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ORAL PRESENTATIONS

ORAL PRESENTATIONS

[OP-01]

Evaluation of the effect of boron and lithium treatment on SH-SY5Y (neuroblastoma) cell viability

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Aims: Neuroblastoma is a type of cancer originating from the peripheral nervous system seen in early childhood, and many methods (surgery, chemotherapy, etc.) have been tried in its treatment. Lithium (Li) and boric acid (BA), which are known to have a wide and variable spectrum of pharmacological and biochemical effects, have been reported to prevent the proliferation and metastasis of different types of cancer cells. However, the mechanisms by which these effects occur are still not clearly known. For this purpose, we evaluated the effects of different doses of BA and Li alone and in combination on neuroblastoma cell viability.

Methods: The human neuroblastoma cell culture line (SH-SY5Y) was used in this study. Cells were seeded in a 25 cm^2 culture dish and multiplied with passage. The medium was changed every 72 hours. Then, the number of live and dead cells was determined on a thoma slide by staining with trypan blue (0.4%). The cells were seeded in 96-well cell culture dishes in 100 µL cell medium with 10.000 cells in each well and incubated for 24 hours. Subsequently, BA (0-80 mM) and Li (0-200 mM) concentrations were applied alone and in combination for 24 hours. The percentage of cell viability was determined by the tetrazolium salt (MTT) method. The chemical solutions in the wells were removed and 100 µL (5 mg/mL) MTT solution was added and incubated for 3-4 hours. Finally, 100 µL of dimethylsulfoxide was added and incubated for 20-30 minutes. Then, the absorbance value of the wells at 570 nm was calculated by measuring on the plate reader. IBM Statistical Package for the Social Sciences statistics 27.0 package program (Chicago, IL, USA) was used for data analysis. The data obtained were expressed as mean±standard error. Differences between the groups were evaluated by ANOVA. Then, Dunnet and Tukey post-hoc tests were performed and the statistical significance level was considered at $p<0.05$.

Results: Doses of BA 80 mM (43.99%), 40 mM (39.06%), 20 mM (34.75%), 10 mM (22.60%), 5 mM (24.55%) and 1 mM (23.95%) significantly reduced SH-SY5Y cell viability compared to the control group ($p<0.05$). Li 200 mM (89.01%), 100 mM (85.04%), 75 mM (76.57%), 50 mM (62.77%), 25 mM (35.42%), 10 mM (34.83%) and 5 mM (28.57%) doses significantly decreased SH-SY5Y cell viability compared to the control group ($p<0.05$). BA-5 mM+Li-10 mM and BA-10 mM+Li-25 mM applications significantly reduced cell viability by 89.42% and 65.30%, respectively, with a synergistic effect compared to the control group ($p<0.05$).

Conclusions: It was determined that BA and Li alone and combined applications prevented the proliferation of neuroblastoma cancer cells in this study. And, our results need to be supported by further molecular studies by determining the mechanisms through which BA and Li prevent the proliferation of neuroblastoma cells. In addition, it is thought that the results we obtained may lead to new clinical research but, more importantly, BA and Li applications may contribute to promising current and original treatment approaches in neuroblastoma cancer.

Keywords: Boron, lithium, neuroblastoma

[OP-02]

Radiological examination of pelvic types and diameters and evaluation of gender differences

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Aims: Pelvic morphology can vary by gender, geography and racial factors. This study aimed to measure important pelvic diameters in the Turkish population, determine pelvic type incidence, and find the relationship between genders.

Methods: Pelvic radiographs of 153 men and women, aged 18-65, selected randomly, were evaluated with X-ray pelvimetry in our study. Pelvic types were determined using Caldwell classification, and conjugata anatomica, obliqua, transversa, vera and diagonalis were measured with Thoms and William's technique. Gender differences were analyzed.

Results: In 15.7% of cases android type, in 11.8% anthropoid type, in 33% gynecoid type, and in 39.5% platypelloid type pelvis were found. Platypelloid and gynecoid pelvis types were more common in men, while other types were more common in women. Pelvic diameters in women and men were, respectively, conjugata transversa 13.85±0.92 cm and 14.65±0.89 cm, conjugata anatomica 12.8 (8.34-16.65) cm and 13.55 (8.61-17.73) cm, conjugata vera 14.33 (10.14-17.70) cm and 14.84 (10.43-18.30) cm, conjugata diagonalis 15.94 (11.94-19.61) cm and 16.04 (12-19.39) cm, and conjugata obliqua 11.1 (8.47-13.53) cm and 11.81 (8.98-17.81) cm. Except for conjugata diagonalis ($p=0.420$), pelvic diameters were significantly larger in women ($p<0.05$).

Conclusions: Knowing the morphometric features of the apertura pelvis superior in the population and identifying differences is important in clinical follow-up. Although our study does not represent the entire population due to its cross-sectional nature, we believe the data will contribute to the literature and help consider differences in pelvic morphology.

Keywords: Diameter, morphology, pelvis

ORAL PRESENTATIONS

[OP-03]

Determination of MMP-9, ezrin, and CD44 levels in serum samples of adult patients with severe asthma

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Aims: This study aims to investigate the levels and interactions of ezrin, CD44 and MMP-9 proteins in severe asthma patients who are either treatment-resistant or treatment-sensitive. By identifying these potential biomarkers, we aim to enhance our understanding of the disease mechanisms, develop innovative therapeutic strategies, and improve prognostic evaluations for severe asthma.

Methods: Blood samples were collected from severe asthma patients at Çukurova University Faculty of Medicine Balcalı Hospital's Chest Diseases Clinic. Patients who did not achieve symptom control despite optimal medication were classified as having severe asthma. Proteomic analyses were performed on proteins extracted from the blood serum, focusing on ezrin, MMP-9, and CD44. Total protein levels were determined using the BCA method, while protein concentrations were measured through Coomassie Blue staining.

Results: The proteomic analysis revealed distinct protein expression patterns between treatment-resistant and treatment-sensitive severe asthma patients. While the study primarily focused on overall protein profiles, the data suggests that variations in proteins such as ezrin, CD44, and MMP-9 could play significant roles in the disease mechanism. These findings are promising for future research into the potential of these proteins as biomarkers for severe asthma.

Conclusions: The study underscores the potential of total protein profiles in identifying biomarkers for severe asthma. These initial findings highlight the importance of proteins like ezrin, CD44, and MMP-9, providing a promising direction for future research. Understanding these protein patterns could lead to novel therapeutic approaches and improved prognosis for patients with severe asthma.

Keywords: Asthma, refractory asthma, severe asthma, biomarker, chest diseases

[OP-04]

Investigation of oxidative stress, inflammation and DNA damage levels in infertile women

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Aims: Infertility is the inability of men and women to achieve pregnancy despite having regular sexual intercourse at least twice a week without using any contraception for at least one year under the age of 35, 6 months between the ages of 35-40 and 6 months over the age of 40. In the literature, oxidative stress, DNA damage, and inflammation are associated with male infertility. In this study, we aimed to examine DNA damage and inflammatory and oxidative stress biomarkers in women diagnosed with infertility.

Methods: Blood samples were collected from 42 patients and 42 volunteers. Total oxidant level (TOS), total antioxidant level (TAS), total thiol (TT), and native thiol (NT) levels were measured by photometric methods using commercial kits. Oxidative stress index (OSI) and disulfide (DIS) levels were calculated by mathematical equations. The alkaline single-cell gel electrophoresis (Comet Assay) method was applied for the detection of DNA damage. Interleukin 1-β (IL-1β), interleukin-6 (IL-6), and tumor necrosis factor-α (TNF-α) levels were measured by ELISA kits.

Results: In the infertility group, TOS, OSI, and DIS levels among oxidative damage biomarkers were significantly increased ($p<0.001$). TAS, TT, and NT levels were significantly lower in the infertility group ($p<0.001$). DNA damage was significantly increased in the infertility group ($p<0.001$). IL1-β, IL-6, and TNF-α levels in inflammation biomarkers were significantly higher in the infertility group ($p<0.001$).

Conclusions: We suggest that increased inflammation, DNA damage, and oxidative stress in infertility patients may guide the pathogenesis, prognosis, and treatment strategies of the disease.

Keywords: Biomarker, DNA damage, infertility, inflammation, oxidative stress

ORAL PRESENTATIONS

[OP-05]

Investigation of HIF-1α levels in patients with pernicious anemia

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Aims: Pernicious anemia is a macrocytic anemia caused by intrinsic factor deficiency resulting from vitamin B12 (cobalamin) deficiency. The onset of pernicious anemia is difficult to detect, and progression is slow. Hypoxia-induced factor-1 (HIF-1) functions as a master regulator of oxygen and undergoes conformational changes in response to oxygen concentrations. This study aimed to investigate HIF-1α levels in patients diagnosed with pernicious anemia.

Methods: The population of the study consisted of volunteers who applied to Bezmialem Vakıf University Internal Medicine, Internal Diseases Clinic and agreed to participate in the study. A total of 76 volunteers, including 38 volunteer patients diagnosed with pernicious anemia between the ages of 18-65 years and without any other disease and 38 healthy volunteers with the same demographic characteristics, were included in the study. The levels of the inflammatory biomarker HIF-1α in sera were measured by photometric method using a commercially available ELISA kit. The Ethics Committee of the University of Health Sciences Türkiye approved the study protocol.

Results: HIF-1α levels were significantly higher in the patient group with pernicious anemia compared to the healthy control group ($p<0.001$).

Conclusions: We suggest that HIF-1α levels in patients with pernicious anemia may be a specific and effective biomarker for the prognosis of the disease, determination of the correct diagnosis and prevention of damage due to delayed treatment.

Keywords: Biomarker, HIF-1α, pernicious anemia

[OP-06]

Evaluation of the effect of pregnancy school on pregnant women's knowledge level about safe motherhood

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Aims: Pregnancy Schools give "Safe Motherhood" training. This research aims to evaluate the level of knowledge about safe motherhood of pregnant women who have or have not received training at the University of Health Sciences Türkiye, Gülhane Training and Research Hospital (GTRH) Pregnancy School.

Methods: This study was performed between 16 March 2024 and 31 March 2024 at the GTRH-Gynecology and Obstetrics Polyclinic with 100 volunteer pregnant women. Of the participants, 50 subjects received training and 50 subjects served as controls with no training. The data collection form was administered face-to-face to participants. It contains 57 questions assessing sociodemographic characteristics and knowledge of pregnancy, childbirth, and postpartum processes. Pregnant women could get a maximum of 57 points from the form.

Results: There was no significant difference between the average scores of the training group and no training group. The training group gave significantly more correct answers than no training group in 11 of the 45 questions/statements measuring the level of knowledge. Some of these questions/statements and the percentages of correct answers are as follows: "During pregnancy, one should avoid alcohol (A: 88%, B: 68%), X-ray-machines (A: 90%, B: 58%), ready-made-foods (A: 78%, B: 58%), caffeine (A: 78%, B: 52%)", and "Disease risk of a baby can be assessed by performing a heel prick test after birth (A: 96%, B: 84%)"

Conclusions: Among pregnant women, there was no significant difference in the responses of women who attended the pregnant school and controls. There is a need to enhance the content, teachings, and methods employed in pregnant schools.

Keywords: Pregnancy school, safe motherhood

ORAL PRESENTATIONS

[OP-07]

Examples of the use of artificial intelligence in the diagnosis of hematologic malignancies

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Hematologic malignancies are cancerous diseases that affect the blood and blood-forming organs, such as leukemia, lymphoma, and myeloma. The primary diagnostic methods for hematologic diseases include complete blood counts, peripheral smears, and bone marrow examinations. The selection of these tests is based on the patient's symptoms, physical examination findings, and the preliminary diagnoses made by the physician. An incorrect diagnostic approach by the physician can result in misdiagnosis and improper treatment, emphasizing the importance of accurate and thorough diagnostic processes. Artificial intelligence (AI) is a field of science dedicated to creating computer systems that possess human-like intelligence. Within AI, machine learning is a branch that enables computer systems to learn from data and gain experience. Deep learning, a subset of machine learning, utilizes multi-layered artificial neural networks to process large and complex datasets. Computer vision is another domain within AI that allows computers to analyze, understand, and interpret visual data from images and videos. With the continuous advancement of technology, AI has begun to play a significant role in the medical field. AI algorithms, such as those based on machine learning, deep learning, and computer vision, are increasingly being utilized in the diagnosis and treatment of diseases. For instance, these AI algorithms can analyze complete blood counts, peripheral smears, and bone marrow examinations to aid in the diagnosis and treatment of hematologic conditions. The success of these AI algorithms depends on the type of disease being tested and the adequacy of the training dataset.

Keywords: Hematologic malignancies, artificial intelligence, deep learning, machine learning, diagnosis

[OP-08]

Evaluation M30, M65 and oxidative stress levels in Hashimoto patients

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Aims: Hashimoto's thyroiditis (HT), a prevalent autoimmune thyroid disease, is often asymptomatic in its early stages and progresses insidiously, leading to late recognition. Our project aims to demonstrate oxidative stress and apoptosis in HT, an inflammatory disease, using novel biomarkers.

Methods: In our ethical study, we analyzed blood samples from 88 volunteers: 44 HT patients aged 65-18 years and 44 volunteers with the same demographic characteristics. Total antioxidant status (TAS), total oxidant status (TOS), total thiol (TT), and native thiol (NT) levels, which are biomarkers of oxidative stress, were measured by photometric methods using commercial kits. Oxidative stress index (OSI) disulphide (DIS) levels were calculated by mathematical equations. M30 and M65 protein levels were measured photometrically with ELISA kits as cell death markers.

Results: TOS, OSI, and DIS levels, which are biomarkers of oxidative damage, were significantly increased in the HT group ($p<0.001$). TAS, TT, and NT levels were significantly decreased in the HT group ($p<0.001$). M30 and M65 levels, which are cell death biomarkers, were significantly higher in the HT group ($p<0.001$).

Conclusions: It is thought that the increase in oxidative stress and cell death biomarkers in HT patients may be guiding in determining early diagnosis strategies for the disease. Our next step to improve our project is to group HT patients according to their levels and calculate at which stages biomarkers will be significantly different.

Keywords: Cell death, Hashimoto's thyroiditis, inflammation, oxidative stress

ORAL PRESENTATIONS

[OP-09]

Effect of *Pinus Nigra* extract and chemotherapeutic drugs on A549 and MCF-7 cancer cells

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Aims: Various studies have been conducted on the use of extracts derived from *Pinus* species, which contain terpenoids, steroids, proanthocyanidins, and flavonoids, for their antibacterial, antifungal, and wound healing properties. Most chemotherapeutic drugs prevent the growth and proliferation of malignant cells with their cytotoxic effects and induce their death. This study aimed to demonstrate the effects of *Pinus Nigra* cone extract on human lung and breast cancer cells, as well as its effects on breast cancer cells treated with chemotherapeutic drugs *in vitro*.

Methods: After 2D seeding of A549 and MCF-7 cells, dose optimizations of *Pinus Nigra* cone extract (0.625 µM-1000 µM) and lenalidomide (1.5 µM-100 µM), ribocyclib (1.5 µM-100 µM) and venetoclax (1.5 µM-100 µM) were performed. After 24 hours, the morphology of cancer cells was examined under a microscope and their metabolic activity was determined by 3-[4,5-dimethylthiazol-2-yl]-2,5-diphenyl-tetrazolium bromide (MTT) assay at 570 nm wavelength.

Results: The IC50 values of *Pinus Nigra* cone extract and chemotherapeutic drugs lenalidomide, ribocyciclib, venetoclax applied to A549 and MCF-7 cancer cells were 160 µM, 48.63 µM, 13.59 µM, 6.55 µM, respectively.

Conclusions: *Pinus Nigra* cone extract has been observed to decrease the number of cancer cells and the activity of mitochondrial dehydrogenase enzyme in A549 and MCF-7 cell lines, while ribociclib and venetoclax showed similar effects specifically in MCF-7 cell lines. However, increasing the dose of lenalidomide did not prove effective.

Keywords: Lung cancer (A549), breast cancer (MCF-7), *Pinus Nigra*, chemotherapeutic drugs

[OP-10]

Six-year impression of risky health behaviors of risky health behaviors: 1st-year results

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Aims: This study aimed at studying the changes in the health of medical students and the risk factors they were exposed to during their education.

Methods: This cross-sectional study included 144 students randomly selected from the first-year students of University of Health Sciences Türkiye, Gülhane Faculty of Medicine, University of Health Sciences Türkiye, between March 11 and 31, 2024.

Results: Of the participants, 40.9% (n=59) were female, 33.4% (n=48) were military students, 57.6% (n=83) did not eat regularly, and 4.1% (n=6) had a chronic disease. The proportion of never, ever, and current smoking was 84.7% (n=122), 4.1% (n=6) and 11.1% (n=16), respectively. Frequent and occasional alcohol consumption was reported by 2.7% (n=4) and 18% (n=26), respectively. The proportion of students living away from their families was 78.9% (n=75), who also reported that living away from their families negatively affected their mood. Previous antidepressant use was recorded by 14.5% (n=21) and 7.6% (n=11) of the participants reported that they had thought of suicide.

Conclusion: Educational activities are required for students on the dangers of smoking and alcohol use. In addition, students who are away from their families should be provided with psychological support.

ORAL PRESENTATIONS

[OP-11]

The efficiency of transarterial chemoembolization therapy in hepatocellular carcinoma

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Aims: This study investigated the efficiency of transarterial chemoembolization in hepatocellular carcinoma patients.

Methods: In Bilkent City Hospital between June 2022 and March 2023, transarterial chemoembolization therapy has been applied to 13 hepatocellular carcinoma patients. Doxorubicin emulsion and lipiodol were administered via the hepatic artery. The patients were evaluated after six months with abdomen computed tomography, serum albumin, bilirubin, hematocrit, prothrombin time, and alfa-fetoprotein levels.

Results: The mean age was 66.2 years. The etiological factors were hepatitis B in 9 and hepatitis C in 4 patients. The localization of the tumor was unifocal in 9, and multifocal in 3 patients. One patient had diffuse involvement. There were 6 lesions with a diameter >5. No complication was recorded in any patient. Type 3 and type 3 reactions were observed in 8 and 5 patients, respectively.

Conclusions: Transarterial chemoembolization therapy is generally the most frequently preferred method in hepatocellular carcinoma patients when surgical intervention is impossible. After catheterizing the artery that nourishes the tumor, the chemotherapeutic substance is mixed with lipidiol and is given to the hepatic artery. When transarterial chemoembolization therapy is combined with locoregional and systemic treatments, it may improve survival. Transarterial chemoembolization therapy is an efficient palliative treatment method in selected hepatocellular carcinoma patients when surgical intervention is impossible that provides local control of the tumor and increases survival.

Keywords: Transarterial chemoembolization, hepatocellular carcinoma, safety, efficacy

[OP-12]

Tumor excision and personalized cranioplasty

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Decompressive craniectomy refers to the removal of a part of the skull to reduce brain and intracranial pressure in conditions such as subarachnoid hemorrhage, increased intracranial pressure, brain injury, tumor, brain edema, and skull fractures. Following decompressive craniectomy, cranioplasty surgery is performed to reconstruct the skull, restore protective barriers, improve intracranial physiology, and regulate cerebrospinal fluid and blood flow. Cranioplasty can be conducted using autologous bone, polymethylmethacrylate, polyetheretherketone, titanium, porous hydroxyapatite, and their derivatives. A planning phase is undertaken to perform tumor excision and placement of a personalized implant into the skull in the same surgical session. Before surgery, computed tomography scans are utilized to delineate the boundaries of the tumor to be excised. These scans are converted into 3D models using software like mimics or alternative programs to identify the resulting defect. The tumor boundaries may not be as clearly visible during surgery as they appear on the computer. Therefore, a surgical guide is designed using computer assistance, and an appropriate implant is tailored to fit the defect. Models of the patient's tumor, cranial structure, implant, and surgical guide are produced using 3D printers. Surgical rehearsals are conducted using these models. This process facilitates the simultaneous execution of two separate procedures and shortens the overall process. On the day before surgery, the incision site is planned. Surgery for tumor-bearing patients is guided by the surgical guide. Tumor excision is performed according to the guide, and the implant is placed over the defect with mini screws to achieve aesthetic harmony with the cranial structure. Post-operative checks are conducted via computed tomography scans. Common complications following surgery include infection, intracranial bleeding, extradural fluid collections, hydrocephalus, seizures, and bone resorption. The outcome of the surgery restores cranial integrity and cerebrospinal fluid dynamics. Psychosocial development and improved quality of life are observed in patients whose cranial integrity is restored aesthetically. The restoration of neurological functions is also presumed, although not definitively confirmed.

Keywords: Tumor, craniectomy, cranioplasty, software programs