 / OP: “Evaluation of Gonadal Teratomas of childhood: A retrospective study”

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Abstract (ID-224)

Introduction and Aim: Teratomas are the most common germ cell tumors in children. In this study, we aimed to evaluate the gonadal teratoma cases treated in our department and to determine the prognosis.

Material and Method: Demographic characteristics, laboratory results, mass imaging findings, surgical findings, pathology results and final results of the patients who were operated and diagnosed as gonadal teratoma between January 2004 and July 2019 were evaluated retrospectively.

Results: 24 patients with gonadal teratoma, who were operated on for 15.5 years, were included in the study. Of 24 cases, 21 (87.5%) were female and 3 (12.5%) were male. There were 23 ovarian teratomas in 21 female cases; 11 (52.3%) were right, 8 (38%) were left, 2 (9.5%) were bilateral. All 3 testicular teratomas were on the left.

The mean duration of complaints at admission was 29 days (1 day-5 months), and the mean age of operation was 10.9 years (1-17 years). In 5 of the girls, ovarian torsion developed due to the mass at admission, and acute abdomen was present. Mean Alpha Feto Protein, β -HCG, CEA values and Inhibin A values in girls were within normal limits. On ultrasound/Doppler US, the mean lesion size is 84.5mm x 64.3mm in girls (min: 41-300mm x max: 27-200mm), 24.9mm x 19.2mm in boys (min:14.7-40 x max: 8-40 mm) was found.

Laparoscopy was performed in 11 (52.3%) of the girls and laparotomy was performed in 10 (47.6%) of the girls. Ovarian-sparing surgery with mass excision was performed in 12 (57.1%) cases, and oophorectomy with a mass was performed in 9 (42.8%) of them, including 1 with torsion. The lesion in the contralateral ovary was enucleated in 2 (9.5%) of the oophorectomy cases.

Three cases of testicular teratoma were operated under frozen biopsy conditions by inguinal approach. Orchiectomy was performed in 2 (66.6%) cases, and testicular sparing surgery was performed in 1 (33.3%) mass enucleation.

The mean hospital stay was 1.9 days (1-5 days), and their histopathology was compatible with mature cystic teratoma. Follow-up was uneventful and no recurrence was observed.

Conclusion: In the operation of patients with gonadal teratoma, it is possible to perform gonad sparing surgery with enucleation of the mass if the lesion borders can be clearly distinguished; however, it is necessary to perform a planned and frozen surgery.

Keywords: Gonad; Teratoma; Malignancy; Childhood.

ID-225 / OP: “The Frequency of Rotavirus, Norovirus And Enteric Adenovirus in Pediatric Patients with Acute Gastroenteritis”

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Abstract (ID-225)

Introduction and Objective: Acute gastroenteritis is one of the most important causes of morbidity and mortality in children. Virus agents that frequently cause gastroenteritis in human are rotavirus, norovirus, enteric adenovirus and astroviruses. Rotavirus is the major cause of severe acute gastroenteritis in children in this study. It was aimed to determine the frequency of rotavirus, enteric adenovirus and norovirus gastroenteritis in patients with a prediagnosis of acute gastroenteritis and to investigate the age, sex and seasonal distribution of the factors.

Material and Methods: In our study, stool samples of 3641 patients who applied to our hospital with diarrhea complaints between 2015-2017 were examined. In the samples, rotavirus and enteric adenovirus antigens were investigated with a qualitative immunochromatographic method, the CerTest Rota- adeno card test (CerTest, Biotec, Spain). Norovirus rapid test (SD BIOLINE Norovirus, Standard Diagnostics, Korea) was used in fecal samples, which detected the noroviruses belonging to Genogroup 1 (GG I) and Genogroup 2 (GG II) by a qualitative immunochromatographic method. Statistical analysis was done by chi-square test using SPSS 20 program.

Results: One or more viral antigens were detected in 795 (21.8%) of the 3641 samples examined. Rotavirus was found to be positive in 348 (9.5%), norovirus in 298 (8.2%) and adenovirus 159 (4.4%). While rotavirus antigen positivity was mostly detected between 0-24 months and winter, no significant relationship was found between norovirus and adenovirus antigens and age groups and seasons. No significant difference was found between viral antigen positivity and gender.

Conclusion: Rotavirus, enteric adenovirus and norovirus are the most common causes of acute viral gastroenteritis in children. Identification of viral gastroenteritis agents and determining the frequency of occurrence will prevent unnecessary use of antiparasitic and antibacterial drugs against this type of infection and ensure the correct treatment.

Keywords: Gastroenteritis, rotavirus, adenovirus, norovirus.

Özet (ID-225)

Giriş ve Amaç: Akut gastroenteritler, çocuklarda önemli morbidite ve mortalite nedenlerindendir. Çocuklarda sıklıkla gastroenteritlere neden olan virus etkenleri, rotavirus, norovirus, enterik adenovirus ve astroviruslardır. Bu çalışmada akut gastroenterit ön tanısıyla başvuran çocuk hastalarda rotavirus, enterik adenovirus ve norovirus gastroenterit sıklığının araştırılması ve bu etkenlerin yaş, cinsiyet ve mevsimsel olarak dağılımının araştırılması amaçlanmıştır.

Gereç ve Yöntem: Araştırmamızda iki 2015-2017 tarihleri arasında hastanemize ishal şikayeti ile başvuran 3641 hastanın dışkı örneği incelenmiştir. Örneklerde rotavirus ve enterik adenovirus antijenleri kalitatif immünokromatografik bir yöntem olan CerTest Rota-Adeno Card Test (CerTest, Biotec, Spain) ile araştırılmıştır. Dışkı örneklerinde Genogrup 1(GGI) ve Genogrup 2(GGII)’ye ait norovirusları kalitatif immünokromatografik bir yöntemle saptayan Norovirus hızlı test (SD BIOLINE Norovirus, Standard Diagnostics, Korea) kullanılmıştır. İstatistiksel analiz, SPSS 20 programı kullanılarak ki-kare testiyle yapılmıştır.

Bulgular: İncelenen 3641 örneğin 795’inde (%21,8) bir ya da birden fazla viral antijen tespit edilmiştir. Bu örneklerin 348’inde (%9,5) rotavirus, 298’inde (%8,2) norovirus ve 159’unda (%4,4) adenovirus pozitif olarak saptanmıştır. Rotavirus antijen pozitifliği en sık 0-24 ay arasında ve kış mevsiminde tespit edilirken, norovirus ve adenovirus antijenleri ile yaş grupları ve mevsimler arasında anlamlı bir ilişki saptanmamıştır. Viral antijen pozitifliği ve cinsiyetler arasında da anlamlı bir fark bulunamamıştır.

Sonuçlar: Rotavirus, enterik adenovirus ve norovirus çocuklarda akut viral gastroenteritlerin en sık nedenlerindendir. Viral gastroenterit etkenlerin tanımlanması ve görülme sıklığının saptanması bu enfeksiyonlara karşı gereksiz antibakteriyel ve antiparaziter ilaçların kullanılmasını önleyerek gerekli önlemlerin alınmasını sağlayacaktır.

Anahtar Kelimeler: Gastroenterit, rotavirus, adenovirus, norovirus

Tam Metin (ID-225): “Akut Gastroenteritli Çocuk Hastalarda Rotavirus Enterik Adenovirus ve Norovirus Sıklığı”

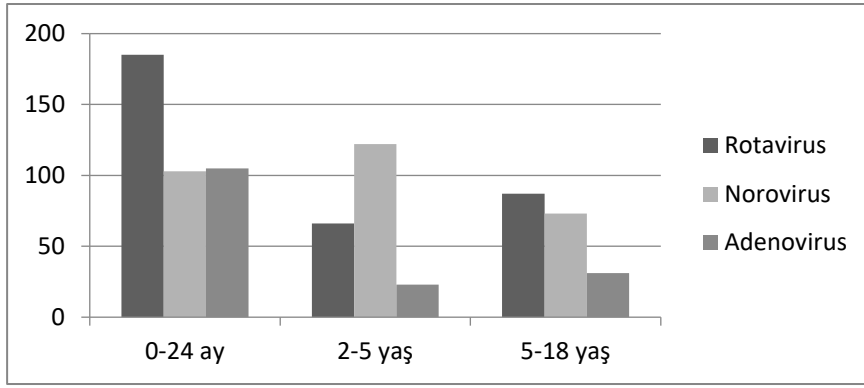
Giriş ve Amaç: Akut gastroenteritler, çocuklarda morbidite ve mortalitenin en önemli nedenlerindendir. Dünya Sağlık Örgütü’nün verilerine göre ishal, çocuklarda 1-60 ay grubunda un sık görülmekte ve bu grubundaki çocuk ölümlerinde, pnömoniden sonra ikinci sırada yer almaktadır (Black *et al.*, 2019). Akut enfeksiyöz gastroenteritler, bakteri, parazit veya virus kaynaklı olabilmektedir. Viral gastroenteritlerin oluşturduğu hastalık yükü özellikle gelişmiş ve gelişmekte olan ülkelerde belirgin olarak artmaktadır. İleri sağlık koruma önlemleri, bu ülkelerde bakteriyel ve paraziter etkenlere bağlı gastroenteritlerde azalma sağlarken virüslara bağlı gastroenteritlere daha az etkili olmaktadır. İnsanlarda sıklıkla gastroenteritlere neden olan virus etkenleri, rotavirus, norovirus, enterik adenovirus ve astroviruslardır. Rotavirus çocuklarda ciddi akut gastroenteritin en önemli nedenidir. (Farkas & Jiang, 2007).

Viral gastroenteritlerde bulaş genellikle fekal oral yolla, insandan insana veya çevresel yüzeylerden temasla olmaktadır. Rotavirus, zarfsız, çift sarmallı RNA virusudur. (Beyazova&Şahin, 2017). Rotavirus ishali, genellikle sulu dışkılama, kusma ve düşük dereceli ateş ile karakterize olup en sık iki yaş altı çocuklarda görülmektedir. Asemptomatik seyredebildiği gibi ağır ishallere de neden olabilir (Kurugöl&Devrim, 2014).

Enterik adenovirüsler ise rotavirüslerden sonra ikinci sırada yer alır. Adenovirüsler, zarfsız çift sarmallı DNA virüsleridir. Enterik adenovirüs olarak adlandırılan adenovirüs serotip 40 ve 41 infantlardaki gastroenteritler ile yakından ilişkilidir (Collier&Oxford, 2016). Rotavirus enfeksiyonlarına daha çok kış aylarında rastlanırken, adenovirüslerde mevsimsel dağılım görülmemektedir (Kurugöl&Devrim, 2014). Norovirüsler, zarfsız, tek sarmallı RNA virüsleridir ve klorlanmaya, donmaya ve ısıtmaya dayanıklıdır (Balkan ve ark., 2012). Hastalık genellikle hafif seyreder. Ancak kontamine yüzeyler, gıdalar ve sularla bulaşıp büyük salgınlara neden olabilmesi nedeniyle önemlidir (Farkas & Jiang, 2007). Viral gastroenterit etkenlerinin tanısı ve süreyans çalışmaları, özellikle çocuklarda gereksiz antibiyotik kullanımından önüne geçilmesi açısından önemlidir. Bu çalışmada hastanemize başvuran çocuk hastalarda rotavirus, norovirüs ve enterik adenovirüs gastroenterit sıklığının araştırılması amaçlanmıştır.

Gereç ve Yöntem: Çalışmamızda 2015-2017 tarihleri arasında Kocaeli Üniversitesi Tıp Fakültesi Hastanesi'ne gastrointestinal şikayetleri ile başvuran 3641 hastanın dışkı örneği incelenmiştir. Örneklerde rotavirus ve enterik adenovirüs antijenleri kalitatif immünokromatografik bir yöntem olan CerTest Rota-Adeno Card Test (CerTest, Biotec, Spain) ile araştırılmıştır. Norovirüs saptanması için ise Rota-Adeno Card Test'ine benzer şekilde hızlı, kalitatif immünokromatografik yöntem prensibi ile çalışan dışkı örneğinde Genogrup 1(GGI) ve Genogrup 2(GGII)'ye ait norovirüsleri saptamaya yönelik SD BIOLİNE Norovirüs Rapid Test (SD BIOLİNE Norovirüs, Standard Diagnostics, Korea) test kullanılmıştır.

Bulgular: İncelenen 3641 örneğin 795'inde (%21,8) bir ya da birden fazla viral antijen tespit edilmiştir. Bu örneklerin 348'inde (%9,5) rotavirus, 298'nde (%8,2) norovirüs ve 159'unda (%4,4) adenovirüs pozitif olarak saptanmıştır.



Grafik 1. Rotavirus, norovirus ve adenovirus antijeni saptanan örneklerin yaşlara göre dağılımı. Rotavirus antijen pozitifliği en çok 0-24 ay arasında (%5,1) ve kış mevsiminde (%5) tespit edilirken, norovirus ve adenovirus antijenleri ile yaş grupları ve mevsimler arasında anlamlı bir ilişki saptanmamıştır. Viral antijen pozitifliği ve cinsiyetler arasında da anlamlı bir fark bulunamamıştır (Grafik 1, Tablo 1).

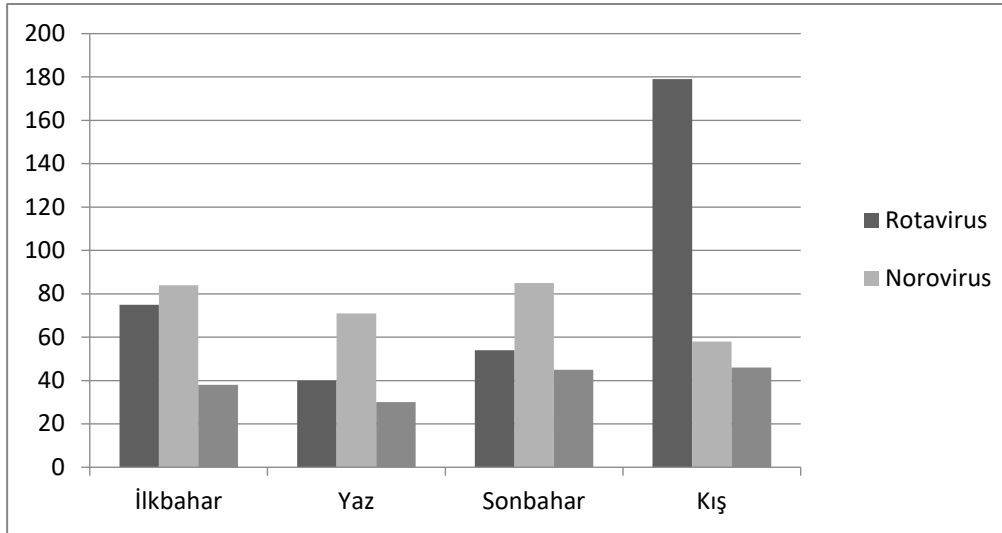
Rotavirus, enterik adenovirus ve norovirus çocuklarda akut viral gastroenteritlerin en sık nedenleridir. Dünyada ve ülkemizde rotavirusun, özellikle 0-5 yaş arası çocuklarda ishal kaynaklı hastane yatışlarına, morbidite ve mortaliteye neden olduğu görülmüştür. Kimyasal dezenfektanlara kısmen dirençli olduğundan hijyen kurallarına yeterince uyulmadığında hastane kaynaklı salgınlara neden olabilir (Collier&Oxford, 2016).

Viral gastroenterit etkenlerinin hızlı antijen saptama yöntemleri sayesinde erken tanımlanması ile salgınlar önlenabilir, enfeksiyona bağlı mortalite ve morbidite azaltılabilir.

Tablo 1. Rotavirus, norovirus ve adenovirus antijeni saptanan örneklerin etken ve cinsiyete göre dağılımı

	Rotavirus pozitif (%)	Adenovirus pozitif (%)	Norovirus pozitif (%)	Toplam pozitif sayı (%)	Toplam örnek sayısı (%)
Erkek	195 (5,3)	65 (1,8)	158 (4,3)	418 (11,4)	2049 (56,3)
Kız	153 (4,2)	94 (2,6)	140 (3,8)	387 (10,6)	1592 (43,7)
Toplam	348 (9,5)	159 (4,4)	298 (8,1)	805	3641 (100)

Bizim çalışmamızda da ülkemizdeki verilere benzer olarak %9,5 rotavirus, %8,2 norovirus, %4,4 adenovirus, 15'inde (%0,4) rotavirüs ve adenovirus birlikte pozitif olarak saptanmıştır. Rotavirus antijen pozitifliği, yapılan araştırmalarla uyumlu olarak en çok 0-24 ay arasında (%5,1) ve kış mevsiminde (%5) tespit edilmiştir. Norovirus ve adenovirus antijenleri ile yaş grupları ve mevsimler arasında anlamlı bir ilişki saptanmamıştır (Grafik 2).



Grafik 2. Rotavirus, norovirus ve adenovirus antijeni saptanan örneklerin mevsimsel dağılımı

Tartışma ve Sonuç: Yapılan bir çalışmada örneklerin %17,3'ü Rotavirüs, %11,7'si norovirus, %2,6'sı adenovirüs açısından pozitif bulunmuştur (Özdemir ve ark., 2013). Rotavirus antijen pozitifliği, İstanbul'da %15,5, Eskişehir'de %19,9, Kayseri'de %27,8, Adıyaman'da ise %16,5 saptanmıştır (İlkaç ve ark., 2012; Kaşifoğlu ve ark., 2011; Berk&Kayman, 2011; Konca ve ark., 2014).

Enterik adenoviruslar da sıklıkla gastroenterite yol açan etkenlerden olup çocuk ishallerinin yaklaşık %5-20'sinden sorumludur (Farkas&Jiang, 2007). Kandemir ve ark çalışmasında enterik adenovirus antijeni pozitifliği %7 saptanmış, cinsiyet, yaş grupları ve mevsimsel açıdan anlamlı bir farklılığa rastlanmamıştır (Kandemir ve ark., 2014).

Çeşitli illerdeki çalışmalarda rotavirus ve enterik adenovirus antijeni pozitiflikleri sırasıyla; Denizli'de %26,5, %4.3; Elazığ'da %26.5, %14.7; Mersin'de %32.2, %10.5; Tekirdağ'da %10.4, %3.6; Erzurum'da %25.9, %8.2; Van'da %41, %17 olarak saptanmıştır (Balcı, 2010; Demirören ve ark., 2009; Tekin, 2010; Gülen ve ark., 2013; Balkan ve ark., 2012, Gültepe ve ark., 2012).

Akut gastroenterit etkeni pozitiflikleri, çeşitli coğrafik bölgelerde farklı oranlarda tespit edilmiştir. Bu farklılık, kullanılan tanı testlerinin değişik olması nedeniyle olabileceği gibi bölgenin sosyoekonomik düzeyi, alt yapı çalışmaları ve hijyene verdiği önem gibi sebeplerden de kaynaklanabilir. Viral gastroenteritler, özellikle çocuklarda mortalite ve morbidite açısından önemlidir. Bu nedenle sularının klorlanması, filtrelendirme sistemlerinin gözden geçirilmesi gibi genel toplumu koruyucu tedbirler alınmalı ve kişisel hijyen kurallarına dikkat edilmelidir.

Noroviruslar, klorlanmaya, donmaya ve ısıtmaya karşı dirençli olmaları, su ve besin yoluyla salgına yol açmaları nedeniyle önemli virüslerdendir. Amerika'da 175 araştırmayı içeren bir meta-analiz çalışmasında norovirus prevalansı %18 bulunmuştur (Ahmed et al., 2014). Ankara ilinde sekiz yıllık

süreçte akut gastroenteritli 0-5 yaş grubu çocuklarda norovirus antijeni pozitifliği %14.1 olarak saptanmıştır. Yaş grupları dikkate alındığında en yüksek pozitiflik oranı 12-23 ay (%1,1) arasındaki olgularda; mevsimsel dağılımı incelendiğinde, en yüksek prevalans yaz aylarında görülmüştür (Altay ve ark, 2013). Bizim çalışmamızda norovirus prevalansı, 0-5 yaş grubu çocuklarda %5 olarak bulunmuş, en fazla pozitiflik 2-5 yaş arası görülmüştür. Norovirus antijen pozitifliği ve mevsimsel dağılım arasında anlamlı bir ilişki saptanmamıştır.

Özetle, çocukluk yaş grubunda viral gastroenterit etkenleri arasında en sık rotavirus görülmekte olup adenovirus ve norovirus da sık saptanmaktadır. Viral gastroenteritler ülkemizde yaygın olup farklı coğrafi bölgelerde etkenin tanımlanması, görülme sıklığının belirlenmesi büyük önem taşımaktadır. Böylece viral gastroenteritlere karşı gereksiz antibiyotik kullanımını önlenerek, aşılama gibi uygun önlemlerin alınmasını sağlayacaktır.

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ID 226 / OP: “Elbow Magnetic Resonance Imaging: Frequency of Variants”

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Abstract (ID 226)

Introduction and Purpose: The variants of the elbow can lead to diagnostic mistakes at elbow magnetic resonance (MR) examinations. This study aims to describe the common variants of the synovium, tendon, and muscle and determine the frequency of these variants on elbow MR images.

Materials and Methods: Elbow MR images of 66 cases taken in one year were reviewed retrospectively. The presence of the variants was noted and the frequency of the variants were determined.

Results: The mean age of the patients was 41.3 ± 8.34 . The posterolateral radiohumeral synovial plica were noted in 48 cases (72.7%). The cyst-like saccular recess was observed in 12% and the anconeus epitrochlearis muscle was found in %7.6 of sixty-six elbow MR examinations. A bifurcated distal biceps brachii tendon was determined in 7 out of 66 cases.

Discussion and Conclusion: Knowing the anatomy and variations of the elbow joint is essential in order not to confuse these appearances with pathologies, but recognizing the variations that may lead to clinical symptoms and secondary pathologies also determines the diagnosis and treatment processes of the cases.

Keywords: Elbow, magnetic resonance imaging, variants

Full-text (ID 226)

Introduction and Purpose: The anatomical variants in the elbow joint can mimic pathologies. Knowing the anatomical variations of the elbow, the pathologies that these variations may cause, and the anatomical details that may be confused with the pathologies are important and necessary for the radiologist to reach the right conclusion in the evaluation process of the magnetic resonance (MR) imaging of the elbow joint (1).

The elbow joint is a complex joint consisting of three separate articulations surrounded by a single joint capsule: Radiocapitellar, ulnohumeral and proximal radioulnar joints (2).

The radiologist is thus compelled to accumulate a comprehensive knowledge of normal structures, variants, and pitfalls in the elbow MR imaging (3). In this article we focus on a number of tendon, muscle, and synovium variants that can simulate disease at the elbow.

Materials and Methods: Elbow MR images of 66 cases taken in one year were reviewed retrospectively. The presence the variants of the muscle, tendon, and synovium were noted. The elbow MR imaging is obtained by a 1.5 Tesla MR imaging machine. The MR imaging protocol of the elbow included, fat-suppressed (FS) proton-density-weighted (PDw) turbo spin-echo (TSE) and T1-weighted TSE coronal, FS PDw TSE and T1-weighted TSE axial, and FS T2-weighted TSE sagittal. Patients with a previous history of infection, tumor and operation were excluded. The psresence of the variants was noted and the frequency of the variants were determined.

Results: The mean age of the patients was 41.3 ± 8.34 . The posterolateral radiohumeral synovial plica was noted in 48 cases (72.7%). This structure was best demonstrated on the sagittal and coronal fat-supressed fluid-sensitive MR images (Figure 1). Cyst-like saccular recess (Figure 2) was observed in 8 out of 66 cases (12%). Cyst-like recess and its relation with the annular ligament were best described on sagittal and coronal fat-supressed fluid-sensitive MR images.

Anconeus epitrochlearis muscle was found in 5 cases (%7.6). The axial MR images were the best planes to show this accessory muscle and its relation to the ulnar nerve at the level of the cubital tunnel (Figure 3).

A bifurcated distal biceps brachii tendon (Figue 4) was determined in 7 out of 66 (10.6%) cases. Axial T1-weighted and fat-supressed proton-density MR images show the short and long heads of the distal biceps tendon separately.

Discussion and Conclusion: This study aimed to determine the presence and frequency of the tendon, muscle, and synovium variants that can simulate disease at the elbow.

The posterolateral radiohumeral synovial plica were noted in 72.7% of the elbow MR examinations. Synovial plicas or folds are the remnants of the membranes that divide synovial cavitations during normal elbow joint development (4). The most common synovial fold is radiohumeral fold. The radiohumeral synovial plica is in the between the capitellum and the radial head (5). A protrusion of synovial tissue extends into the joint space on sagittal and coronal MR images of the cases with radiohumeral synovial plica (6). The fold had T2 high signal in one of the 48 cases with a plica. The T2 high signal represented the edema indicates the plica syndrome (5).

Cyst-like saccular recess was observed in 8 cases (12%) with elbow joint effusion. The sac-shaped recess surrounding the radius neck is localized just inferior to the annular ligament (4). In the presence of effusion in the elbow joint, this enlarged synovial recess can falsely mimic a cystic lesion. Knowing its anatomical localization is important not to confuse it with pathology.

Anconeus epitrochlearis muscle was noted in %7.6 of the cases. This small muscle is a supernumerary muscle that takes the same course as the cubital tunnel retinaculum in the postero-medial aspect of the elbow. This structure has same the signal as the other muscles on all sequences. Since its first description, its prevalence is also divergent among the authors ranging from 3% to 34% (7). If the muscle compresses the ulnar nerve at the cubital tunnel level at the elbow, it can lead to cubital tunnel syndrome.

A bifurcated distal biceps brachii tendon is an anatomic variant that arises from persistent division between the short head and long head of the distal biceps brachii tendon and can be characterized with MRI (8). Knowledge of a bifurcated distal biceps brachii tendon is important to characterize injury to the components and to avoid pitfalls in imaging diagnosis. The anterior part of the distal biceps brachii tendon receives the fibers of the short head and the posterior part, those of the long head (9). A twisting of the tendinous fibers arising from the short head and long head and their respective contribution to the anterior and posterior part of the distal biceps brachii tendon, resulting in either distal or proximal insertion at the radial tuberosity, have been described in the literature. The separation of the biceps tendon was best visualized on axial MR images. The short head and long head of the distal biceps brachii tendon are separated by the fat tissue. Sagittal MR images are useful to demonstrate the course of the two heads of the distal biceps tendon.

Isolated short head tears of the distal biceps are rare and often underappreciated. Isolated short head ruptures are a distinct form of distal biceps tear that present with consistent clinical findings that can aid in diagnosis. They present acutely, have a poor natural history akin to complete tears, and have good outcomes with acute and delayed reconstruction (10). It is important to aware the appearance bifid distal biceps tendon at elbow MR images.

Knowing the anatomical variants of the elbow and the pathologies that these variations may cause are important for the radiologist to reach the right conclusion in the evaluation of the joint on MR images.

Keywords: Elbow, magnetic resonance imaging, variants

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Figures

Figure 1



Figure 2

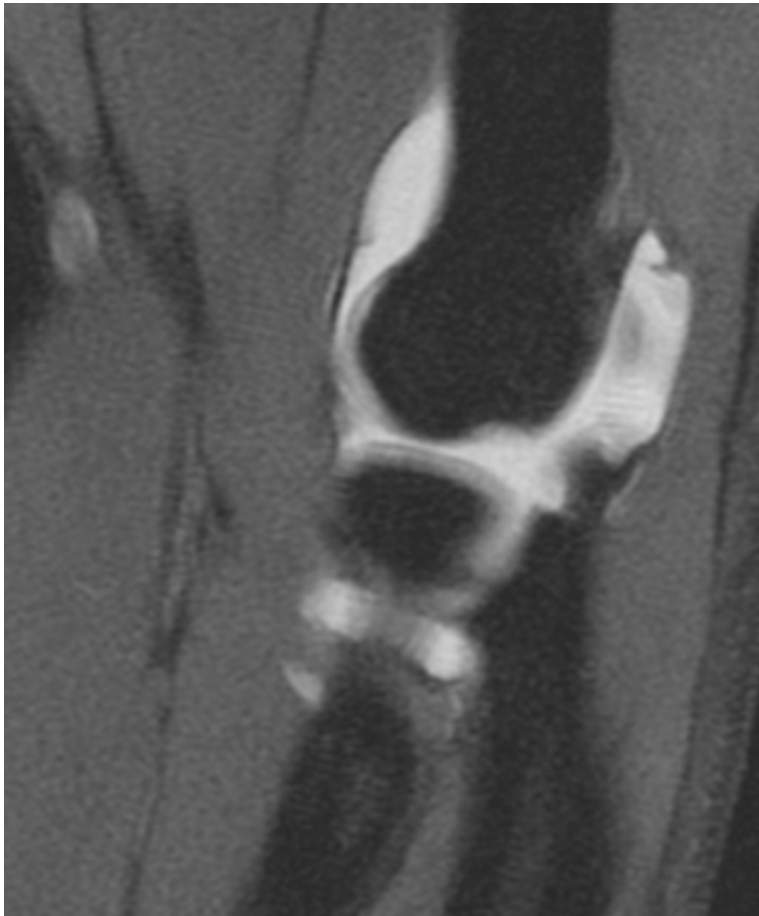


Figure 3

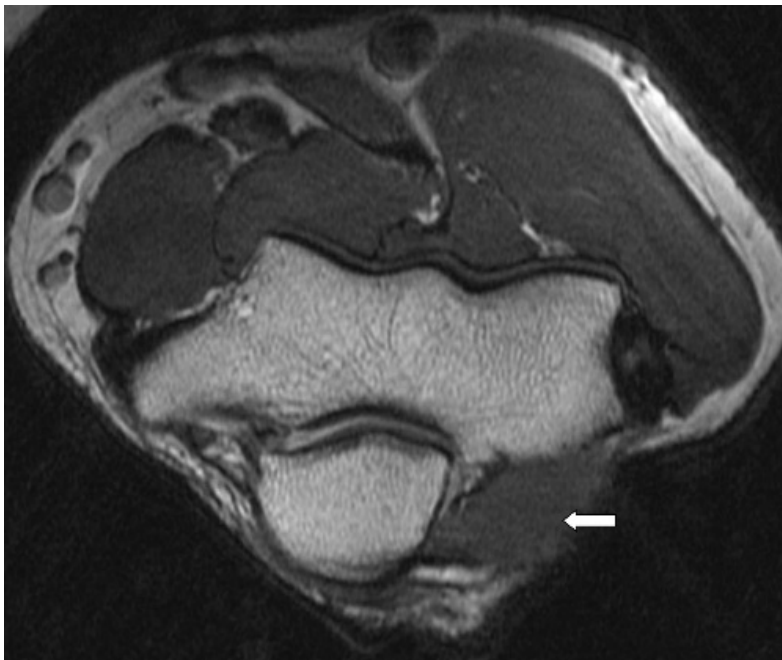


Figure 4

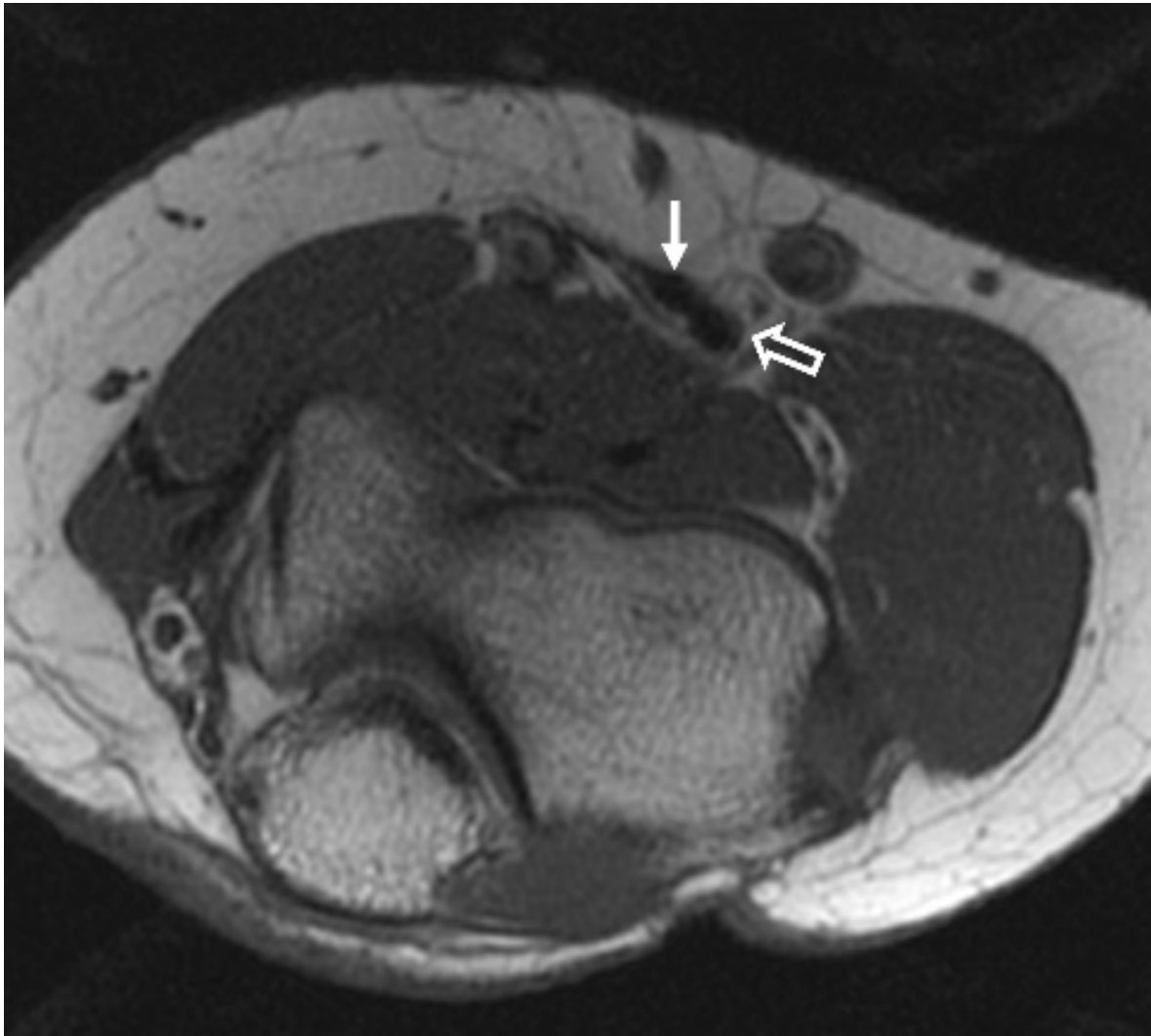


Figure Legends

Figure 1: Radiohumeral synovial plica. Fat-suppressed proton-density-weighted TSE sagittal MR image shows the thick synovial plica (arrow) between the radial head and the capitellum of the humerus.

Figure 2: Cyst-like saccular recess. Fat-suppressed T2-weighted TSE sagittal MR image shows the saccular recess surrounding the radius neck is localized inferior to the annular ligament.

Figure 3: Anconeus epitrochlearis. T1-weighted TSE axial MR image shows the accessory muscle (arrow) at the medial aspect of the elbow.

Figure 4: Bifurcated distal biceps brachii tendon. T1-weighted TSE sagittal MR image shows the short head (arrow) and the long head (open arrow) of the distal biceps tendon.

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Aralık, 2021

