ORAL PRESENTATIONS ABSTRACTS
DIAGNOSING URINARY TRACT INFECTION?

HOW ACCURATE IS THE URINE DIPSTICK TEST FOR DIAGNOSING URINARY TRACT INFECTION?

OP-001
EVALUATING OF SYNTHETIC CATHINONES IN HUMAN URINE SAMPLES

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OBJECTIVES: Cathinone is the principal active constituent of the Khat plant (Catha edulis), and has similar stimulant properties to natural amphetamine. Substituted cathinones are derivatives of cathinone; some of them have medical uses as well, but some are strong psychoactive drugs and commonly sold in “bath salts”. Their use may have very serious public health and safety consequences. We aimed to develop an easy, sensitive and validated method for detecting synthetic cathinones in clinical and forensic toxicology cases.

MATERIALS-METHODS: Urine samples were sent from emergency services. We used LC-MS/MS and certified standard solutions to create the method. We studied the linearity, LOD, LOQ, accuracy, imprecision, repeatability, reproducibility, recovery and carry-over as validation parameters for six synthetic cathinones. Positive electrospary ionization in the MRM mode was applied to all analytes.

RESULTS: All validation parameters studied were found in acceptable analytical ranges. Alpha-PVP was the only synthetic cathinone detected in two urine samples among 16 drug use suspected patients.

CONCLUSION: We developed an easy and sensitive method suitable for analyzing synthetic cathinones and detected alpha-PVP in two urine samples. There is no data on the use of this substance in our country before. The need for sensitivity in clinical and forensic toxicology determinations, LC-MS/MS is preferable for the determination and quantitation of synthetic cathinones in toxicology cases.

Keywords: Synthetic cathinones, urine, LC-MS/MS

OP-002
HOW ACCURATE IS THE URINE DIPSTICK TEST FOR DIAGNOSING URINARY TRACT INFECTION?

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OBJECTIVES: Urine Dipstick is first step laboratory test to diagnose a urinary tract infection. Urinary tract infection(UTI) is one of the most common disease in clinical laboratories. The gold standard to diagnose UTI is urine culture so there a re a number of unnecessary urine culture requests. It is urine culture is expensive and causes time-consuming. We aimed to hand, urine culture is expensive and causes time-consuming. We aimed to

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RESULTS: All validation parameters studied were found in acceptable analytical ranges. Alpha-PVP was the only synthetic cathinone detected in two urine samples among 16 drug use suspected patients.

CONCLUSION: We developed an easy and sensitive method suitable for analyzing synthetic cathinones and detected alpha-PVP in two urine samples. There is no data on the use of this substance in our country before. The need for sensitivity in clinical and forensic toxicology determinations, LC-MS/MS is preferable for the determination and quantitation of synthetic cathinones in toxicology cases.

Keywords: Synthetic cathinones, urine, LC-MS/MS
CONCLUSION: As a result of this study, eyelid, conjunctival and orbital tumors was found to be related to BAP1 and YY1 genes. Our findings suggest that BAP1 and YY1 proteins may be suitable biomarkers for diagnosis of many diseases, especially cancer.

Keywords: Eyelid, Tumour, BAP1, OG1, YY1, Expression

OP 005  
THE POSSIBLE RELATIONSHIP BETWEEN THIOL-DISULPHIDE BALANCE AND PROSTATE CANCER

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OBJECTIVES: Cancer is the second cause of death in Turkey. Prostate cancer are considered to be The “Big Four” Cancer Types as colorectal, lung, breast and in the United States. PlasmaThiol pool consist of plasma protein with low and large molecular weight that is indicate to indicate important the Thiol/disulfide balance of cancer cases. We aimed to find whether there is a possible association between a oxidative stress marker (thiol/disulfide homeostasis) and tumor markers (IMA, Ischemia Modified Albumin). Albumin, CEA, Carcinoembryonic antigen, serum total and free PSA (prostate specific antigen) in patients with Prostate cancer and compare the results with healthy controls for the first time in literature.

MATERIALS AND METHODS: A total of 115 participants including 15 patients with Prostate cancer and 100 healthy individuals were included in the study from the Oncology and Urology clinics. In all cases, serum total and free PSA, IMA, Albumin, CEA, native thiol, total thiol and disulfide as well as disulfide/native thiol and disulfide /total thiol ratios were compared between the groups. Native thiol (-SH), disulfide (-S-S) and total Thiol (TT) concentrations were measured with a novel automated method.

RESULTS: In prostate cancer group, serum total and free PSA, IMA, Albumin, CEA, native thiol, total thiol and disulfide as well as disulfide/native thiol and disulfide /total thiol ratios were not statistically significant difference compared to the control group (p>0.05). There was not any relationship between thiol-disulfide parameters and tumor markers in the control group (p>0.05). There was not any relationship between thiol-disulfide parameters and tumor markers in the prostate cancer group (p>0.05).

CONCLUSIONS: This paper discusses a oxidative stress marker (thiol/disulfide homeostasis) and tumor markers in patients with prostate cancer and compare the results with healthy controls. It could be said that changes in the thiol-disulfide homeostasis may not be interact with serum total and free PSA values. Serum thiol-disulfide activity considered not to be as a biomarker in patients with prostate cancer. New studies are needed to get a better understanding of the subject.

Keywords: Disulfide, thiol, PSA, prostate, cancer.

OP 006  
IN VITRO MIGRATION, INVASION AND METASTASIS MODELS IN CANCER RESEARCH

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Only uncontrolled proliferation is not enough for cancer to occur. The cell must acquire other malignant features such as invasion and metastasis. Metastasis is the spread of cancer cells to the different tissues and organs of the body from which they originate. This occurs with a series of interrelated complex and multi-step events such as angiogenesis, invasion, migration, motility, extravasation and proliferation. First, the tumor cells stimulate the formation of new blood vessels and then break their ties with neighboring cells and leave the primary tumor tissue. Tumor cells pass through the extracellular matrix. They move here and they either reach the surrounding tissues or go to the circulatory system and invade distant tissues and continue their lives and multiply.

Although many steps and molecular agents involved in the development of metastasis have been found up to now, the mechanisms of tumor metastasis are still not fully understood.

One of the key molecules in tumor invasion and metastasis is extracellular matrix (ECM) elements.

ESM elements are dynamic occurrences, which have many biological activity effects such as cell proliferation, differentiation and adhesion with migration, tissue morphogenesis as well as providing structural support to organisms. The ESM elements act as a barrier to the growth of tumor tissue and the spread of tumor cells. Cancer cells also use metalloproteinases to overcome this barrier. For cancer invasion and metastasis, destruction of the ESM is necessary. Metastasis can be examined in two steps:

1. Invasion of the extracellular matrix
   - The separation of the tumor cells
   - Chaining of matrix components to matrix components
2. - Extracellular matrix destruction
   - The migration of the tumor cells
3. Vascular spread of tumor cells, settlement

Tumor cells are vulnerable to the immune system cells in the vascular system. Some tumor cells form aggregates to protect themselves from this.

They lead to embolisms and they try to protect the immune system from antitumor effects by adhering to leukocytes, mainly thrombocytes. Tumor cells show vascular endothelial adhesion as they go out of the vein (extravasation), after which the invasive stages are repeated.

Extravasation and metastasis are usually due to localization of the primary tumor and vascular-lymphatic drainage.

In this presentation, in vitro Migration, Invasion, and Metastasis Modeling will be outlined and current samples will be discussed.

Keywords: migration, invasion, metastasis, cancer research
OP-008
INVESTIGATION OF THE INHIBITORY EFFECT OF TANGERETIN ON ACETYLCHOLINESTERASE ENZYME
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OBJECTIVES: Alzheimer’s disease is associated with memory loss, dementia and cognitive impairment. This disease is one of the most common diseases in the elderly. Currently, acetylcholinesterase (AChE) inhibitors such as Tacrine, Rivastigmine, Donepezil and Galantine have been studied for the treatment of AD. AChE inhibitors are used in the treatment of various neuromuscular diseases. Drugs that cause the inhibition of AChE for the treatment of AD are being sought and studied. Tangeretin, a derivative of the AChE inhibitor, was studied for this purpose in our study. Tangeretin, a flavonoid, has previously been found in citrus fruits. The acetylcholinesterase enzyme sweep away the chemicals that accumulate in front of the nervous system. In this view, the nerve conduction through the opening of the electron carriers in front of it is achieved in a stable manner without interruption.

MATERIALS-METHODS: AChE enzyme activity was determined according to the methods of Ellman et al. For this purpose, acetylcholine iodate (AChI) was used as the substrate.

RESULTS: In our study, the inhibitory effect of Tangeretin on AChE was studied. According to the results, the IC50 value of Tangeretin was found to be 2.26 µM and the mean Ki value was found to be 15.30 µM. The type of inhibition was determined to be non-competitive.

CONCLUSION: Gülcüçî and his colleagues have also recently worked intensively on the effects of biological molecules on the acetylcholinesterase enzyme. Consequently, we have obtained important findings that contribute to the literature when we study the inhibitory effect of Tangeretin on AChE.

Keywords: Asetikoloinesteraz, enzim inhibisyonu, Tangeretin

OP-009
MOLECULAR LINKS BETWEEN ANGIogenesis AND INFLAMMATION IN POLycystic OVary SYNDROME
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OBJECTIVE : Polycystic Ovary Syndrome (PCOS) affects 4-8 % of pre-menopausal women and it is the most common endocrine disorder during childbearing age. Angiogenesis is the physiological process through which new blood vessels form from pre-existing micro vascular blood vessels. In this study, angiogenic factors vascular endothelial growth factor (VEGF), monocYTE CHEMOTACtic PROTEIN (MCP-1), soluble伊mes -Like tyrosine kinase (s -FIt -1), antiangiogenic factor endostatin and proinflammatory cytokine IL-18 levels have been investigated.

MATERIALS-METHODS : A total of 64 serum, 33 patients with PCOS, 31 healthy individuals without any chronic diseases were included into the scope of the study. Measurements of parameters in serum were performed using ELISA. SPSS Mann Whitney U test was used for statistical analysis.

RESULTS : Endostatin levels in PCOS group were significantly higher than the control group (p<0.01). Significant positive correlations were observed between MCP-1 and VEGF (r = 0.411 p<0.05) as well as s-Fit-1 and VEGF (r = 0.345 p<0.05). In this study, higher endostatin levels as well as important correlations between VEGF and MCP-1, VEGF and s-Fit-1 were detected in PCOS group compared to those obtained in healthy individuals.

CONCLUSION : In the PCOS group compared to the control group, endostatin levels as well as between VEGF/MCP-1 and between VEGF/s-Fit-1 significant correlations suggest that there is an increase in VEGF levels but not statistically significant, suggesting that the angiogenesis mechanism in the later stages of the disease has returned to normal with endostatin, the antiangiogenic parameter. By staggering the PCOS, its mechanism can be better illuminated.

Keywords : Polycystic Ovary Syndrome, Angiogenesis, Cytokine, ELISA, Infertility

OP-010
ANTI-PROLIFERATIVE, TOXIC AND APOPTOTIC EFFECTS OF ACRYLAMIDE ON C6 RAT GLIOMA CELLS
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OBJECTIVES: Acrylamide is a highly reactive and toxic chemical agent found in the various areas. Acrylamide also forms in foods at temperatures higher than 120°C via the reaction between reducing sugars and especially asparagine after some processes such as baking and frying. In this study, we aimed to investigate the anti-proliferative, toxic and apoptotic effects of acrylamide on C6 rat glioma cells.

MATERIALS-METHODS: The effect of acrylamide on C6 cells was assessed by MTT colorimetric test and an IC50 of acrylamide was determined. This IC50 was used in subsequent experiments. Firstly, Annexin-V test was used to investigate cell deaths and death modes in acrylamide-treated and untreated cells. Secondly, caspase 3 and 7 activities and mitochondrial potentials of cells were evaluated. Finally, acrylamide-treated and untreated cells were observed under TEM and confocal microscopy.

RESULTS: The MTT test showed that acrylamide decreased C6 cell viability dose-dependently. The IC50 was found to be 6.66 mM. In the Annexin-V test, the apoptotic cell percentage in the acrylamide-treated group was found to be higher than the untreated group. Caspase 3 and 7 activities and mitochondrial depolarization in acrylamide-treated group were higher than untreated group. Apoptotic hallmarks such as apoptotic bodies, membrane blebbing, vacuolization, nuclear condensation and fragmentation were observed in TEM and confocal microscopy.

CONCLUSION: The IC50 of acrylamide for C6 cells was found to be 6.66 mM. Acrylamide exerts anti-proliferative and cytotoxic effects on C6 cells and kills them through apoptosis.

Keywords: acrylamide, C6 rat glioma cells, Annexin-V, Caspase, TEM, Confocal microscopy

OP-011
PRECONCEPTIONAL DIETARY SUPPLEMENT (FERTILOVIT®PLUS) INHIBITS LEUKEMIA CELL PROLIFERATION VIA APOPTOSIS IN VITRO
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OBJECTIVE: Fertilovit® F35 Plus (FV; Gonodasan AG, Germany) containing B,C,D,E vitamins, coenzyme Q10 with Fe, I and Zn microelements, advised for female preconceptional is a dietary supplement with antioxidant effect. A traditional Chinese medical herb and dietary supplement Lycium barbarum (LB; Gojiberry) having similar content as FV and an antioxidant effect is used as a therapeutic agent/an adjuvant at various illnesses. In this current study, we aimed to determine the effect of FV in single agent and in combination with LB on chronic myeloid leukemia and the pathway of this mechanism action.

MATERIALS-METHODS: Antioxidant capacity determined LB fruits’ extracts in single and in combination with FV were applied to K562 leukemia cells for 72 h. Their effects were evaluated by cell viability, apoptotic index (flow cytometry), the levels of apoptotic (Caspases-3,8,9; bax) necro apoptotic (RIPK-1) and resistance [Midkine (MK), bcl-2, nf-kappaβ, Akt] proteins (ELISA). Anova test was used and p≤0.05 was considered statistically significant.

RESULTS: Potent inhibition of cell number and viability was determined at the FV group (PFV<0.05). Highest apoptotic index and caspase-8, total Akt ve nf-kappaβ caspase-3 levels were detected at the FV group (PFV<0.05). Highest bax and bcl-2 levels were determined at the LB group (p<0.05). Highest MK levels were detected at the LB group (PLB<0.05).

CONCLUSION: In this study, it’s shown for the first time that FV has anti-cancer effect, the usage of FV with LB shows antagonistic effect, all applications use extrinsic apoptosis pathway and inhibit a resistance protein MK.

Keywords: Lycium barbarum (Gojiberry), Chronic Myeloid Leukemia, Female Infertility, Apoptosis, Midkine
OBJECTIVES: Bladder cancer is the second most common cancer of the genitourinary system. In recent years, it has become clear that various extracellular substrates including laminin play an important role in the process of invasion and metastasis of malignant tumors. Annexin A1 (ANX A1) is a member of calcium-dependent membrane binding protein family and plays an essential role in tumorigenecity and apoptosis. The aim of this study was to evaluate serum levels of laminin and ANX A1 in patients with bladder cancer.

MATERIALS -METHODS: Fifty patients diagnosed with bladder cancer following TUR were enrolled as group 1. Fifty one healthy individuals were enrolled as the control group, group 2. Laminin and ANX A1 levels in serum samples were measured with enzyme linked immunosorbent assay. RESULTS: In the patients group (n=50), median (minimum-maximum) serum laminin and ANX A1 levels were 396.9 (201.6-492.9) pg/mL and 760.2 (313.8-8236.2) pg/mL compared to 104.4 (55.7-191.9) pg/mL and 264 (21.2-391.2) pg/mL in the healthy individuals (n=51). In the patients group, serum laminin and ANX A1 levels were significantly higher than in the healthy subjects (p<0.001 for both). Furthermore, when the patient and control groups were analyzed together, a significant, positive correlation was determined between serum laminin and ANX A1 levels (r=0.856, p<0.001).

CONCLUSIONS: Serum laminin and ANX A1 increase in patients with bladder cancer, this markers may be used in diagnosis of bladder cancer. But further studies on larger groups are needed to confirm this finding.

Keywords: Annexin A1, bladder cancer, laminin

OP-014 EPIGENETIC EFFECTS OF TELOMERASE INHIBITOR BIBR1532 IN ACUTE T LYMPHOBLASTIC LEUKEMIA CELLS

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OBJECTIVE: Acute lymphoblastic leukemia (ALL), which is the second most common acute leukemia in adults, is characterized by abnormal proliferation and differentiation of clonal populations of lymphoid cells. Telomerase activity is present in almost all types of malignant cell types, including hematological malignancies. It is known that telomerase inhibition with non-nucleosidic telomerase inhibitor BIBR 1532 causes rapid cell death in acute lymphoblastic leukemia cells. The aim of this study is to determine the changes in expression levels of genes associated with chromatin remodeling in CCRF-CEM cells depending on the treatment of BIBR1532.

MATERIALS -METHODS: The cytotoxic effect of BIBR 1532 on CCRF-CEM cells was determined by WST-1 analysis in time and dose dependent manner. RNA isolation and cDNA synthesis were performed from BIBR1532-treated and untreated cells. Changes in gene expression were determined by RT-PCR.

RESULTS: The IC50 dose of BIBR 1532 in the CCRF-CEM cell line was calculated as 89 µM at 48 hours. BMI1 oncogene is a catalytic member of the epigenetic repressor polycomb group proteins and its overexpression causes tumor relapse in cancer patients. The expression of BMI1 oncogene was decreased by 9.38 folds in CCRF-CEM cells when they were treated with IC50 dose of BIBR1532. In addition, a decrease was detected by 2.88 folds in the expression of BRPF1 oncogene, which leads to the development of acute myeloid leukemia.

CONCLUSION: We believe that the BMI1 gene, which is an epigenetic regulator in the development of leukemia, might be targeted with the telomerase inhibitor BIBR1532 therapeutically.

Keywords: acute lymphoblastic leukemia, BIBR1532, telomerase inhibitor, chromatin remodeling

OP-015 VANCOMYCINE PRODUCTION EFFICIENCY OF AMYCOLATOPSIS ORIENTALIS DEPEND ON CARBON AND NITROGEN SOURCES

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OBJECTIVES: Antibiotics are widely used in pharmacology, medicine and agriculture. Various carbon (C-) and nitrogen (N-) sources were utilised in order to induce vancomycin production of Amycolatopsis orientalis DSM 40040. It has been aimed to increase the production yield of vancomycin and to provide economic added value.

MATERIALS-METHODS: A. orientalis spores was taken to liquid medium after counting cells by using OD620nm following incubation at GYM medium at pH 7.2 and 28 ºC for 5 days and the spores were incubated under same conditions at 150 rpm. Time dependent extracellular samples were concentrated by lyophilisation and the supernatants were passed through the C-18 cartridges. For the HPLC determination, Zorbax C8 (4.6 x 150 mm, 5µ) was used with gradient elution at a flow rate of 1.5 mL/min at 42ºC All the analyses were repeated 3-times and SPSS package program was used for statistical analysis.

RESULTS: While glucose, fructose, glycerol, sucrose, starch, propionic acid and crude glycerol were used as sources of C-, ammonium nitrate, ammonium nitrate + triphosphat and autolyzed yeast extract were used as sources of N-. Among the C-sources, the highest levels were similarly observed for crude glycerol and fructose with 40.0±0.05-fold increases. On the other hand, 15.36±0.29-fold increases were determined for the ammonium nitrate+ triphosphat among the used N-sources. Vancomycin level was increased 25.74±2.09-fold in the application where the most efficient C- and N- sources were combined.

CONCLUSIONS: Vancomycin production of A. orientalis shows changes C- and N-sources dependently.

Keywords: Amycolatopsis orientalis DSM 40040, Vancomycine, Carbon, Nitrogen
OP-016
INVESTIGATION OF MATRIX METALLOPROTEASE-9 AND E-SELECTIN LEVELS IN ISOLATED PEDIATRIC HEAD TRAUMA
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OBJECTIVES: Head trauma is one of the most common causes of mortality and morbidity in children. Despite progress in recent years, it has been reported that death rates due to head trauma could be downgraded only up to 20-30%. Our aim was to determine how matrix metalloproteinase-9 (MMP-9) and E-selectin levels were affected by damage in isolated pediatric head trauma.

MATERIALS-METHODS: In the study, experimental group consisted 51 patients with isolated pediatric head injuries under 18 years of age who were brought to the hospital emergency department and control groups consisted 42 people under 18 years old. The severity of head trauma to which patients were exposed was classified as severe, moderate, and light head trauma according to Glasgow Coma Scale (GCS). Serum MMP-9 and E-selectin levels were quantitatively studied by ELISA.

RESULTS: When head trauma patients were classified according to GCS, 61.6% 16.3% and 77.6% of them were found to have severe, moderate, and mild head trauma, respectively. While MMP-9 levels were significantly higher in the patient group than in the control group, there was no significance in terms of E-selectin levels. E-selectin levels were significantly higher in the severe patient than in the mild patient.

CONCLUSIONS: The release of MMP-9 by inflammatory cells explains the mild patient group than in the control group, there was no significance in terms of E-selectin levels and paralysis. Paricalcitol administration increased significantly the SOD levels . SOD levels were decreased in the IR group compared to the sham group. Paricalcitol pretreatment decreased the MDA levels significantly.

OP-018
OXIDATIVE, NITROSATIVE AND GLUCOSATIVE STRESS LEVELS IN CRIMEAN CONGO HEMORRHAGIC FEVER
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OBJECTIVE: In this study we aimed to measure the levels of oxidative, nitrosative, glucosative stress biomarkers in CCHF and to investigate the relationship between these levels and the course of the disease. The results of this study may shed light into understanding of unclear pathogenesis of the disease and developing better treatment strategies.

MATERIALS-METHODS: In Cumburüt University Medicine School Research and Practice Hospital Infectious Diseases Clinic, 60 individuals including 23 women and 37 men who were definitely diagnosed was formed in the Hifzi Saha Institute. A total of 35 individuals without any systemic disturbance constituted the control group. SPSS version 22.0 program was used for statistical analysis. As the parametric test assumptions were fulfilled in the evaluation of the data, the ANOVA of variance analysis, the significance test of the difference between two means (T test) and Pearson correlation analysis test were used and the error level was taken as 0.05.

RESULTS: The difference between the patients and control groups was statistically significant in terms of the mean of OSI (Oxidative Stress Index), oxidative stress (8-isopGF2α, 8-OHdG, MDA), nitrosative stress (8-NT, 3-NT, NO) and glucosative stress biomarker (CML) levels.

CONCLUSIONS: Viral items, cytokines, advance oxidation products in CCHF patients may have elevated Oxidative/Nitrosative/Glucosative stress markers by activating endothelial cells. We believe that antioxidant defence system can be strengthened in the treatment of CCHF to prevent disorders that may be caused by oxidative damage, which may be effective in the treatment of the disease.

Keywords: Oxidative Stress, Nitrosative Stress, Glucosative stress, Crimean Congo Hemorrhagic Fever

OP-019
ANTIOXIDANT AND ANTI-PROLIFERATIVE EFFECTS OF PISTACIA TEREBINTHUS VS PISTACIA LENTISCUS EXTRACTS
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OBJECTIVES: Various polyphenolic constituents extracts from the leaves of P. terebinthus and Pistacia lentiscus, widely distributed in the west of Turkey, were prepared and the antioxidant properties and cytotoxic effects against to cervical carcinoma (HeLa) and gastric adenocarcinoma (ACC201) were investigated.

MATERIALS-METHODS: Polyphenolic compounds and some hydrolysis products in the extracts of P. terebinthus and P. lentiscus were analysed by reversed phase-HPLC with C18 column (250x4mm,5μ) and gradient flow at 1.00 and 1.2 mL/min, respectively. The antioxidant properties of extracts were determined with DPPH, HO· and O2 scavenging, total antioxidant capacity, total phenolics and total flavonoid content assays. The IC50 values of extracts were determined by MTT under the conditions where the initial cell concentrations were kept as 7x103 h/100 μl and 104 h/100μl for HeLa and ACC201, respectively. SPSS package program was used for statistical analysis.

RESULTS: In P. terebinthus and P. lentiscus extracts, flavonol (Quercetin, Rutin, Isorhamnetin, myricetin), flavone (luteolin, apigenin, eupatorin), flavan-3-ol (catechin, epicatechin, epigallocatechin), flavanone (hesperetin, naringenine, hesperidin ) and phenolic acid (gallic, benzoic, vanillic, syringic, chlorogenic, 4-hydroxy-benzoic, caffeic, o-coumaric, sinapic, ferulic, 3-cinnamic, p-coumaric acid) contents were determined . IC50 value of P. terebinthus phenolic acid extract was found as 10.00±1.23 ppm ,while IC50 values of P. lentiscus flavonol and flavone extracts were determined as 80.00±5.62 ppm against HeLa. No extracts could inhibited ACC201 proliferation by 50%.

CONCLUSIONS: The antioxidant capacities of P. terebinthus and P. lentiscus extracts reflect positive results in comparison with the other sources. These extracts were also found more efficient against HeLa.

Keywords: Pistacia terebinthus, Pistacia lentiscus, HeLa, ACC201
OP-020
OLANZAPINE-INDUCED RENAL DAMAGE AND METABOLIC SIDE EFFECT: THE PROTECTIVE EFFECT OF THYMOMIUNE
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OBJECTIVES: The aim of the study was to investigate the possible protective qualities of thymoquinine (TQ) against the side-effects of olanzapine (OLZ) in an experimental model in rat kidneys with histologic and biochemical assessments.

MATERIALS-METHODS: Experimental procedures were performed on 35 female Sprague Dawley rats. Rats were randomly divided into five groups as: group 1, control; group 2, OLZ; group 3, OLZ+TQ-1; group 4, OLZ+TQ-2; group 5, OLZ+TQ-3. All treatments were administered for two weeks by gavage. On treatment day 15, kidney tissues were removed for analysis.

RESULTS: The results showed that 2 weeks administration of OLZ (4 mg/kg, once a day for the first week, 8 mg/kg once a day for the second week, p.o.) and treatment of TQ (25, 50, 100 mg/kg, once daily, p.o.) significantly reduced weight gain induced by OLZ. In addition, TQ increased the total antioxidant status (TAS) and decreased serum creatinine (Cr), blood urea nitrogen (BUN), oxidative stress index (OSI) and total oxidant status (TOS) levels significantly (p<0.05).

CONCLUSIONS: These results indicated that TQ improved the side-effects of OLZ, reduced weight gain, contributed to the oxygen radical scavenging activity, increased antioxidant activity and had ameliorative effects on recovery of increased serum biochemical and oxidative stress parameters. Thus, these results demonstrated that TQ had protective and antioxidant effects against adverse effects of OLZ in kidney of rats.

Keywords: Thymoquinone, olanzapine, adverse effects, kidney, weight gain/loss, apoptosis

OP-021
THE ROLE OF TOLL LIKE RECEPTORS IN RESISTANCE MECHANISM TO BORTEZOMIB IN MULTIPLE MYELOMA
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OBJECTIVES: Multiple myeloma (MM) is an incurable hematological malignancy characterized by abnormal proliferation and invasion of plasma cells into the bone marrow. The most effective treatment for MM is chemotherapeutic regimen includes proteasome inhibitor bortezomib. However, bortezomib resistance causes treatment failure. Despite the several mechanisms play a role in the drug resistance, the role of toll like receptors (TLR) has not been elucidated.

MATERIALS -METHODS: In this study, bortezomib-resistant (KMS-20) and sensitive (KMS -28BM) MM cell lines were used. Firstly, it was determined effects of bortezomib on cell viability by using MTT test. Secondly, the effect of bortezomib on TLR2,3,4,7,9 and MyD88 genes expression were determined by real-time RT-PCR.

RESULTS: IC50 values of bortezomib at 12, 24, 48 hours were found 31.62 nM; 15.85 nM; 5.89 nM respectively for KMS-20 cells, and 11.84 nM; 5.30 nM; 3.66 nM respectively for KMS-28BM cells. The expression levels of TLR2 significantly decreased in dose and time dependent manner in resistant cells compared to sensitive cells. TLR3 and TLR4 expression levels were completely suppressed in resistant cells. TLR7 expression the dose and time dependent decreased in sensitive cells, but significantly increased resistant cells. TLR9 in both cells was significantly decreased in dose and time dependent manner. MyD88 expression was significantly increased in dose dependent at only 48h, but not sensitive cells.

CONCLUSION: The decrease or complete suppression of TLR2, TLR3 and TLR4 mRNA levels, whereas the increase of TLR7 and MyD88 mRNA levels may play a role in the resistance mechanism against bortezomib.

Keywords: Multiple myeloma, Drug resistance, Bortezomib, Toll like Receptors

OP-022
DETECTION OF B-THALASSEMA I SVSI-1 MUTATION USING PIEZOELECTRIC BIOSENSOR IMMOBILIZED WITH A SINGLE Oligonucleotide
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OBJECTIVES: β-Thalassemia is a genetic disease characterized by less production of the β-chain of hemoglobin. β -Thalassaemia can cause low hemoglobin levels and some clinical syndromes. β - Globin genotype definition is important for genetic counselling and it is useful for improve life quality. Current routine diagnosis methods of β – thalassemia are genetic methods. These method relies on gel electrophoresis and polymerase chain reaction (PCR). The aim of this study, developing a new fast diagnosis method for the detection of β –thalassemia IVSI-1 mutation using nanopolymer based piezoelectric DNA biosensor.

MATERIALS-METHODS: For this study, genomic DNA amplified and PCR products obtained with it. Arms(Amplification-refractory mutation system) methods was used for it. These products were detected by using a quartz crystal microbalance. We immobilized with a single oligonucleotide probe with Poly Hema-Mac nanopolymer . Than we compare the results with gel electroporation .

RESULTS: Normal β-globin, IVSI-1 mutation β-thalassemia heterozygote, and homozygote samples PCR products were applied on biosensor. When hybridization occurs on the electrode surface, quartz crystals frequency changes. Biosensor responses of normal β-globin, IVSI-1 mutation β-thalassemia homozygote, and homozygote are respectively 211±14, 267±8, and 314±6 Hz.

CONCLUSIONS: β - Thalassemia biosensor was evaluated for IVSI-1 mutation. This nanopolymer based piezoelectric DNA biosensor can use an alternative technique for determination of β - thalassemia IVSI-1 mutation. Because it has more advantageous. For example when this biosensor compared with current methods, it is faster, cheaper, more specific and less hazardous exposure.

Keywords: Beta thalassemia, Biosensor, Oligonucleotide

OP-023
EFFECT OF HOMOCYSTEINE ON CD36, PPARγ AND C/EBPA GENE EXPRESSIONS IN THE ADIPOSE TISSUE OF NORMAL AND OBSESE MICE
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OBJECTIVES: Obesity is a disease deriving from energy in the body absorbed with foods exceeding energy expended. Homocysteine (Hcy) is an amino acid that forms during intracellular demethylation of the essential amino acid methionine . Cluster of differentiation 36 (CD36) is scavenger receptor that provides the uptake of oxidated LDL. The purpose of this study was to examine, in vivo, the effect of Hcy, associated with several pathological events, on CD36, PPARγ, C/EBPa gene expression in epididymal adipose tissue obtained from BALB/c mice with an obesity model induced with a high-calorie diet.

MATERIALS -METHODS: Four groups , each containing six mice , were established in our study. Group 1: Standard chow and drinking water. Group 2: High fat content chow and drinking water. Group 3: Standard chow and drinking water with added Hcy. Group 4: High fat content chow and drinking water with added Hcy. Epididymal adipose tissue specimens were collected after mice in each group had been fed as described above for 3 months. CD36, PPARγ, C/EBPa gene expression levels in adipose tissue specimens were determined using the RT-PCR method.

RESULTS: CD36 gene expression increased significantly in adipose tissue from obese mice (p =0.003), while Hcy statistically significantly reduced CD 36 gene expression in mice receiving both standard chow and high-fat chow compared to mice that were not given Hcy (p=0.002, p=0.002 respectively). PPARγ and C/EBPa gene expression levels decreased significantly in all groups compared to the group receiving standard chow (p<0.05).

Keywords: Thalassemia, Biosensor, Oligonucleotide
Additionally, Hcy supplementation both PPARγ and C/EBPα gene expression levels proceeded at lower levels compared to their own controls.

CONCLUSION: One of the possible factor for hyperhomocysteinemia to been an independent risk factor in cardiovascular diseases can be attributed to reduction of CD36 gene expression by Hcy in adipose tissue.

Keywords: CD36, C/EBPα, Homocysteine, Cardiovascular Disease, Obesity, PPARγ

OP-024
EFFECT OF LIPOIC ACID ON STEATOSIS, CELL VIABILITY AND OXIDATIVE STRESS IN PALMITATE-INDUCED NON-ALCOHOLIC FATTY LIVER DISEASE MODEL

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OBJECTIVES: The aim of our study was to investigate the effects of therapeutic plasma lipoic acid concentrations on steatosis, cell viability and oxidative stress in palmitate -induced non-alcoholic fatty liver disease model in HepG2 cells.

MATERIALS-METHODS: 10, 40 and 200 μM lipoic acid, which were equal to mean peak plasma concentrations after 600 mg oral, 200 and 600 mg intravenous administration of lipoic acid in humans, added for treatment while cells were being incubated with 1 mM palmitate for 24 hours to induce experimental model.

Cell viability was evaluated by 3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-

RESULTS: 1 mM palmitate significantly increased triglyceride and advanced oxidation protein products levels and also caused a significant decrease in cell viability and catalase activities. Lipoic acid, at all concentrations, significantly prevented a decrease in cell viability, at 40 μM and 200 μM, caused a significant increase in intracellular triglyceride levels and a significant increase on catalase activities and, at 200 μM, significantly decreased advanced oxidation protein products levels in palmitate-induced non-alcoholic fatty liver disease model in HepG2 cells.

CONCLUSIONS: Our study showed that lipoic acid, at the therapeutic plasma concentrations, especially at 200 μM, decreases steatosis and oxidative stress and prevents a decrease in cell viability. Therefore lipoic acid may be useful to prevent non-alcoholic fatty liver disease.

Keywords: Lipoic acid, non-alcoholic fatty liver disease, HepG2, steatosis, advanced oxidation protein products, catalase activity

OP-025
HYPOXIA INDUCIBLE FACTOR-1 ALPHA, FETUIN - A, FIBRINOGEN AND HOMOCYSTEINE LEVELS IN RELATION TO AMPUTATION LEVEL IN DIABETIC FOOT

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OBJECTIVE: Diabetic foot syndrome, which is one of the chronic complications in diabetic individuals, accounts for 60% of non-traumatic foot amputations. Previous studies indicated that deterioration in hypoxia-inducible factor-1 alpha (HIF-1α) transactivation in diabetic individuals changes in fetuin-A levels and increases in fibrinogen and homocysteine levels may play a role in diabetic wound development. The purpose of this study is to determine whether biochemically determined serum HIF-1α, fetuin-A, fibrinogen and homocysteine levels correlate with the level of amputation in patients with diabetic foot wound and council decision.

MATERIALS-METHODS: A total of 31 patients who were diagnosed with DM and participated in the Diabetic Foot Council of Ege University Faculty of Medicine were included in the study. Acute venous blood samples were stored at -80°C until centrifugation. Analyses were performed with commercially available ELISA kits.

RESULTS: As a result of our study, there was a statistically significant negative correlation between fetuin-A level and amputation level. (P: 0.012, r: 0.450)

However, there was no significant relationship between HIF-1α, fibrinogen and homocysteine and amputation level. (p > 0.05).

CONCLUSION: These results suggest that vascular calcification caused by fetal-A deficiency may have an important role in the pathogenesis of diabetic foot, and that fetuin-A level may be a predictor of amputation level. Our work as a preliminary study has been a guide for large-scale human studies that will determine fetuin-A cut-off value.

Keywords: Diabetic foot, fetuin-A, Fibrinogen, HIF-1α, Homocysteine

OP-026
INVESTIGATION OF THE EFFECT OF TRIBULUS TERRESTRIS ON ADIPOCYTE FATTY ACID BINDING PROTEIN (AFABP), IL-6 AND TNF-α LEVELS IN RATS WITH FRUCTOSE INDUCED METABOLIC SYNDROME

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OBJECTIVE: The purpose of this study was to investigate the effect of Tribulus terrestris plant extract (TT) on adipocyte fatty acid binding protein (AFABP), IL-6 and TNF-α levels in rats with metabolic syndrome (MetS) induced by fructose.

MATERIALS -METHODS: Twenty -one Sprague-Dawley rats weighing 240-260 grams were used in the study. The rats were divided into three groups, Group 1 (n=7): The control group was fed standard diet for 10 weeks. Group 2 (n=7): group with MetS generated with fructose (standard diet for 10 weeks and fructose 10%), Group 3 (n=7): group given TT plant extract for 8 weeks after MetS was formed.

After completion of the study, serum Glucose , IL-6, TNF-α, insulin and HOMA-IR levels were studied by ELISA using commercial kits. Western blot analysis of liver and fat tissue from rats was used to investigate AFABP expression. In the study; Kruskal Wallis test and Mann Whitney-U statistical tests were used.

RESULT: There was a significant increase in serum glucose , TNF-α and IL-6 levels in the MetS group compared to the control group (p<0.01, p<0.01, p<0.01), but the level of serum glucose , insulin and HOMA-IR were decreased when compared with the group receiving MetS and TT extract (p<0.05, p<0.05, p<0.05).

There was a significant increase in liver and fat tissue AFABP expression levels in the MetS group compared to the control group (p<0.01, p<0.01), but it was observed a significant decrease in when compared with the TT extract group (p<0.05, p<0.05). 

CONCLUSION: It was thought that administration of TT plant extract in rats with MetS produced by fructose had positive effects on AFABP expression in liver and fat tissue and could be useful in MetS treatment.

Keywords: Metabolic Syndrome, AFABP, Tribulus terrestris

OP-027
A GLUCOMETER ACCURACY STUDY: SELCUK UNIVERSITY FACULTY OF MEDICINE HOSPITAL MODEL

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OBJECTIVES: In our study, we performed accuracy study of used glucometers, comparing the glucose results obtained using different lot numbered strips in the same mark and model glucometers with the results in the routine biochemical autoanalyzer.

MATERIALS-METHODS: We have created our accuracy protocol by taking ISO 15197:2003 document. 2 glucometers were selected randomly from 10 FreeStyle Optium Neo II (Abbott Diabetes Care, UK) mark glucometers with strap enzyme GDH which were used in the blood sampling unit of the Selcuk University Faculty of Medicine. Two different lot number strips (68297; 68053) were used with the devices. Glucometer measurements were made with fresh capillary whole blood. Routine glucose measurements were made with venous blood serum. As a comparison device, Beckman Coulter AU5800 (Beckman Coulter, USA) autoanalyzer operated with the hexokinase method was used.

RESULTS: When the accuracy results are evaluated; 100% of 59 patients studied in the strip lot number 68297 device, 92.98% of 57 patients studied in the strip lot number 68053 device, glucose results were <75 mg/dL; ± 15 mg/dL, ≥75 mg/dL; ± 20 mg/dL when compared to the biochemical autoanalyzer results.

Keywords: Glucose, Glucometer, Biochemistry
CONCLUSION: According to the ISO 15197:2003 accuracy study criteria, 95% of all glucometers results are predicted within ±75 mg/dL, ±15 mg/dL, ≥75 mg/dL, ≥20 mg/dL when compared with comparator results. In our study, the strip lot number 68297 provided this criteria, while the strip lot number 68053 did not provide.

Keywords: Glucometer, accuracy, lot number, ISO 15197:2003

OP-028
COMPARISON OF A CHROMATOGRAPHIC AND AN IMMUNOLOGICAL METHODS FOR HbA1c DETERMINATION

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OBJECTIVES: Method comparison studies are based on comparison of samples results which are analyzed by the new test method and the reference method. Hemoglobin A1c (HbA1c) is a valuable marker for the monitoring of glycemic balance in diabetic patients and is also used for diagnosis of diabetes mellitus. Furthermore, HbA1c is an important predictive marker of long term complications of diabetes. For this reason, analytical methods for HbA1c detection have become very important. The aim of this study was to compare the two analytical techniques for determination of Glycated hemoglobin (HbA1c), consisting immunoturbidimetric method and boronate affinity chromatography method.

MATERIALS-METHODS: This study comprised randomly chosen 100 whole blood samples from the diabetic and non-diabetic patients. HbA1c level was quantified using two methods as follows: Premier Hb9210 boron affinity chromatography and Archem immunoturbidimetric assay.

RESULT: The correlation between two methods was statistically significant (r= 0.971, p<0.05) and the regression equation was found as (y=0.56+0.944x). The mean HbA1c was slightly higher for immunoturbidimetric method (mean=8.58) than chromatography method (mean=8.41). A good precision was shown at both low and high HbA1c levels on two systems, with all individual CVs below 2% (IFCC units). Method comparison showed a good correlation and agreement between methods.

CONCLUSION: Our study demonstrated that HbA1c measurements with two different methods were accurate and reliable. The immunoturbidimetric method, which is faster and easier to perform, can be used as alternative to chromatography system.

Keywords: HbA1c, diabetes, boronate affinity, immunoturbidimetry

OP-029
INVESTIGATION OF INHIBITION EFFECTS OF SOME ANTIBACTERIAL DRUGS ON ACETYLCHOLINESTERASE ENZYME

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OBJECTIVES: Acetylcholinesterase (AChE) hydrolyses the neurotransmitter acetylcholine to choline and acetic acid. Alteration of AChE enzyme concentration has been recognized in several human disorders such as Alzheimer’s diseases, diabetes, autoimmune hemolytic anemia, protein malnutrition. Therefore, prevention of overexpression or high activity of AChE is considered as an ideal therapeutic strategy to achieve effective management of such conditions. It was aimed in this study to investigate inhibitory effects of clindamycin, gentamicin, kanamycin, ornidazole, and amikacin on AChE enzyme.

MATERIALS-METHODS: The AChE inhibition assay was determined using the spectrophotometric Ellman’s method. The absorbance was read at 412 nm and 5,5’-dithiobisnitrobenzic acid (DTNB), and acetylthiocholine iodide (AChI) were used as substrates. Activity %=[Inhibitor] graphs were drawn and IC50 values were calculated.

RESULTS: Clindamycin, gentamicin, ornidazole, and amikacin drugs were showed IC50 values respectively in the range of 59.1-101.4 nM for AChE enzyme.

CONCLUSIONS: Inhibition effects of some antibacterial drugs on AChE enzyme was investigated. It was determined that Kanamycin had no effect on the drugs tested. Experienced clindamycin, gentamicin, ornidazole, and amikacin drugs were observed to inhibit this enzyme at low concentrations.

Keywords: Antibacterial drug, acetylcholinesterase, inhibitor

OP-030
SUBCLINIC INFLAMMATION AND OXIDATIVE STRESS INCREASE IN RAINY AND MOISTURE AIR

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OBJECTIVES: Symptoms of chronic rheumatic diseases increase especially in humid and rainy weather. Increased inflammation and oxidative stress play an important role in the etiopathogenesis of these diseases. In this study, we aimed to investigate how some inflammatory and oxidative stress markers are affected in different weather conditions.

MATERIALS-METHODS: The levels of certain inflammatory and antioxidant markers from sera obtained by taking blood from seven rats on three separate days, sunny, cloudy and rainy, were measured by eliza method.

RESULTS: Glutathione reductase (GR) and reduced glutathione (GSH) were found to be lower on both cloudy and rainy days compared to sunny days (p=0.001 ve 0.004 respectively). e-glutathione -S-transferase was found to be lower on rainy days than on sunny days (p=0.017). Malondialdehyde was found to be higher on rainy day than on sunny day (p=0.044). Nitrice oxide and interleukin (IL) -1 were higher on cloudy and rainy days compared to sunny days (p=0.003 ve 0.025, respectively ). There was no significant difference between the groups for myeloperoxidase ; tumor necrosis factor α, IL-6 and IL-10 values . There was a negative correlation between IL-1β and GR, and a positive correlation between IL-1β and MDA, MP0 and NO. Positive correlation between TNF-α and NO, IL-6 and GSH was detected.

CONCLUSION: Oxidative stress and inflammation increase on rainy and cloudy days. There is a need for further studies that reveal the relationship of oxidative stress and inflammatory mechanisms to diseases in different weather conditions.

Keywords: Subclinical inflammation, oxidative stress, chronic rheumatic disease, humid and rainy weather

OP-031
ASSESSMENT OF PARAOXANASE (PON), ARLY ESTERASE AND HOMOCYSTEINE THIOLACTONASE ACTIVITIES IN PATIENTS WITH DIABETIC NEPHROPATHY

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OBJECTIVES : In our study, changes in paraoxanase I (PON), arylesterase (ARE), and homocysteine thiolactonase (HTLase) enzyme activities were examined in patients with diabetic nephropathy.

MATERIALS -METHODS: We set 3 groups containing 40 healthy individual (Group I), 45 normoalbuminuric diabetic patients (Group II) and 50 microalbuminuric diabetic patients (Group III).

RESULTS : There was no statistically significant difference between the PON1 results of group I and group II (p<0.05). The serum ARE results of Group II and Group III were found to be statistically significantly lower than Group I (p<0.05), but no statistically significant difference was found between Group II and Group III (p>0.05). The serum HTLase results of Group III were found to be statistically significantly lower than the other groups (p<0.05). Serum HDL levels of Group II and Group III results were statistically significantly lower than Group I (p<0.05). The serum levels of serum fasting blood glucose (FBG) , HbA1c of Group II and Group III results were statistically higher than Group I (p<0.05). Group I microalbumin results were significantly lower than Group II and Group III results were statistically significantly lower than Group III (p<0.05) but there was no statistically significant difference in urinary creatinine levels (p>0.05).

CONCLUSION : We believe that the use of PON1, ARE and HTLase activities which are reduced due to increased oxidative stress in diabetic patients with
OP-032 
THE RELATIONSHIP BETWEEN MELATONIN AND METABOLIC SYNDROME IN HEALTH CARE PERSONNEL WORKING NIGHT SHIFTS
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OBJECTIVES: In this study, it was aimed to investigate the associations among melatonin, circadian rhythm, leptin, ghrelin and metabolic syndrome by determining melatonin levels of healthy women health care personnel who were working on night-shift for at least 3 months and on day-shift for at least 3 months. MATERIALS -METHODS: Venous bloods following 8-hour fasting of 50 women health care personnel, who were aged at 20-40 age range and whose BMI were >25, were collected. Those working on night-shift were named as night group and the control group of the study was named as day group. From the bloods collected; melatonin, leptin and ghrelin levels were evaluated by ELISA method, insulin was evaluated by immunochemically, whereas fasting blood glucose, cholesterol, triglyceride, HDL and LDL levels, which are among criteria of metabolic syndrome, were evaluated spectrophotometrically.

RESULTS: When our results were examined, we observed that levels of melatonin, which is a hormone secreted in darkness at night and an antioxidant, was statistically significantly decreased in the night group (p<0.05). However, no statistically significant difference were determined between the 2 groups in regard to serum leptin and ghrelin levels (p>0.05). The criteria of metabolic-syndrome which we measured, however, were altered in the group working on night-shift such as to exhibit tendency for metabolic syndrome.

CONCLUSION: Melatonin gets decreased in the healthcare professionals working on night-shifts and therefore, we hypothesize that likelihood of development of metabolic syndrome in this group is high.

Keywords: Melatonin, metabolic syndrome, night shift working

OP-033 
PHOTOTOXIC EFFECTS OF DIFFERENT LIGHT SOURCES USED ON VITREORETINAL SURGEON ON RETINAL PIGMENT EPITHELIUM
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OBJECTIVES: In our study, the toxic effects of most commonly used endolimination systems; halogen, xenon and LED light sources, on the retinal pigment epithelium, were compared. At the same time, it was investigated whether the duration of application changed this effect. MATERIALS -METHODS: In vitro human RPE cells were exposed to halogen, xenon and LED light sources using a wide angle endolimination probe. Probes attached to different light sources were applied to the incubation plate at a right angle from the center at 1.5 cm for 30 and 60 minutes, respectively. IL-1ß, IL-6 and TNF-α levels, DNA Damage and Apoptosis level were measured in retina cell cultures that were left to incubate for 24 hours after administration.

RESULTS: No statistically significant difference was found between halogen, xenon and LED light sources and control group in terms of cell viability, DNA damage, apoptosis, TNF-α and IL-1ß levels, indicating inflammation level, were found to be significantly higher in the halogen light group than in the xenon, LED light and the control group. There was no statistically significant difference in IL-6 levels between the groups.

CONCLUSION: It has been found that short term DNA damage and apoptosis effects on retina cells of halogen, xenon and LED light sources are similar to the control group. The higher levels of TNF-α and IL-1ß levels as inflammatory markers in the halogen light group suggest that this light source is potentially more likely to produce more inflammation on retina cells after particularly prolonged surgeries.

Keywords: Phototoxicity, Retinal pigment epithelium, Endolimination

OP-034 
CALCULATION OF REFERENCE RANGES FOR SOME BIOCHEMICAL PARAMETERS BETWEEN 18-45 AGED INDIVIDUALS LIVING IN GAZIANTEP
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OBJECTIVES: The reference values and intervals serve as the basis for interpreting laboratory test results and aid the physician in differentiating between healthy and diseased patients. Therefore, each clinical laboratory must determine the reference values of its own population or at least verify whether the existing values, which are used, are suitable for the population. MATERIALS-METHODS: Some questionnaires were applied to the individuals in between the 18 and 45 age groups in Gaziantep for our working group according to NCCLS C28-A3 guidelines and by adding some questions evaluating preanalytical factors. According to early evaluations made by considering exclusion criteria of these questionnaires, the reference individuals were selected from the healthy individuals who do not have any kind of infection, allergy or systemic disease (224 men, 243 women). 52 biochemical parameter were analysed using Abbott reagents and instruments.

RESULTS: Compared with the reference values determined by reference to the manufacturer (90% confidence interval presence), differences were found in many biochemical tests. Urea, creatinine, uric acid, triglyceride, AST, ALT, GGT, CK, iron, TSH values showed significant differences between male and female sex.

CONCLUSIONS: Our study demonstrates that most of the values obtained from our laboratory are different from the reference intervals of the firm and literature. As a result, the obtained reference intervals can be used to interpret the laboratory results of patients in Gaziantep.

Keywords: Reference interval, NCCLS C28-A3, Clinical chemistry tests, Gaziantep

OP-035 
THE IMPORTANCE OF REPORTING BLOOD ETHANOL CONCENTRATION ANALYSES RESULTS WITH MEASUREMENT UNCERTAINTY ESTIMATION
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OBJECTIVES: Ethanol is the most widely used addictive substance and the incidence of emergency department admissions due to ethanol intake is gradually increasing all over the world. But once ethanol analyser measured, is that result accurate and absolute? In principle, it is assumed that the real value of an analytical measurement is unknown. The aim of this study is to present the importance of reporting ethanol analysis results with estimation measurement uncertainty.

MATERIALS-METHODS: We retrospectively reviewed the records of 682 patients who were tested ethanol from January 2016 to December 2016. Ethanol levels were measured in a e4000 Architect Abbott autoanalyzer (Rungis, France) using original commercial kits.

RESULTS: Measurement uncertainty (95% confidence interval ) for ethanol is estimated to ± 14.72 %. When measurement uncertainty is taken into account, the legal 50 mg/dL value is acceptable to be reported between 42.64 - 57.36 mg/dL. With this point of view, in a retrospective consideration the results of two drivers whose results are between 50-57.36 mg/dL might be under 50 mg/dL. Also and, there are four drivers whose results are between 42.64-49.99 mg/dL might be over 50 mg/dL.

CONCLUSION: Medical laboratories must produce the necessary data and analytical results in order to achieve the correct interpretation and use of the results. Finally, reporting ethanol analysis results with estimation of measurement uncertainty is important to show measurements that contained within the true limits and the level of confidence.

Keywords: Estimation of measurement uncertainty, ethanol, motor vehicle driver
MATERIALS-METHODS: In a traditional surveillance study, it is needed to collect samples from many labs that may be geographically distributed, make the tests and share the results. Such a model enables laboratories to rapidly upload results to the database and share those with other epidemiologists, and in-depth investigation and analysis of these results. In this research, requirement components, design, software architecture and setup of our Laboratory Information Management System (LIMS) providing the aforementioned model were explained that responds to the needs of collecting, uploading and sharing data through the web to be used via many surveillance projects.

RESULTS: In our software, any epidemic case can rapidly be detected and comparative evaluations can be done for the results of different sites while maintaining data integrity since data access is provided through single point. We have observed that 16 minutes long operations can be completed less than 30 seconds and analyses could rapidly be done with parallel calculation.

CONCLUSIONS: Our Ct-value prediction algorithm determining target gene existence in sample keeps Ct consistency while resetting the errors caused by individual based value identification. The system designed would be a good guide to future studies.

Keywords: Epidemiologic surveillance, infectious diseases, RT-PCR, database, data storage and retrieval.

OBJECTIVES: Assessment of Analytical Performance within the scope of Total Quality Management is known. There have recently been criticisms of the lack of the theoretical basis of Total Analytical Error (TAE) used by the Medical Laboratories in the Analytical Performance evaluation. In this respect, studies are increasingly being conducted to replace TAE in Analytical Performance Evaluation of Measurement Uncertainty. In this direction, the necessity of identifying “Permissible Limits for Measurement Uncertainty” in the Milan Consensus by the German Society of Clinical Chemistry and Laboratory Medicine (DGKbL) was emphasized in order to define the Analytical Quality Targets according to the Measurement Uncertainty methodology. In our study, we aimed to evaluate Measurement Uncertainty, Permissible Limits for Measurement Uncertainty, TAE and TEs together in Analytical Performance evaluation. MATERIALS -METHODS : AFP, CEA, CA 19-9 and CA 125 tests were measured using the chemiluminometric method in Beckman Coulter UnCel® Dx1800 analyzer. Measurement Uncertainty is calculated by determining three Uncertainty sources Precision, Trueness and Calibration. TAE was calculated using the six-month Internal-External Quality Control data. RESULTS: The calculated TAE for tumor markers was 13.73%, 11.55%, 13.12% and 14.51% for AFP, CA 19-9, CA 125 and CEA respectively. Measurement uncertainty was 15.2%, 14% 10, 15.35%, 18.82% respectively, measurement uncertainty limits were found as 16.8%, 18.68%, 19.01% and 15.97% respectively

CONCLUSIONS: It is considered that the use of “Permissible Limits for Measurement Uncertainty” in assessing Measurement Uncertainty for Tumor Markers is more appropriate than TEs. Keywords: Measurement Uncertainty, Permissible Limits for Measurement Uncertainty, Total Analytical Error, Tumor Markers

OBJECTIVES: Clinical accuracy measurement of Vitamin D is very important for clinicians in the diagnosis, treatment and follow-up of the disease. A standardization is required for measurement of Vitamin D. With the recent standardization of measurement methods and the use of certified reference materials, measurement variability between laboratories is steadily declining nowadays. Vitamin D has no data in the "2014 Westgard biological database specification ". We aimed to calculate the uncertainty of vitamin D measurement by taking advantage of internal and external quality control data of Vitamin D.

MATERIALS -METHODS : The internal quality results and external quality (EQA) control results of the Vitamin D test that are obtained between April 1 and June 1 2017 were used in our study. In the calculation of measurement uncertainty, six step "uncertainty calculation model ", that is defined in Nordest guide was followed.

RESULTS: For the Vitamin D test, the extended measurement uncertainty was calculated to be ± 11% in the 95% confidence interval.

CONCLUSION: From the last three months' data, the measurement uncertainty of vitamin D was calculated to be 11%. Clinicians categorize vitamin D results; deficiency level, insufficiency level, normal level, and intoxication level. Adding measurement uncertainty to the categorized vitamin D results helps us obtain more accurate and reliable results. As a result, when laboratories make measurement uncertainty calculations at regular intervals ; this improves the confidence of laboratory results by preventing improper treatment by increasing the power of clinical interpretation.

Keywords: External Quality Control, Internal Quality Control, Measurement Uncertainty, Vitamin D

OP-040 THERMAL STABILITIES OF HETEROTRIMERIC G-PROTEINS GAMMA SUBUNITS IN O.SATIVA: RGG1 AND RGG2

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OBJECTIVES: Heterotrimic G-proteins have three subunits, alpha, beta, and gamma, and the heterotrimic G-protein complex plays enormous roles in plant systems. They regulate in developmental processes, defense mechanism, hormone reception, seed size and seed germination. In our study, we performed structural characterization studies on RGG1 (Rice G-protein Gamma-Subunit-1) and RGG2 (Rice G-protein Gamma Subunit-2) protein.

OP-039 EVALUATION OF MEASUREMENT UNCERTAINTY FOR VITAMIN D

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OBJECTIVE: To investigate the adopted TAE model, TAE and imprecision limits and to present solution proposals.

MATERIALS-METHODS: In the circular letter released the TAE mathematical model, statistical calculations, and limit values were examined.

RESULTS: a) Total Allowable Error (TE) limits should be determined on a test basis instead of a TAE (regardless of any mathematical model). In this way, the guidelines that are implemented in the world (CLIA, Rilbaek-interlab, RCP, EPA, etc.) will directly compare the limits of TEs that our country will determine. With current TAE model this is not possible because the acceptable Bias (deviation from target) depends on the laboratory's internal quality control "total CV" (TAE=Bias+1.65*TotalCV). b) The bias calculation was carried on summarization; Whereas many organizations have adopted a level-based average percentage difference. c) Instead of "total CV=SQR of (SQ CV level1+ SQ CV level2), the upper limit of the intermediate CV should be determined. If a laboratory is performing qc at 3 levels rather than 2 levels, the "total CV" (and hence the TAE) will always be higher, d) Sodium imprecision limit is 5% "total CV" which corresponds to intermediate CV of 3.5%. This intermediate imprecision for Sodium is not clinically acceptable. e) TEs limits should also be established for HbA1c (now a diagnostic test) and some other clinical laboratory tests such as Hormones, Haematology, Coagulation, Drugs and Blood gases.

CONCLUSIONS : As in other guidelines , TEs limits should be determined instead of TAE on a test basis. These guidelines should expand to other commonly used tests including HbA1c.

Keywords: Total analytical error, Imprecision, Bias, Total allowable error,

OP-038 MEASUREMENT UNCERTAINTY, PERMISSIBLE LIMITS FOR MEASUREMENT UNCERTAINTY AND TOTAL ANALYTICAL ERROR IN EVALUATION ANALYTICAL PERFORMANCE

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RESULTS: Avermectin analog characterization studies may help us to gain a better understanding the defense mechanism against to abiotic stress factors, the structural formations. Specifically, RGG1 native proteins consisted of 33% alpha-helix and 29% unordered structures whereas RGG2 native proteins consisted of 31% alpha-helix and 24% unordered structures. Thermal denaturation experiments revealed that RGG1 proteins were unfolded denatured between 60°C-70°C whereas RGG2 proteins were thermally denatured at two different temperatures as between 40°C-50°C and 60°C-70°C. Thermally denatured proteins were refolded at 15°C.

CONCLUSIONS: RGG1 and RGG2 proteins were found as oligomers in the solution. Although secondary structures were similar in both RGG1 and RGG2 proteins, structural stabilities of these proteins showed some differences in thermal denaturation experiments. Since these proteins have important roles in defense mechanism against to abiotic stress factors, the structural characterization studies may help us to gain a better understanding the relationship between structure-function.

Keywords: RGG1, RGG2, CD, structural characterization

MATERIALS-METHODS: Recombinant yeast cells obtained in our previous study were used for protein production. The cells were grown for 120 hours by transferring into the methanol with different concentration (0.5%, 1.0%, 2.0%, 3.0% and 4.0%) in baffled flasks containing production media and induced by methanol at 24 hours intervals. Recombinante enzyme activity was detected using paraoxon as substrate. The obtained samples after 96 hours incubation were analyzed by SDS-PAGE. To determine utilization of methanol, yeast was transferred on minimal dextrose and minimal methanol media.

RESULTS: The best enzyme activity was observed with 0.5% methanol induction on the 96th hour according to the measurement results obtained every 24 hours. On daily measurements, generally, the activity decreased as the methanol concentration increased. SDS-PAGE analysis showed no significant difference in the bands due to methanol induction. The band of 4% induction was not almost visible. Finally, it was determined that the yeast used methanol slowly.

CONCLUSIONS: An increase in methanol concentration did not affect enzyme activity positively. This can be attributed to the slow methanol utilization by this recombinant yeast. We suggest that methanol utilization test should done formerly if methanol concentration for induction in P. pastoris is studied.

Keywords: methanol induction, recombinant protein, Pichia pastoris

OP-045 INVESTIGATION OF CHARGE TRANSFER COMPLEX FORMATION BETWEEN PROTOPORPHYRIN AND SELECTED POLAROMATIC HYDROCARBONS

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OBJECTIVES: Porphyrins, photostable materials, have important applications such as molecular electronic devices and photosensitizers in photodynamic therapy of cancer. Pyrene molecule can be represented as a fragment of graphene sheet and attract attention in photochemical charge transfer studies due to its conjugated macroricyclic π-systems. In this study, we investigated donor-acceptor complexes between porphyrin and Pyrene spectroscopically and computationally.

MATERIALS-METHODS: UV-Vis absorption spectra were recorded using Perkin-Elmer Lambda35 spectrometer. Fluorescence spectra were obtained using Perkin-Elmer LS55 spectrophotometer. The conformational analyses of investigated molecules were performed to determine initial structures. Full optimizations were performed with Gaussian 09 [2] at ωB97XD/6-31G(d,p) level. In order to explore the solvent effect, solvation calculations were performed by Tomasi’s Polarizable Continuum Model (PCM)[3] in different polarity solvents.

RESULTS: Fluorescence spectra of pyrene show changes in intensity with addition of increasing amount of porphyrin. UV-Vis absorption spectra haven’t show important changes of pyrene and pyrene-protoporphyrin molecules. Density functional calculations (DFT) show that molecules form stable complexes in the ground state.

CONCLUSIONS: Computational complexation energies and experimental fluorescence results indicate that protoporphyrin and pyrene forms intermolecular complex. Studies will go on with increasing number of porphyrine derivatives and substituents in different solvent medium.

Keywords: Pyrene, protoporphyrin, density functional theory (DFT), charge-transfer complexes.
MATERIALS-METHODS: Following siRNA transfection cells MnSOD level, staining with MitoSOX, aconitase enzyme activity, and carbonyl group formation on protein side chains were examined. For the determination levels of oxidative phosphorylation complexes, BN-PAGE technique was applied. RESULTS: As a result of Letm1 silencing, MnSOD level and aconitase enzyme activity were significantly reduced, and increased carbonyl group formation on protein side chains was determined in total cell lysate. Also increased oxidative stress visualized by MitoSOX staining. The protein levels of oxidative phosphorylation complexes were remained unchanged. CONCLUSION: It has been suggested that increased oxidative stress in LETM1 silenced cells may be an important actor of the malfunctions of the mitochondrial physiology and morphology in WHS. This project was founded by TUBİTAK (115S455).

Keywords: Letm1, Oxidative Stress, BN-PAGE

OP-045

PROTECTIVE EFFECTS OF ALISKIREN, A RAAS INHIBITOR, ON OVARIAN ISCHEMIA/REPERFUSION INJURY IN RATS

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OBJECTIVES: Ovarian torsion is a gynecological emergency and surgical operation is the only way to solve. In addition to the surgical operation some protective agent usage is necessary before surgery because of reperfusion injury. This study aimed to show the protective effects of Aliskiren in experimental ovarian ischemia/reperfusion injury model in rats.

MATERIAL-METHODS: A total of 48 rats were divided into 8 groups, including sham, sham plus 100 mg/kg aliskiren, ischemia, ischemia-reperfusion, ischemia plus 50 mg/kg aliskiren, ischemia plus 100 mg/kg aliskiren, ischemia-reperfusion plus 50 mg/kg aliskiren and ischemia-reperfusion plus 100 mg/kg aliskiren. Aliskiren was administered 24 hour and 30 minutes before ischemia and reperfusion protocol in all treatment groups. Ischemia and reperfusion were each applied for 3 hours.

RESULTS: Ovarian damage decreased superoxide dismutase activity and glutathione level, and increased malondialdehyde level in the ovaries of rats. Aliskiren administration increased superoxide dismutase activity and glutathione, and decreased malondialdehyde levels. In addition, this ischemia-reperfusion damage caused a significant increase in levels of the inflammatory cytokines (IL-1β, IL-6, TNF-α) and iNOS, as examined by real-time polymerase chain reaction. Aliskiren administration decreased these parameters. On pathological evaluation administration of a 100 mg/kg dose of aliskiren was found to protect the ovary. Renin-angiotensin-aldosterone system inhibition by aliskiren caused an increase in serum renin levels and a decrease in serum angiotensin II levels.

CONCLUSIONS: It appears that aliskiren protects the ovary from ischemia /reperfusion damage by regulating inflammation and the oxidant-antioxidant balance via renin-angiotensin-aldosterone system inhibition.

Key words: Aliskiren, ischemia, ovary, oxidative stress, rat

OP-046

INVESTIGATION OF THE INFLUENCE OF METFORMIN AND FIBROBLAST GROWTH FACTOR 21 (FGF21) IN THE CONTROL OF INFLAMMATION INDUCED BY LIPOPOLYSACCHARIDE (LPS) IN RATS

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OBJECTIVES: Metformin is widely used oral hypoglycemic drug and has anti-inflammatory effect. FGF21 is recently discovered endocrine polypeptide that has regulatory effects on glucose and lipid metabolism, as well as anti-inflammatory effects. In this study, the protective or therapeutic effect of metformin on inflammation and oxidative damage was investigated in rats with LPS-induced inflammation.

MATERIALS-METHODS: In the study, 40 Sprague Dawley male rats were divided into 5 groups each containing 8 rats. Groups were identified as Control, LPS, pre-LPS metformin, after LPS+1hour metformin, after LPS+3hour metformin. LPS and Metformin was prepared at 5 mg/kg/BW and 200mg/kg/BW volumes. The rats were injected intraperitoneally, 24 hours after LPS injection, blood samples and liver tissues were taken. AST, ALT, FGF21, IL-10 and TNF-alpha levels were measured in the serum. MDA, MPO and FGF21 levels were measured in the tissues. Data analyses were performed with SPSS packet programs. Liver tissues were histologically examined.

RESULTS: There was a significant relationship between measured markers of oxidative damage and inflammation (p ≤ 0.001). In the LPS group, it was found that there was a serious damage according to the control group. In the treatment groups, it was seen that the values decreased according to the LPS group. In particular, results were close to the control group in the pre-LPS metformin group.

CONCLUSIONS: According to the obtained data, it was determined that metformin had protective effect on inflammation. It has been thought that FGF21 is induced in the liver after inflammation and metformin may increase this activity.

This work is supported by Eskişehir Osmangazi University (Project No: BAP 16-1353).

Keywords: Fibroblast Growth Factor 21, inflammation, lipopolysaccharide, metformin

OP-047

ROLE OF TNF-α PHOSPHORYLATIONS ON TNF-α-INDUCED INSULIN RESISTANCE

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OBJECTIVES: Obesity-induced insulin resistance is a common cause of type II diabetes. The main inflammatory mediator leading to insulin resistance is TNF-α. TNF-α, through its type I receptor TNFR 1, activates p38, JNK and ERK MAPKs, which phosphorylate IRS1 at Ser/Thr residues. These phosphorylations inhibit IRS1 tyrosine phosphorylation, thereby halt insulin receptor (IR) signaling. As we have demonstrated JAK2- and c-Src-mediated Y360/Y401 and Protein Kinase A (PKA) -mediated T411/T417 phosphorylations of TNFR1 and regulation of tyrosine phosphorylation by PKA phosphorylation , we questioned whether these TNFR1 signaling events would regulate TNF-α-induced inhibition of IRS 1 tyrosine phosphorylations.

MATERIALS-METHODS: By site-directed mutagenesis, we generated phosphorylation-inhibiting Y360A,Y401A,Y360/401A, T411A, T417A, T411A/T417A and phosphorylation-mimicking Y360D,Y401D, Y360D/Y401D, T411D, T417D; T411D/T417D mutants of TNFR1 construct, which was cloned into pcDNA3.1a backbone. We transfected 293T cells with these mutants and investigated ERK and p38 activations under untreated or TNF-treated (10ng/ml TNF-α, 15 min ) conditions . To determine the influence on IRS-1 tyrosine phosphorylation, transfected cells were either treated or not with 10ng/ml TNF-α for 8 hours and then stimulated with 100ng/ml insulin for 5min. IRS1 tyrosine phosphorylation was evaluated by western blot.

RESULTS: TNFR1 tyrosine phosphorylation mediates but PKA phosphorylation inhibits ERK activation while these phosphorylations differentially regulate p38 activation.Both PKA and tyrosine phosphorylations of TNFR1 augment inhibitory effect of TNF-α on IRS-1 tyrosine phosphorylation. The most dramatic influence was observed on Y360D/Y401D mutant , where IRS 1 tyrosine phosphorylation was completely abrogated.

CONCLUSION: TNF-1 tyrosine phosphorylation may constitute the primary signaling event causing TNF-induced insulin resistance and therapeutic strategies targeting these phosphorylations may help with reversal of insulin resistance.

Keywords: TNF-α, IRS-1, Insulin Resistance, Post-translational modification, Phosphorylation
OP-048
EFFECTS OF URANTIDE, AN UROTENSIN RECEPTOR ANTAGONIST, ON SEPSIS INDUCED LUNG INJURY OF DIABETIC MICE
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OBJECTIVES: This study aimed to examine the potential protective effect of urantide, an urotensin-II receptor antagonist, on sepsis induced lung injury in diabetic mice.

MATERIAL-METHODS: Sixty-four male CD1 mice were used in this study (n=6). Diabetes was induced by 200 mg/kg Streptozotocin. One month after diabetes induction, theecal ligation and puncture induced polymicrobial sepsis model was applied in diabetic and non-diabetic mice. 0.6mg/kg and 1.2mg/kg of Urotensin-II antagonist (Urantide) were administered one hour after sepsis induction. Biochemical and molecular examinations were performed after lungs which obtained from 6 hours and 12 hours after sepsis are homogenised by liquid nitrogen. mRNA expressions of data are presented as fold-change in expression of any group compared to that of control group, using the 2-ΔΔCt method. Kruskal Wallis and Mann Whitney U tests were used for statistical analyses.

RESULTS: Regarding to the mRNA expression results of TNF-α, IL-1β, IL-6 and NF-κB, it was observed that cytokine levels significantly increased in both time points in diabetic and sepsis groups compared to healthy group and this increase was significantly higher in diabetes-sepsis groups. Our biochemical (SOD ; GSH ; MDA ) findings also supported these results . All increased parameters were significantly reduced dose-dependently by Urantide, an urotensin receptor antagonist, administration . mRNA expression of Urotensin-II and its receptor were examined in lung tissue. We have found that Urotensin-II and Urotensin receptor levels which increased in damaged tissue were significantly reduced by Urantide administration.

CONCLUSIONS: It appears that Urotensin-II and Urotensin-II receptor contribute in aggravation of sepsis-induced lung injury in diabetic mice and urantide prevents this damage by antagonizing this receptor.

Keywords: Diabetes, sepsis, lung, urantide

OP-049
MICRORNA EXPRESSION PROFILES IN RESPONSE TO HYDROGEN PEROXIDE-INDUCED OXIDATIVE STRESS IN ARPE-19 CELLS AND THE ACTIVITY OF VEGF INHIBITOR DRUGS ON THESE REACTIONS
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OBJECTIVES: This study aimed to evaluate microRNA (miRNA) expression responses in retinal pigment epithelial cells (ARPE-19) under the oxidative stress, and to investigate the effects of three different vascular endothelial growth factor inhibitor drugs (anti-VEGF) on this response.

MATERIALS-METHODS: ARPE-19 cells were incubated to 600 µM H2O2 for 18 h. In the study groups, cells were pre-incubated with anti-VEGF drugs for 3 h before H2O2 exposure. Another group of ARPE-19 cells were incubated with drugs for 3 h without H2O2 exposure. Cell viability and VEGF levels were evaluated by MTT and ELISA, respectively. The expression levels of 1152 miRNAs were determined by quantitative RT-PCR.

RESULTS: Incubation with 600 µM H2O2 alone for 18 h decreased cell viability by approximately 50%. Cell viability was greater in the anti-VEGF drug groups compared to the H2O2 group, but the differences were not significant (p>0.05). VEGF levels were significantly lower in the anti-VEGF drug groups compared to the H2O2 group (p<0.05 for all study groups), with no significant differences between the study groups (p>0.05). Incubation with anti-VEGF drugs alone had no effect on miRNA expression in ARPE-19 cells. However, pre-incubation with bevacizumab, ramizumab, and aflibercept significantly altered the profile of H2O2-modulated miRNA expression.

CONCLUSION: Pre-incubation with anti-VEGF drugs can alter the miRNA expression profile in response to H2O2-induced oxidative stress, and these drugs may have epigenetic effects.

Keywords: microRNA, anti-VEGF, ARPE-19 cells, oxidative stress.
CONCLUSION: Our results indicated that TG2 induction may play an important role in development of ischemic renal damage.

Keywords: Apoptosis, human renal tubular epithelial cells, hypoxia, inflammation, Transglutaminase 2

OP-052 INTRACRINOLOGIC ASPECTS IN ESTROGEN RELATED POSTMENOPAUSAL BREAST CANCER AND THE ROLE OF AROMATASE ACTIVITY

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OBJECTIVES: The intracrine transcription was first coined over 2 decades ago but there are still questions to be answered which could help us to understand the intracrinc mechanisms in the breast cancer microenvironment. Thus, we investigated expression and activity levels of the key enzyme Aromatase in human breast cancer tissues and healthy breast tissues in this study.

MATERIALS -METHODS: One tumor (T) and one periphal mammary adipose tissue sample (P) adjacent to the tumor was obtained from each patient (n=20). RT-PCR was employed for gene expression detection. All patients were luminal A and postmenopausal . Patients were divided into groups according to clinicopathologic features. Also 12 tumour -free breast tissue samples (N) were obtained from premenopausal women with no history of breast cancer who underwent reduction mammoplasty surgery as the control group. The conversion of Testosterone to 17β-estradiol was determined via LC -MS /MS and specific aromatase activity of micromosomal fractions were calculated.

RESULTS: Aromatase expression levels were ordered as P>T>N. Approximately 3 fold higher CYP19A1 expression levels were observed in P compared to T (p=0.001). Although the highest activity was also observed in P, the activity of N was higher than T. 80% of the patients were observed to have higher activity in P compared to T (p=0.002).

CONCLUSION: Our results suggest that the main source of the estrogen drive in postmenopausal period is the adipose tissue adjacent to the tumor. The local aromatase overexpression and high aromatase activity are important factors for the survival of estrogen dependent breast carcinoma cells.

Keywords: Breast cancer, postmenopausal, aromatase, estradiol, mass spectrometry

OP-053 KRUPPEL-LIKE FACTOR-4 GENE EXPRESSION AND DNA METHYLATION IN PATIENTS WITH TYPE 2 DIABETES AND DIABETIC NEPHROPATHY

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OBJECTIVES: Our aim was to determine Kruppel-like factor-4 (KLF-4) gene expression and DNA methylation status in patients with type 2 diabetes and, to investigate their contribution to the development of diabetic nephropathy.

MATERIALS -METHODS: 120 individuals were evaluated. They were divided into three groups; Control, Type 2 Diabetes (T2D) and diabetic nephropathy (DN). Demographic and clinical characteristics of all patients were examined. The blood samples were collected. Serum glucose, HbA1c, triglyceride, low density lipoprotein and high density lipoprotein levels were measured. Urine albumin - protein/creatinine ratio was calculated. KLF-4 gene expression level was analyzed by using Real-time PCR and DNA methylation status was determined.

RESULTS: Body weight values showed a significantly increase in T2D and DN groups as compared to control group.

The urine albumin -protein/creatinine ratio in DN group was higher than the control and T2D groups. KLF-4 gene expression showed a decrease in the patients with T2D when compared to control group. Also, KLF-4 gene expression in DN group was lower than T2D group. However, there was no significant change DNA methylation status among groups.

CONCLUSION: The results suggest that the KLF-4 gene may contribute to the development of nephropathy in diabetes , independently of methylation status. KLF-4 gene may be the target gene in the planning of nephropathic treatments in diabetes.

Keywords: diabetic nephropathy, gene expression, KLF-4, methylation, Type 2 Diabetes

OP-054 THE EFFECT OF SILIMARIN ON FRACTURA HEALING IN RATS

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OBJECTIVES: Silimar is an antifibrotic, antioxidant, antiinflammatory, neuroprotective substance obtained from 'Silybum marium ', which has been subjected to many studies in recent years. In this study, we investigated the effect of silymarin on fracture healing in the rat tibia model.

MATERIALS-METHODS: In this study 48 male Sprague Dawley rats were randomized into three groups, a control group, sham group and silymarin group (treatment group) with sixteen rats per group. The fractures were produced by the manual breakage using plate bending devices, placed at the distal 3rd of the right tibia. Saline (50 mg/kg/day) to group 2 and Silymarin (50 mg/kg/day) to group 3 were given for 21 days by gastric gavage one day before and during the experiment. However, nothing was administered to group 1. At the end of the experiment, malondialdehyde (MDA) levels, activity of superoxide dismutase (SOD) and catalase (CAT) in bone tissue samples were measured biochemically.

RESULTS: MDA levels in group 3 decreased compared to other groups (p<0.05). However, SOD and CAT activities in group 3 increased (p<0.001). On histopathological and radiological assessment, fracture healing on day 60 was significantly more advanced in the Silymarin group.

CONCLUSION: Silymarin may affect fracture healing favourably and might be useful as a therapeutic agent in clinical fracture management.

Keywords: Fracture healing, Oxidative stress, Silymarin

OP-055 THE EFFECT OF CERTAIN VITAMINS ON ANTIoxidANT/PROoxidANT BALANCE IN FLUORIDE (F) ADMINISTERED OSTEoBLAST CELL LINES

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OBJECTIVE: The present study was planned to investigate possible prooxidant/antioxidant mechanisms and determining the effect on cell viability in bone cell lines involved in fluoride metabolism and the role of certain vitamins (A, D, E and C).

MATERIALS-METHODS: Cells were replicated in vitro with two to three regular passages per week. NaF IC50 and vitamin doses were determined by MTT. Cells were seeded to 104 to 96-well culture plates and 106 to flasks. The groups were determined as control group, NaF, vitamin and NaF+vitamin groups. The cells were harvested by trypsinization following 24-hour incubation and samples were prepared by disintegration by freeze-thaw method for TAS and TAS analysis. It was used MTT test for the effect of some vitamins on various doses of NaF and commercial kit for TAS and TOS.

RESULTS: TAS levels were significantly decreased in NaF group (p≤0.05), while TAS levels were close to control except vitamin C. It was found that TAS levels increased significantly in the NaF-treated group (p≤0.05), but in all groups
OBJECTIVES: The present study was planned to investigate the cellular damage in osteoblast cell lines in the fluoride metabolism that are most likely to be effected by toxicity and the roles of certain minerals (Ca, Se, Al, Mg) antioxidant / antioxidative mechanisms that are likely to occur in prevention of the abovementioned mechanisms.

MATERIALS-METHODS: Cells were propagated in vitro with two to three regular passages per week. MTT viability test and the NaF IC50 value were determined with non-toxic mineral doses. Cells were cultured in 96-well plates. For samples used in TAS and TOS analysis, cells were harvested with trypsinization following the 24-hour incubation and prepared for the assay by disintegration with the freeze / thaw method. TAS and TOS were determined by ELISA test using a commercial kit.

RESULTS: TAS decreased in selenium administered groups (p<0.05), but the decrease in NaF administered group was insignificant. In the Mg+NaF administered group, TAS levels were the highest (p<0.05). TAS levels were the highest in the NaF-administered group (p<0.05), and decreased in all NaF + mineral administered groups (p<0.05) and approached the control levels.

CONCLUSION: It was observed that the decreased TAS, increased TOS, and OSI levels in the osteoblast cell line with NaF administration approached the control group levels after the administration of the minerals. It was concluded that the cell viability in the osteoblast cell line was consistent with the TAS/TOS balance.

Keywords: Cell culture, NaF, oxidative stress index, minerals, osteoblast

OP-057 INVESTIGATION OF ALICANTE LIPID ACID EFFECT ON NEUROPATHY WHICH DEVELOPING IN BRAIN TISSUE WITH STREPTOTOCIC-INDUCED DIABETIC RAT MODEL

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OBJECTIVES: Neuropathy due to diabetic complications causes structural and functional impairments in brain tissue, causing cognitive functions to deteriorate. We aimed to elucidate the mechanism of neuropathy in STZ-induced diabetic rats and to investigate the effects of ALA administration on brain tissue from biochemical histological and physiological aspects.

MATERIALS-METHODS: Forty Wistar albino male rats control, STZ, ALA and STZ+ALA were divided into four groups. Single dose 50mg/kg STZ ip to create diabetes. ALA was administered orally daily for 6 weeks at 100 mg/kg/day. Cognitive functions were assessed by MWM during the last week of treatment. Brain tissues of the sacrificed rats were divided into hippocampus, cortex, hypothalamus and striatum regions structures for histological and antioxidative assay. Results: The changes in cognitive functions assessed by MWM were deteriorated according to the control and ALA to the STZ group, whereas there was no improvement according to the STZ group in the STZ+ALA group (p<0.05). SOD, CAT, GSH-Px activities decreased in the STZ group compared to the control group were significantly increased in the STZ+ALA group compared to the STZ group. MDA and TOS levels increased in the STZ group, decreased in the STZ+ALA group compared to the STZ group (p<0.05). According to our histological microscopic findings, it was determined that some parts of STZ + ALA group ultrastructural damage and degeneration findings in the sections of STZ group diminished considerably.

CONCLUSIONS: Distorted balance of antioxidant-antioxidant in the rat brain tissue caused structural distortions in nerve cells, resulting in cognitive dysfunctions in the STZ-induced diabetes model. ALA is effective for ameliorate cell damage and cognitive functions in brain tissue by antioxidant and neuroprotective effect.

Keywords: Diabetes Mellitus, Streptozocin, Alpha Lipoic Acid, Neuropathy, Brain

OP-058 THE PROTECTIVE EFFECT OF ALICANTE LIPID ACID ON HEPATOTOXICITY CAUSED BY DICLOFENAC SODIUM-INDUCED OXIDATIVE STRESS

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OBJECTIVES: Diclofenac is widely used because of its analgesic, antipyretic, antinflammatory effects; therefore, diclofenac-induced idiosyncratic hepatotoxicity cases are frequently seen. Lipoic acid is a natural antioxidant that protects against oxidative stress thanks to sulfhydryl groups. In our study, we aimed to investigate the protective and therapeutic effect of lipoic acid against acute diclofenac -caused oxidative stress induced liver damage and the role of transsulfuration pathway in this mechanism.

MATERIALS-METHODS: Our study contains a five-day model consisting of five groups, each containing 8 Sprague Dawley rats: Lipoic Acid, Diclofenac, Lipoic Acid + Diclofenac and Diclofenac + Lipoic Acid. 5% DMSO, lipoic acid (25 mg / kg), diclofenac (200 mg / kg) were administered intraperitoneally. Transaminases (AST, ALT), alkaline phosphatase (ALP), bilirubin (T.Bil, D.Bil) levels were measured on serum; malondialdehyde (MDA), catalase (CAT), glutathione (GSH) and homocysteine (Hcy) levels were measured on liver tissue. Histological examinations of liver tissue were performed.

RESULTS: Lipoic acid + Diclofenac group’s hepatic injury markers (AST, ALT, T:Bil, D:Bil) and MDA, Hey levels were decreased (p<0.001) compared to the Diclofenac group with diclofenac -induced hepatotoxicity; however significant increases were observed in GSH levels (p <0.001). CAT activities improved by reaching the control group levels (p>0.05 according to the control group). No significant biochemical and histologic improvement was observed in the Diclofenac + Lipoic Acid group.

CONCLUSIONS: The lipoic acid’s hepatoprotective effects against diclofenac caused oxidative stress induced liver injury due to its antioxidant property and ability to stimulate GSH synthesis from homocysteine via the transsulfuration pathway are observed.

Keywords: Diclofenac, glutathione, homocysteine, lipoic acid, liver injury
spectrophotometrically using appropriate commercial kits on the Siemens Advia 2400 autoanalyzer.

RESULTS: In this study, serum glucose and insulin levels increased significantly in the fructose-treated group compared to the control group (p<0.01, p<0.01) and the calculated HOMA-IR values were significantly higher (p<0.01); they were above the threshold for the metabolic syndrome. It was also observed that in the TT extract-treated group, serum glucose and insulin levels and HOMA-IR values were significantly decreased when compared with the fructose-treated group (p<0.05, p<0.01 and p<0.01). Serum TOS values increased significantly in the group with metabolic syndrome compared to the control group (p<0.05) while they decreased significantly in the TT extract-treated group (p<0.05).

CONCLUSION: We think that TT extracts, which are used as alternative treatment agents in the experimental rat model of metabolic syndrome, have beneficial effects on insulin resistance and oxidative stress.

Keywords: Metabolic syndrome, Tribulus terrestris (TT), total oxidative status (TOS), total antioxidant status (TAS)

OP-060 EFFECT OF ASTAXANTHIN ON NF-kB/SIRT1 PATHWAY AND OXIDATIVE STRESS IN FRUCTOSE-INDUCED NEPHROTOXICITY

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OBJECTIVE: Astaxanthin (ASX), a lipophilic compound extracted from crustaceans, algae, shellfish, and a variety of plants. It has strong biological effects, including antioxidative, anti-inflammatory, antitumor, and protective of cell membrane. The aim of this study is to determine the efficiency of astaxanthin on oxidative stress levels of nuclear factor kappa B (NF-kB/Sirtuin 1 (SIRT1) of high fructose induced nephrotoxicity in rats.

MATERIAL-METHODS: Treatments were arranged in 2x2 factorial fashion: administrations of fructose (30%, via drinking water) and ASX (1 mg/kg/day, within 0.2 ml olive oil) for 8 weeks. At the end of blood samples were taken by cardiac route. Creatinine, urea and BUN levels were measured in serum; NF-kB/SIRT1, malondialdehyde (MDA) and superoxide dismutase (SOD) levels were measured in kidney. Data were analyzed by 2-way ANOVA.

RESULTS: Astaxanthin administration decreased serum urea and BUN concentrations at a lower extent in rats receiving fructose than those not receiving fructose (p<0.001). In response to fructose administration, renal superoxide dismutase (SOD) levels (p<0.001) decreased and renal NF-kB and MDA levels increased. Overall, ASX administration increased renal SOD level and decreased renal NF-kB and malondialdehyde (MDA) levels (p<0.05). Astaxanthin administration in treatment group considerably decreased renal NF-kB and MDA levels and increased SIRT1 and SOD levels.

CONCLUSION: These results suggest antioxidant effects of astaxanthin to reduce oxidative stress in the kidney tissue which is an important role in metabolism. Against tissue damage generated by exogenous fructose, astaxanthin is effective in preventing tissue damage with SIRT1/NF-kB pathway.

Keywords: Astaxanthin, Fructose, NF-kB, Oxidative stress, SIRT1

OP-061 DETERMINATION OF ANTIOXIDANT CAPACITY OF WATER EXTRACT OF ARONIA MELANOCARPA FRUITS BY CUPRAC AND FRAP METHODS

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OBJECTIVES: Aronia melanocarpa (Rosaceae) fruits have high antioxidant activity and this activity is attributed to its high polyphenol content with a ratio 7 g polyphenol/1 liter Aronia melanocarpa juice. Thanks to this rich polyphenol content numerous studies have demonstrated that this herb has antioxidant, chemo preventive, chemotherapeutic, anti-inflammatoty, cardioprotective, hepatoprotective and antidiabetic activities.

MATERIALS-METHODS: In this study we evaluated the antioxidant capacity of the water extract of Aronia melanocarpa berries by CUPRAC and FRAP assays including electron transfer reactions. Water extract of the plant lyophilized to dryness and then used in the experiment. Ferric reducing antioxidant power (FRAP) and cupric reducing antioxidant capacity (CUPRAC) were used for determination of antioxidant capacity.

RESULTS: The water extract at the concentration of 30 µg/ml obtained from Aronia melanocarpa berries presented high antioxidant activities standardised with respect to trolox equivalent anti-oxidant capacity (TEAC) value of 65.94 µg/ml for FRAP method and 77.35 µg/ml for CUPRAC method.

CONCLUSION: Water extract of Aronia melanocarpa fruits have strong radical scavenging properties. Therefore this herb could be considered as a good antioxidant source.

Keywords: Aronia melanocarpa, antioxidant, CUPRAC, FRAP

OP-062 DETERMINATION OF ANTIOXIDANT CAPACITY PPO ENZYME PURIFIED FROM MORCHELLA ESCULENTA BY FRAP AND CUPRAC METHODS

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OBJECTIVES: Polyphenol oxidase (PPO, E.C.1.14.18.1) is an oxidoreductase enzyme with a copper element in its active center. It uses the phenolic compounds as substrate (Mayer, A.M., 2006). o-quinones formed as a result of the reaction are colorless compounds, but are not stable, resulting in a number of non-enzymatic reactions convert to dark colored pigments (ROBB 1984). This negatively affects the sensory properties of the product such as color, taste and odor.

MATERIALS-METHODS : In this study, PPO enzyme from the edible fungus Morchella esculenta was purified using cold acetone precipitation and sepharose 4 B -L- tyrosine-p-aminobenzoyc acid affinity gel chromatography, 2.22 and 33.48 fold , respectively . SDS-gel electrophoresis was applied to determine the purification of the enzyme. Then, dilute extracts were prepared from stock solution of PPO enzyme and antioxidant effect of each was determined by FRAP and CUPRAC methods. In order to compare and calculate the equivalent antioxidant capacity of each sample, different concentration of reference samples were prepared in between 1-40 µg/mL. All measurements were performed in the Biotek Elisa Reader and the results were evaluated.

RESULTS : The values of capacity to trolox antioxidant capacity at 30 µg/mL concentration of the extract were determined as 44.66 Eq µg / mL by the FRAP method and 45.62 Eq µg / mL by the CUPRAC methods.

CONCLUSION : According to the results, polyphenol oxidase enzyme purified from Morchella esculenta has moderate antioxidant capacity. According to these results, it was observed purified PPO enzyme showed antioxidant effect by FRAP and CUPRAC methods.

Keywords: Antioxidant capacity, CUPRAC, FRAP, Morchella esculenta Polyphenol oxidase.

**OP-063**

THE EFFECT OF THE [SILYBUM MARIANUM ] ON 8-OHDG, TOTAL OXIDANT-ANTIOXIDANT LEVELS IN DIABETIC RATS

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OBJECTIVES : The aim of this study was to investigate the effect of Silybum marianum extract on the antidiabetic, antioxidant and DNA damage in rats with diabetes.

MATERIALS -METHODS : In this study, 28 males rats were used and divided into 4 groups as follows : Control (C), Diabetes (D), S. marianum extract (S), S. marianum extract administered plus diabetes (DS). While olive oil was administered to group C and D, S. marianum extract in olive oil was administered to group S and DS via intragastric lavage (200 mg/kg/day) for 14 days. 8-hydroxy -2-deoxyguanosine (8-OHdG) of total oxidant (TOS) / oxidant (TAS) status in serum were analyzed.

RESULTS : When the levels of 8-OHdG in group DS compared to D, an arithmetical but not statistically significant decrease was determined (p>0.05). A statistically significant increase was determined in 8-OHdG levels in group D. A statistically significant increase was determined in TAS levels in group DS as compared to D (p<0.01). A statistically significant decrease in TAS was found in group DS as compared to D (p<0.01).

CONCLUSION: The antioxidant effect of S. marianum extract was determined to have a protective effect on oxidative stress associated with diabetes by increasing TAS and decreasing TOS, and also by supporting the enzymatic and non-enzymatic defense mechanisms of the cells. S. marianum extract caused a decrease in 8-OHdG, which is a DNA damage indicator, levels indicates that long period extract application can be useful in the treatment of diabetes.

Keywords: Diabetes, Silybum marianum extract, antioxidant activity, 8-hydroxy-2-deoxyguanosine

**OP-064**

DO DIETARY POLYUNSATURATED FATTY ACIDS INTAKE INFLUENCE BIOCHEMICAL MECHANISM UNDERLYING MOOD ASSOCIATED TO PREMENSTRUAL SYNDROME?

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OBJECTIVES : Premenstrual syndrome (PMS) is a disorder that often affects women in their reproductive years and is accompanied by deterioration in the mood. The relationship between dietary fatty acid pattern, mood and PMS has not been yet known. Therefore, the aim of this study was to investigate the relationship between dietary fatty acid pattern, mood and PMS.

MATERIALS-METHODS: This study was conducted to 29 healthy female volunteer participants aged between 20-37 years. PMS evaluation scale and mood. The relationship between dietary fatty acid pattern, mood and PMS has not been yet known. Therefore, the aim of this study was to investigate the relationship between dietary fatty acid pattern, mood and PMS.

RESULTS : PMS was recorded in 60.9% of the participants and 22.4% of these individuals at the premenstrual period, but more extensive researches should be performed in this regard.

Keywords: Premenstrual syndrome, mood, fatty acids, fatty acid patter
OP-068

EFFECTIVENESS OF DEGUELIN ON IN VITRO ANTI-CANCER MARKER IN PANCREAS AND PROSTATE CANCERS

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OBJECTIVES: Pancreatic cancer is a widely diagnosed cancer type with very poor prognosis worldwide. Prostate carcinoma is the most common malignant cancer of the prostate gland and is a leading cause of death due to cancer worldwide. Prostate cancer is a disease of the elderly; hence, older men are primarily affected. Prostate cancer was the second most common cancer death in males of Western countries that can be considered an important health problem for many developing and developed countries. In this study, we examined the anticancer effect of Docetaxel and Deguelin, which are used first in prostate tumor in males of Western countries. Androgen-independent prostate cancer is a serious health problem for many patients worldwide. Prostate carcinoma is the most common malignant prostate cancer lines. The aim of this study is to compare the efficacy of standardized Gencitabine and Deguelin, which is used firstly in the treatment of pancreatic cancer, and to compare the efficacy of Docetaxel and Deguelin, which are used first in prostate cancer. We have determined the effective concentration with the cell lines in different drug combinations and cell cycle, apoptosis, migration, and angiogenesis analyses were performed using flow cytometry.

RESULTS: Docetaxel was found to be effective in PANC-1 cell line at very low concentrations and not being effective in prostate cancer lines. Docetaxel was found to be effective in PANC-1 cell line at very low concentrations and not being effective in prostate cancer lines. Docetaxel was found to be effective in PANC-1 cell line at very low concentrations and not being effective in prostate cancer lines. Docetaxel was found to be effective in PANC-1 cell line at very low concentrations and not being effective in prostate cancer lines.

REFERENCES:
OP-071

APOTOPIC AND AUTOPHAGIC EFFECTS OF CETUXIMAB IN METASTATIC COLORECTAL CANCER CELLS

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OBJECTIVE: The colorectal cancer is one of the most common cancer type and chemotherapy has an important effect in the treatment. Recently, a number of studies investigating the effect of chemotherapeutic agents on genes involved in apoptosis and autophagy have been carried out. In this study, it was aimed to investigate the apoptotic, autophagic and cytotoxic effects of cetuximab, used for the treatment of colorectal cancer and is a monoclonal antibody that is epidermal growth factor antagonist, on the cancer cells.

MATERIALS-METHODS: Cetuximab was administered to colorectal cancer cell lines at different doses to form 10 test groups and all groups were left in incubations for 24 and 48 hours. MTT assay was applied for determine the cytotoxicity. TUNEL assay was used to detect the apoptosis by histochemical. p21, p27, p57, KRAS, LC3A, BECN1, EGF and ATG4A gene expression levels were measured by Real-Time PCR.

RESULTS: MTT cytotoxicity analysis indicated that 10 μg/mL cetuximab was the effective dose. At the same time, there was a decrease in KRAS and EGF gene expression while p21, p27, p57, LC3A, BECN1, ATG4A gene expressions were increased. In TUNEL staining, an increase in apoptosis was observed with increasing dose of cetuximab.

CONCLUSION: We can come to the conclusion that CTX mediates HT-29 KRK cells to apoptosis and autophagy by increasing both p21, p27, p57 gene expressions and ATG4A, LC3A and BECN1 gene expressions. In addition, it can be said that inhibiting the growth of cancer cells by decreasing EGF, KRAS gene expression.

Keywords: Apoptosis, Autophagy, Cetuximab, Colorectal Cancer.

OP-072

CYTOTOXIC EFFECTS OF PISTACIA VERA EXTRACTS ON HELA AND GASTRIC ADENOCARCINOMA CELLS

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OBJECTIVE: The aim of this study was to prepare flavonoid, flavone, flavan-3-ol, flavanone and phenolic acid extracts by using different organic solvents from the outer skin of Pistacia vera Antep (A) and锡 (grafted Pistacia terebinthus, S) and determine the cytotoxicity of the extracts on the proliferation of cervical carcinoma (HeLa) and gastric adenocarcinoma (ACC201). MATERIALS-METHODS: Flavanoid compounds in samples prepared after evaporation and hydrolyzation of extracts obtained from the outer skins of Antep and Siirt samples of P. vera were determined by using C18 column (250x4mm, 5μ) and gradient flow. IC50 values of the extracts were determined by MTT under the conditions where the initial cell concentrations were kept as 7x103 h/100 μl and 104 h/100μg for HeLa and ACC201, respectively. SPSS package program was used for statistical analysis.

RESULTS: Flavonol (quercetin, rutin, isoquercetin, myricetin), flavone (luteolin, apigenin, eupatorin), flavan-3-ol (catechin, epicatechin, epigallocatechin), flavanone (hesperetin, naringenin, hesperidin) and phenolic acid (gallic, benzoic, vanillic, syringic, chlorogenic, 4-hydroxy-benzoe, caffèic, o-coumaric, sinapic, ferulic, t-cinnamic, p-coumaric acid) contents were determined. While IC50 values of the A and S samples of the acid hydrolysed phenolic acids against HeLa were found as 10.00±0.21 ppm and 11.00±0.84 ppm, respectively, the IC50 values of both the extracts against ACC201 cell line was found as 20.00±0.39 ppm. It was observed that P. vera extracts from Antep region was generally effective to Hela and while the ones from Siirt region to ACC201. CONCLUSION: Cytotoxic properties of P. vera on HeLa and ACC201 cancer cell lines were determined.

Keywords: ACC201, Phenolic Acid, Flavanoid, HeLa, Pistacia vera

OP-073

THE USE OF GOJIBERRY WITH MELATONIN SHOWS SYNERGISTIC EFFECT AT THE TREATMENT OF LEUKEMIA IN VITRO

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OBJECTIVES: Melatonin (MLT), a pineal hormone, possess potent antioxidant and antiapoptotic actions in healthy cells. In contrast to this, MLT shows pro-oxidant effect as well as anti-proliferative, anti-angiogenic, and immunomodulatory effect in many cancer types. A traditional Chinese dietary supplement as Gojiberry (GB) with an anti-proliferative and an anti-apoptotic effects is a therapeutic or an adjuvan agent for cancer including leukemia. The aim of the study was to investigate the effect of MLT in combination with GB and the underlying mechanism of their effect at chronic myeloid leukemia cells in vitro.

MATERIALS-METHODS: The extracts of GB in single and in combination with MLT were applied to K562 leukemia cells for 72 h. Their effects were evaluated by cell number and viability, apoptotic index and cell cycle analysis (flow cytometry), the levels of apoptotic (Caspses-3,8,9; bax), necroapoptotic (RIPK-1) and resistance (bcl-2) proteins (ELISA). Anova test was used and p<0.05 was considered statistically significant.

RESULTS: All groups decreased cell number and cell viability (p<0.05), however the combination group led to the highest decrease (p<0.05). The combination group induced the highest increase in apoptotic and dead cell rates, the levels of caspase-3, caspase-9 and bax (p<0.05). The highest decrease in Bcl-2 levels were also detected in the combination group (p<0.05). The combination group showed an highest G0/G1 arrest and a decrease in other phases (p<0.05).

CONCLUSION: In current study, it’s detected for the first time that the combination of GB with MLT shows synergistic effect via intrinsic (mitochondria induced) apoptotic pathway.

Keywords: Gojiberry, Melatonin, Chronic myeloid leukemia, Intrinsic apoptosis, Synergistic effect

OP-074

EFFECT OF HISTONE DEACETYLASE INHIBITOR SUBEROYLILANILIDE HYDROXYAMIC ACID ON YES-ASSOCIATED PROTEIN/TRANSCRIPTIONAL COACTIVATOR WITH PDZ-BINDING MOTIF. COLONY-FORMING UNIT, APOPTOSIS AND CELL CYCLE IN CHOLANGIOCARCINOMA CELL LINE

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OBJECTIVES: Cholangiocarcinoma is a malignant tumor originating from bile duct epithelial cells. Suberoylanilide hydroxamic acid (SAHA) is a potent histone deacetylase (HDAC) inhibitor that causes the prevent of growth and induction differentiation and apoptosis on many tumor. SAHA is utilized in clinical research for cancer treatment. In this study, it was purposed to investigating the effect of SAHA on protein level of yes-associated protein/transcriptional coactivator with PDZ-binding motif (YAP/TAZ) that's transcriptional regulators in cholangiocarcinoma (TFK-1) cell line. Moreover the effect of SAHA on colony-forming unit (CFU), apoptosis, cell cycle was investigated.

MATERIALS-METHODS: Protein levels were measured with sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE). CFU was performed for colony count. Apoptosis and cell cycle were performed by Muse Cell Analyzer.

RESULTS: All groups decreased cell number and cell viability (p<0.05), however the combination group led to the highest decrease (p<0.05). The combination group induced the highest increase in apoptotic and dead cell rates, the levels of caspase-3, caspase-9 and bax (p<0.05). The highest decrease in Bcl-2 levels were also detected in the combination group (p<0.05). The combination group showed an highest G0/G1 arrest and a decrease in other phases (p<0.05).

CONCLUSION: In current study, it’s detected for the first time that the combination of GB with MLT shows synergistic effect via intrinsic (mitochondria induced) apoptotic pathway.

Keywords: Gojiberry, Melatonin, Chronic myeloid leukemia, Intrinsic apoptosis, Synergistic effect
OP-076
THE EFFECTS OF THE HISTONE DEACETYLASE INHIBITOR SUBEROPYLAINILIDE HYDROXAMIC ACID ON THE COLONIFORMING UNIT, CELL VIABILITY, APOPTOSIS AND CELL CYCLE IN THE HEPATOCELLULAR CARCINOMA CELL LINE

OBJECTIVES: Hepatocellular carcinoma (HCC), is primary malignant tumor of the liver originating from hepatocytes. Suberoylanilide hydroxamic acid (SAHA) is a potent reversible histone deacetylase inhibitor (HDACi). HDACis have demonstrated anticancer effects by selectively inducing apoptosis through modulating the expression of pro-apoptotic and anti-apoptotic genes in cancer cells. Upon binding of HDACis to HDACs, the accumulation of acetylated proteins, including histone proteins results in apoptosis, cell cycle arrest, and angiogenesis inhibition. In this study, it was aimed to investigate the effects of SAHA in HepG2 cell line on the colony-forming unit (CFU), apoptosis, cell viability and cell cycle.

MATERIALS-METHODS: CFU was performed for colony count. Apoptosis, cell viability and cell cycle were performed by Muse Cell Analyzer.

RESULTS: SAHA statistically reduced the colony formation in CFU assay (p<0.001). Statistical difference was not found in apoptosis measurements between control group and SAHA group (p>0.05). In the cell cycle, the G0/G1 phase increased statistically compared to the control group in the SAHA group, while the S phase decreased statistically (p<0.05). Statistical difference was not found in G2/M phase (p>0.05). Statistical reduction in SAHA group was observed in cell viability (p<0.001).

CONCLUSION: It was observed that the SAHA reduced colony formation without using apoptosis pathway and it maintained the cells in phase G0/G1. The inhibition of colony formation is very important in cancer studies. Further work must be done to illuminate the effective mechanism. We anticipate that the use of SAHA in the HepG2 line will be positive and detailed studies will be useful.

Keywords: Apoptosis, Cell Cycle, Hepatocellular Carcinoma, SAHA

OP-077
ANTIOXIDANT / PROOXIDE BALANCE EFFECT OF VITAMINS C AND E IN THE RELATION OF NRK-52 E CELL APPLIED SODIUM FLUORIDE

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OBJECTIVES: This study was planned to determine the effect of certain vitamin applications on total antioxidant capacity (TAS), total oxidant capacity (TOS) and to evaluate the antioxidant role of vitamins C and E against possible toxic effects of fluoride, in renal cells exposed to sodium fluoride in vitro.

MATERIALS-METHODS: Cells were grown in regular conditions with 1% FBS. Under NaF (100-1000 μM), 60 μM vitamin E, and 100 μM vitamin C, sodium fluoride and vitamin groups were given together as a control group and were separated. MT4% viability results were determined. as the control group was accepted as 100% live. Twenty-four hour incubation was followed by trypsinated cells were prepared with broken up freeze/thaw method and analyzed. Twenty-four hour incubation was followed by trypsinized cells were dissociated by freeze/thaw method and analyzed. In the obtained cell lysate; TAS and TOS values were determined by ELISA method using commercial kit.

RESULTS: TAS levels in all groups were found to decrease significantly in the groups given only vitamin and NaF + vitamin groups (p<0.05). It was observed that TOS levels in all groups increased significantly from control (p<0.05). For OSI, it was observed that all groups increased significantly in relation to the control, the use of vitamin E in combination with NaF increased the OSI and there was no significant change in the groups given only NaF + vitamin C.

CONCLUSIONS: In conclusion, although the NRK-52E rat kidney cell line has a decreasing effect on the cell viability of the NaF dose, the changes in the TAS/TOS balance and the effect of NaF and vitamin in the applied groups were found to be limited in terms of the mechanisms of cell death.

Keywords: Fluoride, cell culture, total antioxidant capacity, total oxidant capacity, vitamin

OP-078
THE EFFECT OF SOME MINERALS ON TOTAL OXIDANT / ANTIOXIDANT STATUS IN SODIUM FLUORIDE (NAF) ADMINISTERED RENAL CELL LINE

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OBJECTIVES: About 50-80% of the fluoride intake in the body is excreted by kidneys. The present study aimed to investigate the effects of certain minerals (Al, Se, Mg, Ca) on determination of the impact of NaF on oxidant / antioxidant capacity and cell viability in renal cell line, which are involved in fluoride metabolism and are most affected by fluoride excretion.

MATERIALS-METHODS: Cells were propagated with two to three regular passages per week. Non-toxic mineral doses were determined by the MTT viability test and NaF IC50 value was identified. Cells were exposed to NaF, minerals and mineral groups+NaF for 24 hours. Control groups were considered 100% viable and MT 5% viability results were determined. Cells were collected by trypsinization after 24 hours of incubation and analyzed by freeze/thaw method disintegration. TAS and TOS were determined using commercial kits.

RESULTS: TAS levels were significantly lower in the NaF group compared to the control (p<0.05). In Mg and Se plus NaF administered groups, TOS was slightly lower when compared to the control, albeit a slight increase was observed (p>0.05). TOS levels were lower in the NaF administered group when compared to the control group (p<0.05), but it remained the same when minerals were administered with NaF.

CONCLUSION: The oxidative stress index that increased after NaF administration in NRK-52E cell line significantly decreased especially in Mg and Se administered groups, however it was still high when compared to the control.

Keywords: Minerals, renal cell, total antioxidant capacity, NaF, total oxidant capacity

OP-079
THE EFFECTS OF TREATMENT WITH MANNITOL AND CONIVAPTAN ON POST-ISCHEMIC BRAIN EDEMA AND INFLAMMATION

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OBJECTIVES: During the cerebral ischemia-reperfusion (IR), cellular and metabolic changes lead to irreversible disfunctions in brain. This process is leading to destruction of blood brain barrier and to cerebral edema. It is often accompanied by increase of antidiuretic hormone which aggravate of edema and injury. In this study, it is aimed to investigate the effects of diuretic Mannitol and aquaretic Conivaptan on post-ischemic brain damage, inflammation and edema in acute phase in cerebral IR model.

MATERIALS-METHODS: 58 Sprague Dawley rats were divided into five groups; Control (n=10), I/R (n=12), I/R+Mannitol (n=12), I/R+Conivaptan 10 mg/ml (n=12) and I/R+Conivaptan 20 mg/ml (n=12). In groups except control, bilateral a.carotis communis was clamped for 30 minutes. Saline, Conivaptan and Mannitol were applied to relevant groups for 30 minutes with reperfusion. The blood and brain tissue samples were taken 6 hours after reperfusion. In serum samples were measured Na+, K+, Cr, antidiuretic-hormone, progurulin, tumor-necrosis-factor, interleukin-15 and interleukin-35, neuron-specific-enolase, myeloperoxidase activity, albumin and osmolality. In tissue samples was...
calculated water-content and applied hematoxyline-eosin and TUNEL methods. Data-analysse was done with SPSS 21.0 package program. RESULTS: According to biochemical and histological findings, post-ischemic cerebral damage, inflammation and edema occurred in I/R group. Convivaptan was found to be more effective than Mannitol for preventing damage, controlling inflammation and maintaining hydromineral homeostasis. CONCLUSIONS: Against cerebral post-ischemic injury and edema, it was concluded that acute phase Convivaptan treatment was more beneficial than Mannitol, which has serious side effects. This work is supported by Eskişehir Osmangazi University (Project-No: BAP 2017-1524).

Keywords: Aquaretic Convivaptan, Brain edema, Diuretic Mannitol, Inflammation, Neuron specific enolase

OP-079
THE LEVELS OF TAU PROTEIN AND 8-ISOPROSTAGLANDIN IN PATIENTS WITH CORONARY ARTERY DISEASE
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OBJECTIVE: Tau proteins belong to the family of microtubule-associated proteins. They are mainly expressed in neurons where they play an important role in the assembly of tubulin monomers into microtubules to constitute the neuronal microtubules network. 8-isoprostane is considered as an indicator of oxidativestress. Tau protein and 8-isoprostane levels were measured in some diseases. However, there are noinformation on 8-isoprostane and Tau protein levels in patients with coronary artery disease. In this study, we aimed to investigate the levels of 8-isoprostaglandin and Tau protein levels in patients with coronary artery disease.

MATERIALS-METHOD: A total of 30 patients (16 females, 14 males; range of age 42-78 years) with coronary artery disease and 30 healthy individuals as control (15 female, 15 men; range of age 46-77 years) were enrolled in the study. Platelet function was evaluated by a Multiple Platelet Function Analyzer according to impedance aggregometry method. Tau protein and 8-isoprostaglandin levels in serum samples were determined by ELISA.

RESULTS: Compared to the control group, the levels of Tau protein and 8-isoprostane were found significantly higher in patients (p<0.05). Furthermore, we found that there is a strong positive correlation (p<0.001) between Tau protein and 8-isoprostane levels.

CONCLUSION: Our results indicated that increased activity of Tau protein and 8-isoprostane levels have an important role in the pathophysiology of patients with coronary artery disease.

Keywords: Tau protein, 8-isoprostaglandin, Coronary artery disease

OP-080
THE INVESTIGATION OF ANTIMICROBIAL AND ANTIOXIDANT EFFECTS OF HERPERICUM PERFORATUM IN ARDAHAN REGION
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OBJECTIVES: Herpericum perforatum, which is found in many parts of the world, is known as "kılıçotu" or "sarı kantaron" in our country. The climate of Turkey is the most suitable climate for Kılıçotu. It is known that there are 70 varieties of this plant in our country. It is also known to be beneficial in asthma, stomach ulcer, excess acid, lung diseases, and arteriosclerosis and nerve inflammation. In this study the antimicrobial activities and antioxidant capacity of Hererpermum perforatum samples which belong to Hypericaceae family was investigated.

MATERIALS-METHODS: In the study, 21 male Sprague-Dawley rats about 200-240 g were used in the procedure. The rats were separated into 3 groups, each of which has 7 rats. Group1; control group (10 weeks), group 2; MS with fructose (10 weeks), group 3, given NSO after MS progress (10+4 weeks) in created.

RESULTS: Tau protein and 8-isoprostane levels were measured in patients with coronary artery disease. In this study, we aimed to investigate the levels of 8-isoprostaglandin and Tau protein levels in patients with coronary artery disease.

MATERIALS-METHOD: A total of 30 patients (16 females, 14 males; range of age 42-78 years) with coronary artery disease and 30 healthy individuals as control (15 female, 15 men; range of age 46-77 years) were enrolled in the study. Platelet function was evaluated by a Multiple Platelet Function Analyzer according to impedance aggregometry method. Tau protein and 8-isoprostaglandin levels in serum samples were determined by ELISA.

RESULTS: Compared to the control group, the levels of Tau protein and 8-isoprostane were found significantly higher in patients (p<0.05). Furthermore, we found that there is a strong positive correlation (p<0.001) between Tau protein and 8-isoprostane levels.

CONCLUSION: Our results indicated that increased activity of Tau protein and 8-isoprostane levels have an important role in the pathophysiology of patients with coronary artery disease.

Keywords: Tau protein, 8-isoprostaglandin, Coronary artery disease

OP-081
THE EFFECTS OF NIGELLA SATIVA OIL ON CYTOKINES AND OXIDATIVE STRESS IN RATS METABOLIC SYNDROME
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OBJECTIVES: Fructose is absorbed in the small intestine by facilitated transport mediated by glucose transporter proteins -2 and -5, and arrives in the liver cells. Here it is transformed enzymatically into fructose-1-phosphate and then, fructose-1,5-diphosphate, which splits further into glyceraldehyde and dihydroxyacetone-phosphate, entering the process of glycolysis, triglyceride and uric acid production. Thus, the steps of metabolic syndrome formation begin. We aimed to investigate the effect of Nigella sativa oil (NSO) on oxidative stress and cytokine levels in MS induced rats with fructose diet.

MATERIALS-METHODS: In the study, 21 male Sprague-Dawley rats about weight of 200-240 g have been used. The rats were separated to 3 groups, each of which has 7 rats. Group1; control group (10 weeks), group 2; MS with fructose (10 weeks), group 3, given NSO after MS progress (10+4 weeks) in created.

RESULTS: Serum TNF-a, TOS levels measuring were compared to the control group found statistically significantly higher and TAS amount was compared to the control group found significantly lower in the MS groups (P<0.01). Formation of MS, that we gave the NSO group TOS, TNF-a and IL-6 levels were lower, an increase in TAS levels but the decrease did not have a statistical significance (p>0.05).

CONCLUSIONS: As a result of this study, it is understood that MS patients are very important for medical treatment as well as for healthy eating habits of In different experimental models there is a need for in-vitro and also in-vivo work with more animals.

Keywords: Metabolic syndrome, nigella sativa oil, total antioxidant capacity, total antioxidant capacity

OP-083
RELATIONSHIP BETWEEN PARATHYROID HORMONE AND VITAMIN D IN RENAL TRANSPLANT PATIENTS
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OBJECTIVES: Deficiency of 25(OH) vitamin-D is common in patients with end-stage renal failure, however there is insufficient research on vitamin-D levels after renal transplantation. The aim of this study is to investigate the relationship between serum parathyroid hormone (iPTH) and 25(OH) vitamin-D levels after renal transplantation.

MATERIALS-METHODS: Sixty renal transplant patients (40 male, 20 female) who were being followed by the transplantation clinic at Gazi University Medical Faculty Hospital were included in the study. Forty healthy subjects (25 males, 15 females) who were similar in age and sex to the patient group were included in the study as control. SPSS v20 was used for statistical analysis. To determine differences between groups Mann-Whitney U and for the correlation analysis between variables Spearman’s correlation test was used.

RESULTS: In the patient group, the median (min-max) values of serum 25(OH) vitamin-D levels and iPTH levels were 12.29(6.21-278.00) pg/mL and 40.20 (16.52-152.00) µg/L, respectively. In the control group, these values are 13.29 (7.00-258.00) µg/L and 40.20 (41-126.20) pg/mL, respectively. iPTH levels were significantly higher in the patient group than control (p<0.05). In the correlation study between iPTH and 25(OH) vitamin-D levels , it was found that there was a negative correlation in patient group (p<0.01) and control (p=0.05). While 25(OH) vitamin-D levels decreased, iPTH levels increased.

CONCLUSIONS: There was no significant difference in 25(OH) vitamin-D levels between renal transplant group and control, whereas there was a significant difference in iPTH levels between these groups. There was a significant negative

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correlation between serum iPTH and 25(OH) vitamin-D levels in renal transplant patients.

Keywords: 25(OH) Vitamin D, iPTH, Renal Transplant

OP-085
ANALYSIS OF SERUM HEPCEIDIN, IRON/INFLAMMATION/OXIDATIVE STRESS PARAMETERS IN TORCH POSITIVE DISEASES

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OBJECTIVE: The aim of this study was to investigate serum hepcidin, iron, ferritin, transferrin, transferrin receptor, interleukin-6, tumor necrosis factor alpha, superoxide dismutase, glutathione and malondialdehyde values and to determine the relationship between hepcidin hormone and inflammatory and oxidative status in TORCH positive pregnant women.

MATERIALS-METHOD: It was included in the study 39 TORCH positive patients and 28 healthy pregnant control group who were referred to the State Hospital of Ağrı. Hospital data were used for TORCH infection analysis, hemoglobin and C-reactive protein values. Serum hepcidin, total free iron, transferrin, transferrin receptor, interleukin -6, tumor necrosis factor alpha, superoxide dismutase, glutathione, malondialdehyde and protein levels were measured in Ağrı Ibrahim Çeçen University Central Research Laboratory. Commercial ELISA kit for study tests and Micro Lowry Sigma kit for serum protein analysis were used. Malondialdehyde levels were measured by manual method.

RESULTS: All patients and control group had normal hemoglobin values (14±1.2 g/dL). C-reactive protein, hepcidin, transferrin receptor, interleukin -6, superoxide dismutase, glutathione and malondialdehyde levels were significantly higher in the patients compared to the control group (p<0,05). Free iron, ferritin, transferrin and tumor necrosis factor alpha values were not significantly different.

CONCLUSION: It has been concluded that hepcidin, one of the important parameters of iron metabolism, may be useful in monitoring TORCH group infections.

Keywords: TORCH, hepcidin, iron, interleukin-6, superoxide dismutase

OP-086
DETERMINATION OF 8-HYDROXY-2′-DEOXYGUANOSINE , MALONDIALDE- HYDE AND PROTEIN CARBONYL LEVELS AS OXIDATIVE STRESS MARKER IN PATIENTS WITH ADENOTONSILLAR HYPERPHTROPHY

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2Agri Ibrahim Çeçen University, Faculty of Pharmacy, Ağrı

OBJECTIVE: The aim of this study was to investigate serum hepcidin, iron, ferritin, transferrin, transferrin receptor, interleukin-6, tumor necrosis factor alpha, superoxide dismutase, glutathione and malondialdehyde values and to determine the relationship between hepcidin hormone and inflammatory and oxidative status in TORCH positive pregnant women.

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CONCLUSION: It has been concluded that hepcidin, one of the important parameters of iron metabolism, may be useful in monitoring TORCH group infections.

Keywords: TORCH, hepcidin, iron, interleukin-6, superoxide dismutase

OP-087
INVESTIGATING EFFECT OXIDANT-ANTIOXIDANT SYSTEMS SOURCES IN MALE INFERTILITY VARICOCELO AND IDIOPATHIC IN SEMEN PLASMA

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OBJECTIVES: The aim of this study was to investigate seminal oxidant-antioxidant activity in infertile men.

MATERIALS-METHODS: This study was conducted in the new laboratory factors related to the pathogenesis of infertility and to uncover new scientific data for the diagnosis and treatment of idiopathic and varicocele -induced infertility. Made by us in literature was determined to be the first. This research project was supported by TUBITAK. Liquefied which the semen sample was centrifuged at 3000 for 15 minutes. The resulting liquid was transferred to a sterile 1 cc aliquot of seminal Falcon tube and stored at -80 °C for biochemical analysis. On the day of the analysis were examined using a full automatic analyser (Architect CI16000). The test parameters investigated in this study; Total Anti-oxidant capacity (TAC), Oxidation status (TOS), Total thiol (TTL), Paraoxonase (PON1) and Arylesterase (ARE) levels . Rel Assay Diagnostics kit was used in the study. Statistical values were analysed SPSS 23 software package.

RESULTS: Infertile patients higher PON 1 values more than the other fertile was determined (significant statistical, p =0,042). The other test parameters between the two groups (TAC , TOS , TTL, OAT) was not statistically significant (p = 0.391, 0.488, 0.084, 0.620). The p value could not be determined for ARE because unread.

CONCLUSION: Infertile patients semen detected in plasma PON 1 value of height, brings to mind that there is a negative relationship . On the other hand no doubt these issues need to be clarified by further research.

Keywords: oxidant, infertility, oxidant, varicocele

OP-088
MALE INFERTILITY AND OXIDATIVE STRESS

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OBJECTIVES: Infertility, defined as 1 year of unprotected intercourse without conception, affects approximately 15% of human couples, with men being responsible in approximately 50% of cases. Oxidative stress (OS) is excessive generation of reactive oxygen species. There is growing evidence that damage to spermatagonia by reactive oxygen species (ROS) play a key role in male infertility/Th e aim of the present study was to assess seminal plasma levels of the advanced oxidation protein products (AOPPP) level and parao - oxase -1 (PON-1) activity in men with Azosperma (A.), Teratozoosperma (T) and oligoasthenoteratozoosperma (OAT) compared with normozoospermic (N) males

MATERIAL -METHODS: This study was carried out in the Antalya Medicalpark Hospital Urology Clinic included semen analysis between January 2014 and May 2015. Working group was 52 infertile men who had 1 year or more of infertility .18 proven fertile healthy men served as control group . Participants were assigned to 4 groups based on the semen analysis results; Groups : N; (18 (26 %)), T; (21 (30 %)), A; (16 (23 %)) and 15 patients (21 %) as OAT group.

RESULTS: PON-1 activity was significantly higher in seminal plasma of the infertile males than in the healthy controls (p<0,001) but the remarkably lower in the seminal plasma AOPP levels of infertile males than control group (p=0,004).

CONCLUSIONS: We concluded in our study that the levels of oxidative stress parameters were increased in children with adenotonsillar hypertrophy and improved with surgical treatment.

Keywords: Adenotonsillar hypertrophy, malondialdehyde, protein carbonyls
RESULTS: The results were evaluated as toxic elements, trace elements and macro elements. The highly toxic elements of Be, Pb and Cd were detected in Van fish tissues. In general, no significant difference was observed between the metal concentration values of the 3 and 4 age groups, and the 5 age group values were found to be lower than the other groups (p<0.05). In particular, concentrations in brain tissue were observed to be higher.

CONCLUSION: As a result, it can be considered that the increase in environmental pollution is an ecological problem and that all living heavy metals in the food chain will harm.

Keywords: Van Fish, Toxic elements, Trace elements, Makro elements, ICP-OES, Van Lake

OP-091 THE EFFECT OF VITAMIN C AND VITAMIN E ON OXIDATIVE DAMAGE IN RATS WITH FLUOROSIS

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OBJECTIVE: Excessive consumption of fluoride causes chronic toxicity known as fluorosis. In this study, it was aimed to investigate the protective and therapeutic properties of vitamins C and E on oxidative mechanism on chronic fluorosis.

MATERIALS-METHODS: Wistar-Albino rats were used in the study and each group consisted of 9 rats containing 8 rats. Corn oil, was applied 0.2 ml/oral to the corn oil group. A protecting group, with water containing 150 ppm NaF 16 weeks /day excessive VitC (100 mg/kg), VitE (300 mg/kg) and VitC + VitE (100 mg/kg + 300 mg/kg) was administered. For the treatment group, water containing 150 ppm NaF for 16 weeks was administered as adlibitum Then, with normal drinking water for 4 weeks; VitC, VitE and VitC + VitE were administered. In the serum, TAS, TOS and 8-OHdG values were determined by ELISA method. RESULTS: Tos level was not significant in the NaF group compared to the control group but it was found that it was significantly higher than VitE and combination group given for treatment (p<0.05). TAS levels were significantly lower (p<0.05) in the combination group given for protection and VitE group given for treatment than NaF group. DNA damage in the NaF and corn oil groups was significantly higher in the control group (p<0.05). It was determined that vitamin applications for treatment and protection purposes decreased DNA damage ( p<0.05).

CONCLUSION: We can said that VitE given for therapeutic purposes can correct the DNA damage and oxidative stress caused by fluorine.

Keywords: Fluorosis, 8-OHdG, TAS, TOS

OP-092 PLASMA ISCHEMIA MODIFIED ALBUMIN LEVELS AND DYNAMIC THIOL- DISULFIDE BALANCE IN SICKLE CELL DISEASE

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OBJECTIVES: Sickle cell disease (SCD) described as a group of inherited blood disorders affects millions of people throughout the world and particularly common in Southern part of Turkey. We aimed to determine the relationship between ischemia modified albumin (IMA) and the dynamic thiol/disulfide balance in sickle cell disease (SCD).

Keywords: Sickle cell disease (SCD) described as a group of inherited blood disorders affects millions of people throughout the world and particularly common in Southern part of Turkey. We aimed to determine the relationship between ischemia modified albumin (IMA) and the dynamic thiol/disulfide balance in sickle cell disease (SCD).

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Ahmet Cihat Öner¹, Ahmet Ufuk Kömüröğlu², Semihade Dede³, Fatmaayar Yur¹, Ayyegül Öner³
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4Mülgü State Köiman University, Fethiye Health Sciences Faculty, Department of Nutrition and Dietetics, Muğla
5Van Yüzüncü Yıl University, Institute of Health Sciences, Van

OBJECTIVE: Excessive consumption of fluoride causes chronic toxicity known as fluorosis. In this study, it was aimed to investigate the protective and therapeutic properties of vitamins C and E on oxidative mechanism on chronic fluorosis.

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CONCLUSION: We can said that VitE given for therapeutic purposes can correct the DNA damage and oxidative stress caused by fluorine.

Keywords: Fluorosis, 8-OHdG, TAS, TOS

OP-092 PLASMA ISCHEMIA MODIFIED ALBUMIN LEVELS AND DYNAMIC THIOL- DISULFIDE BALANCE IN SICKLE CELL DISEASE

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OBJECTIVES: Sickle cell disease (SCD) described as a group of inherited blood disorders affects millions of people throughout the world and particularly common in Southern part of Turkey. We aimed to determine the relationship between ischemia modified albumin (IMA) and the dynamic thiol/disulfide balance in sickle cell disease (SCD).

Keywords: Sickle cell disease (SCD) described as a group of inherited blood disorders affects millions of people throughout the world and particularly common in Southern part of Turkey. We aimed to determine the relationship between ischemia modified albumin (IMA) and the dynamic thiol/disulfide balance in sickle cell disease (SCD).
OP-093 WHAT CAN WE DO TO MAKE A STANDARDIZATION AND HARMONIZATION OF ACTIVATED PARTIAL THROMBIN TIME?
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OBJECTIVE: We tried to show the importance of active parsiel thromboplastin time (APTT) reagents and how to reach the correct measure of APTT in this study.

MATERIALS-METHODS: APTT levels were calculated ACL-TOP analyzer by using three different reagents. First reagent was HemosILAPTT-SP which was sensitive against both plasma factors and lupus anticoagulant. It contains mix colloidal silica. Normal range of APTT-SP was 25.4-36.9 s. Second reagent was HemosIL SynthAsil -SS which was sensitive against only plasma factors. It contains silica. Normal range of APTT-SS was 25.1-36.5 s. Third reagent was HemosIL SynthA Fox-SF which was sensitive against only lupus anticoagulant. It contains ellagic asid. Normal range of APTT-SF was 21.5-30.4 s.

RESULTS: Forthy -five patients had normal level of APTT by measuring some types of reagents. Seventeen patients had long level of APTT by measuring three types of reagents. Twenty patients had long level of APTT by measuring Hemosil synhAsil -SS reagent and normal level with Hemosil Syntha - Fox -SF and Hemosil APPT-SP. Seventeen patients had normal level of APTT by measuring Hemosil synhAsil -SS reagent and normal level of APTT with Hemosil Syntha - Fox -SF and Hemosil APPT-SP. Seven patients had long level of APTT by measuring Hemosil synhAsil -SS reagent and normal level of APTT with Hemosil Syntha - Fox -SF and Hemosil APPT-SP. Seven patients had long level of APTT by measuring Hemosil synhAsil -SS reagent and normal level of APTT with Hemosil Syntha - Fox -SF and Hemosil APPT-SP.

CONCLUSION: Ranges of APTT must be determined according to reagents. APTT reagents must be sensitive against borderline cases who have a mild or moderate low levels of factors and the presence lupus anticoagulant.

Keywords: active parsiel thromboplastin time, reagent,hemostasis

OP-094 DETERMINATION OF MICROPARTICLES VIA THROMBIN GENERATION TEST IN PATIENTS DIAGNOSED RENALINOPATHY
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OBJECTIVES: Neovascularization is seen in wet type age-related macula degeneration (AMD) and diabetic retinopathy (DRP). In our study, we aimed to investigate whether plasma microparticles (MMP) functional levels determined by thrombin generation test (TGT) parameters have any clinical value for showing neovascularization.

MATERIALS-METHODS: Cases were investigated in four groups; group 1: healthy individuals (N=37); group 2: DRP (N=40); group 3: dry type AMD (N=41); group 4: wet type AMD (N=40). Platelet poor plasma samples were stored at -80°C. In addition to the routine biochemistry tests, MMP levels were examined functionally via TGT parameters (Calibrated Automated Thrombography, Stago Diagnostics, France).

RESULTS: Diabetics had significantly higher body maOP index (p<0.05), waist circumference (p<0.001), systolic blood preaOPure (p<0.001), diastolic blood preaOPure (p<0.001), and less endogenous thrombin potential (ETP) values (p<0.01) than controls. There were correlations between C-reactive protein levels and TGT parameters of ETP (r=0.394, p=0.012), Peak (r=0.345, p=0.029), statTail (r=0.330, p=0.038) in wet type AMD. Again in the same group, there were correlations between imaging findings of central macular thickneOP via optic coherence tomography and TGT parameters of tPeak (r=0.269, p=0.036), lag time (r=0.243, p=0.059).

CONCLUSION: The degrees in the degree of obesity or diabetic status would be probable causative factors for decreased ETP values in diabetics; several mechanisms are involved in the hypereactive platelet phenotype associated with increased atherothrombotic risk characterizing diabetics. MMP may have a part in the pathogenesis of the wet type AMD.

Keywords: age related macula degeneration, angiogenesis, diabetic retinopa-thy, hemostasis, microparticles, thrombin generation test

OP-095 EVALUATION ON THE DNA DAMAGE OF MICROWAVE OVENS WITH ULTRAVIOLET AGAROSE GEL ELECTROPHORESIS
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OBJECTIVE: Now, the number of microwave ovens is increasing in the world, and it is very practical and inexpensive that starts to be used in many areas like heating our foods. As using of microwave ovens daily increases, safety problems come to mind in society. The aim of this study is to investigate effects of microwave oven on pure DNA samples.

MATERIALS-METHODS: For this research, ten human DNA samples isolated from the bloods in our DNA bank were used. DNA fragments were observed under UV light with 1.5 % ethidium bromide agarose gel electrophoresis and then DNA samples were selected without having any fractures. 10 μL DNA samples were placed in PCR tube to be exposed to electromagnetic fields from all microwave ovens. DNA was observed by agarose gel electrophoresis.

RESULTS: They showed that some analyses were effective and results obtained were standardized, results obtained were good quality.

Keywords: Microwave Ovens, DNA, DNA fragments

OP-096 PREANALYTICAL STANDARDIZATION OF PROTEOMIC STUDIES AND EUKARYOTIC CYTOPLASM AND LYSOSOMAL ISOLATION
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OBJECTIVES: Eukaryotic cells have three components; cell membrane, cytoplasm and nucleus. Cytoplasm compartment consists of cytoplasm and corganelles (mitochondria, ribosomes, endoplasmic reticulum, lysosomes, etc.). Isolation of cytoplasm and lysosomes can be done in eukaryotic cells. Significant results can be obtained in functional and pathological responses of cell in proteomic studies. If application of proteomic studies in eukaryotic cells is standardized, results obtained will be good quality.
Proteomic studies can be performed in situations such as autophagia by isolating cytoplasm and lysosomes in eukaryotic cells. In our study, we aimed to standardize cytoplasm and lysosome isolation in eukaryotic cells and preanalytic stage of proteomic studies.

MATERIALS -METHODS: The numerical target was reached in eukaryotic cell culture. Three different cell cultures were prepared with same features. Cells were subjected to washing, centrifugation, compartment separation, sonication. They were sonicated in protease inhibitor buffer. Nucleus, cell membrane and cytoplasmic isolations were performed. Lysosomal isolation was performed with enrichment solution. Protein levels of samples were measured and they were stored under appropriate conditions until proteomic studies.

RESULTS: Eukaryotic cell cytoplasm and lysosomes were isolated in a quality and standardized way.

CONCLUSION: Validation and verification are very important in proteomic studies. Cold and reduced contamination is required. Isolation of cytoplasm and lysosomes in eukaryotic cells should be done as standard in high quality. Quality of chemicals and its concentrations, washing, centrifugation, sonication, gradient-dependent enrichment, protease inhibitors, cold environments and proportional volumetric process steps should be optimized.

Keywords: proteomics, eukaryotic, cytoplasm, lysosome, preanalytical standardization

OP-097 MOLECULAR EVALUATION OF HEMOLOBIN BEIRUT (126B VAL > ALA) FIRST OBSERVED IN TURKEY

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OBJECTIVES: Hemoglobin Beirut (Hb Beirut), first characterized in a Lebanese family by Strahler et al. and forming substitution of valine to alanine at the 126th position of Beta globin chain, is a silent abnormal hemoglobin variant. Our purpose in this presentation is to discuss the molecular diagnosis of Hb Beirut, one of the abnormal hemoglobins.

MATERIALS-METHODS: Complete blood count, cellulose acetate Hb Electrophoresis, cation-exchange HPLC, ARMS, RFLP, gap PCR, Sequencing and globin gene expression analysis for classification of hemoglobin variants and genetic analysis were examined in a family applying to our department for Prenatal diagnosis and being Hb AS of father.

RESULTS: Mild microcyte anemia findings was found in hemogram. It wasn’t observed any abnormal pattern in cellulose acetate Hb electrophoresis and cation-exchange HPLC and Hb A2 value was found to be 3,2%. No mutations were determined with screening of α and β globin gene defects by conven- tional methods. Globin gene expression analysis showed that alpha/beta ratio of mother was 1,2. However, β globin gene sequencing analysis proved that mother was heterozygous Hb Beirut (C126T GTG->GGC).

CONCLUSIONS: It is known that isoelectric focusing with pH gradient and reverse phase HPLC methods are successful in diagnosis of neutral amino acid substitutions. Mother was identified as Hb Beirut by sequence analysis for the first time in Turkey. Thus, this study also revealed that sequencing analysis is a gold standard and indispensable method to be taken into consideration.

Keywords: Abnormal Hemoglobin, Hb Beirut, Hb Electrophoresis, HPLC, Sequence Analysis

OP-098 DETERMINATION OF RAT PROLACTIN RECEPTOR mRNA VARIANTS

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OBJECTIVES: Prolactin receptors (PRLR) are involved in over 300 different functions, including osmoregulation, immunoregulation, proliferation and tumorigenesis in addition to its well known role in lactation and reproduction. So far, 11 variants in humans, 4 variants in mice and 2 variants in pigs and rats have been identified. The aim of the study was to investigate the possibility of new rat PRLR variants and also to identify the 3’ UTR of PRLR mRNAs.

MATERIALS-METHODS: Organs (kidney, liver and testes) were collected from 24-week-old male and female rats and total RNA and mRNAs were isolated. Single and double strand cDNAs were synthesised by RT-PCR and other PCR applications (3’ RACE, Nested PCR and Stepdown PCR). PCR products were sequenced and analysed. RESULTS: It was found that all organs express the known rat PRLR variants. No specific amplification products were obtained for 3’ (exons 10 and 11) and internal exon variants. Expression of mouse specific exons (11 and 12) were also investigated in rats, but no mouse equivalent of rat prlr gene products was observed. Using SF PRLR gene specific primers, it was found that SF PRLR mRNA has a 3’ UTR region, about 500 bp long. CONCLUSION: In both sexes and all organs, rat PRLR L- and SFs were successfully amplified and it seems that these two forms are the sole forms in these organs. It also seems that highly conserved mouse exons (11 and 12) were not expressed in the investigated organs.

Keywords: Prolactin receptor, rat prlr gene, PRLR variants, mRNA, cDNA.

OP-099 ENGRAFTMENT ANALYSIS OF INFORMATIVE ALLELES AFTER BONE MARROW TRANSPLANTATION IN LEUKEMIC PATIENTS

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OBJECTIVES: Bone marrow transplantation (BMT) is one of the important options in the current treatment of leukemia patients. Chimerism analysis is a routine method to follow hybrids after BMT. In this study, we evaluated the chimerism status of leukemia patients using short tandem repeat (STR) fragment analysis and informative loci of STR alleles was determined for engraftment analysis.

MATERIALS-METHODS: BMT was performed leukemia patients who received consent form in Balcalı Hospital Bone Marrow Clinic. The recipient and donor were examined to identify 16 STR informative alleles prior to BMT. The chimerism status was determined by PCR analysis and STR sequences after BMT. Sixteen STR alleles with informative loci were evaluated for engraftment analysis.

RESULTS: Thirty-four patient includes in this study. Chimerism status were evaluated after 30th and 60th day following-up BMT. According to this, Chimeric alleles was found that 26 of 34 patients were %100, 2 of 34 patients were %75 and one of them was %56. No chimerism was observed in 5 patients. The 16 STR loci (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, D2S135, D19S133, vWA, TPXO, D18S51, AMEL, D5S818, FGA) was evaluated.

CONCLUSIONS: It was determined that TH01 from the 16 STR loci evaluated in the study had a higher frequency of being seen as informative following-up the BMT. Informative loci are particularly enlightening in the analysis of the reverse/donor chimerism in the post-transplant period. The evaluation of informative loci is important in order to prevent probable errors and to correctly evaluate the results.

Keywords: Chimerism, STR-PCR, leukemia.

OP-100 GENETIC HETEROGENEITY OF BETA THALASSAEMIA MUTATIONS IN KAHRAMANMARAS CITY

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OBJECTIVES: Beta thalassaemia is a autosomal recessively transmitted disease. Beta thalassaemia trait in our country is given as 2% but at some regions this ratio increase as to 10%. IVSI-110 is the most common beta thalassaemia mutation in Turkey, and IVSI-6, Fsc 8, IVSI-1, IVSI-745, IVSI-1, C649,-30 and Fsc5 mutations follow this. In this first study, we aimed to determine genetic heterogeneity of beta thalassaemia mutations in Kahramanmaraş province in Çukurova region.

MATERIALS-METHODS: 5 ml blood samples was taken from 14 thalasssemic patients and their relatives. The patients were taking care of K.S.Ü. Hospital at Kahramanmaras. Haematological data were obtained by cell counter. HbA2 was determined by HPLC. Ten different mutations were screened by ARMS method.
These common beta thalassemia mutations are -30 (G>T), C8 (-AA), C8/9 (+G), IVS 1-1 (G>A), IVS 1-5 (G>C), IVS 1-6 (T>C), IVS 1-110 (G>A), C39 (-C>T), IVS 2-1 (G>A), IVS 2-745 (C>G) in Çukurova region .

RESULTS: Seven of the 14 patients were detected IVS1-110 homozygous. While one of the patient was homozygous for IVS1-5 and four were double heterozygous (two: IVS1-110/IVS1-6, one: Fsc8/Fsc8-c, one: IVS2-1/IVS1-5). Two patient were characterized by DNA sequencing as Fsc4 (-C) homozygous.

16 chromosomes were detected as IVS1-110 in 28 (57.14%).

CONCLUSIONS: IVS 1-110 (G>A) was seen the most common mutation in Kahramanmaraş. Six different beta thalassemia mutations were found in this study. While 10 families have only one thalassemic patient, two families have double thalassemic patient in total 12 family.

Keywords: Beta thalassemia, Genetic heterogeneity, Mutation,

OP-101
8-HYDROXY-2'-DEOXYGUANOSINE AND NEURON SPECIFIC ENOLASE CONCENTRATIONS IN EXPERIMENTAL CONGENITAL HYPOTHYROIDISM AND THE PROTECTIVE EFFECT OF 3,6-DIBROMO-A-(PHENYLAMINO-METHYL)-9H-CARBAZOLE-9'-ETHANOL (P7C3) IN RATS

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OBJECTIVE: Congenital hypothyroidism (CH) is defined as congenital thyroid hormone deficiency. The aim of this study was to examine the pathological findings, plasma 8-hydroxy-2'-deoxyguanosine (8-OH-DG) and neuron-specific enolase (NSE) concentrations in rat pups with CH. We also evaluated the effect of P7C3 on 8-OH-DG and NSE concentrations.

MATERIALS -METHODS: Rats were assigned to four groups: Group 1, congenital hypothy -roid -road; Group 2, congenital hypothyroid treated with P7C3; Group 3, CH treated with P7C3 and L-thyroxine; Group 4, control group. Plasma 8-OH-DG and NSE concentrations were determined by using commercially produced ELISA kits in all groups. For pathologic examinations haematoxylin -eosin staining procedure were used on brain samples. We also evaluated the effect of P7C3 on 8-OH-DG and NSE concentrations.

RESULTS: Increased NSE concentrations were found in CH group with respect to control group (p < 0.0001). Additionally, decreased concentrations of NSE were found in CH treated with P7C3 group compared to CH group (p<0.001). 8-OH-DG concentrations were found higher in methimazole treated groups than control group. Finally, we found karyopyknosis and shrinkage of some cytoplasm in particularly granular layer cells as well as pyramidal and alveus cells of hippocampal regions and different parts of brain cortex in CH group. CONCLUSIONS: The results showed that CH can induce oxidative DNA damage. Plasma NSE concentrations may be a useful indicator of early period brain damage related with CH. P7C3 compounds may have a protective effect in CH. Further studies are needed to confirm these findings.

Keywords: Congenital hypothyroidism, 8-(OH)DG, NSE, P7C3, Rat

OP-102
LOW PLASMA SFINGOMYELINE AND CERAMIDE LEVELS IN CYSTIC FIBROSIS

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OBJECTIVES: CFTR impairment may affect sphingolipid metabolism and lipid raft composition by intracellular and vesicular pH changes. Ceramide (CER) accumulation was demonstrated in mouse models and human lung tissues.

MATERIALS -METHODS: Plasma long chain CER and sphingomyelins (SM) were investigated in children and adult cystic fibrosis (CF) to evaluate sphingolipid metabolism. Acute exacerbation, discharge and first month plasma SM16, SM18,SM24, C16, C18, C20, C22 and C24 levels were measured by LC-MS/MS in children (n=17) and adults (n=12) with CF, as well as in age-matched healthy children (n=9) and adult (n= 14 ) controls.

RESULTS: All SM and CER levels of exacerbation and discharge period, and except 16 SM in first month period were significantly low in CF adults compared to healthy controls (p<0.05/p<0.001). Except C16, C18, C20, C24 in exacerbation period;16SM, C16, C22, C24 in discharge period and 16SM levels in first month period were significantly low in CF children compared to healthy controls (p<0.05/p<0.001). Low SM and CER levels of the exacerbation period were elevated after the treatment and close to healthy control levels in first month (p<0.05). Among the significant low levels of SM/CER, 16 SM (most hydrophilic) was relatively elevated in exacerbation period of children, at first month of adults. Improvement was observed in all CER levels at first month in children.

CONCLUSION: More hydrophobic CER and SM (accumulated in tissues and resulted in reduced transmissions to plasma ) may involved in pathogenesis of CF. Decreased plasma CER levels were found in adult CF in two studies. Sfingolipid metabolism is affected, and is related to inflammation and apoptosis in CF.

Keywords: Cystic fibrosis, sphingolipids, sphingomyelin, ceramide, LC-MS/MS

OP-103
THE EFFECT OF SEASONS TO INFLAMMATION PARAMETERS IN BEHÇET’S DISEASE

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INTRODUCTION: Behçet’s disease (BD) is a otoimmune disease that effects multiple organs. BD generally makes oral and genital ulcers, and also may have effect on eye, skin and central nervous system. We investigated changes in laboratory parameters by season and summer winters.

MATERIAL-METHODS: The laboratory values of the Behçet patients that have admitted to Selcuk University Medical Faculty, Biochemistry Laboratory in 2015-2016 years, are obtained retrospectively. 90 patients admitted in summer and 40 patients admitted in winter included in the study. The analyses were performed by SPSS program.

RESULTS : MPV showed parametric distribution ; Mean ± SD ; In winter 7.4 ± 1.3 ; and in the summer it was 8 ± 1.5 . CRP, sedimentation ve neutrophil lympho- cyte ratio (NLR) showed nonparametric distribution; the winter values was 0.9-98 mg/dl, 2.96 m/h, 0.11-8,50 , respectively . The summer values was 3.1-20 mg/dl, 2.18 m/h, 3.6-8,78, respectively.

CONCLUSION: In our study, we observed a decrease in inflammatory parame ters in the summer. This decline may be associated with vitamin D. Our study is consistent with studies indicative that inflammatory parameters may be reduced by vitamin D replacement.

Keywords: Behçet, season, inflammatury, vitamin D

OP-104
SEASONAL CHANGE OF VITAMIN D AND INFLAMMATORY PARAMETERS IN BEHÇET’S DISEASE

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OBJECTIVES: Vitamin D has roles associated with calcium homeostasis and regulation of bone turnover, as well as anti-inflammatory, immunomodulatory, antiproliferative and prodifferentiative effects in various cells and tissues. In this retrospective study, we aimed to investigate whether not only there was a seasonal variation in 25-OH vitamin D, CRP, albumin, neutrophil/lymphocyte ratio (NLR) sedimentation levels but also the relationship between these parameters.

MATERIALS -METHODS: A total of 1191 randomly selected patients admitted to our hospital between 01.01.2015 and 31.12.2015 were retrospectively analyzed through the hospital information system. Patients were divided into three groups in terms of their 25-OH vitamin D levels as follows : first group: <10 ng/mL; second group: 10-20 ng/mL; third group: >20 ng/mL). In addition, the participants were also divided into two groups in terms of season as follows: Winter-spring and summer-autumn.
RESULTS: When patients were grouped based on their vitamin D levels, CRP levels in group 1, group 3 were 11.80 mg/dL Land 10.01 mg/dL, respectively, whereas the sedimentozy values were 17.10 mm/h in group 1 and 14.20 mm/h in group 3 (p=0.044). In the first and third group, the level of albumin increased to the level of 4.01 g/dL, 4.15 g/dL, respectively (p<0.01). There was a significant difference in between sedimentation, CRP, albumin levels and Vitamin D levels for two groups (p values: 0.00; 0.047; 0.02; 0.00, respectively) according to seasons.

CONCLUSIONS: There was a negative correlation between vitamin D levels and inflammatory markers. It was concluded that sufficient levels of Vitamin D may help to suppress inflammation.

Keywords: Albumin, CRP, Vitamin D

OP-105
THE ROLE OF MDR GENES AT DEVELOPED RESISTANCE AGAINST BORTEZOMIB IN MULTIPLE MYELOMA CELL LINES

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OBJECTIVES: Multiple Myeloma (MM) is a hematological cancer characterized by accumulation of malignant plasma cells and bortezomib is the most effective chemotherapeutic used in treatment. However, drug resistance prevents success of chemotherapy in treatment process. One of the factors causing resistance is overexpression of multiple drug resistance genes (MDR). Therefore, in this study expression levels of MDR-1 (Pgp), MRP-1, MRP-2, MRP-3, MRP-6, MRP-7 and GSTP-1 genes in MM cell lines were investigated.

MATERIALS-METHODS: IC50 values of bortezomib were determined by MTT assay in KMS20 (borzeomib resistant) and KMS28 (borzeomib sensitive) MM cell lines. RNA was isolated from both cell lines and cDNAs were obtained. Expression levels of investigating genes were analyzed by qRT-PCR. Expression of MRP6 decreased at both cell lines and MRP3 expression was not detected either.

CONCLUSIONS: The main responsible gene for bortezomib resistance in MM is MDR1 and MRP7 gene was discovered for the first time in our study to play a role in this resistance. As a result, overexpression of these genes may be possible to develop treatment forms for personalized.

Keywords: Multiple myeloma, Bortezomib, Drug Resistance, MDR, Cancer

OP-106
SYNTHESIS AND ANTIOXIDANT PROPERTIES OF NOVEL PYRIDINE COMPOUNDS CONTAINING BIS-1,2,4-TRIAZOLE MOIETY

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OBJECTIVES: The synthesis and biological activities of some novel derivatives of 4,5-disubstituted-1,2,4-triazole-5-thiones (3a-c, 4a-e) were focused in this work. Firstly, these compounds were synthesized and later evaluated for their acetylcholinesterase (AChE), human carbonic anhydrase (hCA I and II) inhibitory and antioxidant properties.

MATERIALS-METHODS: New compounds including ring bis-1,2,4-triazole were synthesized by cyclization of corresponding 1,4-disubstituted tyrosinracarba - zides formed from the reactions of pyridine-2,5-dicarbaxoylacid with alkyl/aryl-isotiocyanates. These compounds were characterized by performing of melting point, FT-IR, 1H- NMR (400 MHz), and 13C-NMR (100 MHz). The samples were tested with DPPH free radical, ABTS cation radical-scavenging activity, ferrous chelating capacities, The inhibitory effects of novel derivatives on AChE, hCA I and II activity was investigated conforming to spectrophotometric process.

RESULTS: Compound 4a showed high activity against both the stable DPPH radical and ABTS cation radical. AChE, Cystolic hCA I and II isomers were potently inhibited by the derivatives with Kis in the range of 3.07±0.76 – 87.26±29.25 nM against AChE, in the range of 1.47±0.37– 10.62±2.96 nM against hCA I, and in the range of 3.55 ± 0.57 – 7.66 ± 2.06 nM against hCA II, respectively.

CONCLUSIONS: While negatively affected of the reducing power capacity of cyclization to 1,2,4-triazole ring appeared to positively effect for chelating activities. All the molecules efficiently inhibited AChE, hCA I and II enzymes, at the nanomolar levels. So, novel derivatives of 4,5-disubstituted-1,2,4-triazole-5-thiones are considered that can be excellent candidate drugs, like AChE, and CAIs inhibitors, for treatment of some diseases, like glaucoma, gastric -duodenal ulcers, epilepsy, osteoporosis, or neurological disorders for therapy.

Keywords: 1,2,4-triazoles; antioxidant activity; carbonic anhydrase; enzyme inhibition; pyridine; thiosemicarbazides.

OP-107
ANALYTICAL MEASUREMENT OF SERUM VITAMIN D METABOLITES BY LC-MS/MS METHOD IN CHILDREN WITH AUTISM SPECTRUM DISORDER

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OBJECTIVES: Vitamin D compounds are steroidal structures which have hormone-like functions. Autism Spectrum Disorder (ASD) is a group of diseases of the neurodevelopmental condition that is usually detected in early childhood prenatal origin. Vitamin D metabolites might reduce the risk and severity of autism due to the effects such as their anti-inflammatory effects, increasing T-regulatory cells, protecting the mitochondria.

MATERIALS-METHODS: In our study, as compared with other methods, due to the fact that it provides more accurate and reliable results, in children with ASD (Group I,n=46) and healthy children (Group II; n=46), serum vitamin metabolites (25(OH)D3/25(OH)D2/3-epi-25(OH)D3) levels to measure are aimed by LC-MS/MS method. In this research, as well as serum 25(OH)D2 and 25(OH)D3 levels are measured in routine condition, 3-epi-25(OH)D3 levels are analyzed using a different method and an analytical column. While levels of serum calcium, creatinine and phosphorus were determined by spectrophotometric levels of parathyroid hormone were determined by electrochemiluminescence method.

RESULTS: When compared Group I with Group II, there was no statistically significant differences (p>0.05). As Childhood Autism Rating Scale (CARS)'s results of children with ASD were evaluated themselves, children with severely ASD (Grup Ib;n=22) had lower levels of serum 25(OH)D3 than children with mildly–moderately ASD (Group Ia; n=24). When the two groups were compared to each other, there were found statistically significant difference in level of serum 25(OH)D3 (p<0.05). Between serum 25(OH)D3, 25(OH)D2, 3-epi-25(OH)D3, calcium, creatinine, phosphorus and PTH levels, statistically differences were not observed (p>0.05).

CONCLUSIONS: We consider that metabolites of vitamin D may be useful, due to the effects of neurodevelopmental process in preventing and monitoring the disease in individuals with ASD.

Keywords: Autism, C3 epimer, Vitamin D, Liquid Chromatography Tandem Mass Spectrometry

OP-108
EFFECT OF SOME ANTIBIOTICS ON GLUTATHIONE-S-TRANSFERASE ACTIVITY IN KIDNEY, HEART AND LIVER TISSUES

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Keywords: Autism, C3 epimer, Vitamin D, Liquid Chromatography Tandem Mass Spectrometry
OBJECTIVES: Glutathione-S-transferases are family of mitochondrial, cytosolic and microsomal enzymes that are primarily are found in phase-II-metabolism. They are multifunctional enzymes for cellular defence against xenobiotics. In our study, the effects of Cefoperazone, Cefuroxime and Cefazolin that are antibiotics, were investigated on GST-activity in kidney, liver and heart tissues of rats.

MATERIALS-METHODS: 96 albino-rats were randomly divided into sixteen equal-groups (n=6). The first four-groups were sham groups that were administrated blank injection and decapitated under the anesthesia (10 mg/kg xylasine) at 1st, 3rd, 5th and 7th hours. The each of the four groups of the other groups were administrated cefazolin (50 mg/kg), cefuroxime (25 mg/kg) and cefoperazone (100 mg/kg) that are the antibiotics, as single dose and intraperitoneal, respectively. GST-activities were measured in tissue-superna tants.

RESULTS: In all-tissues, GST-activity was increased in antibiotics groups at 1rd and 3rd hours compared to sham groups, while it began to fall at 5th and 7th hours (p<0.05). In kidney-tissues, it was lower than same sham group in the cefoxime and cefoperazone groups at 7th hours (p<0.05). In addition, almost all antibiotic groups of kidney tissues had higher GST-activity at 1rd, 3rd, and 5th hours than those of sham groups, but it was higher only at 7th hours in heart tissues (p<0.05).

CONCLUSIONS: These results revealed that they increased GST-activity for first three-hours and that they loOP effect on activity by completing the half-life within the following-hours. We suggest that they had no adverse effect on GST-activity especially for first five hour.

Keywords: Cephalosporins, Cefazolin, cefuroxime, ceraferazion, GST activity

OP-109

THE ROLE OF ISCHEMIA MODIFIED ALBUMIN, 3β,5α,6β-TRIOL IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE

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OBJECTIVE: Plasma oxysterols 7-ketosterol (7-KC), cholestan-3β,5α,6β-triol (C-Triol) and Ischemia Modified Albumin (IMA) levels and relations in effort tests of coronary artery disease patients and healthy subjects were investigated.

MATERIALS-METHODS: Thirty patients and 20 healthy subjects were included in the study. IMA levels by cobalt binding test and 7-KC and C-Triol levels by LC-MS/MS were measured before and after the effort test. Three subgroups were identified as definite positive (n=4), suspicious positive (n=8) and negative (n=18) according to the effort test and ECG results.

RESULTS: The 7-KC levels of patients having the effort test were significantly high compared to healthy subjects (40.90±2.3±mg/mL, 20.26±1.16±mg/mL, p=0.001). Decreased 7-KC levels were found after the effort test (post-test vs. pre-test: 38.59±2.5±mg/mL vs. 40.90±2.3±mg/mL, p=0.001). There was a significant difference in 7-KC levels between definite positive, suspicious positive and negative patient groups (40.99±1.20±mg/mL, 39.30±2.23±mg/mL, 37.68±2.51±mg/mL, p=0.037). There was no significant difference in IMA and C-Triol levels.

CONCLUSION: 7-KC has a role in atherosclerotic plaque formation and coronary artery disease. Patients with positive effort test and ECG findings showed significantly higher levels of 7-KC and decreases in 7-KC were observed after the effort test. 7-KC is a biomarker of changes in lipid metabol- ism and oxidative damage. 7-KC levels can be used as a biomarker in the diagnosis and follow-up of coronary artery disease. Future studies are needed to investigate the potential effects of exercise on oxysterols.

Keywords: Coronary artery disease, Effort test, Ischemia Modified Albumin, LC-MS/MS, Oxysterols

OP-110

SEPARATION OF ISOMERIC BILE ACIDS AND BILE SALTS

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OBJECTIVE: Due to their chemical similarities and identical precursor and product ions, isomeric bile acids and bile salts are difficult to distinguish between by liquid chromatography and mass spectrometry. Here, we aimed to establish a reliable and robust method by which such compounds could be separated and individually quantitated by combined LC-MS/MS using multiple reaction monitoring without the need for chemical derivatization to minimize sample handling and to avoid potential problems and sample losses that can occur when derivatization is employed.

MATERIAL S-METHODS: The compounds examined were taurodeoxycholic acid and taurochenodeoxycholic acid both with molecular weights of 499 g/mol, and deoxycholic acid, chenodeoxycholic acid and ursodeoxycholic acid all with molecular weights of 392 g/mol.

RESULT AND CONCLUSION: We assessed both positive and negative ion electrospray ionization modes using varying solvent compositions of acetonitrile and methanol on an LC/triple quadrupole MS system to achieve optimal separation and maximal MS response by the use of Phenomenex PLRP-S column (5μm, 150x2.1mm), Thermo Scientific Hypercar HPLC column (3μm, 100x2.1mm) and Phenomenex Kinex C18 column (1.7μm, 150x2.1mm).

While the chemically pure standards separated on PLRP-S and Hypercar columns, the same separation was not observed for human plasma extracts despite the optimization of column temperature, flow rate, gradient and mobile phase conditions. However, separation of both standards and human plasma extracts was observed with Phenomenex Kinex C18 column.

Keywords: Bile acid, bile salt, isomer, liquid chromatography

OP-111

EFFECT OF TAUROUREDOSOXYCHOLIC ACID ON PUFA LEVELS AND INFLAMMATION IN HEPATIC ENDOPLASMIC RETICULUM STRESS

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OBJECTIVES: Polyunsaturated fatty acids (PUFAs) and inflammatory response in an animal liver and cell model of endoplasmic reticulum (ER) stress.

MATERIALS-METHODS: Hepatic ER stress induced by treatment with tunicamycin and the ER stress inhibitor TUDCA was treated 30 minutes before injection of ER stress. Liver THLE-3 cells were induced by 7-KC and TUDCA was treated in advance to decrease cytoketic effects.

Necroinflammation was evaluated in liver sections while cell viability was determined via MTT assay. ER stress was confirmed by C/EBP-homologous protein (CHOP) and 78-kDa glucose-regulated protein (GRP-78). Arachidonic acid (AA,C20:4,6-8), dihomo-gamma-linolenic acid (DGLA, C20:3,6-8), eicosapentaenoic acid (EPA,C20:5,6-8) and docosahexaenoic acid (DHA, C22:6,7-6) were determined by multiple reaction monitor- ing using LC-MS/MS. Phospholipase A2 (PLA2), cytoxygenase (COX) and prostaglandin E2 (PGE2) were measured in tissue and cell samples .

RESULTS: Hepatic ER stress was by induced TM and was decreased by TUDCA . Tunica - mycin treatment significantly decreased PUFAs in both liver tissueend THLE - 3 cells compared to controls. PLA 2, COX and PGE 2 levels were markedly increased in TM treated rats and THLE - 3 cells compared to controls. TUDCA lead to a partial restoration of liver PUFAs levels and decreased PLA 2 , COX and PGE 2 levels.

CONCLUSIONS: This is first study reporting altered PUFA levels in ER stress and supports the use of omega 3 fatty acids in liver diseases demonstrating ER stress.

Keywords: Liver, Endoplasmic Reticulum Stress, Polyunsaturated Fatty Acids.
OP-112
HOW DO YOU PREFER YOUR BREAD WITH CD, PB OR BOTH? (PHYSIOLOGICAL EFFECTS OF HEAVY METALS ON CROPP)
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OBJECTIVES: Food web among organisms clearly affects them in a negative way, when it is disturbed in terms of environmental causes. Of those, one of the main reason is known to be the heavy metal (HM) accumulation. As air, water and especially soil are contaminated by HM, due to dramatic increase in industrialization recently, this unwanted situation in environment, firstly influence plants and consequently HMs are carried to other organisms via food chain. In this study, we aimed to evaluate the effects of HMs on wheat (Triticum aestivum cv. Bezoekaraya) and barley (Hordeum vulgare cv. Ergin) species from Central Anatolia.
MATERIALS-METHODS: To determine the impacts of different HMs, selected concentrations (0, 150, 300 uM) of PbCl₂, CdCl₂ and combination of PbCl₂ + CdCl₂ were applied and germination percentage, root and shoot length, water, pigment and MDA contents are compared with control samples for each species.
RESULTS: As a result of applications, significant decrease was observed in germination percentage, root and shoot length, water and chlorophyll contents with increased level of HMs. However, while slight increase in carotenoid contents were observed with HMs applications, MDA contents increased significantly by comparing to control samples.
CONCLUSIONS: Applied HMs were observed as one of the causes of oxidative stress tolerance of crop species. Therefore, we considered that different HM applications can be tested on different crop species to determine the existence and amnipleness of oxidative stress and could give an opportunity to compare and decide which crop species to be more tolerant.
Keywords: Heavy metals, cross, germination, MDA, pigment

OP-113
THE EFFECTS OF THE HISTONE DEACETYLASE INHIBITOR SAHA ON EPITHELIAL-MESENCHYMAL TRANSITION IN HEPATIC STELLATE CELL LINE
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OBJECTIVES: Suberoylanilide hydroxamic acid (SAHA) is a potent reversible histone deacetylase (HDAC) inhibitor. Epithelial-Mesenchymal Transition (EMT); is an important change process in which epithelial cells acquire mesenchymal properties by losing epithelial properties consequently passing a some morphological and biochemical changes. EMT is involved in the pathogenesis of many diseases. In this study, it was purposed that investi-gating effect of SAHA to which of EMT markers E-cadherin, N-cadherin and Vimentin expression and levels of protein in Lx-2 cell line. With this, the effect of SAHA on cell viability, migration, colony-forming unit (CFU), apoptosis was investigated.
MATERIAL-METHODS: Sodium dodecyl sulfate polyacrylamide gel electro-phoresis (SDS-PAGE) was performed to determine protein levels. Gene expression levels were measured by Real Time PCR. Apoptosis was performed by Mune Cell Analyzer.
RESULTS: SAHA statistically reduces the levels of E-cadherin, N-cadherin and Vimentin protein (p<0.007, p<0.021, p<0.035); The SAHA statistically decreased cell migration and colony formation (p<0.001), while total, early and late apoptosis increased statistically (p<0.003, p<0.016, p<0.003).
CONCLUSIONS: Suppression of the N-cadherin and Vimentin at gene and protein levels and the increase in gene level of the E-cadherin suggests that the EMT mechanism is reversible, while the protein level of E-cadherin is unexpectedly decreased. This may have resulted in abnormal post-transla-tional modifications or protein degradation. For this reason, the impact of the SAHA on the EMT mechanism is not fully understood. Further studies are necessary to elucidate the mechanisms affecting the e-cadherin protein level and the applicability of the SAHA.
Keywords: apoptosis, CFU, EMT, Lx-2, SAHA

OP-114
EFFECTS OF LANSOPRAZOLE AND ADROGRAPHOLIDE ON SOME BIOCHEMICAL PARAMETERS IN RATS WITH GASTRIC ULCER MODELS INDUCED BY INDOMETHACIN
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OBJECTIVE: This study aims to investigate some biochemical parameter changes in different experimental groups of rats to which lansoprazole and andrographolide were administered after the induction of gastric ulcer using indomethacin.
MATERIAL-METHODS: This study was conducted using 48 male Wistar rats which weighed 300-330 grams. The rats were individually housed and starved for 24 hours before the experiment. The rats were categorized into the following groups: Group I, control; Group II, indomethacin 25 mg/kg; Group III, lansoprazole 30 mg/kg; Group IV, indomethacin 25 mg/kg + lansoprazole 30 mg/kg; Group V, indomethacin 25 mg/kg + andrographolide 15 mg/kg; and Group VI, indomethacin 25 mg/kg + andrographolide 30 mg/kg. After six hour plasma glucose, urea, creatinine, AST, ALT, bilirubin, total protein, albumin and cholesterol levels were measured by an autoanalyzer.
RESULTS: No statistically significant difference was found among the groups in terms of the ALT, creatinine, total bilirubin, total protein levels. The glycemic of the group III increased significantly compared to that of the control. The urea levels of the group IV decreased significantly compared to those of the group II. The albumin levels of the group II and group III increased significantly compared to those of the control. The AST levels of the group II, group III and group VI decreased significantly compared to those of the control. The cholesterol levels of the group IV, group V and group VI decreased significantly compared to those of the control group.
CONCLUSION: Although there were significant differences among some groups for many biochemical parameters, the drugs administered did not cause acute liver and kidney damages. The study showed that indomethacin and lansoprazole levels, and andrographolide levels in both doses brought some of the values that were assumed to rise or fall due to starvation into normal level.
Keywords: Andrographolide, biochemical parameters, indomethazin, lansoprazole, ulcer.

OP-115
CYTOTOXIC EFFECT OF ACETONE EXTRACT OF EUPHORBIA MACROCLADA BOIOP ON PROSTATE CANCER CELLS
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OBJECTIVE: Prostate cancer is the most common cancer type in men after lung cancer. Despite the organic synthesis and progress in new biotechnological processes in the treatment of this disease, medical plants still play an important role in medical treatment. In many countries, Euphorbia species is commonly used for the treatment of cancer and warts. In our study, it was aimed to investigate cytotoxic properties of Euphorbia macroclada Boiss flower, body and leaf acetone extracts on DU -145 prostate cancer cell line. MATERIALS-METHODS: Methanol extracts of Euphorbia macroclada Boiss were prepared from its flowers, body and leaf. Concentration range of 10-1000 μM were added to the wells and incubated for 24, 48 and 72 hours.
Keywords: Euphorbia macroclada, Boiss, DU-145, Cytotoxicity, Prostate cancer.
At the end of the incubation period, the cytotoxicity of the extracts was determined by MTT method. The color change in the wells was measured in a microplate reader at a wavelength of 540 nm. The concentration values causing the 50% death rate (IC50) in the DU-145 prostate cancer cells were calculated using the Excel program. Quantitation of cell death was performed with Hoechst (HO; Sigma), propidium iodide (PI, Sigma) stain. RESULTS: According to MTT test results, it has been determined that acetone extracts of Euphorbia macroclada Boiss flower, body and leaf were prepared. Cells were used for analysis after 24 hours incubation. In these experiments, MTT cell viability was determined for glucose, glutathione. Cells were seeded into plates. Control, glucose (285 mM), GSH (250 μM) and its cross groups were prepared. Cells were used for analysis after 4 hours incubation. In these examples, 8-OHdG, TAS, OSI were measured by ELISA and spectrophotometric methods. RESULTS: 8-OHdG levels were increased by high glucose (p<0.05) and, HG plus glutathione supplements were increased, too. TAS levels and OSI values in all working groups (HG, and GSH+HG) increased compared to controls (p<0.05). The TAS was no effect from glutathione supplemented group. HG treatment was decreased TAS in TQ and LYC groups (p<0.05). As a result, in the HG treated BHK-21 cells, oxidative DNA damage, TO, OSI increased compared to the control for all treated groups. Oxidative DNA damage and OSI were higher than, GSH and, HG plus groups. CONCLUSIONS: According to the results obtained in the study, no protective effect of glutathione applied to high glucose cells on the cellular level was observed at these doses. However, it has also been determined that in glutathione administered groups, the doses of glutathione administered are not toxic on the cells.

Keywords: Glucose, cell culture, glutathione, DNA damage, TAS/TOS

OP-118 IN VITRO ANTIDIABETIC EFFECT MECHANISMS OF HESPERIS BREVISCAPA
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OBJECTIVES: Hesperis breviscapa Boiss is a plant species grown as wildly and endemic to the province of Erzincan. The object of current study was to evaluate the possible in vitro action mechanism of Hesperis breviscapa Boisse in diabetes mellitus.

MATERIALS - METHODS: Cell proliferation and cytotoxicity assay were performed on pancreatic b-cells of bTC6. The protective activity of the extract on streptozotocin-induced death in bTC6 cells was studied. The effect of Hesperis breviscapa on the metabolism of glucose in HepG2, a hepatocellular carcinoma cell line, was evaluated. The effect of Hesperis breviscapa extract on glucose diffusion across the dialysis membrane was evaluated.

RESULTS: The results obtained from current study confirmed that the protection of the Hesperis breviscapa extract against streptozotocin-induced cell death is not at an adequate level but Hesperis breviscapa extract can act as a growth factor for pancreatic b-cell line.

CONCLUSIONS: This study with Hesperis breviscapa may be a pioneer for the possible antidiabetic effect of other natural substances. On the other hand, there is a need for a number of preclinical investigations to assess the exact action mechanism of Hesperis breviscapa in diabetes mellitus.

Keywords: Hesperis breviscapa, Endemic, complementary medicine, diabetes, proliferation

OP-119 EFFECT OF THYMOCUINONE ON C6 GLIOMA IN VITRO
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OBJECTIVES: Glioblastoma multiforme (GBM) is an invasive and the most aggressive primary tumor of central nervous system. The standard treatment in patient with GBM is surgical resection, radiotherapy and adjuvant chemotheraphy. Despite these treatment the median survival is approximately 15 months. Many researches have been made to improve survival of patients with GBM, but ideal treatment was not found yet. Thymocuimone (TQ) is the bioactive component of black seed (Nigella sativa) oil and it has anti-inflammatory, anti-hypertensive, anti-tumour effects. Aim of this study was to determine the effects of TQ on glioma by investigating cytotoxicity, genotoxicity, apoptosis and intracellular reactive oxygen species (ROS).

MATERIALS - METHODS: C6 glioma cells are incubated in different TQ concentration (0 to 200 μM) for 24 hours. Cytotoxic activity with ATP cell viability assay, genotoxicity with Comet Assay, ROS levels with 2,7-dichlorofluorescin diacetate (DCFH-DA) staining and, apoptotic activity is measured with acridine orange/ethidium bromide staining. RESULTS: Our results showed that TQ exerted dose-dependent cytotoxic effect and DNA damage in C6 glioma cell line. Moreover TQ increased apoptosis and intracellular ROS levels in C6 glioma cells.
CONCLUSION: Our results suggest that Thymoquinone is effective in C6 glioma cells through direct cytotoxicity, DNA damage, induction of apoptosis and increased level of intracellular ROS in vitro. Further investigation is warranted to make Thymoquinone available for treatment of patient with glioma.

Keywords: Thymoquinone, glioma, apoptosis

OP-120
PREVENTIVE EFFECTS OF HESPERIDIN ON STREPTOZOTOCIN-INDUCED DIABETIC NEPHROPATHY BY MODULATING TGF-β1 AND 8-OHdG

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OBJECTIVES: Hesperidin (HSP) is a natural bioflavonoid with active pharmacological properties. This study was conducted to investigate the hypoglycemic and antioxidant effects of HSP on streptozotocin-induced diabetic nephropathy in rats.

MATERIALS -METHODS: 36 male Sprague Dawley rats were randomly divided into 4 groups as 9 rats in each group in the experiment. Group I: Non-diabetic control group. Group II (HSP group): HSP was administered orally at a dose of 200 mg/kg/day for 4 weeks. Group III (Diabet): Streptozotocin dissolved in citrate buffer was administered intraperitoneally to rats at a single dose of 50 mg/kg. Group IV (Diabet + HSP): Diabetic rats were given HSP 200 mg/kg/day orally for 4 weeks. Rats were decapitated under sevoflurane anesthesia to remove kidney tissues.

RESULTS: Serum urea (17.48 mg/dL), creatinine (3.17 mg/dL) and malondialdehyde (MDA) (139.97 nmol/g tissue) levels increased in the diabetic group, while antioxidant enzyme activities (superoxide dismutase (12.96 U/g protein), catalase (29.23 katal/g protein) and glutathione peroxidase (15.38 U/g protein)) decreased compared to the control group. Moreover, transforming growth factor-β1 (TGF-β1) (60.93 pg/mL) level, 8-hydroxy-2′-deoxy - guanosine (8-OHdG) expression and histopathological changes in renal tissue were increased in the diabetic group. On the other hand, HSP therapy significantly regulated [Serum urea (11.75 mg/dL), creatinine (1.73 mg/dL), MDA (98.85 nmol/g tissue), superoxide dismutase (15.99 U/g protein), catalase (33.48 katal/g protein), glutathione peroxidase (18.29 U/g protein) and TGF-β1 (37.31 pg/mL)] these values in diabetic rats.

CONCLUSIONS: Our results indicate that hesperidin might be helpful to prevent diabetic nephropathy.

Keywords: Diabetic nephropathy, hesperidin, TGF-β1, 8-OHdG, streptozotocin

OP-121
THE EFFECT OF NIGELLA SATIVA OIL ON SERUM BDNF AND BIOGENIC AMINES IN RAT METABOLIC SYNDROME

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OBJECTIVES: In this study, we had the purpose to contribute to the literature with the data to be obtained from investigating the mechanism of the reason of increase of the development and the prevalence of the Nigella sativa oil (NSO) metabolic syndrome (MS) brain derived neurotrophic factor (BDNF) and biogenic amines levels, having a metabolic syndrome formed in rats with a fructose diet.

MATERIALS-METHODS: In the study, 21 male Sprague-Dawley rats about weight of 200-240 g have been used. The rats were separated to 3 groups, each of which has 7 rats. Group1: control group (10 weeks), group 2: MS with fructose (10 weeks), group 3: given NSO after MS progrevOP (10-4 week) in created.

RESULTS: Serum dopamine and noradrenaline levels measuring were compared to the control group found statistically significantly higher and the serotonin amount was compared to the control group found significantly lower in the MS groups (P<0.05). Metabolic syndrome group BDNF levels were compared to the control group lower, but the decrease did not have a statistical significance (p>0.05). Formation of metabolic syndrome, that we gave the NSO group BDNF levels were compared to the MS group found statistically significantly higher.

CONCLUSIONS: Conclusively, NSO have a positive effect the serum BDNF and biogenic amines which can be useful in the patients with MS and it looks like a promising option has been concluded.

Keywords: Metabolic syndrome, Nigella sativa oil, Brain derived neurotrophic factor