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TÜRK BİYOKİMYA DERGİSİ

Turkish Journal of Biochemistry

ULUSLARARASI BİYOKİMYA KONGRESİ 2017

28. Ulusal Biyokimya Kongresi

19 - 23 Eylül 2017, Erzurum

INTERNATIONAL BIOCHEMICAL CONGRESS 2017

28th National Biochemistry Congress

19 - 23 September 2017, Erzurum

Türk Biyokimya Derneği'nin yayın organıdır.
[Published by the Turkish Biochemical Society]

2017
Volume 42
Supplement 1

YER ALDIĞI İNDEKSLER [INDEXED BY]

SCI Expanded, Journal Citation Reports/Science Edition, Chemical Abstracts, Index Copernicus, Embase, Scopus, Ulakbim Türk Tıp Dizini, Ulrich's Periodical Directory, EBSCO, Türkiye Atıf Dizini

2017 • VOLUME 42 • SUPPLEMENT ISSUE 1

TURKISH JOURNAL OF BIOCHEMISTRY

TÜRK BİYOKİMYA DERGİSİ

OFFICIAL JOURNAL OF THE TURKISH BIOCHEMICAL SOCIETY

DE GRUYTER

Turkish Journal of Biochemistry (TJB), official journal of Turkish Biochemical Society, is issued electronically every 2 months. Research articles, reviews, short communications, technical reports, case presentations, opinions, and letters to the editor, that have not published elsewhere, on biochemistry, clinical biochemistry, molecular biology, molecular genetics, biotechnology, bioinformatics, bioengineering, and their educational disciplines are published in the journal.

The main aim of the journal is to support the research and publishing culture by ensuring that every published manuscript has an added value and thus providing international acceptance of the "readability" of the manuscripts published in the journal.

e-ISSN 1303-829X

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/view/j/tjb.

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Welcome Letter

Dear Colleagues,
You are all welcome!

As **Turkish Biochemical Society (TBS)**, we are very happy to meet you at such a nice scientific environment in the greatest and the historical city of Eastern Anatolia, **Erzurum.**

This meeting is so important for us. Because, Erzurum is a city where the independence of our country was started. In this sense, once again, we express our gratitude to **Mustafa Kemal Pasha**, his struggle staff, and the people of Erzurum who sheltered them. This meeting is also important for us because of being the first in Erzurum. Despite our long-standing desire, this is the first national congress of TBS in Erzurum. We are happy to be able to organize this meeting.

In fact, we planned this meeting as a national congress at the beginning. However, the 2017 year was 60. anniversary of **Ataturk University** and by the great support of the University Rectorate and regional colleagues, and the expectations of our members, we could change our national congress to a more international meeting. In collaboration with international institutions, TBS hosted a lot of international congresses in Turkey, but this is the first that we can perform it with our national power.

Now, I see that we have done the right one… As a powerful but humble meeting, the Congress is different from others with its rich scientific content, high number of attendants, high level sponsorship, and its interest in the region and whole Turkey.

I would like to thank to **Prof. Khosrow Adeli** and **Prof. Steven Soldin** who coming from far away and support us, to **Prof. Revaz Solomonia, Prof. Arif Efendief Mustafaoglu, Prof. Ramin Bayramlı, Prof. Reza Meskhani, Prof. Mohammad Reza Bakhtiari**, who coming from our eastern neighbors, to **Dr. Hatım Al Jarrah, Dr. Christian Ramakers and Dr. Muhammad Aurangab Ghauri**, who coming from other countries, and to other colleagues from Turkey.

Ataturk University has supported the Congress by hosting to the meeting and giving all the means of the university. In this sense, I would like to thank to **Prof. Dr. Omer Comakli**, the **Rector of Ataturk University**, to **Prof. Dr. Ebubekir Bakan, the President of Local Organizing Committee**, and to other colleagues from Erzurum.

The young scientists have revealed a great interest to the Congress. There are too many young scientists actively attending the Congress with a presentation. As usual, we tried to respond to this big interest by giving **both registration and accomodation bursaries** to these young persons. We are proud to be able to give this support.

Primarily Ataturk University, other sponsors such as **municipalities of Erzurum, Palandoken, Yakutiye and Aziziye**, and **diagnostic companies** have played a great role for this support. We are grateful to them. They contributed much to a complete and powerful Congress.

I would like to highlight once again that all abstracts presented at the Congress will be published in the **Turk Biyokimya Dergisi / Turkish Journal of Biochemistry**, a journal indexed by SCI-E. This is so valuable for almost all colleagues, I think.To breath this scientific air, to inspect Erzurum more closely, to gather of scientists from abroad and from all regions of Turkey at this nice environment is very valuable for all of us…

I hope all attendants will enjoy the meeting. I wish a useful and productive Congress to all the delegates.

I would like to finish my speech with the words of **Mustafa Kemal Pahsa** during the Erzurum **Congress**, 1919: "**The homeland is an indivisible piece within the national borders, it cannot be broken down. Mandate and patron age are unacceptable.**"
With my best regards.

Dogan Yucel
President of TBS and Congress
On behalf of the Executive Board of TBS and Meeting Organizing Committee

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Course 1

19 September 2017

09.00 - 17.00	**Microsoft Excel and R Applications in Clinical Laboratory** Muhittin Serdar, Deniz Topcu, M. Sibel Güngören
17.30 - 18.30	**Opening Ceremony (Hall 1)**
18.30 - 19.30	Opening Lecture Distance Education in Laboratory Medicine - IFCC eAcademy (Khosrow Adeli)
19.30 - 21.00	**Opening Cocktail**

Course 2

19 September 2017

09.00 - 17.00	**Course on Biosensors** Levent Kayrın, Umut Kökbaş, Kezban Kartlamış
17.30 - 18.30	**Opening Ceremony (Hall 1)**
18.30 - 19.30	Opening Lecture Distance Education in Laboratory Medicine - IFCC eAcademy (Khosrow Adeli)
19.30 - 21.00	**Opening Cocktail**

Course 3

19 September 2017

09.00 - 17.00	**Applied Molecular Techniques** Abdullah Tuli, Irfan Küfrevioğlu, Orhan Erdogan, Harun Budak, Saltuk Bugrahan Ceyhun, Melda Sisecioglu, Aylin Sepici Dincel
17.30 - 18.30	**Opening Ceremony (Hall 1)**
18.30 - 19.30	Opening Lecture Distance Education in Laboratory Medicine - IFCC eAcademy (Khosrow Adeli)
19.30 - 21.00	**Opening Cocktail**

Course 4

19 September 2017

09.00 - 17.00	**Hemostasis Laboratory Management: What Does Say the Guidelines?** Mesude Falay, Mehmet Senes, Z. Gunnur Dikmen, Doğan Yücel
17.30 - 18.30	**Opening Ceremony (Hall 1)**
18.30 - 19.30	Opening Lecture Distance Education in Laboratory Medicine - IFCC eAcademy (Khosrow Adeli)
19.30 - 21.00	**Opening Cocktail**

Hall 1

20 September 2017

09.00 - 11.00	**Laboratory Management 1** Chairpersons: Ebubekir Bakan, Mehmet Şeneş
09.00 - 09.30	**Automation and Workflow Analysis in Clinic Laboratory** Ebubekir BAKAN
09.30 - 11:00	**Method Validation by View of Manufacturer** Salih UCA
10.00 - 10.30	**Calculations of LoD, LoQ and Linearity in Method Validatio** Ismail TEMEL
10.30 - 11.00	**Oral Presentation**
11.00 - 11.30	**Coffee Break**
11.30 - 12.15	**Pediatric Obesity and Metabolic Syndrome: Pathophysiology and Laboratory Assessment** Khosrow ADELI
12.15 - 14.00	**New Generation Analyzer: Alinity** Chairperson: Z. Günnur Dikmen Emre TEKCI Discover the Potential of Your Lab Data: Alin IQ Emre TAVSANCIL New Approaches in Ovarian Cancer: Diagnostic Value of HE4 and ROMA Index Z.Günnur DIKMEN
12.15 - 14.00	**Lunch**
14.00 - 15.30	**Health Policy in Turkey and Azerbaijan** Chairpersons: Münire Hacıbekiroğlu, Güzin Aykal
14.00 - 14.30	Turkey's Diabetes Program and Wellness Centers Fatma Meriç YILMAZ
14.30 - 15.00	Rational Laboratory Practice Ferzane MERCAN
15.00 - 15.30	Health Policy and Laboratory Management in Azerbaijan, Ramin BAYRAMLI
15.30 - 16.00	**Coffee Break**
16.00-16.45	**The Role of Mass Spectrometry in Enhancing Specificty of Analyte Measurements and Leading to Improve Diagnosis in Thyroid and Adrenal Diseases** Steven SOLDIN
16.45 - 18.35	**Biochemistry of Metabolism** Chairpersons: İrfan Küfrevioğlu, Meral Yüksel
16.45 - 17.15	Recent Improvements in the Biochemistry of Insulin Resistance and Obesity Gülnur ANDİCAN
17.15 - 17.45	SREBP Pathway and Metabolism Fatih AKDEMİR
17:45 - 18:15	Relation of Obesity amd Metabolic Diseases with High Glucose-Fructose Syrup Obtained from Corn Starch Hakan Boyunağa, Nermin Dindar Badem
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Hall 2

20 September 2017

09.00 - 11.00	**Cancer Chemistry** Chairpersons: Yavuz Siliğ, Oytun Portakal
09.00 - 09.30	**A New Player in Prostate Cancer: ER Associated Degradation Pathway** Petek Ballar KIRMIZIBAYRAK
09.30 - 11:00	**Angiogenesis and Its Effects on Cancer** Funda KOSOVA
10.00 - 10.30	**Metastasis Chemistry** Sait KELES
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14.00 - 15.30	**Oral Presentations**
15.30 - 16.00	**Coffee Break**
16.45 - 18.35	**Laboratory Management 2** Chairpersons: Oğuzhan Zengi
16.45 - 17.15	Three Years Data Analysis of Glucose Meters Used in Clinics Ebubekir BAKAN
17.15 - 18.45	Comparison of Automated Urinalysis Systems Ahmet KIZILTUNC
17:45 - 18:35	Oral Presentation

Hall 1

21 September 2017

09.00 - 11.00	**Laboratory Management 3** Chairpersons: Sevtap Bakır, Konca Altınkaynak
09.00 - 09.30	**Closing the Gaps in Pediatric and Adult Reference Intervals for Biochemical Markers: The CALIPER and CHMS Initiatives** Khosrow ADELI
09.30 - 10:00	**The Use and Importance of Decision Limits in Diagnosis** Yesim OZARDA
10.30 - 11.00	**Oral Presentation**
11.00 - 11.30	**Standardization in Clinical Flow Cytometry: Streamlined Work-Flow and Improved Quality** Hatim AL JARRAH
11.30 - 11.45	**Coffee Break**
11.45 - 12.30	**Frequently made mistakes and Possible Precautions in Cell Death - Cytotoxicity Research** Engin ULUKAYA Chairperson: Hilal Koçdor
12.30 - 13.15	**Standardization Challenges of TSH Assay** Mohammad Reza BAKHTIARI
13.15 - 14.15	**Lunch**
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Hall 2

21 September 2017

09.00 - 11.00	**Undergraduate and Postgraduate Biochemistry Education** Chairpersons: Sevtap Bakır, Konca Altınkaynak
09.00 - 09.25	**Biochemistry Education in Iran** Reza MESHKANI
09.25 - 09:50	**Biochemistry Education in Azerbaijan** Efendiev Arif MUSTAFAOGLU
09.50 - 10.15	**Biochemistry Education in Georgia** Revaz SOLOMONIA
10.15 - 10.40	**Biochemistry Education in Turkey** Doğan YÜCEL
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14.15	**Oral Presentation**

Hall 1

22 September 2017

09.00 - 11.00	**Laboratory Management 3** Chairpersons Levent Kayrın, Erhan Seyfi Demirhan
09.00 - 10.00	**Hemato Flow- New Technology for Advanced Patient Care** Muhammad Aurangzeb GHAURI
10.00 - 10:30	**Flow Cytometry in Hemato-oncologic Diseases: Recent Improvements and Challenges** Mesude FALAY
10.30 - 11.00	**Oral Presentation**
11.00 - 11.30	**Coffee Break**
11.30 - 12.15	**The FEBS National Lecturer Molecular Mechanisms of Memory in Imprinting** Revaz SOLOMONIA Chairperson Ferhan Sağın
12.15 - 14.00	**Autoverification in Hematology and A different View to Quality** Taner OZGURTAS Chairperson Abdullah Tuli
	Lunch
14.00 - 14.45	**Molecular and Cellular Aspects of Diabetes** Reza MESHKANI
14.45 - 15.30	**Switching From Serum To Plasma Without Tears!** Chris RAMAKERS Chairpersons Diler Aslan, Abdurrahman Coşkun
15.30 - 16.00	**Coffee Break**
16.00 - 18.00	**Inherited Metabolic Diseases** Chairpersons Tülin Bayrak, Nihal Yücel
16.00 - 16.30	**Laboratory Approach to Inherited Metabolic Diseases** Gursel BIBEROGLU
16.30 - 17.00	**Metabolomics and Related Biomarkers in Metabolic Diseases** İncilay LAY
17.00 - 17.30	**Mitochondrial Diseases and Diagnostic Tests** Z. Gunnur DIKMEN
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19.00	**GALA DINNER**

Hall 2

22 September 2017

09.00 - 11.00	**Molecular Diagnostics** Chairpersons Lülüfer Tamer, İlham Yaylım
09.00 - 09.30	**Cloning of Human hCAII Isoenzyme** Irfan KUFREVIOGLU
09.30 - 10:00	**The Status and Role of Non-Invasive Methods to Determine Fetal Health in Laboratory Medicine** Abdullah TULI
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11.00 - 11.30	**Coffee Break**
15.30 - 16.00	**Coffee Break**
16.00 - 18.00	**Special Topics in Biochemistry and Clinical Biochemistry** Chairpersons Ayfer Çolak, Tuba Hancı
16.00 - 16.30	**Multi-Targeted Drug Design in the Therapy of Alzheimer Disease** Tugba Tuylu KUCUKKILINC
16.30 - 17.00	**The Relationship of Thalassemia Markers with Oxidant Stress and Endogenous Antimicrobial Peptides** Efendiev Arif MUSTAFAOGLU
17.30 - 18.00	**Oral Presentations**
19.00	**GALA DINNER**

Hall 1

23 September 2017

09.00 - 11.00 Chairpersons: Aylin Sepici Dinçel, Çiğdem Sönmez

Mass Spectrometry and Clinical Toxicology

09.00 - 09.30 **Should Mass Spectrometry be Used in Routine Analyses?**
Fehime Benli AKSUNGAR

09.30 - 10:00 **Mass Spectrometry in the Analysis of Synthetic Drugs**
Huseyin KAYADIBI

10.00 - 10.30 **Current Approach to the Tests of Toxicology and Drugs of Abuse**
Zafer KOCABEY

10.30 - 11.00 **A Mass Spectrometry Experience in the Routine Laboratory**
Ali ÜNLÜ

11.00 - 12.00 **Closing Session**

13.00 - 17.00 **Applied Mass Spectrometry Course**
Ali ÜNLÜ, Sedat ABUŞOĞLU, Fehime Benli AKSUNGAR, Hüseyin KAYADİBİ

INVITED LECTURES ABSTRACTS

AUTOMATION AND WORK-FLOW ANALYSIS IN CLINICAL LABORATORY

Ebubekir BAKAN

Ataturk University, Department of Medical Biochemistry Erzurum

Lean production is a quality process that focuses on adding more value by eliminating activities that are considered "waste". Any activity or process that wastes resources and/or time without adding value should be viewed or removed from the system. Lean production and Six Sigma Process have been integrated with the quality process in obtaining quality results in clinical and molecular diagnostic laboratories. The development of automation in clinical laboratories has been provided by contribution of vendors developing more flexible and multifunctional systems. Now, automation is not only used to help the laboratory technician in test performance but also to provide processing and transport of samples, loading of samples into automated analyzers, evaluation of the results of the tests made and storage of samples. Thus, automation in clinical laboratories is changing the definition of automation and expanding its scsse. The laboratory automation must begin with an assessment mapping the current laboratory workflow from handling the patient samples to completion of testing and reporting of results. The mapping of sample and data flows directly reflects the flow of the process. Ultimately, (1) bottlenecks, (2) staff waste, and (3) potential sources of become illuminated. Workflow mapping can thus better define what steps should be taken in the laboratory for automation. The expected results of the apslied automation should be evaluated about 6 months after installation.

Keywords: Laboratory automation, LIS, preanalytical automation, laboratory work-load, laboratory work-flow

ERAD: A NEW PLAYER ON PROSTATE CANCER

Yalçın Erzurumlu[1], Burcu Erbaykent Tepedelen[2], Petek Ballar Kırmızıbayrak[1]

[1] Ege University, Faculty of Pharmacy, Biochemistry Department, Izmir
[2] Uludağ University, Faculty of Science and Art, Department of Molecular Biology and Genetics, Bursa

Prostate cancer is the second leading cause of cancer mortality. More than one third of prostate cancer patients developed metastasis and the survival rate is around %35. Besides their regulation by androgen, it is known that prostate cancer cells are highly secretory. Endoplasmic Reticulum (ER) is the organelle responsible for the synthesis and maturation of proteins that are destined for the secretory pathways. A process called "ER Stress" is triggered due to the accumulation of misfolded proteins in the ER lumen. In response to ER stress, "Unfolded Protein Response (UPR)" is activated and enhances the protein folding capacity of the ER while directing the misfolded proteins to degradation process. Misfolded or unfolded proteins are ubiquitinated and translocated from ER into the cytsslasm for proteosomal degradation via "ER associated degradation (ERAD)". Therefore, it is important to elucidate the regulation of ERAD and UPR, which are associated with the pathogenesis of various diseases such as diabetes and neurodegenerative diseases. Androgens activate IRE1α signaling pathway of UPR, while coordinately inhibit the PERK pathway; thereby regulating the growth and survival of prostate cancer cells. In our laboratory, we characterized the androgen-mediated regulation of ERAD. The roles of ERAD members on prostate cancer determined by functional analysis. In addition, it was observed that different responses were obtained against ER stress in the presence/absence of androgen in prostate cancer cells.
Studies have also been conducted to elucidate the potential activity of ERAD inhibitors on prostate cancer. All these data suggest that UPR and ERAD may be a mechanism that can be targeted in the prevention and/or treatment of prostate cancer.

EFFECTS OF ANGIOGENESIS AND ANTI-ANGIOGENESIS IN THE CANCER

Funda KOSOVA

Celal Bayar University, Faculty of Health Science, Manisa

Cancer is one of the most widespread causes of death in the world, and some cancers are very resistant to drug treatment. Cancer spreads through the blood vessels and lymphatic system. This invasion has been shown to be made easier by angiogenesis. Angiogenesis is the creation of new capillaries from pre-existing blood vessels. Angiogenesis is a physiological process which is beneficial in situations such as the healing of wounds, growth and development, but at the same time it plays a role in tumor growth and metastasis. There are many factors which affect the progress and metastasis of cancer. One of these is the presence of angiogenesis system activators and inhibitors, the balance between which inhibits or activates the progression and spread of cancer. One of the most important activators of the angiogenic system is VEGF. This is a multi-functional molecule with important biological activity. VEGF increases vascular permeability and makes metastasis easier by stimulating secretion of MMP, which is responsible for breaking down the extracellular matrix. Endothelial cells brought into action by VEGF first synthesize MMPs. The MMPs are released and disrupt the structure outside the blood vessels, preparing the ground for angiogenesis. The most important anti-angiogenic agents are endostatin (ES) and thrombospondin (TSP).
In the light of this information, we made a study in stomach cancer cell cultures receiving a treatment dose of CAPE from the standpoint of the factors relating to the effects of matrix proteins. Also, in another study we made a comparison of pre and post-treatment angiogenesis markers in patients with bladder cancer.
Our purpose was to find an alternative way related to these changes which would be less toxic to normal cells while causing the greatest damage to cancer cells and thus provide not only an effective treatment but also a better quality of life. At the same time this will provide the possibility of finding the development of new and more effective methods in the future on the effects of angiogenic of antiangiogenic factors in the treatment of cancer patients.

CALCULATIONS OF LOD, LOQ AND LINEARITY IN METHOD VALIDATION

Ismail TEMEL
Biochemistry Clinic Health Sciences Dışkapı Yıldırım Beyazıt University Educational Research Hospital, Ankara

It is crucial that analytical methods used in diagnosis, prognosis and treatment of diseases produce accurate, reproducible and reliable results.
According to international regulations issued by regulatory agencies such as FDA, Eurachem, ICH, USP, "analytical sensitivity, linearity, measurement range, accuracy, precision, limit of detection and limit of quantification" are accepted as mandatory validation parameters.
In this presentation, the definition, validation and application examples of Lineerite, LOD and LOQ parameters will be presented.
Linearity is defined as the ability of a method to respond directly and proportionally to changes in the concentration of the analyte, and it can be determined directly by diluting the stock standard having a given concentration or indirectly determined by analyzing components of the test substance separately.
Linearity determination analyzes are performed in duplicate or triplicate at a minimum of five different concentrations. Evaluations are carried out both visually and computationally.
Among the validation concepts: LOD and LOQ are the most important analytical parameters to be determined. Depending on whether the procedure is performed manually or instrumentally, various approaches are used to detect LOD and LOQ. These include:
A.Visual evaluation,
B.Evaluation according to signal-to-noise ratios,
C.Evaluation by slope and standard deviation analysis.
While the slope estimate is performed using the calibration data, the standard deviation estimates can be made in different ways:
-Through the appropriate number of blank readings and repetitions;
-Through the residual standard deviation of the regression line;
-Through the standard deviation of the regression line intercept; can be calculated.
Where LOD and LOQ tests are performed by calculation or extrapolation; These estimates should then be verified by analyzing of samples with appropriate concentrations.

DIABETES PROGRAM IN TURKEY AND HEALTHY LIVING CENTERS

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The World Health Organization's Global Diabetes Report released on World Health Day on April 7, 2016 announced that the prevalence of diabetes increased from 4.5% to 8.5%, doubling between 1980 and 2014. The adult diabetes population increased fourfold to 422 million from 108 million. Diabetes increases throughout the world, but in developed countries, this increase is associated with aging of the population. As a matter of fact, it is determined that the prevalence of diabetes is not increased when standardization is made according to age. In countries with low and middle income groups, in addition to the prolongation of the average life span, obesity also increases and the prevalence of diabetes increases much more rapidly.
On the one hand, the prevalence of diabetes in our country has rapidly increased due to the aging of the surviving population on the one hand, and the lifestyle change that leads to inactivity and unhealthy nutrition on the other, and today it has become a serious public health issue involving 15% of the population. There is a significant effect of preventable risk factors in this rapid increase in diabetes mellitus. For this reason, it is very important for the primary care to take an active role in early recognition of diabetes, effective fighting with risk factors and regular follow-up of treatment.
The Ministry of Health received a decision to launch "Healthy Life Centers" throughout the country with an emphasis on the promotion of health and the importance of primary health care services in the preparation of the 2018-2023 Strategic Plan. These centers are designed as centers that include dieticians, physiotherapists, psychologists, physical activity consultants, and family physicians in this sense. In this context, it is planned to employ 30.000 non-physician health workers at 1149 Healthy Living Centers. In addition, the preparations are made for employing case managers which will work in full coordination with family physicians and follow chronic patients. Case managers will follow the treatment adaptations of chronic patients through the automation system to be established, organize and remind their appointments, and the rate of treatment compliance of the chronic patients will be increased . In the presentation, patient journey in diabetes management and the new primary care service model supported by the Healthy Living Centers, the plans and new term objectives of the Ministry of Health's Diabetes Program will be shared.

THE COMPARISON OF TWO GLUCOSE MEASUREMENTS: POINT-OF-CARE TESTING GLUCOMETERS AND LABORATORY METHOD

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OBJECTIVES : The glucose meters (glucometers ; GMS) are used for two purposes: point-of-care testing and self-monitoring of glucose, both of which are very important in the management of diabetes, hypo-glycemia, or hyperglycemia and in therapeutic decisions. The aim of this study was to determine the test reliability of glucometers and to compare their results with those of clinical laboratory method, since it is mandatory to correctly measure blood glucose concentrations for management of glycemia in emergent situations.
MATERIALS-METHODS : Five different glucometers , used for hospitalized patients , were included in the study . The capillary and venous specimen of the same patient was concurrently obtained . The former was analyzed in glucometer , and the latter in laboratory analyzer . The analytical performances of each device were monthly followed , and its results were compared with those of laboratory analyzer. The results of any glucometer were included if the error was ≤ ±20%, and excluded if >±20%.
RESULTS : From a total of 1,837 GMS read-outs, 1,748 capillary and venous comparisons were evaluated. The majority of the glucometer measurements were within acceptable limits .
The error percentage distribution of GMSs indicated that the accuracy of GMSs is higher in the prediabetic /diabetic measurement range than at normo- / hypoglycemic levels .
CONCLUSIONS : A compatibility of glucometers and laboratory method was observed in general . However , the health care professionals and the diabetic patients , in the case of self-monitoring , should be alert in evaluation of the glucometer results, and they should make cross-check, as frequently as possible, with laboratory determinations.

Keywords: Glucose meter, glucometer, glucose monitoring system, diabetes POCT

SREBP PATHWAY AND LIPID METABOLISM

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SREBP-1 and -2 are transcription factors regulating cholesterol and triglyceride metabolism in mammals. Drosophila has only one homolog of SREBP and it is involved in triglyceride metabolism . SREBP-GAL4 reporter was generated by replacing nuclear part with GAL4 so that upon activation, with UAS-GFP responder, it can be observed where it is activated normally and upon different interrogations . We have determined the effect of some other genes on the activation of the pathway by crossing flies carrying the GAL4 driver and GFP responder with different RNAi strains. Genes known to affect SREBP pathway from mammalian studies have been tested by knocking down them with RNAi and this has confirmed the validity and relevance of our assay. After identifing new genes in a pilot screen, we performed genome-wide RNAi screen for about 4000 genes. Upon general introduction about Srebp pathway our results will be presented.

RELATION OF OBESITY AND METABOLIC DISEASES WITH HIGHGLUCOSE -FRUCTOSE SYRUP OBTAINED FROM CORN STARCH

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OBJECTIVES: Consumption of high glucose fructose syrup obtained from corn starch (HGFCS) is increased dramatically at last 50 years. Our aim is to discuss of HGFCS consumption is giving demage to body with which metabolic pathways.
MATERIALS-METHODS: HGFCS was started to be produced through isomerase enzym at the years of 1960 s and after that its usage was extremely increased.
RESULTS: During production of HGFCS, mercury and carbonyl compounds are contaminated. Just this fact is olso a sufficient reason why this product to be used. Besides consumption of HGFCS creates an anarchy in the metabo lism and so a lot of diseases are triggered . The results of this anarcy are increased fat deposition , methabolic increase of high uric asid levels , atherosclerosis , syndrome, some side DM and extation of carsinogenesis process due to increase of some products.
CONCLUSIONS : HGFCS must exitation be an avoided contamination , and genetically modified corn that is HGFCS consumption metabolism especially and so a lot of diseases creates of are triggered renal diseases, carsinogenesis product an anarchy like due is not hypertension , process due to toxic subtance used in its production in the carbohydrate high uric asid levels, obesity, DM, hypertension in the childhood period . HGFCS (nearly added to every food product) Countries producing to the whole world prohibit its usage in their boundaries almost completely . Restrict or prohibit of of this product in our country is vital importance for our future. As a consumer to investigate the product ingredients very carefully shows how we care to our health.

Keywords: Corn starch, glucose-fructose syrups, metabolism

THE USE AND IMPORTANCE OF CLINICAL DECISION LIMITS IN CLINICAL DIAGNOSIS

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While reference intervals (RIs) describe health and physiology and are derived from a reference distribution, clinical decision limits (CDLs) focus on disease and pathology and are based on the diagnostic question. CDLs are obtained from specific clinical studies to define the probability of the presence of a certain disease or a different outcome, published professional recommendations and consensus values. These limits lead to the decisions of how individuals with values above or below the decision limit should be treated. The clinical sensitivity and specificity of the diagnostic test, relative distribution of individuals between the two subgroups and the clinical costs of mis-classification are the basic requirements of CDLs. Lipids such as total-LDL cholesterol, glucose and HbA1c are good examples which have well-defined CDLs. The rationale of this kind of CDL is based on outcome studies that have demonstrated different levels of survival or incidence of complications for patients with concentrations above or below the limit. There are several CDLs that can be applied to HbA1c; (1) 7.0% vs. 8.0% to change diabetic management, (2) ≥6.5% for diabetes diagnosis and (3) ≥5.5% to assess cardiovascular risk. An example of a CDL based on consensus is an upper reference limit for thyroid-stimulating hormone (TSH) of 2.5 mIU/L by the National Academy of Clinical Biochemistry. For the purpose of postanalytic quality, it is important that RIs are not confused with CDLs. To avoid confusion, the C28-A3 recommended reporting decision limits with a clear indication of which has been used.

Key words: Clinical decision limits, Reference intervals, postanalytic quality

UNDERGRADUATE AND POSTGRADUATE BIOCHEMISTRY EDUCATION AND SPECIALISATION IN MEDICAL BIOCHEMISTRY IN TURKEY

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Higher education is regulated by the Higher Education Law, legislation no: 2547, in Turkey. Biochemistry education is mandatory for undergraduate education of medicine, pharmacy, dentistry, veterinary, chemistry, biology, and engineering (agriculture, food, environment and forestry). There are main science departments of biochemistry in the medicine, pharmacy, science (chemistry), and veterinary faculties. Additionally, there are few associate, undergraduate and postgraduate biochemist education programs. Currently, there are 84 medical faculties, 34 pharmacy faculties, 72 chemistry departments and 28 veterinary faculties in Turkey. Postgraduate biochemistry education, including master and doctorate programs is governed by health sciences institutes within universities. Problem based learning has become widespread since the second half of 1990s. The reform process in higher education starting with the Bologna Declaration in Europe,1999, has been adopted by Turkey in 2001. In this connection, “Regulation on Academic Evaluation and Quality Development in Higher Education Institutions” has been published in 2005 and thus the accreditation process has been started. Finally, “Regulation on Quality Assurance in Higher Education” has been published in 2015 and the Higher Education Quality Board has been established. Based on this regulation, the establishment of quality boards has become mandatory in all higher education institutions.
Medical biochemistry and medical microbiology education have been given in the medical specialisation area. The name of the education is medical biochemistry. The education is given by medical faculties and the training and research hospitals of the Ministry of Health (TRHMH). Currently, TRHMHs are affiliated to Health Sciences University. The number of medical faculties and TRHMHs giving medical biochemistry competency are 55 and 14, respectively. Period of assistanship is 4 years and physicians, pharmacists, chemists and veterinarians can take the central examinations. The Core Curriculum of Medical Biochemistry was accepted in September 2016. There are external rotations of internal diseases (4 months), pediatrics (2 months) and medical microbiology (1 month) during the period of 4 years training and education. The central board examinations are not currently established.

CLONING OF HUMAN CARBONIC ANHYDRASE II ENZYME

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Objective: In recent years, recombinant protein production is increasing rapidly using molecular biological methods. Carbonic anhydrase, a member of the family of metaloenzymes, catalyzes the conversion of CO_2 to HCO_3^- using Zn metal as cofactor. In this study, this enzyme with vital precursor was recombinantly produced with the fusion protein by the TA cloning method using the pET SUMO vector. This method was used as part of Deryanur Kılıç 's PhD work under my supervisior to determine the function of amino acid present in the active region of the recombinant carbonic anhydrase II enzyme by replacing single amino acid.
Materials and Methods: For the recombinant enzyme production, the sequence region encoding the hCA II isoenzyme was first identified using the NCBI database. Specific primers were designed using the Primer3 program for this sequence. The portion encoding the hCA II isoenzyme was amplified by PCR with the primers designed using the human pancreatic cDNA library. Recombinant DNA was then obtained by TA cloning using the pET SUMO vector. The resulting recombinant DNA was transformed into competent OneShot Mach1 *E. coli* cells by heat-shock method. Plasmid isolation was performed from positive transformants that were identified by colony PCR. The resulting recombinant plasmid sequence analysis was performed with vector primers.
Findings: The PCR product made with the primers designed specifically for the sequence region encoding the hCA II isoenzyme was carried out on an agarose gel and the band observed at the desired site. *E. coli* cells harboring recombinant DNA were selected for LB agar containing kanamycin. Sequence analysis result of the plasmid DNA isolated from positive transformants was blasted with hCA II sequence. As a result, it was found to be 100% similar.
Conclusion: While cloning of this isoenzyme was performed using restriction enzymes in the literature, it was obtained in one step by TA cloning method in our study. Through the SUMO protein in the vector that we used here, the solubility of the expressed protein was increased.

Keywords: Carbonic anhydrase, pET SUMO vector, TA cloning method

FLOW CYTOMETRY IN HEMATO-ONCOLOGIC DİSEASES: RECENT IMPROVEMENTS AND CHALLENGES

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Laboratory diagnostics of hematological malignancies has three major applications: establishing the diagnosis, prognostic classification, and evaluation of treatment effectiveness This is related to the fact that flow cytometry requires single cell suspensions, which are easily obtained from peripheral blood (PB) samples and bone marrow (BM) aspirates. Moreover, single cell suspensions can also be prepared from lymph node biopsies and fine needle aspirates, BM biopsies and solid tissue biopsies from other lymphoid tissues. These unique features, together with the continuous advances in laser technology, optics, fluorochrome chemistry, bead technology, informatics and the production of Mab, have reshaped the way flow cytometry is used in haematology and have expanded its applications. The increased diagnostic use of flow cytometry is certainly related to its relative simplicity, high sensitivity and specificity and the possibility of providing clinically useful results in a short period of time. Despite the great clinical utility of flow cytometric immunophenotyping of haematological malignancies and the promising technological advances which have occurred in the past few years, standardization of technical procedures as well as of data analysis, interpretation and reporting still remains a major challenge.

THE STATUS AND ROLE OF NON-INVASIVE METHODS TO DETERMINE FETAL HEALTH IN LABORATORY MEDICINE

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The advance of technology and knowledge in the past two decades, has made significant contributions in the development of non-invasive methods used in monitoring and detecting fetal health. Nowadays, blood tests are performed in thousands of pregnant women in order to screen and determine fetal anomalies. However, cell-free nucleic acids (cFNA) have been used as an important tool in many pathsshysiological conditions such as cancer, transplantation, autoimmune disease, trauma, infectious disease and cardiovascular disease to provide new ssportunities for more effective clinical management. There are three important evidences which prove that the placenta is the main source of fetal DNA in maternal plasma. First of the three evidences is that in anembryonic pregnancy only consisting of placenta, fetal DNA is found in the maternal plasma in typical concentration. Second evidence is, placenta carrying the same methylation markers with the fetal DNA in the maternal plasma and thirdly, in cases where placenta carries a distinctive cytogenetics signature, the same signature is found in the maternal plasma. As, in 1997, Lo et al. revealed that the gene sequences belonging to the fetus in maternal plasma can be amplified, and beginning from 2012, cell-free fetal DNA (cffDNA) entering the clinical practice created new exciting apslications for the methods of non-invasive prenatal test (NIPT). Also, invasive diagnostic methods needing fetal tissue sampling such as amniocentesis, cordocentesis and chorionic villus sampling, increase the mortality and morbidity of the fetus. Therefore, prenatal diagnosis practitioners should improve the usage and accessibility of non-invasive diagnostic methods. Today, non-invasive prenatal diagnosis, which achieves the complete genetic information of the fetus and minimizes the fetal risks, is taking steady steps to become a must. Therefore, prenatal diagnosis practitioners should improve the usage and accessibility of non-invasive diagnostic methods. NIPT can detect aneuploids, fetal Rh incompatibility, sex chromosomal disorders and fetus sex using free fetal DNA. However, it was reported in 2012 that NIPT in high-risk pregnancies can detect trisomy 21, 18 and 13 with about 98% accuracy, and under 0.5% false positives. Ongoing researches committed to expanding the diversity of conditions that can be tested noninvasively to include microdeletion / duplication syndromes and common Mendelian genetic disorders. Also, NIPT has been used to diagnose various autosomal dominant conditions that occur paternally or de novo, including torsion dystonia and achondrsslasia. In addition, NIPT has been used to exclude the father's mutation in autosomal recessive diseases, such as beta thalassemia when parents carry different mutations. The emergence of new technologies such as next generation sequencing and digital PCR broadens this perspective. As a result, a major challenge for the medical community is the speed of development and clinical presentation of non-invasive tests. The decision to include into routine laboratory parameters of a new NIPT is given by the clinician, not by the laboratorian. It is often difficult to distinguish commercial promotional statements from objective test performance evaluations. Examination of the tests must be previously done by partners through the existence of any professional guidelines and proficiency testing. In this case, test providers should supsly comprehensive details on their websites for a good evaluation of the service. Lastly, it must be kept in mind that assisting patients on present test sstions and effects has its own difficulties. Counseling is often necessary based on very limited data on individuals who will be given non-invasive testing and pregnant women.

Keywords: Non-invasive methods, fetal health, laboratory medicine.

Molecular Mechanisms of Memory in Imprinting

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Visual imprinting is a learning process through which young, visually naïve animals come to recognize a visual stimulus by being exposed to it (training) and subsequently approach the object in preference to other objects. As a model this phenomenon offers a number of important advantages for the study of molecular and cellular mechanisms of learning and memory. From these advantages we will outline only two: (i) a region of the chick forebrain has been identified as being of crucial importance for the learning and memory process of imprinting. This region is the intermediate and medial mesopallium (IMM); (ii) it is possible to measure the strength of learning and memory and correlate molecular changes with this parameter. Special criteria for inferring learning-relatedness of molecular changes after training were formulated. Taking advantage of this knowledge we have demonstrated a number of molecular changes, which could be divided in early, intermediate and late changes. The early changes involvemainly post-transcriptional modifications of proteins and synthesis of immediate early gene products, whereas the late changes are associated with a number of molecular pathways, including cell adhesion, stability of synaptic structures, release of neurotransmitters, mitochondrial dynamics and many others. Proteomic, RNA-SEQ, epigenetic and micro-RNA profiling studies 24h after training revealed additional biochemical processes involved in the long-term memory of visual imprinting. The results indicate the progression from transient/labile to trophic synaptic modifications culminating in stable recognition memory.

SWITCHING FROM SERUM TO PLASMA WİTHOUT TEARS!

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Laboratories in the Netherlands have a history of adssting the latest technologies, and have embraced plasma ensuring the fastest sample testing and a way to standardise the samples used for both emergency and routine testing. Until recently the EMC had not utilised plasma because of the logistics in place at that time, which allowed for ample clotting time of the serum tubes. With the transition to a new hospital, almost 95% of transport of blood samples is going to be facilitated by an extensive pneumatic tube network allowing for a continuous and fast supsly of blood tubes to the clinical laboratory. With this fast supsly it is to be expected that there is an increase of latent clotting after centrifugation. The pre-emptive conversion to plasma would tackle this problem. There were many concerns with the conversion to plasma but with the supsort of BD and their hospital partners the laboratory of the EMC was able to transition from a predominant serum-with-gel workflow to a lithium-heparin plasma workflow using the new BD Barricor® tube for most of the routine 24/7 chemistry and immunochemistry tests. Completing, in parallel, all of the necessary steps in its move to plasma (i.e. analytical compatibility & validation, LIS updates & hospital wide training).

LABORATORY APOROACH TO INHERITED METABOLIC DISEASES

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Inherited metabolic diseases are a complex pathogenetic group of diseases that can occur with specific or nonspecific findings. These diseases, usually seen in neonatal period or childhood, occur with severe clinical signs and can lead to permanent mental retardation, physical defects and death. Early diagnosis is important for success in treatment and prevention of permanent sequelae. For this purpose, expanded newborn screening programs are being carried out all over the world. İnherited metabolic diseases can occur both in newborn and childhood as well as in older ages and the greatest difficulty in diagnosing diseases is due to the fact that early signs and symptoms are not specific to these diseases. In the case of İnherited metabolic diseases, it should never be forgotten that the metabolites accumulate especially at the time of attack. The most important step in the diagnosis is to make emergency examinations. For unexamined investigations, samples should be taken at the moment of attack and stored parsserly.

Due to the large number of consanguineous marriages in our country, the incidence of inherited metabolic diseases is high.

Small molecules such as inorganic ions, amino acids, organic acids, carbohydrates, simple lipids, purines, pyrimidines, vitamins, small peptides and oligosaccharides are frequently used in the diagnosis.

Complex molecules such as glycolipids, sphingolipids, plasmalogens, glycogen, mucssolysaccharides, bile acids, nucleic acids, enzymes are important in the diagnosis of inherited metabolic diseases. Complex molecules are usually localized in the membranes and their amounts in body fluids such as blood, urine are very small. Complex molecules can usually be measured using advanced techniques.

Determination of metabolites by NMR spectroscssy, measurement of free carnitine, acylcarnitines and amino acids by tandem mass spectrometry, organic

acid analysis by gas chromatography-mass spectrometry (GC-MS), qantitative amino acid analysis of blood, urine and CSF, biogenic amines, carbohydrate deficient transferrin, purine, pyrimidine bases, very long-chain fatty acid determinations, analysis of bile acids by GC-MS or LC-MS / MS, enzyme analyzes, metabolomics are freqently used for the diagnosis of inherited metabolic diseases.
Definitive diagnosis of inherited metabolic diseases should be made enzyme analysis in fibroblast culture, leukocyte, lymphocyte, erythrocyte, tissue samples such as liver, muscle, and molecular genetic analysis in DNA samples.Recent innovations in technology have made significant improvements in the diagnostic methods of these diseases. Further analyzes such as metabolomics, proteomics, and next generation DNA sequencing techniques are current methods used to diagnose inherited metabolic diseases. As a result, early diagnosis is the most important step for successful treatment. The missed diagnosis can lead to life-long permanent sequelae and death.

MULTI-TARGET-DIRECTED LIGANDS IN ALZHEIMER'S DISEASE TREATMENT

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Alzheimer's Disease (AD) is a progressive neurodejenerative disease whose multifactorial pathophysiology arise from cholinesterase enzymes, amyloid precursor protein, amyloid Aβ), tau, -synuclein, apoE4 and oxidative stress. Complex and unsolved mechanismof AD directed researchers towards multi targeted drug design recently.
A large part of current treatment approaches are inhibitors of the enzyme acetylcholinesterase, which has been regarded as one of the main targets of AD since 1970. This approach aims to increase the reduced cholinergic transmission observed in AD. Specific AChE inhibitors tacrin, donepezil, galanthamine and a dual cholinesterase inhibitor rivastigmine have been approved by the FDA. But donepezil is the most prescribed drug in AD. For this reason, its analogues and derivatives are intensively investigated.
Amyloid beta peptide (Aβ) accumulation in the brain is one of the characteristic findings of AD. This accumulation causes a number of events such as neurofibrillary tangle formation, neuroinflammation, and apoptosis, leading to neuronal death. Although several drug candidates targeting Aβ have been developed, clinical phase studies have shown that monotherapeutic approaches are not sufficient.
Following to epidemiologic studies that have shown nonsteroidal antiinflammatory drugs (NSAIDs) may be protective against AD, cyclooxygenase enzymes (COX) have also become drug targets for AD. Neuroinflammation has also been shown to be a clinical outcome of AD and to affect amyloid plaque formation at the same time.
Multi-target-directed ligand design is an innovative approach and is compatible with the multifactorial nature of AD. New potential molecules designed with this approach, with cholinesterase inhibitory, Aβ accumulation inhibitory and at the same time with anti-inflammatory effects have become new drug candidates that can be used in the treatment of this complex disease.

METABOLOMICS AND RELATED BIOMARKERS IN METABOLIC DISEASES

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Metabolomics analysis is the detection of small molecules in biological fluids especially used for the determination of disorders in the metabolic pathways and /or the metabolic state in any case. Metabolomics analysis is applied in two ways as targeted metabolomics and untargeted metabolomics. In recent years, the development of mass spectrometry technologies has accelerated the metabolomics studies. In metabolic disorders, mostly mass spectrometry based targeted metabolomics have being used. Targeted metabolomics analysis is the quantitatitation of a known set of analytes. Measurements of acylcarnitines, amino acids in biological samples and organic acids in urine are the best known targeted metabolomics used in the screening of inherited metabolic diseases. Determination of biochemical composition of the esterified carnitines by tandem mass spectrometry in dry blood samples, is an targeted metabolomics that is used in the diagnosis of more than 20 inherited metabolic diseases. The profile of organic acids excreted in urine and analysed by gas chromatography mass spectrometry is also important in the diagnosis of inherited metabolic diseases. There are characteristic increases/decreases in organic acids that can vary in acute, asymptomatic, anabolic/catabolic disease states. Characteristic amino acid patterns by liqid chromatography tandem mass spectrometry are also determined for the hereditary metabolic disorders. Experience and special interpretation are necessary for these targeted metabolomics analyses. Untargeted metabolomics studies are developing rapidly. Internal standards are chosen based on their broad chemical structures and biological variety, and over 2500 metobolite can be identified through libraries. Data management needs strong statistics, detailed analysis with bioinformatic experts, integration with other omics data, metabolic pathway analysis, biological interpretation performed by basic and clinical field experts. Obtained data should also be confirmed with detailed analyses. New biomarkers have begun to emerge with metabolomics. Oxysterols as new biomarkers for Niemann-Pick Type C have been included in targeted mass spectrometry-based metabolomics analyses for inherited metabolic diseases in our hospital central laboratory. Studies of bile acid profiling with mass spectrometry for hereditary bile acid metabolism disorders are in progress. Mass spectrometry technologies are rapidly progressing and the identification of new biomarkers in the field of metabolomics is promising.

Keywords: Metabolomics, mass spectrometry, oxysterols, bile acids

MITOCHONDRIAL DISEASE AND DIAGNOSTIC TESTS

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Mitochondrial diseases are a clinically heterogeneous group of disorders that arise as a result of dysfunction of the mitochondrial respiratory chain due to the inherited or spontaneous mutations in mtDNA or nDNA. Mitochondrial diseases are characterized by multi-systemic involvement; especially tissues with high aerobic demands such as brain tissue, hearth and skeletal muscle are usually affected severely. Therefore heterogenous clinical presentations such as developmental delays, muscle weakness, encephalomyopathy, gastrointestinal, ophthalmic or myocardial symptoms can be observed in patients. Elevation in the blood levels of lactate, pyruvate and creatine kinease is usually observed in laboratory testing. Biopsy of skeletal muscle is essential for the histochemical and biochemical analysis of Respiratory Chain Complex (RCC) defects. Molecular genetic testing should be undertaken after detailed clinical, biochemical and histochemical examination.
Muscle biopsies were received from pediatric patients with suspected myocardial myopathy between 2015-2017 and analyzed for mitochondrial RCC deficiency. RCC deficiency was observed in 72% of muscle biopsy samples. Complex IV deficiency was the most common (45%), followed by Complex I (34%) and Complex II-III (26%) deficiency. Isolated deficiency was present in 53% of the patients; 16% Complex I, 18% Complex II-III and 56% Complex IV. Decreased Complex I/CS, Complex II-III/CS and Complex IV/CS ratio was observed in 34%, 40% and 40%, respectively. Multiple complex deficiencies were present in 47% of the muscle biopsies; 13% for Complex I+II-III, 55% for Complex I+IV, 32% for Complex II-III+IV.
In Turkish population, single complex deficiency was the most common (53%), followed by double complex (30%) and triple complex deficiency (17%). Complex IV deficiency, either isolated or accompanied by other complex deficiencies, was the most common in our patient groups. At present, there is no definite cure for mitochondrial disorders, supportive pharmacological treatments are directed towards relieving the symptoms.

Key words: Mitochondria, respiratory chain, complex activity

MASS SPECTROMETERS IN ROUTINE LABORATORIES: SHOULD WE USE THEM?

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Diagnostic branches such as clinical biochemistry, clinical microbiology, pathology and radiology, keep pace with technology in a faster way than other medical areas. As technology evolves and the time to release accurate results progress, in parallel, accurate diagnosis and treatment of patients progress. Since the 1990s clinical laboratories, began to use electrophoresis, turbidimetry and nephelometry systems in addition to traditional spectrometry and immunoassays in routine which enabled them to analyze specific molecules more accurately. Aforementioned systems are recently more improved and high-volume laboratories can produce serial results using a single carrier line connected to an automation system.

In addition to all these improvements, in the last 15 years, with the electrospray ionisation (ESI) method especially for large molecules, mass spectrometry finds place in routine laboratories . Despite the progress in technology all the analizing methods have three common stages: Isolating the particular analyte from a complex matrix, determining the concentration and reporting the result in proper units . Mass spectrometers (MS) determine analyte concentrations more accurately than the other systems. Especially therapeutic drug concentrations, biologic amins and steroid hormon measurements are more sensitive in MS measurements. Moreover, recent diagnostic algorithms in endocrinology are aligned particulary with LC-MS/MS results.With these characteristics , in recent years MS systems not only found place in reference laboratories but also in clinical laboratories reporting routine patient results. However , there are several disadvantages that need to be overcome : Devices should be purchased by the laboratory which constitutes a serious cost. Isolating the analyte from the complex biological matrix and derivatizing the molecules requires more than one chemical preanalytic processes . They have longer throughput time than automated analyzers . For the correct reporting process technicians must be experienced, also for in-house method development one to two years experience is required . Despite all these limitations , manufacturers work hard to produce automatic pre-processing and multiplex systems and they create data-bases for new methods which accelarate the routine usage of MS systems . Today mass spectrometers are accepted to be located in the central and specific laboratories in terms of usage and cost. However, all laboratory physicians need to follow the cost-benefit calculations for MS systems for their own laboratories.

MASS SPECTROMETRY FOR ANALYSIS OF SYNTHETIC DRUGS

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Synthetic drugs are the types of drugs that are generally formed in the laboratory environment as a result of carboxylation , hydroxylation , methylation and demethylation, and are expected to have an effect like natural drugs. Synthetic drugs are generally synthetic cannabinoid, synthetic cathinone (bath salt), ecstasy, LSD and methamphetamine. The most common of these are the synthetic cannabinoids . Synthetic cannabinoids are called as bonzai, jameica, spice, K2, and the most common type is the JWH series. Synthetic drugs , especially synthetic cannabinoids , seem to be very common . The reasons for these are;

- Non-detection in standard substance screening tests due to different chemical structures
- Continuously introducing a new product to the market to overcome legal barriers
- The lack of legal responsibility for the fact that many of these substances are still not covered by narcotics
- Sense of being harmless because they are vegetarians
- Marketing of these substances under many different names
- Easily accessible, economical and pleasant smell
- The presence of phrases that create the impression that the packages are being used for legal purposes

Addition of propyl, pentyl, morpholinyl, piperidinyl, trifluorobutyl, methyl, naphthyl, benzyl, adamantyl, phenyl and cyclopropyl groups to R1, R2 and R3 called three different regions causes an increase of the synthetic cannabinoid diversity . The same is true for the increased diversity of other synthetic drug types. Synthetic drugs can be divided in two main groups as identified or non-identified ones according to the detection by mass spectrometer . Identified synthetic drugs may be detected by low resolution mass analyzers like quadrupole and ion trap , while non-identified synthetic drugs could be determined by high resolution mass spectrometry devices, such as TOF and Orbitrap. The new molecule can be identified by molecular fragmentation and product ion analysis after the presence in high resolution mass analyser by scanning mode.

The advantage of high resolution mass analyzers is that they can accurately detect the molecular weight of the substance up to three or four decimal places. Molecules with the same nominal mass can be distinguished by high resolution mass analyzers by this feature . For example , morphine , 7-aminoclonazepam and pentazocine have a molecular weight of 285 Daltons and differ in their decimal parts (Figure). Detection of the decimal parts can be done up to three or four digits by high resolution mass analyzers , while these molecules are indistinguishable unless specific cleavage products exist in the low resolution mass analyzers.

In standard screening tests and verification analysis only the previously identified synthetic drugs can be detected , while non-identified substances especially the new synthetic drugs can only be determined by means of high resolution mass analyzers.

RATES OF POSITIVE DRUG TEST RESULTS IN SAMPLES OF INDIVIDUALS UNDER TREATMENT OR PROBATION

Tarık Zafer KOCABEY

OBJECTIVES : This study aims to evaluate the positive drug test results of samples which were delivered to our laboratory from individuals that were under probation or had been admitted for treatment either outpatient or inpatient to Bursa AMATEM Clinics.

MATERIALS-METHODS: Urine samples are obtained under chain of custody and tests were studied on the same day using immunoassay techniques. The tests studied are Amphetamines , MDMA , Cannabinoid , Cocain , Opiates , Buprenorphine, and Synthetic Cannabinoids. Validity tests creatinine, oxidants and nitrite are studied as well. Cutoff values are set according to the limits that are assigned by either reagent manufacturer or Guidlines for Drug Testing which is prepared by Ministry of Health.

RESULTS: In the calendar year 2016, a total of 6144 outpatient and 612 inpatient cases are treated in Bursa AMATEM Clinics. When urine samples taken from these individuals are studied , the following positive rates are found : Amphetamines %14.47 , MDMA %5.15 , Cannabinoid %7.70 , Cocain %0.24 , Opiates %1.07 , Buprenorphine %24.14 and Synthetic Cannabinoids %0.23. Total positives rate among all samples was %5.66 .

CONCLUSION : Statistical results are mandatory for evaluating risks and setting correct measures for drug addiction control and prevention . When assigning test menus for individual laboratories these results may be used. The results can be compared to and evaluated together with country's statistics to benefit by means of laboratory practice.

A MASS SPECTROMETRY EXPERIENCE IN THE ROUTINE LABORATORY

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Increase in the borderline cases due to early diagnostic techniques and development of the health care systems require more sensitive , specific and reliable techniques than routinly used methods. Commonly used technologies in clinical laboratories may not meet the needs, especially in the borderline cases. Development of the mass spectrometry (MS) techniques became an useful tool for the measuring of broad range analytes.

MS integrated with liquid (LC/MS) or gas chromatography (GC/MS) provides higher sensitivity and specifity. Because of having unequalled sensitivity, lower detection limits and diversity of its applications mass spectrometry has an outstanding position among analytical methods . Low solvent volumes , high throughput , providing clinically stable results with deuterated internal standards , minimizing the specifity problems , high analytical range, improved sensitivity , multiplex testing in a single run are the most important advantages of MS systems . The main disadvantages of MS techniques are requirement of experience for method development and procedures , time consuming application and method validation progress , long turn around times due to preanalitycal steps , difference in calibrator and methods , lack of standardisation of solvents and stability issues. MS methods are commonly used in endocrinology, clinical and forensic toxicology , inborn error of metabolism , therapeutic drug monitoring and emerging clinical biomarkers. Steroids measurements are one of the main focus in MS laboratories in Endocrinology section. MS analysis recommended hormones are; estradiol in male , prepubertal ages and postmenapausal term , free testosterone , aldosterone , 17-OH progesterone , Deoksicorticosterone , 25-OH vitamin D2 ve D3 and their metabolites . MS analysis is also found to be superior aganist immunassay in the measurement of free tyroxine and tyriodotronine levels. Cross reactivity is one of the main problem in immunassay analysis which is commonly used in clinical laboratories . For the use of inborn errors of metabolism , analyzing for amino , organic , and fatty acids has undergone a series of developments to the technology . LC–MS/ MS is now recognized as one of the most definitive analysis procedures for measuring these analytes . LC–MS/MS system is capable of measuring all of the analytes within a group in a single run, is called a "multiplex" testing.

LC-MS/MS and GC-MS devices have been used in our clinical laboratory since 2011. Both devices are our instruments, owned by our University therefeore we do not pay instrument rental cost. The cost of LC-MS/MS system was 210000 $, GC-MS system was 64000 $. Both systems require regular maintenance . The cost of analysis is also of critical importance , which is closely related to the number of samples analyzed. The cost of test is lower than other methods for high throughput experiments . For our laboratories mean analysis cost is much less than the commercial available kits. Net income of the analysis from the devices is more than 150000 $ so far. Development of analytical techniques is always expensive, time-consuming and needs expertise . However MS enstruments are powerfull tools and can be cost-effective after 1-2 years in clinical laboratories . In our department more than 10 postgraduate thesis has been made with MS system . Nearly 20 of analytes method validation process have been completed . We organized 2 courses on clinical applications of MS in our clinic.

BIOCHEMISTRY OF METASTASIS

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Cancer constitute the second most common cause of death, aftercardiovascular disease . A neoplasm refers to any abnormal new growth of tissue . It may be benign or malignant in nature. Metastasis is not limited to thepassive spread of cells from the primary tumor to other organs via blood andlymphatic vessels . Metastasis beeds to changes in biochemistry , morphology , andmigration capabilities of tumor cells, emergence of surface receptors thatmediated directed migration to target organs ; formation of the specificenvironment in the target organ that facilitates survival and multiplication ofmetastatic cells . Cancer metastasis progresses through a stepwise cascade of events ,including tumor growth , angiogenesis , stromal invasion , intravasation ,extravasation , and colonization at secondary sites within the body.

OBESITY: CURRENT KNOWLEDGE AND NEW DEVELOPMENTS

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Obesity has a multifactorial nature resulting from genetic , physiological , behavioral , sociocultural , and environmental factors that lead to imbalance between energy intake and expenditure. Current lifestyle trends, characterized by high calorie diets and lack of physical activity , have increased the incidence of obesity . It is known that obesity is a risk factor for several diseases such as insulin resistance , type 2 diabetes , cardiovascular diseases and some cancers . Many mechanisms such as ectopic lipid toxicity , chronic and mild systemic inflammation in hormonal resistance (insulin and leptin) and bacterial changes in the gastrointestinal system are thought to play a role in the development of obesity . Increased expression of inflammatory mediators has also been observed in fat tissue of obese humans . These cytokines have been shown to disrupt insulin signalling and altered adipokine production (such as adiponectin , leptin , and rezistin) and aberrant fatty acids release.
For the management of obesity , lifestyle changes , dietary modifications , increased physical activity , and medications have been suggested and it is shown that the patients will lose weight through these methods. However, the recent researches clearly show that approximately 80% of the patients in which weight loss initially successful do not maintain this weight loss and subsequently regain weight . In addition , the metabolic complications may relapse in 12 months . Dysbiosis which is compositional and functional intestinal microbiomes alterations has been suggested to contribute to the pathogenesis of remaining weight . In recent years , bariatric surgery has rapidly become an option of treatment for severe obesity . The studies regarding to the weight loss after these surgeries show that bariatric surgery improves glucose tolerance and insulin sensitivity in humans . This phenomenon caused these surgeries to be categorized under the metabolic surgery.

ORAL PRESENTATIONS ABSTRACTS

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, sentitive 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 electrospray 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 TESTS 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 infection diagnosed in the clinical laboratories. The gold standard to diagnose UTI is urine culture so there are a number of unnecessary urine culture requests. But urine culture results are not available earlier than 24 hours. On the other hand, urine culture is expensive and causes time-consuming. We aimed to compare urine dipstick with urine culture to determinate the sensivity, specifity, positive predictive value(PPVs) and negative predictive value.(NPVs)
MATERIALS-METHODS: Urine culture results and Urine dipstick test results of patients who admitted to Selçuk University Medical School Hospital between May 2016 and May 2017 were collected retrospectively. The study included 11.169 patients and 3299 of them have positive urine cultures.
RESULTS: In total, 3299 patients were positive by urine culture. Out of these culture positive samples, ratios of positive dipstick results for LE and nitrite were 82.8%(n = 2733) and 23.4%(n = 774). Leukocyte esterase had 82.8% sensitivity and 68.1% specificity, with PPVs and NPVs of 52.1% and 90.5%, retrospectively.
CONCLUSIONS: Our results showed that there are a lot of unnecessary urine culture requests. Urinalysis can accurately rule out UTI in the majority of patients. The NPVs are found significantly higher than PPVs($p<0.05$) and urinary dipstick is more reliable to exclude disease than to diagnose the disease. Therefore, clinicians should order urine culture if the urine analysis results don’t match with the patient’s clinic.

Keywords: urine dipstick test, urine culture, leukocyte esterase test, nitrite test

OP-003
UNCERTAINTY OF MEASUREMENT IN 14 IMMUNOASSAY ANALYTES AND APPLICATIONS OF THEM TO LABORATORY RESULT INTERPRETATION

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OBJECTIVES: Measurement uncertainty comes into prominence in the context of the accuracy of the laboratory result. This study aims to investigate measurement uncertainty of 14 immunoassay analytes, to compare them with different quality goals and to utilize them in the result interpretation.
MATERIALS-METHODS: The study was performed in Central Biochemistry Laboratory of Ankara University Faculty of Medicine İbni Sina Hospital, Ankara, Turkey. Measurement uncertainties of 14 immunoassay analytes were estimated by using internal and external quality control data by using Nordtest approach. Expanded uncertainties (U) were compared with allowable total error (TE%), permissible relative deviation in the external quality assessment (PRDEQA%) and permissible expanded uncertainty for external quality assessment (pUEQAS%). RCVs of 14 analytes were calculated by 3 different methods reported by Harris, Clinical Laboratory Standards Institute (CLSI), and National Pathology Accreditation Advisory Council (NPAAC).
RESULTS: U(TSH), U(estradiol), U(LH), U(prolactin), and U(VitaminB12) were below defined allowable limits. U(FT3), U(progesterone), and U(ferritin) exceeded defined TE% but was found below the limits of pUEQAS%. U(FT4), U(cortisol), U(DHEAS), U(FSH), U(testosterone), and U(folate) did not meet the specification limits. Uncertainty adjusted RCV defined by NPAAC was found higher than other RCV estimations.
CONCLUSION: Recently defined permissible expanded uncertainty promises new targets to compare estimated measurement uncertainty. Measurement uncertainty should be applied to the laboratory result interpretation within the scope of RCV and reference interval to obviate misdiagnosis. Furthermore, we suggest that laboratories should inform clinicians about the tests with high uncertainties to assist them making the right clinical diagnosis.

Keywords: measurement uncertainty, immunoassay, reference change value, reference interval

OP-004
DETERMINATION OF THE EXPRESSION PROFILES OF BAP1 AND BAP1 ASSOCIATED SEVERAL GENES IN PATIENTS WITH EYEL, CONJUNCTIVA AND ORBITA TUMOURS

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OBJECTIVE: Eyelid, conjunctival and orbital tumors are rare in all types of cancer worldwide but they are the most common tumor types in optomology. Because the eyelid contains many types of tissue, benign and malignant tumors may contain various types. More than 90% of eyelid tumors constitute basal cell carcinoma. BAP1 is a tumor suppressor gene that interacts with the RING finger domain of the BRCA 1 protein. OGT catalyzes the attachment of O-glycosidic linkages to N- acetylglucosamine threonine or serine residues . YY 1 is a transcription factor that interacts with BAP1 and OGT. Our aim in this study is to determine the expression profiles of OGT and YY1 genes interacting with BAP 1 and BAP 1 in conjunctival and orbital tumor patients from rare tumor types .
MATERIALS-METHODS: In this study, we determined the expression levels of BAP1, OGT and YY1 expression in 20 patients with eyelid, conjunctival and orbital tumors by RT-PCR, ELISA and IHC methods.
RESULTS: Although the increase in BAP1, OGT and YY1 expression levels was observed in RT-PCR analysis , it was not statistically significant ($p>0.05$). A statistically significant correlation was found BAP1 and YY1 protein levels in the ELISA method ($p<0.05$). In the IHC method, a significant correlation was observed in BAP1 expression level.

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 BAP 1 and YY1 proteins may be suitable biomarkers for diagnosis of many diseases, especially cancer.

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

OP-005

THE POSSIBLE RELATIONSHIP BETWEEN THIOL-DISULPHIDE BALANCE AND PROSTAT CANCER

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OBJECTIVES: Cancer is the second cause of death inTurkey. Prostate cancer are considered to beThe"Big Four"CancerTypes as colorectal,lung,breast and in theUnited States.PlasmaThiol pool consistof plasma protein withlow andlarge molecular weight that is indicate tobe important theThiol/disulfide balance of cancer cases. We aimed to find whether there is a possible associationbetween a oxidative stress marker(thiol/disulphidehomeostasis) and tumor markers (IMA(IschemiaModified Albumin), Albumin, CEA(Carcinoembryonic antigen),serum total and freePSA(prostate specific antigen))in patients with Prostatecancer and compare the results with healthy controls for thefirsttime in literature.
MATERIALS -METHODS : A total of 115 participants including 15 patients with Prostatecancer and 100 healthy individuals were included in thestudy from Oncology andUrologyclinics . In all cases, serum total and free PSA, IMA, Albumin, CEA, native thiol, total thiol and disulphide as well as disulphide/native thiol and disulphide/total thiol ratios were compared between the groups.Native thiol(-SH),disulfide (-S-S) and total Thiol (TT) concentrations were measured with a novel automatedmethod.
RESULTS: In prostatecancer group, serum total and free PSA, IMA, Albumin, CEA, native thiol, total thiol, and disulphide as well as disulphide/native thiol and disulphide /total thiol ratios did not obtained sitatistically significant difference compared to the controle group ($p>0,05$). There was not any relationship between thiol-disulphide parameters and tumor markers in the control group ($p>0,05$).There was not any relationship between thiol-disulphide parameters and tumor markers in the the prostat cancer group ($p>0,05$).
CONCLUSIONS: This paper discusses a oxidative stressmarker(thiol/disulphide 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-disulphide homeostasis may not be interact with serum total and free PSA values. Serum thiol-disulphide activity considered not to be as a biomarker in patients with prostate cancer.New studies are needed toget a better understanding of the subject.

Keywords: Disulphide, 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 exstracellular 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(ESM) 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 thumor cells
-Clinging of matrix components to matrix components
-Escracellular matrix destruction
-The migration of the thumor cells
2. 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(ekstaravazation), 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-007

THE EFFECT OF ROYAL JELLY ON LEVELS OF TNF-A AND OXIDANT- ANTIOXIDANT SYSTEMS IN EXPERIMENTAL RATS HYPOTHYROIDISM

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OBJECTIVES: In this study, we investigated the effect of royal jelly on TNF-α levels and oxidant-antioxidant systems in hypothyroid rats induced by propylthiouracil (PTU).
MATERIALS-METHODS: I. control group, II. royal jelly group, the royal jelly group received a dose of 100 mg / kg /day from the beginning of the fourth week (22nd day) by intragastric gavage for 30 days. III- PTU group, 0.05% PTU was given in drinking water. IV- PTU + royal jelly group, 0.05% PTU was given in drinking water and at the beginning of the 4th week 100 mg/kg/day of royal jelly was given by intragastric gavage. Hematological parameters, sT3, sT4 and serum lipid profile were determined by autoanalysing . Levels of TSH, TNF-α, GSH, MDA, GSH-Px, SOD and CAT were measured in the ELISA.
RESULTS: The levels of sT3, sT4 in PTU and PTU + royal jelly groups were lower than the control group ($p<0.001$). There was a decrease in triglyceride levels ($p<0.05$) and an increase in LDL ($p<0.01$), RBC ($p<0.05$), HCT ($p<0.01$) and HGB ($p<0.01$) in PTU + royal jelly group compared to the PTU group . Levels of TNF-α, GSH and GSH-Px, CAT, SOD were not significantly different between groups.
CONCLUSION: In this study, the increase in oxidative stress was not detected in hypothyroid rats induced by PTU. In the case of hypothyroidism, royal jelly had positive effects on triglycerides among biochemical parameters and on RBC, HCT and HGB among haematological parameters

Keywords: Hypothyroidism, Oxidative Stress, Propylthiouracil, Royal jelly, Tumor Necrosis Factor -α

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 Takrin, Rivastigmine, Donepezil and Galantamine 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 sweeps 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 1.26 µM and the mean Ki value was found to be 15.30 µM. The type of inhibition was determined to be without competition.
CONCLUSION: Gülçin 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: Asetilkolinesteraz, 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 fms - Like tyrosine kinase (s - Flt - 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 ($p \leq 0,01$). Significant positive correlations were observed between MCP-1 and VEGF ($r = 0.411$ $p \leq 0,05$) as well as s Flt- 1 and VEGF ($r = 0.345$ $p \leq 0,05$). In this study , higher endostatin levels as well as important correlations between VEGF and MCP -1, VEGF and s-Flt -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-Flt-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)/ necroapoptotic (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 antagonist effect, all applications use extrinsic apoptosis pathway and inhibit a resistance protein MK.

Keywords: Lycium barbacum (Gojiberry), Chronic Myeloid Leukemia, Female Infertility, Apoptosis, Midkine

OP-012

SERUM LAMININ AND ANNEXIN A1 LEVELS IN PATIENTS WITH BLADDER CANCER

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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 tumorigenesis 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 (201.2-391.2) 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-013

EFFECTS OF DEHP ON TRACE ELEMENTS AND BIOCHEMICAL PARAMETERS

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OBJECTIVE : Di(2-ethylhexyl) phthalate (DEHP) is widely-used plasticizer for synthetic polymers. DEHP may have effects such as endocrine disrupting, reproductive toxicity , inducing carcinogenesis that lead to fetal death and malformations in the laboratory animals. The aim of this study was to investigate the effects of DEHP administration on trace elements and certain clinical biochemical parameters in serums samples of rats fed with various concentrations of DEHP.
MATERIALS-METHODS: 6 weeks old, 24 pubertal Wistar albino rats (200-220 g) male rats were divided into four groups and dosed with 0, 100, 200 and 400 mg/ kg/day of DEHP. At the end of 28th day, blood samples were taken. Ag, Al, As, Ba, Be, Ca, Cd, Co, Cr, Cs, Cu, Fe, Ga, K, Li, Mg, Mn, Na, Ni, Pb, Rb, Se, Sr, Ti , U, V, and Zn trace elements concentrations were measured with Agilent 7700x ICP-MS. Clinical biochemistry parameters alanine aminotransferase , aspartate aminotransferase , albumin , cholesterol , creatinine , total protein , triglycerides , urea and glucose were measured with Shimadzu clinical spectrophotometer - CL-770 for evaluation of toxicology effect of DEHP on liver, and kidney. RESULTS : Our data have indicated that Na , Ca , Rb , K and Cs significantly decreased but Fe and Se concentrations significantly increased in a dose - dependent manner . And , DEHP administration leads to increase in certain biochemical parameters in serum associated with liver and kidney damage.
CONCLUSION: In conclusion, our findings support the previous published data related to effects of DEHP administration , however mechanisms of trace elements action in DEHP induced processes need to be further investigated.

Keywords: di-(2-ethylhexyl) phthalate (DEHP), serum eser elementleri, alanine aminotransferase (ALT), aspartate aminotransferase (AST), cholesterol, creatinine

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 BIBR1532 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 BIBR1532 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 IC 50 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 °C 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 42°C 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 + tryptophan 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 4.00±0.05-fold increases. On the other hand, 15.36±0.29-fold increases were determined for the ammonium nitrate + tryptophan 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 in this study was to determine how matrix metalloprotease -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 Glaskow 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, 6.1% 16.3% and 77.6% of them were found to have severe, moderate, mildhead 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 elevated levels of serum MMP-9 in patients with excess inflammation. A significant increase in the E-selectin level in severe patient than in the mild patient indicated endothelial cell damage. These parameters may be useful in the prognosis of these cases.

Keywords: Pediatric head trauma, GCS, MMP-9, E-Selectin

OP-017

THE PROTECTIVE EFFECT OF PARICALCITOL ON RENAL ISCHEMIA/REPERFUSION INJURY IN RATS THROUGH THE INHIBITION OF P38 MAPK SIGNALING PATHWAY

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OBJECTIVES : Renal ischemia /reperfusion injury (IRI) is a serious medical condition that might lead to acute kidney failure. Also increased reactive oxygen species during IRI results in activation of p38 mitogen-activated protein kinase (MAPK) which induces inflammatory responses . Paricalcitol is an active vitaminD analog which has a therapeutic potential . We aimed to investigate the effects of paricalcitol on oxidative stress, inflammation and the possible role of p 38 MAPK induced by renal IRI in rats .
MATERIALS -METHODS : 20 wistar albino rats were randomly divided into 3 groups; Sham, IR, IR+paricalcitol. IRI was performed through bilateral clamping of the pedicles 45 min ischemia followed by 24 h of reperfusion . Paricalcitol (0.3 µg /kg, i.p) was administered 24h before ischemia . High performance liquid chromatography and a colorimetric kit were used to analyze malondialdehyde (MDA) and superoxide dismutase (SOD), respectively . Also RT- PCR was used to analyze mRNA expressions of TNF -α and Interleukin -1. Total p38 and phospho -p 38 (p -p 38) protein expressions were analyzed with western blot .
RESULTS : MDA levels were increased significantly in the IR group compared to the sham group. Paricalcitol pretreatment decreased the MDA levels significantly . SOD levels were decreased in the IR group compared to the sham group . Paricalcitol administration increased significantly the SOD levels . mRNA expressions of TNF-α and Interleukin-1 were found to be significantly higher in the IR group compared to the sham . Paricalcitol pretreatment caused a significant decrease in both mRNAs ' expressions . Besides , p-p38MAPK protein expression was significantly higher in the IR group . Paricalcitol pretreatment decreased significantly the p-p38 MAPK.
CONCLUSION : Our study suggests that paricalcitol may represent a potential strategy to attenuate renal IRI.

Keywords: Paricalcitol, Ischemia reperfusion, p38 MAPK, Oxidative stress

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 Cumhuriyet University Medicine School Research and Practice Hospital Infectious Diseases Clinic, 60 inviduals including 23 women and 37 men who were definitely diagnosed was formed in the Hıfzı Sıha 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-NG, 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 ANTIPROLIFERATIVE EFFECTS OF PISTACIA TEREBINTHUS VE PISTACIA LENTISCUS EXTRACTS

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OBJECTIVES: Various polyphenolic constituents extracts from the leaves of Pistacia 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 , t-cinnamic , p-coumaric acid) contents were determined . IC50 value of P. terebinthus phenolic acid extract was found as 10.00±1.23 ppm , while IC 50 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 THYMOQUINONE

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OBJECTIVES: The aim of the study was to investigate the possible protective qualities of thymoquinone (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 TLR 2,3,4,7,9 and MyD 88 genes expression were determined by real-time RT- PCR.
RESULTS: IC50 values of bortezomib at 12, 24, 48 hours were found 31.62 nM; 15.85nM; 5.89 nM respectively for KMS-20 cells, and 11.84 nM; 5.30nM; 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 in 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-THALASSEMIA IVSI-1 MUTATION USING PIEZOELECTRIC BIOSENSOR IMMOBILIZED WITH A SINGLE OLIGONUCLEOTIDE

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OBJECTIVES: β-Thalassaemia is a genetic disease characterized by less production of the β -chain of hemoglobin. β -Thalassaemia can cause low hemoglobin levels and some clinical sendromes. β - Globin genotype definition is important for genetic counselling and it is usefull for improve life quality. Current routine diagnosis methods of β – thalassaemia 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 jel electroprosis .
RESULTS: Normal β -globin, IVSI-1 mutation β -thalassemia heterozygote, and homozygote samples PCR products were applied on biosensor. When hybridization occures on the electrode surface, quartz cristals frequency changes. Biosensor responses of normal β -globin, IVSI-1 mutation β -thalassemia heterozygote, and homozygote are respecticvely 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 using an alternative technique for determination of β - thalassemia IVSI-1 mutation. Because it has more adventageus. For example when this biosensor compared with current methods, it is faster, cheaper, more spesific 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 OBESE 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 oxydated LDL. The purpose of this study was to examine, in vivo, the effect of Hcy, associated with several pathological events, on CD36, PPAR γ, C/EBPα 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/EBPα 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/EBPα gene expression levels decreased significantly in all groups compared to the group receiving standard chow ($p<0.05$).

Additionally, Hcy supplementation both PPARγ and C/EBPα gen 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 HepG 2 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-tetrazolium bromide assay. Steatosis in cells was shown by oil red O staining and intracellular triglyceride levels were measured with commercial kit. Advanced oxidation protein products and catalase activities were measured according to Witko-Sarsat et al. and Aebi's methods, respectively.
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 decrease 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. Analyzes 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 Syndrom, 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 H (Abbott Diabetes Care, UK) mark glucometers with strip enzyme GDH which were used in the blood sampling unit of the Selcuk University Faculty of Medicine Hospital. 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.

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 (HbA 1c) 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 HbA 1c detection have become very important. The aim of this study was to compare the two analytical techniques for determination of Glycated hemoglobin (HbA 1c), 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 . HbA 1c level was quantified using two methods as follows : Premier Hb9210 boronate 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 HbA 1c was slightly higher for immunoturbidimetric method (mean :8.5)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 great correlation and agreement between methods .
CONCLUSION : Our study demonstrated that HbA 1c 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 HPLC system.

Keywords: HbA1c, diabets, boronate affinity, immunoturbidimetry

OP-029
INVESTICATION OF INHIBITION EFFECTS OF SOME ANTIBACTERIAL DRUGS ON ACETHYLCHOLINESTERASE 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´-dithiobisbis nitrobenzoic acid (DTNB), and acetylthiocholine iodide (ATChI) 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. Experinced clindamycin, gentamicin, ornidazole, and amikacin drugs were observed to inhibit this enzyme at low concentrations.

Keywords: Antibacterial drug, acetylcholinesterase, inhibitor

OP-030
SUBCLINC 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 oxidant/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). α– glautathione -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 ($p = 0.044$). Nitric oxide and interleukin (IL) -1β 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-1 β and MDA, MPO 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 1 (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), HbA 1 c 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 statistically ($p <0,05$) and Group II microalbumin results were 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

microalbuminuric would be beneficial in combination with microalbumin levels that are the gold standard for follow -up of diabetic nephropathy.

Keywords : Homocysteine , homocysteine thiolactonase , arylesterase , paraoxsanase, diabetes, diabetic nephropaty

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 endoillumination 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 endoillumination 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-1β 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 apoptosiseffects on retina cells of halogen, xenon and LED light sources are similar to the control group . The higher levels of TNF-α and IL-1β 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, Endoillumination

OP-034

CALCULATION OF REFERENCE RANGES FOR SOME BLOOD 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 criterias 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). 32 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 analysis 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 reportiing 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 c4000 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 . And also, 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

OP-036
EPIDEMIOLOGIC SURVEILLANCE WITH LABORATORY INFORMATION MANAGEMENT SYSTEM

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OBJECTIVES : The laboratory data collected for epidemiologic surveillance include detailed information on patients , samples and pathogens , and play a crucial role in understanding the etiology of infections and outbreak and diagnostic processes . On the other hand, it is known that Real-Time Polymerase Chain Reaction (RT-PCR) based systems using low density TaqMan Array Cards are effective surveillance tools.
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 laboratorians 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, requirements, 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 analyzes 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.

OP-037
TOTAL ANALYTICAL ERROR (TAE) CIRCULAR LETTER (2016/18): PROBLEMS AND SOLUTION PROPOSALS

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OBJECTIVES: 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 (TEa) 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, Rilibaek-interlab, RCPA, etc.) will directly compare the limits of TEa that our country will redetermine. 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) TEa limits should also be established for HbA1c (now a diagnostic test) and some other clinical laboratory tests such as Hormones , Haematlogy , Coagulation , Drugs and Blood gases .
CONCLUSIONS : As in other guidelines , TEa 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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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 (DGKL) 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 TEa 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 UniCel® DxI800 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 Uncertaınty " in assessing Measurement Uncertainty for Tumor Markers is more appropriate than TEa.
Keywords: Measurement Uncertainty, Permissible Limits for Measurement Uncertainty, Total Analytical Error, Tumor Markers

OP-039
EVALUATION OF MEASUREMENT UNCERTANITY FOR VITAMIN D

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OBJECTIVE : Clinically accurate measurement of Vitamin D is very important for clinicians in the diagnosis, treatment and follow-up of the disease. A standardization is required fo rmeasurement 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 (EQAS) 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: Heterotrimeric G-proteins have three subunits, alpha, beta, and gamma, and the heterotrimeric 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) proteins.

MATERIALS-METHODS: RGG1 and RGG2 genes were cloned and expressed in E.coli cells. Recombinant protein purification was performed by AKTA FPLC system. Purified proteins were cleaved by enzymes to separate their fusion partners. The secondary structures of native RGG1 and RGG2 proteins and the thermal stabilities were detected by circular dichroism spectroscopy (CD).
RESULTS: RGG1 and RGG2 proteins were characterized as oligomeric 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 a/biotic 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

OP-041
THE EFFECT OF THE BIOLOGICAL PESTICIDE ABAMECTIN ON MAMMALIAN BUTYRYLCHOLINESTERASE: EXPERIMENTAL AND COMPUTATIONAL STUDIES

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OBJECTIVES: Butyrylcholinesterase (BChE) protects the neurotransmitter function of its sister enzyme acetylcholinesterase (AChE) by detoxifying neurotoxins and serves as a backup to AChE by hydrolyzing acetylcholine that has diffused out of the synaptic cleft. Human BChE is often implicated in Alzheimer 's disease (AD) pathology . Abamectin , a blend of the natural avermectins B1a and B1b, is a widely-used pesticide with relatively low toxicity for mammals. Here, we aimed to investigate abamectin 's inhibitory activity against horse serum BChE.
MATERIALS -METHODS : For in vitro studies , residual BChE activity after abamectin treatment was assayed according to Ellman's method using the substrate analog butyrylthiocholine. For in silico studies, avermectin B1a was docked against a horse BChE homology model , and interactions holding the predicted BChE – avermectin B 1 a complex together were calculated accordingly .
RESULTS : Enzyme kinetic experiments demonstrated that avermectin B1a was a potent inhibitor of horse BChE (IC50= 10.6 µM). The type of inhibition appeared to be competitive when inhibitor concentrations spanned the linear region of the dose - response curve ($V = 252.59 \pm 7.11$ U mg^{-1} protein ; $Km = 0.16 \pm 0.02$ mM; $Ki = 2.26 \pm 0.35$ µM). Computational analyses revealed that avermectin B1a was well anchored in the active-site gorge of horse BChE through multiple hydrogen bonds and hydrophobic interactions.
CONCLUSIONS : In a physiological context, abamectin may adversely affect the central nervous system of mammals. In a pathological context, however, abamectin may lead to the rational design of more potent and selective BChE inhibitors that can be employed as anti-AD drugs.

Keywords: abamectin, avermectin B, horse serum butyrylcholinesterase, enzyme inhibition, molecular docking

OP-042
DOES METHANOL CONCENTRATION AFFECT HUMAN PARAOXONASE 1 EXPRESSION IN RECOMBINANT PICHIA PASTORIS?

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OBJECTIVES: Paraoxonase 1 (PON1) is a mammalian serum protein. Cardiovascular health and the toxicology of organophosphorus compounds are interested in its activity. In Pichia system, optimizing of methanol concentration is an important factor. Therefore, the aim of present study was investigation how different methanol concentration affected expression of human PON1 enzyme.
MATERIAL-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. Recombinant 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 no 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 be done formerly if methanol concentration for induction in P. pastoris is studied.

Keywords: methanol induction, recombinant protein, Pichia pastoris

OP-043
INVESTIGATION OF CHARGE TRANSFER COMPLEX FORMATION BETWEEN PROTOPORPHYRIN AND SELECTED POLYAROMATIC HYDROCARBONS

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OBJECTIVES: Porphyrins, photoactive 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 macrocyclic pi-structures. In this study, we investigeted donor-acceptor complexes between protoporphyrin 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 spektrofluorometer. 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 byTomasi'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 protoporphyrin. UV-Vis absorption spectra haven't show important changes of pyrene and pyrene-protoporphyrin molecules. Density fonctional 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.

OP-044
THE ROLE OF LETM1 SILENCING ON OXIDATIVE STRESS

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OBJECTIVES: Mitochondria are the main centers which responsible for production of the reactive oxygen species (ROS), as well as responsible for generation of ATP. LETM1 gene was firstly identified in Wolf-Hirschhorn syndrome (WHS) and the encoded protein locates in the mitochondrial inner membrane and is thought to play a role on mitochondrial physiology and morphology, and ion transportation. General the studies are done on cancer cell lines and the result are inconsistent in the published literature. Thus, the quite important to determine the function of protein on normal cells other than cancer cells. The aim of this study, following the specific RNAi, was to evaluate the potential role of LETM1 downregulation on oxidative stress and level of respiratory chain complexes in mouse embryonic fibroblasts (MEFs).

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 TÜBİTAK (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 - 1b, 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 hypoglycaemic 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 analyzes 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 ($p \leq 0.001$). 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 2016-1353.

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

OP-047
ROLE OF TNFR1 PHOSPHORYLATIONS ON TNF-A-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 JAK 2- and c-Src-mediated Y360/Y401 and Protein Kinase A (PKA)-mediated T411 /T417 phosphorylations of TNFR 1,and regulation of tyrosine phosphorylation by PKA phosphorylation , we questioned whether these TNFR 1 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,Y360A/Y401A, T411A, T417A, T411A/T417A and phosphorylation-mimicking Y360D,Y401D,Y360D/Y401D, T411D, T417D, T411D/T417D mutants of TNFR1 construct, which was cloned into pcDNA 3.1a 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 IRS1 tyrosine phosphorylation was completely abrogated.
CONCLUSION : TNFR1 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, the cecal 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 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 WhitneyU tests were used for statistical analyzes.
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 diabetes 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 EXPRESION PROFILES IN RESPONSE TO HYDROGEN PEROXIDE-INDUCED OXIDATIVE STRESS IN ARPE-19 CELLS AND THE ACTIVITY OF VEGF INHIBITOR DRUGS ON THESE REAPONCES

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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, ranibizumab, 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.

OP-050

DISCOVERY OF SERUM MINA BIOMARKERS BY IN SILICO METHODS AND THEIR VALIDATION WITH RT-PCR FOR DIAGNOSIS OF LUNG CANCER

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OBJECTIVES : Lung cancer has a relatively high mortality rate compared with other cancers .Lung cancer divided into two groups that are non-small cell and small cell based on histology features .Small cell lung cancer (SCLC) is more aggressive tumour than non-small cell lung cancer (NSCLC).Generally ,lung cancer patients are diagnosed with 2.,3. and 4.stages by using conventional methods .The 5-year relative survival rate for stage-III SCLC is about %8 and for stage -IV SCLC is %2.Stage -0 SCLC patients that are diagnosed with computational tomography (CT) has a relative 5-year survival rate of about %99. However ,false positive rate of CT is very high ,so this technique is unpreferable for early detection of SCLC.Thus,the development of new methods that have high sensitivity and specificity rate are very critical to improve the survival rate of SCLC patients . Our main goal is discovery of serum based miRNA biomarkers by in silico methods ,validation of them with in vitro experiments for early diagnosis of SCLC.
MATERIALS-METHODS: For in silico analysis gene expression levels that are found in GSE19945,15008 and 25508 datasets from GEO Database were normalized with Quantile Normalization method . SCLC patients and control samples' gene expression levels were compared with t-test and sorted based on the p-values .The most statistically significant 6 miRNAs were selected . The level of miRNAs expression were measured with RT-PCR. ROC curves were created for each miRNA.
RESULTS : Sensitivities of miR-20a, miR-96, miR-130b, miR-183, miR-200b and miR200c that are discovered from in silico analysis are %21, 35, 5, 27, 37 and 21 respectively at %100 specificity.
CONCLUSION: These experiments showed that SCLC could be diagnosed with high sensitivity and specificity by using these biomarkers.

Keywords: Lung Cancer,Biomarkers, miRNA, early diagnosis

OP-051

THE ROLE OF TRANSGLUTAMINASE 2 IN HYPOXIA-INDUCED RENAL TUBULAR CELL DAMAGE

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OBJECTIVES: Transglutaminase 2 (TG 2, EC 2.3.2.13); is a multifunctional enzyme which catalyzes Ca++-dependent transamidation reactions . It has been reported that TG2 is associated with cellular processes such as cell proliferation and differentiation , cell adhesion , signal transduction , apoptosis and has a functional role in the pathogenesis of various diseases . Certain mechanisms that trigger cell damage , such as hypoxic /ischemic stress, induce TG2 and this response vary according to cell type , kind of stressor and conditions . The role of TG2 in ischemic renal damage is not yet fully known . In our study , we aimed to investigate the changes in TG2 levels and evaluate with related cellular parameters in human renal tubular epithelial cells (HK-2) subjected to hypoxia.
MATERIALS -METHODS : Hypoxia induction was performed for 24 h using modular hypoxia chamber . Intracellular TG2 activity and expression with HIF-1α, iNOS , p-(NF)κB, TNF-α, cleaved PARP , Bax , Bcl-2 ve Bcl-xl expression levels were detected in normoxic and hypoxic conditions. Then, the above protein expression levels in the presence of TG2 inhibitor and activator were examined. TG2 activity was determined by using in situ transamidation activity assay and protein expression levels were detected by immunoblotting.
RESULTS : It was observed that hypoxia induction significantly increased intracellular TG2 activity and expression with inflammation-related proteins. Moreover, expressions of anti-apoptotic proteins decreased, whereas expressions of pro-apoptotic proteins increased. In the presence of TG2 inhibitor, there was significant decrease in the expressions of inflammation-related and pro-apoptotic proteins.

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 POSTMENAPAUSAL BREAST CANCER AND THE ROLE OF AROMATASE ACTIVITY

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OBJECTIVES: The intracrinology term was first coined over 2 decades ago but there are still questions to be answered which could help us to understand the intracrine 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 peripheral 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 postmenapausal . Patients were divided into groups according to cilinicopathologic features . Also 12 tumor -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 17ß-estradiole was determined via LC -MS /MS and specific aromatase activity of microsomal 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 postmenapausal 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, postmenapausal, 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 , HbA 1c, 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 : Silimarin is an antifibrotic , antioxidant , antiinflammatory , neuroprotective substance obtained from 'Silybum marinum ', 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 platebending 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 -METODS : 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 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 TOS 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 ($p\leq0.05$), while TAS levels were close to control except vitamin C. It was found that TOS levels increased significantly in the NaF-treated group ($p\leq0.05$), but in all groups

vitamin+NaF decreased (p≤0.05). It was detected that the OSI was the highest in the NaF group, in groups given vitamin were close to control except NaF+ vitamin C.
CONCLUSION: it was determined that NaF administration in the osteoblastic cell line increased oxidative stress and decreased following vitamin application. It has been concluded that the cell viability of osteoblastic cell line is compatible with the oxidative balance and that the change of oxidative balance in cell death due to NaF application is effective.

Keywords: Antioxidant, Cell culture, NaF, Vitamins

OP-056

THE EFFECT OF CERTAIN MINERALS ON THE TOTAL OXIDANT/ANTIOXIDANT SYSTEM IN SODIUM FLUORIDE (NAF) INDUCED OSTEOBLAST CELL LINE

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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) inoxidant / antioxidant 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). TOS 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 ALPHA LIPOIC ACID EFFECT ON NEUROPATHY WHICH DEVELOPING IN BRAIN TISSUE WITH STREPTOZOTOCIN-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 six 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 oxidant - antioxidant parameters.
RESULTS: The changes in cognitive functions assessed by MWM were deteriorated according to the control and ALA to the STZ group , whereas theresults were improved 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 PC 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 oxidant-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, Streptozotocin, Alpha Lipoic Acid, Neuropathy, Brain

OP-058

THE PROTECTIVE EFFECT OF ALPHA LIPOIC ACID ON HEPATOTOXICITY CAUSED BY DICLOFENAC SODIUM-INDUCED OXIDATIVE STRESS

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OBJECTIVES : Diclofenac is widely used because of its analgesic , antipyretic , antiinflammator 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 , Hcy 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

OP-059

PROTECTIVE EFFECTS OF TRIBULUS TERRESTRIS ON OXIDATIVE STRESS IN RATS WITH METABOLIC SYNDROME

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OBJECTIVES: This study aims to investigate the effects of Tribulus terrestris (TT) extract on the oxidative stress and antioxidant defense system in rats with fructose induced metabolic syndrome.
MATERIALS-METHODS: The rats were divided into three groups. Control group (n=7),Fructose -treated group with metabolic syndrome (n=7) and TT extract-treated group after the development of metabolic syndrome (n=7).In this study,serum glucose ,total cholesterol ,triglyceride , HDL,LDL,VLDL and serum total oxidant status(TOS) and total antioxidant status(TAS) levels were measured

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 ($p<0.05$). Serum TAS values in the group with metabolic syndrome was decreased significantly compared to the control group ($p<0.05$), increased 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 stres levels of nukleer factor kappa B (NFκB)/Sirtuin 1 (SIRT1) of high fructose induced nephrotoxicity in rats.
MATERIAL-METHODS: Treatments were arranged in 2 x 2 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; NFκB/ SIRT 1, 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-κB and MDA levels increased. Overall, ASX administration increased renal SOD level and decreased renal NF-κB and malondialdehyde (MDA) levels ($p<0.05$). Astaxanthin administration in treatment group considerably decreased renal NF-κB 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-κB pathway.

Keywords: Astaxanthin, Fructose, NF-κB, Oxidative stres, 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, chemopreventive , chemotherapeutic , anti-inflammatory , 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 anti-oxidant source.

Keywords: Aronia melanocarpa, antioxidant, CUPRAC, FRAP

OP-062
DETERMINATION OF ANTIOIDANT 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 esculente was purified using cold acetone precipitation and sepharose 4 -B-L- tyrosine-p-aminobenzoic 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 esculente 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 esculente 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), 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 TOS 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 Beck Depression Inventory (BDI) were administered . 24 hours-dietary intakes were recorded for 3-days during premenstrual , menstrual and postmenstrual phases . Daily total fat(g/day) and fatty acid(g/day) intake were determined . Statistical analyzes were performed using the SPSS 22 programme.
RESULTS : PMS was recorded in 60.9% of the participants and 22.4% of these were accompanied by mood disturbance ($p=0.02$). The fatty acid composition showed that consumption of saturated fatty acids and monounsaturated fatty acids was less in menstrual period than in other periods . There was no correlation between dietary fatty acid pattern and PMS scores($p>0.05$). However, there was a negative correlation between fatty acid pattern and mood scores . There was a negative correlation between the consumption of polyunsaturated fatty acids and mood scores and a significant relationship with the mean strength ($r = -0.474$, $p=0.2$).
CONCLUSION : As a conclusion , increased consumption of polyunsaturated fatty acids might have positive effects on mood in the premenstrual period . Increasing consumption of polyunsaturated fatty acids may be suggested to the 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-065

EFFECTS OF DIETARY GLYCEMIC LOAD ON APPETITE

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OBJECTIVE : The aim of study is to determine effect of glycemic load (GL) on appetite and how appetite effects to food choice.
MATERIALS -METHODS : The study was conducted with 20 subjects (21.7±0.9 years) healthy , at body mass index (BMI) of 18-25 kg/m². Energy , carbohydrate , protein and lipid percentages were determined by Beslenme Bilgi Sistemi (BEBIS). The GL of diets was calculated by determining glycemic index (GI) of foods. Blood glucose was measured with Plusmed (pM-100). Pre/post-meal appetite scores were determined by using 10-cm scale . Statistical analyzes were performed with SPSS 21.0. Shapiro -Wilk-test was used to determine normality of parameters, ANOVA/ Kruskal Wallis tests were used for statistical analysis.
RESULTS : Average of body weight ; 53,8±7,2kg, BMI ; 20,4±1,9kg/m², energy 1749,9±434,2kcal, carbohydrate 199,1±59,1g, protein 67,5±14,5g, lipid; 73.9±31.1g. There are three GL groups; low (15.0%), medium (35.0%) and high (50.0%). Individuals with high GL had higher appetite scores but this was not statistically significant. When compared blood glucose measurements and GL values, significant difference was found only post-dinner (60.min) ($p<0.05$). Individuals having higher appetite scores pre-breakfast consumed more protein ($p<0.05$) and consuming more carbohydrate at lunchtime had higher appetite score ($p<0.05$).
CONCLUSION : It was found that diet with high GL to increase energy intake, appetite scores and pre-breakfast appetite to increase consumption of protein in breakfast . Low GI diets provide blood glucose control and increase HDL cholesterol in individuals with type 2 diabetes . However , number of studies investigating effects of GL on appetite is inadequate . Studies are needed to understand effects of GL effecting regulation of appetite metabolism on appetite.

Keywords: Nutrition, glycemic index, glycemic load, appetite metabolism

OP-066

THE EFFECT OF TURKISH BEE POLLEN EXTRACTS ON NAV 1.5 AND 1.7 A-IZOFORM OF VGSC IN PC-3 HUMAN PROSTATE CANCER CELLS

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OBJECTIVES: To investigate the effect of dimethyl sulfoxide (DMSO) and water extracts of Turkish Bee Pollen on mRNA expression of Nav 1.5 and 1.7α isoforms of Voltage-Gated Sodium Channel (VGSC) proteins in PC-3 human prostate cancer cells.
MATERIALS -METHODS : DMSO and water extracts of Turkish Bee Pollen (150 µg/mL each) were incubated for 24 h with PC-3 cells and total RNA was extracted using a commercial kit. Real-time polymerase chain reaction (RTPCR) assay was used to determine mRNA levels of the isoforms of VGSC. Expressions of VGSC were assumed to be 100 % in PC-3 cells incubated without extract .
RESULTS: According to RTPCR studies, both extracts decreased the expression of VGSC isoforms to varying extents. Expressions of Nav 1.5 and 1.7 was 44.05 ± 0.66 and 46.76 ± 1.96 %, respectively for DMSO extracts of Turkish Bee Pollen; while for water extracts of Turkish Bee Pollen , the values were 75.85 ± 3.74 and 75.03 ± 5.65 150 µg/mL, respectively.
CONCLUSION: This results suggest that DMSO and water extracts of Turkish Bee Pollen may have antimetastatic activity in PC-3 cells due to down-regulation of expressions mRNA of VGSC α-isoforms.

Keywords: PC-3, Pollen, Voltage-Gated Sodium Channel

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 tumor in males of Western countries. Androgen-independent prostate cancer is highly metastatic and therefore resistant to both chemotherapy and radiation . The aim of this study is to compare the efficacy of standardized Gemcitabine 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 Ca standard therapy , and to evaluate invasion and metastasis responses .
MATERIALS -METHODS : In this study we examined the anticancer effect of Deguelin on pancreatic cancer cell line PANC-1 and prostate cancer cell lines PC -3 and DU-145. For this purpose , cell viability tests were performed to determine the preventive effects of Docetaxel, Gemcitabine and Deguelin on the PC-3, DU- 145 and PANC-1 cell lines and to determine the relative effective dose. The determined effective concentrations were applied to the cells in different drug combinations and cell cycle , apoptosis , migration and angiogenesis analyzes were performed using flow cytometry.
RESULTS: Deguelin was found to be effective in PANC-1 cell line at very low concentrations and not being effective in prostate cancer lines.
CONCLUSIONS: In the light of the results, It was determined that this effect was due to the difference in carcinogenesis stages of two different invasive organ cancers, and it would be important to identify the details with advanced pathway studies.

Keywords: Docetaxel, Deguelin, Gemcitabine, Prostate Cancer, Pancreatic Cancer

OP-069

THE INVESTIGATION OF THE CYTOTOXIC EFFECT OF FOLIC ACID-GRAPHENE OXIDE NANOPARTICLE ON PRODUCTION AND PROSTATE CANCER CELL LINE

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OBJECTIVE : In recent years , scientists have focused on investigating nanotechnological molecules that exhibit anti-cancer activity , and progress has been recorded in the relevant pharmacotherapeutic field. Since nanoparticles have very small diameters, has been the subject of research that has been the subject of choice in recent years both in vitro and in vivo studies in the areas of cancer diagnosis and treatment, targeted drug release, biosensors, and biotechnology . In this study; the anti-cancer activity of this synthesized Folic Acid-Graphene oxide nanoparticle (FA-NGO) has been investigated effect on PC-3 prostate cancer cell line.
MATERIALS -METHODS : The GO nanoparticles used in the work were synthesized using the Hummers method , which was improved from graphite powder. FA-NGO was then synthesized and the stability and rheological tests of the suspensions prepared at different concentrations of this synthesized material were carried out. PC-3 human prostate cell line, FA-NGO prepared at different concentration ranges , was incubated for 24, 48 and 72 hours in the wells. At the end of the incubation period, the cytotoxicity of the nanoparticle was determined by MTT method.
RESULTS: In this study, it was shown that the FA-NGO nanostructured system had a protective effect on the PC-3 cell line and a preventive effect on the growth of cancer cells when compared to the NGO.
CONCLUSIONS: As a result; The FA-NGO nanostructured system was found to have cytotoxic activity on the PC-3 prostate cancer cell line according to NGO and control group.

Keywords: Graphene, Folic acid, Prostate cancer, PC-3, MTT

OP-070

THE EFFECTS OF CAMELIA SINENSIS EXTRACT ON PROLIFERATION , APOPTOSISI , OXIDATIVE STRESS IN INS-1 CELLS

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OBJECTIVES: Green tea (Camellia sinensis) is one of the most consumed beverages. C.sinensis consumption may prevent tumor and other diseases. Insulinomas are pancreatic islet cell tumours. Most insulinomas are benign and a few patients have malignant insulinoma. In present study, the effects of the extract from C.sinensis on cytotoxicity, proliferation, apoptosis and oxidative stress status were investigated in rat insulinoma INS-1 cells.
MATERIALS-METHODS: C.sinensis leaves were collected. Tea leaves were brewed in tap water for 20 and 40 mins at 80 °C. INS-1 were treated with different doses (100-5000 µg/mL) of tea extract for 24 h. MTT assay was used for cytotoxicity. PCNA antibody and TUNEL method were examined as proliferation marker and cell death detection, respectively. The levels of malondialdehyde (MDA), glutathione (GSH), protein carbonyl (PCO) were measured in INS-1 cells treated with brewing tea.
RESULTS: The MTT assay showed that treated with the extract from C.sinensis 3000-4000 µg/mL doses inhibited the proliferation of INS-1 cell. The percent of PCNA immunoreactive cells decreased and the percent of TUNEL positive apoptotic cells increased in INS-1 cells treated with the extract from C sinensis as compared to non-treated cells at both doses. While MDA and PCO levels in INS- 1 cells treated with tea extract showed a significant decrease at both doses as compared to non-treated cells, GSH level significantly increased .
CONCLUSIONS: The results indicate that the extract from C.sinensis inhibited proliferation and caused apoptosis in INS-1 cell. C.sinensis may be natural agent for supporting the treatment of various tumors diseases.

Keywords: antioxidant, Camellia sinensis, INS-1, PCNA, TUNEL

OP-071

APOPTOTIC 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. p 21, 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,BECN 1,ATG 4A 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 BECNI 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 flavonol, flavone, flavan-3-ol, flavanone and phenolic acid extracts by using different organic solvents from the outer skin of Pistacia vera Antep (A) and Siirt (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 lyophilization 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/100µl for HeLa and ACC201, respectively. SPSS package program was used for statistical analysis.
RESULTS: 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, 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, posses 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 (Caspases-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 SUBEROYLANILIDE HYDROXAMIC 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: Cholangiocarcinom 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 induce differentiation and apoptosis on many tumor. SAHA is utulized 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: SAHA statistically increased the level of YAP /TAZ ($p<0.001$). SAHA statistically reduced colony formation ($p<0.05$). With SAHA treatment, total and late apoptosis statistically increased and early apoptosis decreased ($p<0.03$, $p<0.05$). SAHA has statistically increased the number of cells retained in the G0/G1 phase. There was no statistically significant difference in S phase ($p<0.046$, $p>0.05$).
CONCLUSIONS: A positive effect of SAHA on proliferation, apoptosis and cell cycle was observed. It has been reported that YAP/TAZ is both oncogenic and tumor suppressor gene feature. This subject is not clear. YAP/TAZ is active in low cell density. Therefore, increase in YAP/TAZ with SAHA administration may have increased in response to a decrease of cell proliferation or SAHA may have shown a positive effect on the TFK-1 by increasing the tumor suppressor property of YAP/TAZ.

Keywords: Cholangiocarcinoma, SAHA, YAP/TAZ

OP-075

THE EFFECTS OF THE HISTONE DEACETYLASE INHIBITOR SUBEROYLANILIDE HYDROXAMIC ACID ON THE COLONI-FORMING UNIT, CELL VIABILITY, APOPTOSIS AND CELL CYCLE IN THE HEPATOCELLULER CARCINOMA CELL LINE

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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 histones engenders multiple cellular effects such as 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 colony formation in CFU assay ($p<0.001$). Statistical difference was not found in apoptosis measurements between with 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, Hepatocellüler Carcinoma, SAHA

OP-076

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 vitaminsC 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 in vitro conditions . Cells were plated into plates ,1x106 cells .Cells ; at various doses NaF(100-10000 µM), 60µM vitaminE , 100µM vitaminC , sodium fluoride and vitamin groups were given together as a control group and were separated.MTT% viability results were determined.as the control group was accepted as 100% live. Twenty-four hour incubation followed by trypsinized cells were prepared with broken up freeze /thaw method and analyzed .Twentyfour hour incubation 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+vitamins($p\leq0.05$).It was observed that TOS levels in all groups increased significantly from control ($p\leq0.05$).For OSI, it was observed that all groups increased significantly in relation to the control, the use of vitaminE in combination with NaF increased the OSI and there was no significant change in the group 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-077

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 lines 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 MTT % 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 ($p\leq0.05$). In Mg and Se plus NaF administered groups, TAS was slightly lower when compared to the control, albeit a slight increase was observed ($P\leq0.05$). TOS levels were lower in the NaF administered group when compared to the control group ($p \leq0.05$), 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-078

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 (I/R), 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 investigation the effects of diuretic Mannitol and aquaretic Conivaptan on post-ischemic brain damage, inflammation and edema in acute phase in cerebral I/R 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+, Cl-, antidiuretic-hormone, progranulin, 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-analyse 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. Conivaptan was found to 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 Conivaptan treatment was more beneficial than Mannitol, which has serious side effects.
This work is supported by Eskisehir Osmangazi University (Project-No: BAP 2017-1524).

Keywords: Aquaretic Conivaptan, Brain edema, Diuretic Mannitol, Inflammation, Neuron spesific 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-isoprostoglandin andTau 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 Herpericum perforatum samples which belongs to Hypericaceae family was investigated.
MATERIALS-METHODS: 10 gr of dried plant sample extract with 300 ml methanol and ethanol for 6 hours. Methanol/ethanol extracts of Herpericum perforatum was tested for antimicrobial activity against Pseudomonas aeroginosa (ATCC 9027), Staphylococcus aureus (ATCC 6538), Bacillus megaterium (DSM 32), Yarrovia lipolytica, Candida albicans and Saccharomyces cerevisiae. The measurements of glutathione (GSH) levels which participate in vital mechanism of plants were done spectrophometrically and total antioxidant capacity (TAC) was done by ELISA method .
RESULTS : Altered antimicrobial activity is found in the studied species Herpericum perforatum GSH levels are various in different solvents. The recent study showed that the all the studied species have significant results of antioxidant capacity.
CONCLUSIONS: In conclusion, it's suggested that antimicrobial and antioxidant content of Herpericum perforatum may positively affected by geographic properties and need to be further studies about these plant.

Keywords: Antimicrobial, Antioxidant, Herpericum perforatum Glutathione

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 seperated to 3 groups, each of which has 7 rats. Group1; control group (10 weeks), group 2; MS with fructose (10 weeks), group3; given NSO after MS progress (10+4 week) in created.
RESULTS: Serum TNF-α, 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-α 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 oxidant 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(6.21-87.39) µg/L and 83.60 (16.52-278.00) pg/mL, respectively. In the control group, these values are 13.20 (7.00- 59. 60) 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 is 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

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 HEPCIDIN, 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 malondialdahit 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 Agri. 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 İbrahim Cecen 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±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 HYPERTROPHY

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OBJECTIVES: Adenotonsillar hypertrophy is a common disease in children, causing recurrent respiratory infections. The free radicals can result in damage to DNA, lipids and proteins. The most common oxidative base damage marker is 8- hydroxy-2-deoxyguanosine. Malonylaldehide is a marker of lipid peroxi- dation, and carbonyl derivatives are used widely as marker of protein damage. In this study, it was aimed to investigate 8-hydroxy -2-deoxyguanosine, malon- dialdehyde and protein carbonyl levels in patients with adenotonsillary hypertrophy.
MATERIALS-METHODS: A total of 25 patients with adenotonsillar hypertrophy, who were later operated on, and 25 control patients with the same demographical features were included to the study. Blood and urine samples were collected preoperatively and at the sixth month of postoperative phase. In serum, urine and tissue samples 8-hydroxy-2-deoxyguanosine, protein carbonyl and malondialdehyde levels were determined by EIA, ELISA and manually spectrophotometric method, respectively.
RESULTS : Our study showed that malondialdehyde levels in children with adenotonsillar hypertrophy are significantly higher than those of the control group, and 8- hydroxy -2-deoxyguanosine and protein carbonyl levels were notstatistically significant. After the operation, 8-hydroxy -2-deoxyguanosine, malondialdehyde and protein carbonyl levels decreased significantly. There was a statisticaly significant but weak correlation between preoperative malondialdehyde and 8-hydroxy-2-deoxyguanosine levels. Urinary malondi - aldehyde levels in the patients were significantly higher than those of control group, while the 8-hydroxy -2-deoxyguanosine levels did not differ betwee the two groups.
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

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

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OBJECTIVES: The aim of this study were to investigate seminal oxidant-antioxi dant activity in infertile men.
MATERIALS -METHODS : This study was conducted 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 g 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 fully automatic analyser (Architect C16000). The test parameters investigated in this study; Total Anti-oxidant capacity (TAC), Total oxidant status (TOS), Total thiol (TTL), Paraoxonase (PON 1) 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, OSI), 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 : Infertility 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: antioxidant, 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 stres (OS) is excessive generation of reactive oxygen species. There is growing evidence that damage to spermatozoa by reactive oxygen species (ROS) play a key role in male infertilityThe aim of the present study was to assess seminal plasma levels of the advanced oxidation protein products (AOPPP) level and paraox - onase -1 (PON- 1) activity in men with Azoospermia (A), Teratozoospermia (T) and oligoasthenoteratozoospermia (OAT) compared with normozoospermic (N) males
MATERIAL -METHODS : This study was carried out in 70 men attendig the Antalya Medicalpark Hospital Urology Clinic included semen analysis between January 2014 and May 2015. Working group was 52 infertil men who had 1 year or more of infertility. 18 proven fertile healty 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 ($p=0,004$).

CONCLUSION: Our results confirm the importance of oxidative stress in male reproductive function, and therefore we supposed that the examination of semen AOPP levels and PON 1 activity might furnish useful information on sperm quality and function in infertile men.

Keywords: Seminal plasma, AOPP, Oxidative Stress

OP-089

INVESTIGATION THE EFFECTS OF L-NAME (N-NITRO L- ARGININE METHYL ESTER) AND VITAMIN E (A-TOCOPHEROL) TO TESTICULAR OXIDATIVE STRESS CAUSED BY EXPOSURE TO CIGARETTE SMOKE IN MALE RATS

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OBJECTIVES: Testis is an organ rich in blood veOPels. It is possible that toxic substances present in cigarettes and carried in blood may disrupt the balance between oxidant-antioxidant system. The effect of L-NAME on oxidative stress has been shown in various studies. Vitamin-E(alpha-tocopherol) was also demonstrated in several studies to be effective to inhibit lipid peroxida- tion and oxidative stress. In this study, L-NAME, and alpha-tocopherol are aimed to investigate the effects of testicular oxidative stress result consisting of smoking exposure.
MATERIALS-METHODS: In the study, 45 male Wistar albino rats were divided into five groups and each group had 9 rats; Control, cigarette smoke, cigarette smoke+Vitamin-E, cigarette smoke+L-NAME, cigarette smoke+Vitamin-E+L-NAME. Cigarette smoke was administered by inhalation in special cages, 200 mg/kg-BW Vitamin-E and 50 mg/kg-BW L-NAME was administered by intraperitoneal during 42 days. On day 43, blood and tissue samples were taken from the rats. Testosterone, follicle-stimulating-hormone (FSH) and luteinizing-hormone (LH) in serum; malondialdehyde (MDA), catalase (CAT), myeloperoxidase (MPO), glutathione (GSH), nitric-oxide (NO) levels were examined in tissue homogenates.
RESULTS: In the cigarette smoke group, there was a statistically significant increase in MDA, NO, MPO and LH levels [65%, 43%, 115% and 46% of control, respectively ($p<0,05$)], however; GSH, CAT and testosterone levels decreased by 40%, 51% and 53%, respectively. In treatment groups, return to normal values was found statistically significant compared to smoking groups($p <0,05$).
CONCLUSIONS: Smoking has been shown to cause adverse changes in the oxidative stress parameters and gonadal hormones. It was observed that these adverse changes could be normalized by L-NAME and Vitamin-E application.
'This work is supported by Eskisehir Osmangazi University (Project-No: BAP 2016-1344).'

Keywords: Oxidative stress, cigarette smoke, testicular damage, vitamin E (alpha-tocopherol), L-NAME (N-nitro L-arginine methyl ester)

OP-090

LEVELS OF TRACE ELEMENTS AND HEAVY METHAL IN SOME TISSUES INVESTIGATION AT DIFFERENT AGE GROUPS OF VAN FISHES

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OBJECTIVES: With the advancement of technology and industry, water resources are becoming increasingly polluted. Heavy metals for the environment are the most dangerous environmental pollutants. Heavy metals also show toxic effects for aquatic life. This applies to Van Fishes living in Van Lake. For this reason, we aimed to investigate how the metal levels of Van fish (Alburnus tarichi, Güldenstädt 1814) change according to different ages.
MATERIALS -METHODS :In the study, 70 Van fish was obtained from the local market. Age determination is made on the operculum sample taken from each fish. Grouping was determined to be 3, 4 and 5 years (30 females, 40 males). In the study, Be, Bi, Pb, Cd, Fe, Cu, Zn, Se, Ni, Mn, Co, Cr, Li, Ca, Mg, Na and K elements in the tissues of muscles, liver, gills ,brain etc. of Van fishes were analysed by ICP-OES.
RESULTS: The results were evaluated as toxic elements, trace elements and macro elements. The highly toxic elements of Be, Bi, 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 the 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 consuption 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; Vit C, Vit E 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).

MATERIALS-METHODS: Fifty four SCD patients and 30 healthy controls were included in the study. Fasting blood samples were collected. After centrifugation at 1500 g for 10 minutes, plasma samples portioned and stored at – 80°C. IMA levels were determined by albumin cobalt binding test (ACB test), a colorimetric method. Total and native thiols and disulfide were analyzed with the novel spectrophotometric method.
RESULTS : We found significantly lower levels of native thiol (-SH) (284 ± 86. 3 µmol /L), disulfid levels (14 .65± 89 .3 µmol /L) and total thiols (-SH + -S-S-) (313 ± 89.3 µmol/L) in SCD patients compared to healthy controls (respectively , 417 ± 54 .2; 22 .7 ± 11 .4; 462 ± 58 .7 µmol /L). Plasma albumin (34.9± 7.98 g/L) levels were lower and IMA levels (1.36± 3.8 g/L) were higher in SCD patients compared to controls (respectively , 43 .5± 3.7, 8.43± 1.6 g/L). Besides, plasma albumin levels were strongly correlated with both plasma native (r=0. 853; p=0. 0001) and total thiols (r=0.866; p=0.0001).
CONCLUSION : Decreased plasma native and total thiol levels and increased IMA levels are related to increased oxidative stress and provide an indirect and quick reflection of the oxidative damage in SCD patients.

Keywords: Sickle cell disease, thiol/disulfide homeostasis, oxidative stress, ischemia modified albumin

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 collodial 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. The 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 three types of reagents . Seventeen patients had long level of APTT by measuring three types of reagents . Twenty patients had long levelof APTT by measuring Hemosil synhAsil -SS reagent and had normal level with Hemosil SynthA - Fox - SF and Hemosil APTT-SP. Seven patients had long level of APTT by measuring Hemosil synhAsil - SS reagent and Hemosil APTT -SP reagent and had normal level of APTT with Hemosil SynthAFox -SF. Twenty patients had long level of APTT by measuring Hemosil synhAsil- OP reagent and Hemosil SynthA Fox -SF reagent and had normal level of APTT with HemosilAPTT - SP.
CONCLUSION : Ranges of APTT must be determine according to reagents . APTT reagents must be sensitive against borderlines cases who had a mild or moderate low levels of factors and the presence lupus antıcoagulant.

Keywords: active parsiel thromboplastin time, reagent,hemostasis

OP-094
DETERMINATION OF MICROPARTICLES VIA THROMBIN GENERATION TEST IN PATIENTS DIAGNOSED RETINOPATHY

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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 (MPP) 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, MPP levels were examined functionally via TGT parameters (Calibrated Automated Thrombog raphy, Stago Diagnostics, France).
RESULTS: Diabetics had significantly higher body maOP index ($p<0.05$), waist circumference ($p<0.001$), systolic blood preaOPure ($p<0.0001$), 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 ttPeak (r=0.269, p=0.036), lag time (r=0.243, p=0.059).
CONCLUSION : The differences 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 hyperreactive platelet phenotype associated with increased atherotrombotic risk characterizing diabetics. MPP 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 ULTRAVIOLE 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 directions . They were kept 5, 10 and 15 minutes in respectively at maximum level of microwave oven . After this procedure , let them cool for 10 minutes and was loaded in 1.5% ethidium bromide agarose gel , run 15 minutes in electrophoresis . They were visualized and analyzed with UV imaging device .
RESULTS : As result of analyses , agarose gel imaging results showed that there were no DNA fragments in the experimental groups and exposure of microwaves on the samples did not cause fractures on the phosphodiester bonds that forming the DNA.
CONCLUSION : The natural frequency of water produced some matches the frequency of the microwaves . It is known that heating disrupts various protein structures , but microwave oven on DNA samples were not effective in vitro , and DNA samples were observed stable.

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 memebrane, 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 forming physiological 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 of 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 EVALUTION OF HEMOGLOBIN 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 Electro phoresis , 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 (Cd126 GTG- > GCG).

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 leukemic 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 chimer- ism 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. Acoording 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, CFS1PO, D3S1358, TH01, D13S317, D16S539, D2S1338, D19S133, vWA, TPOX, 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 receiver/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 THALAOPEMIA 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, IVSII-745, IVSII-1, Cd39,-30 and Fsc5 mutations follow this. In this first study, we aimed to determine genetic heterogeneity of beta thalassemia mutations in Kahramanmaraş province in Çukurova region.

MATERIALS -METHODS : 5 ml blood samples was taken from 14 thalassemic patients and their relatives . The patients were taking care of K.S.Ü. Hospital at Kahramanmaraş . Haematological datas were obtained by cell counter . HbA2 was determined by HPLC . Ten different mutations were screened by ARMS method.

These common beta thalaOPemia mutations are -30 (T>A), Cd 8 (-AA), Cd 8/9 (+G), IVS 1-1 (G>A), IVS 1-5 (G>C), IVS 1-6 (T>C), IVS 1-110 (G>A), Cd 39 (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/Fsc8-9, one: IVS2-1/IVS1-5). Two patient were charecterized by DNA sequencing as Fsc 44 (-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 thalassaemia, 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 puss 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; 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 .
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 ($p<0.0001$). 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 composi - tion 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 summer and winter seasons.
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 distrubition ; Mean ± SD ; In winter 7,4 ± 1,3; and in the summer it was 8 fl ± 1.5. CRP, sedimantation ve neutrophil lympho- cyte ratio (NLR) showed nonparametric distrubition; 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, 3,60-8,78, respectively.
CONCLUSION: In our study, we observed a decrease in inflammatory parameters in the summerr. 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, inflammatuary, vitamin D

OP-104

SEASONAL CHANGE OF VITAMIN D AND INFLAMMATORY MARKERS

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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 prodiferantiative 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 (N/L), 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 paticipants 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/d Land 10.01 mg/dL, respectively, whereas the sedimentation results 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; 0.020; 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 (bortezomib resistant) and KMS28 (bortezomib 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.
RESULTS: 24 hour bortezomib exposure to KMS20 was determined very high overexpression (~45 fold) of MDR1, at the same time a significant expression of MRP7 and GSTP1 was observed. Only the MDR1 gene expression was found to be increased in 48 hours. In KMS28, solely GSTP1 was expressed for 24-hour exposure. 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 inhibited by appropriate siRNAs or repressor molecules. Through the results of this study and solving all other resistance mechanisms are 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-e, 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-Triazol were synthesized by cyclization of corresponding 1,4-disubstituted tiyosemicarbazides formed from the reactions of pyridine-2,5-dicarbohydrazide by obtained using pyridine-2,5-dicarboxylic acid with alkyl/aryl isotiyocyanates. 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, Cytosolic hCA I and II isoforms 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±0.37–10.06±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, epilePPy, 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.VitaminD metabolites might reduce the risk and severity of autism due to the effects such as their anti-inflamatory 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 healty 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 electrochemilu minescence 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 (Grup 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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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 admin-istrated blank enjection and decapitated under the anesthesia (10 mg/kg xylasine) at 1st, 3rd, 5st and 7st hours. The each of the four groups of the other groups were administrated cefazolin (50 mg/kg), cefuroxime (25 mg/kg) and cefaperazone (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 3st hours compared to sham groups, while it began to fall at 5st and 7st hours ($p<0.05$). In kidney-tissues, it was lower than same sham group in the cefuroxime and cefoperazone groups at 7st hours ($p<0.05$). In addition, almost all antibiotic groups of kidney tissues had higher GST-activity at 1rd, 3st, and 5st hours than those of sham groups, but it was higher only at 5st 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 expecially for first five hour.

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

OP-109

THE ROLE OF ISCHEMIA MODIFIED ALBUMIN, 7-KETOCHOLESTEROL AND THE CHOLESTON-3β,5α,6β-TRIOL IN THE DIAGNOSIS OF CORONARY ARTER DISEASE

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OBJECTIVE: Plasma oxysterols 7-ketocholesterol (7-KC), cholestane-3β,5α,6 β-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±2.3ng/mL, 20.26±1.36ng/mL; p=0.001). Decreased 7-KC levels were found after the effort test (post-test vs. pre-test: 38.59± 2.56ng/mL vs. 40.90±2.38ng/mL; p<0,001). There was a significant difference in 7-KC levels between definite positive, suspicious positive and negative patient groups (40.99±1.20ng/mL, 39.30±2.33ng/mL, 37.68±2.51ng/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 bomarker of changes in lipid metabolism 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, chenodeoxycolic 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 Hypercarb HPLC column (3µm, 100x2.1mm) and Phenomenex Kinetex C18 column (1.7µm, 150x2.1mm). While the chemically pure standards separated on PLRP-S and Hypercarb 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 Kinetex C18 column.

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

OP-111

EFFECT OF TAUROURSODEOXYCHOLIC 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 TM to induce ER stress and TUDCA was treated in advance to decrease cytotoxic 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,C20:4n-6), dihomo-gamma-linolenic acid (DGLA, C20:3n-6), eicosap-entaenoic acid (EPA,C20:5n-3) and docosahexaenoic acid (DHA, C22:6n-3) in liver tissue and THLE-3 cells were determined by multiple reaction monitor- ing using LC-MS/MS. Phospholipase A2 (PLA2), cyclooxygenase (COX) and prostaglandin E2 (PGE 2) 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 tissueand THLE - 3 cells compared to controls . PLA 2, COX and PGE 2 levels were significantly incresed in TM treated rats and THLE -3 cells compared to controls. TUDCA lead to a partial restoraion of liver PUFA levels and decreased PLA 2 , COX and PGE 2 levels .
CONCLUSIONS : This is first study reporting altered PUFA levels in ER stres and supports the use of omega -3 fatty acids in liver diseases demonstating 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. Bezostaja) and barley (Hordeum vulgare cv. Erginel) 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 were 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 in these crop species. Therefore, we considered that different HM applications can be tested on different crop species to determine the existence and ampleness 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 İN 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 expressions and level of protein in Lx-2 cell line. With this, the effect of SAHA on cell viability, migration, colony-forming unit (CFU), apoptosis were investigated.

MATERIAL -METHODS : Sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) was performed to determine protein levels. Gene expression levels were measured by Real Time PCR. Apoptosis was performed by Muse Cell Analyzer.

RESULTS: SAHA statistically reduces the levels of E-cadherin, N-cadherin and Vimentin protein ($p<0.003$, $p<0.001$), besides statistically increasing E-cadherin gene expression and decreasing N-cadherin and Vimentin gene expressions ($p<0.007$, $p<0.021$, $p<0.035$). 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-translational 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 LANSOPRASOLE 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 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 30mg/kg; Group IV, indomethacin 25 mg /kg +lansoprazole 30 mg /kg ; Group V , indo methacin 25mg/kg + andrographolide 15 mg /kg ; and Group VI , indometha cin 25 mg /kg + andrographolide 30 mg /kg . After six hour plasma glucose , urea , creatinine , AST (aspartate aminotransferase), ALT (alanine aminotransferase), total 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 glycemial of the group III increased significantly compared to that of the control. The urea levels of the groupIV decreased significantly compared to those of the group II. The albumin levels of the group II and group III increased compared to those of the control. The AST levels of the groupII, group III and group VI decreased compared to those of the control . The cholesterol levels of the group IV, group V and group VI decreased 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, bodys and leaf. Concentration range of 10-1000 µM were added to the wells and incubated for 24, 48 and 72 hours.

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 excell 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 BoiOP flower, body and leaf were reduced DU-145 cell line viability depending on concentration and time.
CONCLUSIONS: As a result; Euphorbia macroclada Boiss flower, body and leaf acetone extracts were observed to induce toxicity in the DU-145 prostate cancer cell line.

Keywords: Euphorbia macroclada BoiOP, DU-145, MTT

OP-116
NECROPTOTIC EFFECTS OF BISPHENOL A IN SH-SY5Y NEUROBLASTOMA CELLS

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OBJECTIVES: Bisphenol A(BPA) is a commonly used endocrine disruptor that can leads to chronic exposure. It is reported that BPA shows cytotoxic effects on various cell lines and induces apoptosis or necrosis. In this study, we aimed investigate mechanism of cytotoxic effects of BPA in SH-SY5Y cells and possible role of AChE.
MATERIALS-METHODS: Specific AChE activity was determined by Ellman method, TNF-α level and caspase-8 level in BPA-treated SHSY5Y cells were analysed by LEGENDMAX ELISA kit and abcam ELISA kit, respectively. Apoptotic and necrotic cell populations were measured by Tali Image Based Cytometer.
RESULTS: Specific AChE activity increased at 12 hours ($p<0.001$), %necrotic cell decreased at 4, 6 and 12 hours ($p<0.001$, $p<0.01$) and increased at 48 hours with BPA treatment. %Apoptotic cell population increased at 6 hours. While TNF-α level decreased at 48 hours at both doses of BPA teratment ($p<0.001$), it is only decreased with 1 pM BPA treatment at 24 hours ($p<0.001$). Caspase-8 level increased with 1 nM BPA at 24 hours, with 1 pM BPA at 48 hours ($p<0.01$). Necroptosis is inhibited in SH-SY5Ycells with 1 nM BPA ±50 µM RIPK1 inhibitor Necrostatin-1 at 48 hours.
CONCLUSIONS: Increased caspase-8 levels, %apoptotic cell population and specific AChE activity showed apoptosis within 24 hours. TNF-α level and AChE activity decreased between 24-48 hours. Despite increased levels of caspase-8 at 48 hours, cell death did not occur via apoptosis, suggesting the possibility that downstream molecules of caspase-8 could not be activat-ed. Treatment of 1 nM BPA for 48 hours caused RIPK 1-dependent necroptosis in SH-SY5Y cells.

Keywords: Bisphenol A (BPA), Acetylcholinesterase, Necroptosis, Apoptosis

OP-117
THE EFFECTS OF GLUTATHIONE APPLICATION ON OXIDATIVE DNA DAMAGE AND ANTIOXIDANT SYSTEM IN GLUCUSE-ADDED RENAL CELL LINE

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OBJECTIVES: This study was planned in order to effect of glutathione known antioxidant properties the potential oxidative DNA damage and reveals the effects of antioxidant system in high glucose (HG) added kidney cell line.
MATERIALS-METHODS: BHK-21 cells were cultured with the regular passages. MTT cell viability was determined for glucose, glutathione. Cells were seed into plates. Control, glucose (285 mM), GSH (250 µM) and its cross groups were prepared. Cells were used for analysis after hours 24 incubation. In these examples; 8-OhdG, TAS, TOS were analyzed by ELISA and spectrophotometric methods.
RESULTS: 8-OHdG levels were effected by high glucose ($p\leq0.05$) and, HG plus and glutathione supplements were increased, too. TOS levels and OSI values in all working groups (HG, and GSH+HG) increased compared to controls ($p\leq0.05$).
The TAS was no effected from glutathione supplemented group. HG treatment was decreased TAS in TQ and LYC groups ($p\leq0.05$). As a result, in the HG treated BHK-21 cells, oxidative DNA damage, TOS, 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 doses 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 Boisse 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 THYMOQUINONE 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 standart treatment in patient with GBM is surgical resection, radiotherapy and adjuvant chemo-therapy. Dispite 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. Thymoquinone (TQ) is the bioactive component of black seed (Nigella sativa) oil and it has anti-inflamatory, antioxidant, anti-hypertensive, and antitumor effects. Aim of this study was to determine the effects of TQ on glioma by investigating cytotoxicity, genotoxiciy, 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 Comey Assay, ROS levels with 2,7-dichlorofluorescein diasetat (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-B1 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): Streptozotosin 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, transform- ing growth factor -beta 1 (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 seperated 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 progreOP (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: Consequently, NSO have a positive effect the serum BDNF and biogenic amines which can be useful to in the patients with MS and it looks like a promising option has been cocluded.

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

OP-122

DETERMINATION OF IN -VITRO ANTIOXIDANT , ANTICHOLINESTERASE AND BUTYRYLCHOLINESTERASE INHIBITION ACTIVITIES OF ETHANOL EXTRACT OF CROCUS ANCYRENSIS (HERBERT) MAW

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OBJECTIVE : Alzheimer 's disease (AD) is becoming major health problems in developed countries , which is the neurodegenerative diseases occurred in the brain . Main treatment strategies for curing the diseases using higher content of antioxidants and cholinesterase inhibitors . In this context , the present work is focused on in vitro antioxidant , AChE and ButE enyme inhibitory activity of ethanol extract of C.ancyrensis.

MATERIALS -METHODS : Antioxidant activity was investigated by DPPH ve ABTS free radical scavenging assay. Cholinesterase enzymes inhibitory potential was assessed with AChE from Electric eel and BChE from equine serum on ethanolic extracts of Crocus ancyrensis, using Ellman's assay.

RESULTS: The extract exhibited good free radical scavenging activity. AChE and BChE inhibition were obtained as IC50 values for 644 .26 µg / mL for AChE , 617 . 79 µg / mL for BChE .

CONCLUSION : This work suggests that the extract prepared from C.ancyrensis could be used to develop new products for the healthy food for Alzherimer 's patients.

Keywords: Crocus ancyrensis, Antioxidant, Anti-AChE, Anti-BChE

POSTER PRESANTATION

PP1-01
EFFECT OF CENTRIFUGE TEMPERATURE ON ROUTINE COAGULATION TESTS

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OBJECTIVES : Our aim is to demonstrate the effect of centrifugation tempera ture on routine coagulation tests.
MATERIALS - METHODS : All venous blood was collected between 08:00 and 15:00. The phlebotomists carefully collected equal amounts of blood from each patient in two blue-capped tubes to a marked fill-line. On arrival at the laboratory , the standard uncooled sample was centrifuged and then the cooled sample was centrifuged . Plasma was obtained after centrifuging for 20 minutes at 3200 rpm and run on the Diagon Coag XL. Then, the PT (sn), PT (INR), APTT, fibrinogen, and D-dimer were measured. The study was conducted in Clinical Biochemistry Laboratory , from 1 January to 30 April, 2017. The patient history was obtained from the Hospital Management and Information System.
RESULTS: There were 771 study participants : 482 women (62.5%) and 289 men (37.5%). Of the participants , 45% were taking anticoagulants and 19% were diabetic. Anticoagulant therapy significantly increased the PT results, as expected ($p<0.018$). The results of standard and cooled centrifugation were not analysed in the subgroups with diabetes , kidney disease , dialysis , and chemotherapy recipients because there were insufficient subjects . The respective values of the coagulation tests with standard and cold centrifugation were 10.30 and 10.50 for the PT, 1.04 and 1.09 for the PT (INR), 28.90 and 29.40 for the APTT , 321.5 and 322.1 for fibrinogen , and 179.5 and 168.7 for D-dimer. All the differences were statistically significant ($p<0.001$).
CONCLUSION : Centrifuge temperature can have significant effect on the results of coagulation tests.

Keywords: aptt, cooled centrifuge, d-dimer, fibrinogen, pt

PP1-02
EVALUATION OF BIOLOGICAL VARIATIONS IN GLUCOSE AND GLYCATED HEMOGLOBIN LEVELS IN HEALTHY INDIVIDUALS

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OBJECTIVE: In this study, we firstly aimed to determine components of biological variations (BVCs) in levels of glucose and glycated hemoglobin (HbA1c).
METHODS: The study group consisted of 36 healthy volunteers. Samples were collected from each individual 4 times every 2 weeks for 45 days. We estimated BVCs and the analytical performance specifications. We used Excel 2016 (Microsoft, Washington, USA), Excel XLSTAT 2016 (Addinsoft, New York, USA) and SPSS 21 (IBM, New York, USA) for the statistical analyses. We examined whether the glucose and HbA1c levels exhibited a normal “Gaussian” distribution and Analytical (SDA), intra-individual (SDI), inter-individual (SDG) and total (SDT) standard deviations were calculated using a nested ANOVA design. These results were converted to coefficients of variance component (CVA, CVI, CVG and CVT, respectively). We calculated Reference change values (RCV) II index of individuality(II), I% imprecision, B% biological variation, TE% defined following formulas;
• RCV = 21/2 * Z * (CVA2 + CVI2)1/2
• II = CVI/CVG
• I% imprecision = 0.5 CVI
• B% biological variation = 0.25 (CVI2 + CVG2)1/2
• TE% = I% × 1.65 + B%
RESULTS:
CVG CVI CVA CVT RCV II
Glucose 5.3 4.2 1.1 6.9 12.0 0.8
HbA1c% 4.5 1.7 1.3 5.0 5.9 0.37
From our BV data From an online database
I% B% TE% I% B% TE%
Glucose 2.1 1.7 5.2 2.8 2.3 7.0
HbA1c% 0.9 1.2 2.7 0.9 1.5 3.0
CONCLUSIONS: Our results were fairly compatible with current biological variations in both analytes reported in a database

Keywords: biological variation, glucose, glycated hemoglobin, the index of individuality, reference change value, analytical performance specification

PP1-03
COMPARISON OF LIQUID CHROMATOGRAPHY TANDEM MASS SPECTROMETRY AND IMMUNOASSAY TECNIQUES WITH RECEIVER OPERATOR CHARACTERISTIC REGRESSION ANALYSIS FOR SERUM ANDROSTENEDIONE MEASUREMENT

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OBJECTIVES: Measurement of serum androgens is important in adult, geriatric, pediatric endocrinology, and oncology patients. Most epidemiologic studies use enzyme -linked immunosorbent assay (ELISA) to measure sex steroid hormones because they have acceptable turn around times and are relatively inexpensive . The aim of this study was to compare the liquid chromatography and immunoassay results for serum androstenedione measurement.
MATERIALS-METHODS: For serum androstenedione measurement, 50 µL of internal standard (d5- 11 deoksicortizol) in methanol was added to 250 µL standart or serum and centrifuged at 4.500 rpm for 10 minutes to remove the precipitated proteins . Supernatant was transferred to clean tubes and this procedure was performed twice . The supernatant was collected and dried under a nitrogen gas flow at 60 C and analysis was carried out by dissolving in mobil phase. ELISA study was conducted with DRG (Lot. No. 50K 074) brand kit. RIA study was conducted Beckman Coulter , DSL 3800 brand RIA kit in PC- RIA-MAS STRATEC.
RESULTS: Analysis by ROC was used to determine the diagnostic performance of the LC-MS/MS, RIA and ELISA. The area under curve (AUC) for LC-MS/MS 0.919, RIA 0.566, ELISA 0.546. There was a significant difference between the LC-MS/MS- ELISA and LC-MS/MS-RIA compared to ROC statistical analysis results ($p<0.0001$) and There was no difference between ELISA and RIA ($p = 0.8638$).
CONCLUSIONS : Comparative studies show that chromatographic methods measure amount of androstenedione more correctly. By this method, accurate, reliable and sensitive measurement of androstenedione was analyzed with LC-MS/MS system.

Keywords: Androstenedione, immunoassay, ROC

PP1-04
EVALUATION ANALYTICAL PERFORMANCE BY USING SIGMAMETRIC SCALA

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OBJECTIVES: Sigma metrics provide a uniquely defined scale with which we can assess the performance of a laboratory. The objective of this study was to assess the quality control (QC) in the clinical chemistry laboratory of Denizli Servergazi Hospital (DSH) using the six sigma metrics application.
MATERIALS-METHODS: We used commercial normal control serum (IQC) and external quality serum (EQS) for evaluating of quality control. Albumin, ALT, ALP, AST, Chloride,Total Cholesterol, Creatinine, Glucose, HDL-Cholesterol , LDH , Total Protein , Sodium , Triglyceride ve Urea were assessed . Between-day imprecision (CV), inaccuracy (Bias) and sigma values were calculated for each control level.
RESULTS: For IQC and EQS sigma<3 metabolits were albumin and urea. For IQC 3<sigma<6 metabolits were ALP, Chloride , T. Protein and Sodyum while Sigma > 6 olan metabolits were ALT, AST, T. Cholesterol, Creatinine, Glucose, Hdl- Cho- lesterol , LDH and Triglyceride . For EQC 3<sigma<6 metabolits were ALT, Chloride ve Total Protein while Sigma > 6 metabolits were ALP, AST , T. Choles terol , Creatinine , Glucose , HDL -Cholesterol , LDH , Sodium and Triglyceride .
CONCLUSION : Sigma levels <3 where achieved for all parameters using both two control levels , this shows instability and low consistency of results . There is the need for detailed assessment of the analytical procedures and the strengthening of the laboratory control systems in order to achieve effective six sigma levels for the laboratory.

Keywords: sigmametric, analytical performance, medical laboratory

PP1-05
COMPARISON OF THE SIX SIGMA VALUES OF GLUCOSE VALUES MEASURED WITH GLUCOMETER AND OTOANALYSERS

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OBJECTIVES : Sigma metrics provide a uniquely defined scale with which we can assess the performance of a laboratory . The objective of this study was to assess the quality control (QC) in the clinical chemistry laboratory of Denizli Servergazi Hospital (DSH) using the six sigma metrics application .
MATERIALS -METHODS : We used commercial normal control serum (IQC) and external quality serum (EQS) for evaluating of quality control . Albumin , ALT, ALP, AST, Chloride,Total Cholesterol, Creatinine, Glucose, HDL-Cholester - ol,LDH, Total Protein, Sodium, Triglyceride ve Urea were assessed. Between-day imprecision (CV), inaccuracy (Bias) and sigma values were calculated for each control level.
RESULTS : For IQC and EQS sigma<3 metabolits were albumin and urea. For IQC 3<sigma<6 metabolits were ALP, Chloride , T. Protein and Sodyum while Sigma > 6 olan metabolits were ALT , AST , T. Cholesterol , Creatinine , Glucose , Hdl - Cholesterol , LDH and Triglyceride . For EQC 3<sigma <6 metabolits were ALT, Chloride ve Total Protein while Sigma > 6 metabolits were ALP, AST, T. Choles - terol, creatinine, glucose, HDL-cholesterol, LDH, sodium and triglyceride.
CONCLUSION: Sigma levels <3 where achieved for all parameters using both two control levels , this shows instability and low consistency of results . There is the need for detailed assessment of the analytical procedures and the strengthening of the laboratory control systems in order to achieve effective six
sigma levels for the laboratory.

Keywords: sigmametric, analytical performance, medical laboratory

PP1-06
COMPARISON OF COLORIMETRIC AND MASS SPECTROMETRIC SERUM CREATININE METHODS

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OBJECTIVE : Until now , enzymatic and Jaffe methods are commonly used in clinical setting. However, notable differences exist among these methods for absence of adequate specificity . Additionally , these methods are more vulnerable to interference from hemolysis , lipemia , bilirubin , protein , and ketones . The aim of this study was to compare Jaffe and in -house mass spectrometric serum creatinine methods.
MATERIALS-METHODS: A total of 90 serum samples were analyzed as 30 sample below reference intervals, 30 within reference intervals and 30 above reference intervals. For the measurement of serum creatinine, 40 microliters of internal standard (d3-creatinine) in acetonitrile and 460 microliters of acetoni- trile were added on 40 microliters of serum or standard. The reaction tube was centrifuged for protein removal at 2300 rpm for 10 minutes. The supernatant was collected and 20 microliters were injected into a high performance liquid chromatography device for chromatography. Statistical analysis was performed with Medcalc v16.2.1.
RESULTS: According to Deming regression analysis, the equation was found to be as Jaffe Method = 0.05226 + 1.0542 LC-MS/MS Method. The Bland Altman evaluation demonstrated a partial mean bias of 14.4% between both methods. According to Deming regression analysis, the equation was found
Altman evaluation demonstrated a partial mean bias of 14.4% between both methods.
CONCLUSION : As consistent with our study 's results , an interlaboratory comparison of several test methods has demonstrated as much as a 30% difference in measurements . Especially in low levels of serum creatinine (<0.5 mg/dL), Jaffe method tends to give higher results up to 50%. Mass spectrometric determination of serum creatinine might be useful in suspected creatinine results in specific populations.

Keywords: Creatinine, Jaffe, Mass Spectrometry

PP1-07
VERIFICATION STUDY OF MINDRAY CL-2000I IMMUNOASSAY SYSTEM

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OBJECTIVES : In medical laboratories , verification of performance is a requirement and essentially , precision and trueness of a measurement procedure claimed by the manufacturer should be verified before giving patient results. The aim of this study was the verification of Mindray CL -2000 i immunoassay analyzer according to CLSI EP 15 A2 guideline .
MATERIALS -METHODS : Verification studies were carried out according to CLSI EP15 A2 guidelines for thyroid function tests (TSH , fT3 and fT4), fertility hormones (FSH , LH , PRL , testosterone , progesterone and hCG), metabolic hormones (iPTH, insulin and cortisol), tumor markers (AFP, CEA, CA 125, CA 15-2, CA-19-9, tPSA), vitamins and anemia tests (vitamin B12, folate, vitamin D, and ferritin). Two different commercially available quality control materials (BioRad and Thermo Scientific Mas) and native serum pools were used for Results .
RESULTS : In precision studies all parameters were consistent with within -run and total standard deviations which are claimed by the manufacturer . Coefficient of correlations obtained from trueness studies were minimum r=0.7794 (testosterone) and maximum r=0.9980 (AFP) for Roche Cobas 8000-Mindray CL-2000 i and minimum r=0.7734 (CEA) and maximum r=0.9986 (tPSA) for Beckman Coulter DXI800-Mindray CL-2000i.
CONCLUSION : As a result of the verification studies , we can say that the performance characteristics claimed by the manufacturer for the Mindray CL-2000 i immunochemistry analyzer are generally compatible under our laboratory conditions for the parameters analyzed.

Keywords: Analytical quality, immunochemistry, method verification, CLSI

PP1-08
THE EVALUATION OF THE TOTAL ERROR LEVELS OF OUR CLINICAL CHEMISTRY TESTS

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OBJECTIVES: Total allowable error (TEa) is the quantity of inaccuracy that does not prevent the clinical usage of the test result. The total analytical error target of a laboratory should be the combination of all errors from different sources that is lower than TEa. Thus the laboratory can be useful to the clinician in the diagnosis and follow-up of the patients by reliable test results. In our study, it was aimed to evaluate our laboratory's clinical chemistry tests according to TEa levels of the Ministry of Health.
MATERIALS-METHODS: This study was performed by the data obtained from the internal (IQC) and external quality control (EQC) of clinical chemistry tests which were measured by Beckman Coulter kits in Olympus AU 2700 analyzer between January- June 2017. By using the CV% from IQC and Bias% from EQC data, total error was calculated with TE%=1.65*(CV%) + Bias% formula. The results were compared with the TEa levels of the Ministry of Health.
RESULTS: The mean TE of glucose, urea, creatinin, AST, ALT, ALP, cholesterol, triglyceride, HDL, total protein, albumin, sodium, potassium, chloride was lower than TEa%.
CONCLUSION : It is understood that the analytical performance of clinical chemistry tests is good and all the test results can be used reliably in patient care . However, since the assurance of analytical target in clinical decision concentrations is critical in terms of patient safety, it is thought that necessary precautions should be taken by using more stringent quality control rules to improve the analytical performance.

Keywords: Total error, analytical performance, quality, clinical chemistry

PP1-09

MEASUREMENT UNCERTAINTY, REFERENCE CHANGE VALUE, INDIVIDUALITY INDEX IN EVALUATION OF IMMUNOASSAY TEST RESULTS

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OBJECTIVES : Measurement Uncertainty is an indication of the confidence / quality level in measurement result. We aimed to assess Troponin -I, Prostate Specific Antigen (PSA), Thyroid Stimulating Hormone (TSH) Test Parameters Measurement Uncertainty , Reference Change Value (RCV) and Individuality Index (II) together with the test results due to value of Immunoassay Test Measurements quantities as picogram level, narrow limits of Reference Ranges and importance of Medical Decision point in the diagnosis and follow -up.
MATERIALS-METHODS: Each source that causes the measurement uncertainty was determined as mentioned in the Guide to Expression of Uncertainty in Measurement (GUM). Uncertainty Resources were identified including Internal Quality Control Source Uncertainty , External Quality Control Source Uncertainty , Repeatability Source Uncertainty , Recovery Source Uncertainty , Calibrator Source Uncertainty , and Calibration Sources Uncertainty . Relative Standard Uncertainty of each Source Uncertainty was calculated as proposed in the GUM. Individuality Index (II) were calculated from data of Intra-Individual Biological Variation (CVi) and Inter-Individual Biological Variation (CVg) in Ricos database, and Reference Change Value (RCV) was calculated based on 6 months the Analytical CV (CVA) data.
CONCLUSIONS : It is considered that the results of PSA and Troponin -I tests will be more reliable reporting together with Measurement Uncertainty and RDD because of the Individuality Index of PSA and Troponin-I tests is low.

Keywords: Measurement Uncertainty, Biological Variation, Immunoassay

PP1-10

IN SILICO IDENTIFICATION OF MICRORNAS IN 13 MEDICINAL PLANTS

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OBJECTIVES : MicroRNAs are endogenous , non-coding small RNAs and they lay important roles in plant regulatory pathways , development , stress tolerance and growth . With the advent of next-generation sequencing technologies , the microRNA identification studies by computational methods have been increased and have become effective . In this study , we predicted microRNA repertoires from 13 medicinal plants by using their ranscriptome atlas .
MATERIALS -METHODS : The transcriptome sequences of 13 medicinal plants were retrieved and the miRNA identification was conducted based on homology conservation method . Phylogenetic tree was constructed to show the level of similarity /dissimilarity between 13 medicinal plants (Atropa belladonna , Camptotheca acuminate , Cannabis sativa, Digitalis purpurea , Dioscorea villosa, Echinacea purpurea , Ginkgo biloba , Hoodia gordonii , Hypericum perforatum , Panax quinquefolius , Rauvolfia serpentina , Rosmarinus officinalis , Valeriana officinalis) by MiniTab statistical software . The transcriptome of Arabidopsis thaliana organism was used as a model organism. Target annotations of predicted putative microRNAs was performed by psRNA target and Blast2Go softwares .
RESULTS: As a total number, 168 putative miRNAs were identified. The highest number of microRNAs were found in Camptotheca acuminate (28 miRNA families) transcriptome whereas Atropa belladonna had the lowest amount of putative miRNAs (three miRNA families) in its transcriptome. Digitalis purpurea and Rosmarinus officinalis showed the highest similarities . Targets of putative miRNAs in biological processes and molecular functions revealed us different profiles in different organisms .
CONCLUSIONS : Since medicinal plants have some important therapeutic properties , these findings might help to elucidate metabolic and regulatory pathways in medicinal plants to use them efficiently in biotechnological and pharmacological applications.

Keywords: Medicinal plants, microRNA identification, miRNA, transcriptome

PP1-11

2. TURKEY (IN VITRO) DIAGNOSTIC SYMPOSIUM-“BIOMARKERS” EVALUATION OF GENERAL PARTICIPANTS

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OBJECTIVES: After the 1st in vitro Diagnostic (IVD) Symposium, invited speakers from abroad and domestic participated to the 2nd Turkey in vitro Diagnostic Symposium-BIOMARKERS organized in May this year and they discuOPed biomarkers; diagnosis, treatment, monitoring of treatment response of the diseases and the proceOP of using, medical laboratory tests and equipment together with topics public health and patient safety.The symposium organized by Dokuz Eylul University Health Sciences Institute and Turkish Biochemical Society Izmir Branch with the cooperation of Balçova Municipality to aim providing awareneOP to the latest developments in the biomarkers, clarifying basic questions such as future of biomarkers, infrastructure for innovative initiatives related to the effective use of biomarker.
MATERIALS -METHOD : 60 invited speakers attended the symposium , along with the participation Ministry of Health as a legal authority, representatives of manufacturers , scientists . In addition to the presentations , the participants ' views and suggestions regarding the symposium were also collected and a report was prepared.
RESULTS: 215 participants attended the symposium.The participant profile consists of many faculty members, ministry and company representatives, with intensive student (master's degree-doctorate-specialization).48% of the participants gave feedback.88% of the participants evaluated the symposium overall, as successful.78% of participants found successful in terms of scientific content.While 92% of the participants also found quite successful with regard to its social content 80% of them also stated that they would participate if the IVD symposiums to be organized.
CONCLUSION: II. Turkey IVD Symposium-BIOMARKERS was carried out as a successful activity in terms of satisfaction with scientific program, participant profile from different sections andfeedbackreceived.

Keywords: information, biomarkers, in vitro diagnostic

PP1-12

IN SILICO MOLECULAR DOCKING ANALYSIS OF HUMAN CARBONIC ANHYDRASE II TRP209 MUTANT ENZYMES

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OBJECTIVES: Recombinant human carbonic anhydrase II enzyme (hCA II) was obtained in our previous study using the SUMO expression system, an aromatic amino acid in its active site was replaced by some aliphatic amino acids (W209V, W209L, W209I, W209P) and mutant proteins were obtained using the same expression system . The activities of these mutant proteins and affinities for some benzenesulfonamides are experimentally compared to the wild type . In this work , our goal is to investigate the affinity of some benzenesulfonamides to these mutant and wild type as in silico .
MATERIALS -METHODS : The crystal structure of hCA II (PDB ID: 2WEJ) was download from the protein data bank and the structure was constructed using the protein preparation wizard of Schrödinger . Mutants of Trp 209 were then obtained by performing computational mutagenesis . Glide XP docking analyzes were performed to determine the affinity of the some benzenesulfo namides to the mutant protein and wild type .
RESULTS : Glide scores were obtained at the end of the docking study and these scores were compared . The best XP poses of the ligands binding to the proteins were taken and analyzes of the binding sites were performed.

CONCLUSION: As a result, the findings obtained previously experimentally and the data obtained computationally in this study were compared. In addition, docking poses were examined to determine the ligand binding sites of the ligands and these were examined in two dimensions. Decrease of affinity of the ligands to mutant proteins was understood by examining in two dimension images.

Keywords: Human Carbonic Anhydrase II, Molecular Docking, Computational Mutagenesis

PP1-13

ASSOCIATION OF THROMBOMODULIN –1748 G/C POLYMORPHISM AND PLASMA THROMBOMODULIN WITH DIABETIC MICROVASCULAR COMPLICATIONS

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OBJECTIVES : Understanding the pathogenesis of diabetic complications , monitoring their development and introducing new biomarkers are crucial in the management of type 2 diabetes . Diabetic nephropathy and retinopathy are characterized with vascular, post-inflammatory alterations and endothelial injury This study aimed to investigate the influence of thrombomodulin (TM) promoter polymorphism –1748G/C over plasma TM levels and whether plasma TM levels can be used as biomarkers of microvascular complications, namely nephropathy and retinopathy.
MATERIALS -METHODS: A total of 105 diabetic patients and 60 age and sex-matched healthy controls were included . Diabetic patients were grouped according to the presence and type of complications : diabetics with no complications (n= 72), nephropathy (n= 22) and retinopathy (n=11). Diabetes-related laboratory tests, lipid profile, renal function parameters, plasma TM levels and TM G-1748 [-1751] C polymorphism was assessed in all groups. Plasma TM levels were measured by ELISA and TM G-1748 [-1751] C polymorphism was assessed by a commercially available kits.
RESULTS : Mean plasma TM level was significantly higher in type 2 diabet compacompared to controls (3,22±0,93 vs 2,93±0,71 ng/ml; P <0.05) and in patients with complications compared to patients without complications (3,60±1 ,01 vs 3,1±0,9 ng/ml; P < 0.05). There was no significant difference between patients and controls in terms of GG, GC, and CC genotype distribution. The GC genotype was associated with significantly elevated plasma TM levels in all groups.
CONCLUSIONS : TM –1748 G/C polymorphism is associated with elevated plasma TM, a biomarker for development of endothelial microvascular injury in nephropathy and retinopathy in type 2 diabetics.

Keywords: Type 2 diabetes, microvascular complications, nephropathy, thrombomodulin

PP1-14

BONE STATUS IN EXPERIMENTAL MODEL OF SPORADIC ALZHEIMER'S DISEASE

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OBJECTIVES : In recent years , studies have shown that insulin deficiency and insulin resistance in brain tissue could be associated to sporadic Alzheimer's disease (SAD). Chronic hyperglycemia activates osteoblast proliferation and reduces osteoblastic functions . In this study we aimed to investigate the osteoblast maturation via Wnt -beta -catenin pathway during the onset of SAD .
MATERIALS -METHOD : Wistar rats were assigned randomly into three groups , Group I: Sham SAD (intracerebroventricular (i.c.v) SF, n=6), Group II: SAD (i.c.v. streptozotocin (stz) 1mg/kg, n=6), Group III: SAD+Insulin (2 IU insulin s.c, n=6). For experimental Sporadic Alzheimer 's, intracerebroventricular 1-3 mg /kg streptozotocin (STZ) was given . Insulin administration 0.3 to 7 U/kg /day subcutaneously as performed. Rats were sacrificed after one month, blood samples were taken. During the experiment blood glucose concentrations were monitored by glucometer.
Morris Water Maze test was done to control the memory and learning ability of experimental animals. Serum beta-catenin (pg/mL) and Dickkopf-1 (DKK-1, pg/mL) levels were measured by ELISA method.
RESULTS: A significant increase in Dkk-1 levels was observed in group III (1519.50 ± 80.40, 2452.50 ± 398.74, p<0.05, respectively) compared to group I. There was no significant difference for beta-catenin levels between all groups .
CONCLUSIONS: Bone diseases are the complications of diabetes mellitus and it is known that SAD also has the similar insulin signal pathways like diabetes mellitus. So we can suggest an impaired bone quality for the experimental Sporadic Alzheimer's Disease.

Keywords: Sporadic Alzheimer Disease, hyperglycemia, beta-katenin, Dkk-1, bone

PP1-15

THE RELATIONSHIP BETWEEN COGNITIVE FUNCTION AND ANXIETY WITH OXYTOCINE AND COPEPTIN LEVEL IN TYPE1 DIABETES MELLITUS

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OBJECTIVE: The least known complication of Type I diabetes mellitus (Type I DM) is neurocognitive disorder. It has been shown that oxytocin and copeptin have effects on cognition and anxiety.In this study, we aimed to investigate the relationship between cognitive functions and anxiety with oxytocin and copeptin hormones in type I DM.
MATERIALS -METHODS : 39 healthy controls and 39 type I DM with similar age and gender were included . Oxytocin and copeptine levels were studied by ELISA . We used Montreal cognitive assessment (MOCA) inventory for cognitive assessment . For anxiety assessment we used State and Trait Anxiety Scales (STAI -I,STAI -II). We used Mann -Whitney U test for comparing age, oxytocin , copeptin , STAI -I,II and MOCA values between groups . The comparison of cognitive functions by sex and MOCA levels (<24,≥24) was done by Chi-square test. Correlation of oxytocin , copeptin , MOCA , STAI -I,II levels was done by Spearman correlation test.
RESULTS: There was difference in oxytocin and copeptin levels between groups (P=0.001). In type I DM and control group, oxytocin median levels are 100.6 pg/ml (12 -1000) and 313 .4 pg/ml (36 .87 -926 .62) respectively . For copeptin median levels are :1 .63 ng /ml (0 .36 -16 .85) and 2 .90 ng /ml (0 .36 -14 .77) respectively. There was no difference between MOCA and state anxiety inventory levels, but STA-I,II levels were higher in type I DM patients (P<0.001). However, there was no correlation between oxytocin, copeptin and MOCA, STAI-I,II tests among the groups.
CONCLUSION: The relationship between pathogenesis of cognitive dysfunction and anxiety with oxytocin and copeptin levels in Type I DM patients has found irrelevant.

Keywords: Type I DM, cognitive functions, anxiety, oxytocin, copeptin

PP1-16

THE EFFECT OF MAD HONEY ON DORSAL WOUNDS OF DIABETIC RATS

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OBJECTIVES : The aim of this study was to determine the contribution to wound contraction and the effect on inflammatory protein levels of the topical application of mad honey (MH), which has antioxidant and antiinflammatory properties, in diabetic wound treatment.
MATERIALS-METHODS: In this study, 21 male Wistar albino rats (170-200 g, blood glucose level ≥ 300 mg/dL) with diabetes mellitus induced with Streptozocin (60 mg/kg, single dose) injection. Dorsal skin wounds in rats were created under anesthesia and randomly assigned 3 groups: GroupI (n=7), control group, was dressed with saline; GroupII (n = 7) with teramycin as a reference; GroupIII (n=7) with MH for 19 days. Wound contractions were determined and

wound tissues were taken after decapitation. Tumor necrosis factor (TNF-α), an inflammatory marker, and interleukin-10 (IL-10) levels, an antiinflammatory marker, were determined in scar tissue homogenates using a commercial ELISA kits.
RESULTS: At the end of 19 days, wound contraction rates were found as 80.3±1.03 in GroupI, 96.6±1.28 in GroupII and 97.5±0.93 in GroupIII. In other words, MH and teramycin provided better contractions than saline ($p<0.05$). TNF-α levels in GroupII and III were higher than GroupI, but not statistically significant ($p>0.05$). The level of IL-10 and the ratio of IL-10/TNF-α were significantly higher in only Group III than Group I ($p <0.05$).
CONCLUSION: MH gives good contribution to increase wound contraction and to reduce inflammation at least as teramycin. As a result, aplication of topical MH has an effect on healing of dorsal skin wounds of diabetic rats

Keywords: Mad honey, Diabetes, Inflammation, Wound healing

PP1-17
THE EFFECT OF 8-METHOXYPPORALEN ON POLYOL PATHWAY ENZYMESDIABETIC RATS

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OBJECTIVES: The polyol pathway called as sorbitol way is a small part of glycose metabolism. The first enzyme of polyol pathway is aldose reductase (AR) and It is a key enzyme and plays a momentous role in the progress of several diabetic complications. The second enzyme of the polyol pathway is sorbitol dehydrogenase (SDH). This enzyme is a member of dehydrogenase/reductase protein family, uses nicotinamide adenine dinucleotide (NAD+) as a coenzyme and is a homotetrameric Zn2+enzyme which acts in the polyol metabolic pathway. 8-methoxypsoralen (Xanthotoxin, methoxsalen) is a linear furanocoumarin, extracted from various medicinal plants. The present paper focuses on the role of 8-methoxypsoralen in vitro inhibition of polyol pathway enzymes.
MATERIALS-METHODS: For this purpose, AR and SDH were partial purified from sheep kidney. 8-methoxypsoralen was tested various concentrations on in vitro AR and SDH activity.
RESULTS: IC50 value of 8-methoxypsoralen was found as 8.45 µM and 346.5 µM for AR and SDH enzyme respectively. Ki constant of 8-methoxypsoralen were found 7.78±0.95 µM for AR and 179.52±66.81 µM for SDH. The inhibition mechanisms of 8-methoxypsoralen was determined non-competitive for AR and was competitive for SDH.
CONCLUSION: 8-methoxypsoralen is showed highly inhibitory effect on polyol enzymes activity. Hence, this compound and its derivatives can be used in diabetic complications.

Keywords: Aldose reductase, sorbitol dehydrogenase inhibition, 8-methoxypsoralen

PP1-18
DISCOVERY OF NEW GENES CAUSING HYPERGLYCEMIA WITH GENETIC SCREENING

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There is a strong genetic contribution to the pathogenesis of diabetes. Regulatory circuitry of metabolism is highly conserved in Drosophila and it is emerging as a model organism for metabolic studies. We have developed a novel assay in Drosophila to measure blood glucose levels. This novel assay allows us to perform high-throughput genome-wide screening for genetic determi- nants of blood glucose homeostasis for the first time. Proof-of-principle experiments were performed with known mutations from mammalian systems, e.g. insulin pathway , confirming relevance and validity of our assay . Screening of random loss-of-function mutations for blood glucose levels has identified some previously known genes and novel genes that have not been associated with hyperglycemia before . New findings will be discussed in the context of diabetes and genetics.

Keywords: diabetes, hyperglycemia, genetics, Drosophila, RNAi

PP1-19
CAN THE PROTEASOME INHIBITOR BORTEZOMIB BE USED IN THE TREATMENT OF TYPE 1 DIABETES?

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OBJECTIVES: Type 1 diabetes (TID) is an autoimmune disease characterized by apoptotic destruction of insulin secreting β cells of the pancreas. It was shown that Nuclear Factor Kappa-B (NF-kB) pathway plays a role in β cell death. In this study, we investigated whether the proteasome inhibitor bortezomib, currently used in multiple myeloma treatment and it's clinically efficacy depends on NF-kB inhibition, can use in treatment of TID.
MATERIALS-METHODS: This study was performed with 50 non-obese female Spraque Dawley rats. Bortezomib (BZM) was administrated simultaneously and late with STZ which used diabetes induction. The effect of BZM on diabetes development was assessed by measuring the blood glucose levels, the islets viability stained with propidium iodide (PI) and fluorescein diacetate (FDA), and the expression levels of bcl-2 and bax genes with real-time RT-PCR.
RESULTS: STZ caused the increase in blood glucose levels (332.6±50.2 mg/dL), the significant decrease in islet viability compared to control (%65±3.2;$p<0.05$) and the proapoptotoik effect in bcl2/bax ratio. BZM did not change in blood glucose levels (98.2±15.8 mg/dL) and islet viability (%91±5.4) compared to control. Interestingly, BZM showed anti-apoptotic effect (bcl-2/bax=2.03) in islet. In simultaneously group, BZM caused a significant increase in islet viability (%71±5.8) and bcl-2/bax=1.21 ratio compared to the diabetic group ($p<0.05$), although it did not cause the expected decrease in blood glucose values (407.6±24.7). In late group, BZM did not any improve in blood glucose and islet viability and gene expression.
CONCLUSION: Bortezomib may have anti-apoptotic protective effect in the early stages of diabetes.

Keywords: Type 1 diabetes, Bortezomib, NF-kB signaling pathway, Apoptosis

PP1-20
EFFECTIVENEOP OF ORAL GLUCOSE TOLERANCE TESTING RESULTS IN TYPE 2 DIABETES MELLITUS DIAGNOSIS

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OBJECTIVES: Recent studies have documented an elevated global prevalence of prediabetes. According to the latest International Diabetes Federation data, it was estimated in 2015 that more than 300 million people, or 6.7%, in the age- group 20–79 years had prediabetes . Early identification of individuals at high-risk of developing type 2 diabetes (T2DM) is of great importance for the prevention of T 2DM and cardiovascular disease. The aim of this study is to compare the results of oral glucose tolerance testing (OGTT) and find out the effectiveness of this test in diagnosing T2DM.
MATERIALS-METHODS: This is a retrospective observational study; evaluating the results of 2113 subjects with OGTT testing between 2010-2017 years in Selcuk University Faculty of Medicine. Patients with chronic hepatic, cancer and renal disorders were excluded in the study. Statistical analysis was performed with SPSS v21.
RESULTS: According to 2-hour serum glucose values (with a fasting glucose between 100-126 mg/dL) in OGTT testing, 890 (%42); 543 (%26) and 680 (%32) were found to have only impaired fasting glucose, impaired glucose tolerance and diabetes mellitus, respectively.
CONCLUSIONS: The oral glucose tolerance test has long been used for the diagnosis of disorders of glucose metabolism in clinical practice. According to this study's results, glucose tolerance classification from a single OGTT lacks clinical interpretation and ideally requires duplicate or confirmatory testing.

Keywords: Diabetes mellitus, Diagnostic utility, Oral glucose tolerance testing

PP1-21
TRACE ELEMENTS IN 24 HOUR POST-PARTUM WOMEN

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OBJECTIVES: Although it is suggested there can be a relationship between the severity of depressive symptoms and decreased serum zinc concentrations in postpartum depression, there is limited evidence in literature. Usuallylow zinc levels in those women are attributed to poor nutrition and increased consumption with lactation. In the present study,we have investigated the levels of various trace elements in 24 hour postpartum women at the begining of the lactation period.
MATERIALS-METHODS: We have analyzed five trace element (Cu, Zn, Se, Ni, Pb) levels in 270 postpartum women whowere patients at an Obstetrics Hospital in Istanbul. Samples were collected in24 hrs after delivery in trace-metal-free tubes andsera were seperated within 60 min of collection. Also TSH and free thyroid hormon levels of the subjects were monitored.
RESULTS: Serum zinc and selenium levels were significantly (p<0,001) lower in post-partum women than those ofnormal population (Zn 0,24-0,66 ug/L vs 0,70-1,3ug/L; Se, 24-79ug/l vs 63-160 ug/L). Whileserum copper levelsof postpartum women ranged from 117-390 ug/dL vs 70-150ug/dL these were significantlyhigher than thoseof normal range (p<0.01). There wasa positive correlation between copper and selenium levels.
CONCLUSIONS: Our preliminary results indicated subjects had lower zinc and selenium levels with high copperlevels when compared to the normal population ranges. Since the blood samples were collected at thebeginning of lactation period, resultsprojected the late pregnancy period and the delivery status. It is thought that there is a possible association betweenelevated serumcopper, decreased zinc levels and post-partum depression. Low selenium levels were remarkable inour subjects which may result in low thyroid function contributing to post-partum depression.

Keywords: Copper, zinc, selenium, postpartum, trace-elemnt

PP1-22
VITAMIN D LEVEL IN PREGNANCY, GESTATIONAL DIABETES AND WOMEN OF REPRODUCTIVE AGE

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OBJECTIVES: In this study, we aimed to determine vitamin D levels in healthy gestations, gestational diabetic pregnancies and healthy women during the reproductive age.
MATERIALS-METHODS: Vitamin D was measured immunochemically from sera from 28 healthy pregnant women, 15 gestational diabetic pregnant women and 30 healthy young adult women ages 18-43 year.
RESULTS: Vitamin D deficiency was found in all groups [healthy pregnancies (11.8±7.4), gestational diabetics (10.6±5.7), and healthy young women (12.1±5.4) ng/mL]. There is no significant difference between the groups (p=0.54).
CONCLUSIONS: Vitamin D level is not sufficient in all pregnancies and young adult women. So vitamin D supplementation should be performed.

Keywords: Vitamin D, gestational diabetes, pregnancy

PP1-23
INVESTIGATION OF THE EFFECTS OF 50 G GLUCOSE CHALLENGE TEST BY THIOL/DISUSULFIDE HOMEOSTASIS MEASUREMENT IN PREGNANCY

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OBJECTIVES: American Congress of Obstetricians and Gynecologists recommend a 50 g glucose challenge test (GCT) for screening all gestations in terms of gestational diabetes mellitus. The thiol (-SH)/disulfide (-S-S-) homeostasis plays an important role in the defense of antioxidants, allowing the preservation of protein structures. In this study, we investigated the effect of 50 g of GCT on the thiol/disulfide homeostasis.
MATERIALS-METHODS: Thiol/disulfide measurement was made from both the zeroth hour and first hour sera taken during the test on 63 pregnant women with a 50 g GCT resultant positive and 37 pregnant women with negative.
RESULTS: In GCT positive pregnants, when compared post glucose challenge values to the values before; native thiol and native thiol/total thiol decreased (p<0.0001) while disulfide, disulfide/native thiol, disulfide/total thiol (p<0.0001), total thiol (p=0.018) values were found to be increased. However, no difference was observed when comparing these zeroth and first hour values of GCT-negative pregnants. Also, zeroth hour thiol/disulfide homeostasis measurement of GCT positive and negative pregnancies are found similar. In addition, there were a positive correlation between glucose and disulfide (r = 0.407, p <0.0001) and a negative correlation between glucose and native thiol (r = -0.227, p <0.002).
CONCLUSIONS: Glucose challenge increases protein oxidation by altering the thiol/disulfide homeostasis in GCT positive pregnants. However, such an effect is not observed in healthy pregnancies. Therefore, this test can be used safely in healthy pregnancies.

Keywords: 50 g glucose challenge test, thiol/disulfide homeostasis, gestational diabetes mellitus, oxidative stress

PP1-24
EVALUATION OF AN AUTOMATED URINE ANALYZER AND URINE CULTURE RESULTS

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OBJECTIVES: We aimed to evaluate the incidence of leukocyte esterase (LE) and nitrite positivity, leukocyte and bacterial counts, and Gram (+) and (-) bacterial results interpreted in an automated urine analyzer for compliance with culture results.
MATERIALS-METHODS: 3194 results were examined in urinalysis. Measurements were made on a Sysmex UF-5000 automated urine analyzer using a flow cytometry technique. Gram (+) and (-) bacterial interpretations were compared retrospectively with results of culture.
RESULTS: As a result of 889 patients 577 Gram (+) (64.9%) and 312 Gram (-) (35.1%) bacterial interpretation were detected. Gram (+) interpretation was found to be culture-induced 122 (21.1%). In 9 patients with positive culture results, 1 K.pneumoniae, 2 Candida spp, 2 E.faecalis ve 4 S.agalactia were found. Rates of LE and nitrite positivity were 88.8% and 33.3%, and >20/µL leukocytes and >300/µL bacteria were 88.8% and 66.7%, respectively. There were 62 cases of culture contaminated and 50 cases of non-breeding. The rate of culture positivity in Gram (-) group was 95 (30.4%). In 64 patients with positive culture results, 52 E.coli, 4 K.pneumoniae, 5 P.aeuroginosa, 2 E.faecalis and 1 S.agalactia were found. Rates of LE and nitrite positivity were 95.3% and 71.9%, and >20/µL leukocytes and >300/µL bacteria were 95.3% and 76.5%, respectively. There were 18 contaminated urine and 13 non-breeding samples.
CONCLUSIONS: The evaluation of urinary tract infections with clinical data, urine analysis and culture results, especially Gram (-) bacterial interpretation obtained from automated urine analyzers, may be useful for rapid diagnosis and treatment.

Keywords: Urinary tract infections, urinalysis, urine culture

PP1-25
URINARY UROBILINOGEN & SERUM TOTAL BILIRUBIN

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OBJECTIVES: Urobilinogen is the product of bilirubin degradation and urobilinogen levels increases in urine during hemolytic and hepatic diseases.Urinary urobilinogen levels are measured byEhrlich or Diazonium reactions.The aim of this study to assess whether serum total bilirubin levels correlate with urinary urobilinogen.
MATERIALS-METHODS: The results of 5580patients who applied to RecepTayyipErdoğanUniversity Training and ResearchHospital in July2017 and requested Complete Urine Analysis were examined retrospectively.Patients with urinary urobilinogen positive were evaluated in terms of urinary color,serum total

bilirubin levels,inpatient/outpatient status and treatment in intensive care unit (ICU). Urinary urobilinogen and serum total bilirubin levels were analyzed in IQ 200 (IRIS Diagnostic)and Architect c16000 (Abbott Diagnostics), respectively. Statistical analysis was performed using SPSSv.20.0.

RESULTS: Urinanalysisi was positive for urobilinogen in 402 patients (160ICU). 206 of them had serum total bilirubin results (±3 day) and 58 of the samples were sent from ICU. Although urinary urobilinogen was positive in 158 patients, serum total bilirubin level was normal .The urine colors were in the form of yellow tones. Statistical analysis showed no significant correlation between serum total bilirubin and urinary urobilinogen (p> 0, 05).

CONCLUSIONS : In the literature , it's stated that increased amounts of urobilinogen is a"sensitive marker"for evaluating hepatocellular dysfunction . It's also stated urinary urobilinogen significantly increases inhemolytic process . However ,the expression in the Tietz (5th edition) textbook is "The measurement of urobilinogen in urine is of no diagnostic value in the assessment of liver disease". The high urinary urobilinogen without elevated serum total bilirubin in 158 patients suggests the possibility of a cross-reaction. It's also support us by the fact that serum total bilirubin and urine urobilinogen levels don 't correlate . From this point of view ,it's wondered whether urinary urobilinogen is taken into account by the clinicians during diagnose.

Keywords: Urinary urobilinogen, serum total bilirubin, diagnostic value

PP1-26
INTERPRETATION OF URINE PH

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OBJECTIVES : Urine analysis is a diagnostic tool that provides low cost, fast results, easy to apply, non-invasive and important information about kidney function inversely proportional to it. Urine density, protein, glucose, electrolytes and blood parameters should also be considered when assessing urinary pH. It is known that the bacteria that break down the urea turn urine to alkalik, and when the uric acid is elevated, PH falls down. Although kidneys can maintain urine pH between 4.5 and 8.0, they tend to be slightly acidic under normal conditions due to metabolic activity.

MATERIALS-METHODS: We performed the study with a sample of 68 patients. In the study we used some parameters from hemogram and blood biochemical tests. Investigations were made on Beckman Coulter systems. Statistical evaluation was performed with SPSS program.

RESULTS : Significant (p=0.001) and negative correlations between pH and urinary density were found in the parameters.

CONCLUSION: While full urinalysis is being evaluated, dansities and metabolic factors that affect densities such as protein, glucose, calcium and potassium should be considered, especially as the effect of infectious factors on Ph. In this study, we found that blood glucose levels and urine density were correlated in the same direction in accordance with the literature information. We think that the inverse correlation between density and pH is due to protein effect. In this study, we wanted to emphasize that the urine tests should not be taken simple, considering the usefulness and low cost of the tests.

Keywords: Urine densities, urine pH, hyperglycemia

PP1-27
RAPID AND SIMULTANEOUS QUANTIFICATION OF HOMOCYSTEINE , CYSTEINE , CYSTINE AND METHIONINE BY LC MS/MS

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OBJECTIVES: Homocysteine, a naturally occurring amino acid by enzymes which need vitamins B6, B12 and folic acid as part of the body's methylation process, has been shown to be associated with many health problems including heart disease, stroke,autoimmune disease, cancer, and neurodegenerative disease. We aimed to develop a rapid and sensitive LC-MS/MS method for the simultaneous quantification of homocysteine, cysteine, cystine and methionine in plasma.

MATERIALS-METHODS: Selected reaction monitoring was performed through the transitions m/z 135.9→90.4 for homocysteine and m/z 140.0→94.2 for homocysteine-d4 (internal standard), m/z 121.9→76.1 for cysteine, 241.1→152.1 for cystine and m/z 150.3→104.3 for methionine. ESI source was working in the positive mode. Analytes were separated using reverse phase chromatography with a total run time of 4 min.The mobile phase was methanol/water (20:80 v/v, containing 0.1% formic acid) at a flow rate of 0.600 mL/min (35°C). Samples treatment consisted in the reduction with 200 mmol/L DTT in 0.1mol/L NaOH and deproteinization with methanol.

RESULTS: The intra-day and inter-day precisions at two different concentrations were between 4-5.5% and 5-6.5% for all parameters, respectively. The limit of detection was 0.5 µmol/L and the limit of quantification was 2 µmol/L for homocysteine. Calibration curves showed excellent linearity ($r^2 \geq 0.99$) between 3 and 100 µmol/L for homocysteine over a 5-day period.

CONCLUSIONS: We recommend the use of this sensitive and simple LC-MS/MS method in clinical laboratories not only for research, but also for routine work. This LC-MS/MS assay will provide a good basis for further large-scale clinical studies.

Keywords: Homocysteine, LC-MS/MS, methionine, cysteine, cystine

PP1-28
A NEW DESIGNED BIOSENSOR FOR THE URIC ACID DETERMINATION

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OBJECTIVES: Uric acid is the end product of the catabolism of the purines in humans. The amount of uric acid in biological fluids is important in the diagnosis of many diseases. These diseases are diseases such as gout disease, Lesch-Nyhan syndrome, kidney disease and Von Gierke's disease. Because of these reasons, uric acid determination is of great medical importance.

MATERIALS -METHODS : In this study for the determination of uric acid, uricase enzyme was immobilized on the graphite electrode by using BSA/ gelatin and crosslinking by glutaraldehyde. Measurements were carry out at 0.1 V. Optimization studies of the designed biosensor were carried out first for the bioactive layer components and for the working conditions. Finally, for biosensor characterization studies, shelf life and measurement repeatability analyzes were performed.

RESULTS: From the bioactive layer optimization studies; gelatin, bovine serum albumin amount and optimal percentage glutaraldehyde were determined as 0.45 gr, 0.030 gr and %2.5 for the Graphite /BSA -Gelatin /uricase /glutaraldehyde modified biosensör. Asetat buffer of pH 6.5 at 10 mM, scanning rate of 0.05 V/s, temperature 35 OC were determined as a optimum working conditions . As for shelf life studies, at the end of 40th day of results has been preserved by 82.5%, repeatability of the measurement (n=15) standard deviatin (S.S)= +_0.1 and % coefficient of variation (V.K)=0.2, respectively.

CONCLUSIONS: Findings are found to be in perfect range when compared to previous studies.

Keywords: Amparametr,Graphite electrode, Uric acid biosensor, Uricase

PP1-29
MATRIX AND CARRYOVER EFFECT ON SERUM CREATININE MEASUREMENT BY LC-MS/MS METHOD

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OBJECTIVES: Creatine is a product of degradation of creatine phosphate in its steady state skeletal metabolism. Creatinine is an important clinical test for the detection of kidney and muscle damage. Today, it is among the most desirable analyzes in clinical laboratories. This test is not very sensitive with being original. Liquid chromatography-tandem mass spectrometry(LC-MS/MS), originally based on analytical specificity and sensitivity, has been recognized as the gold standard technique. Thus, we aimed to investigate the effect of matrix and carryover on creatinine level by LC-MS/MS method.

MATERIALS-METHODS: For creatinine measurement, 100µL sample or standard is taken, 20µL internal standard and 200 mL %100 acetonitrile are added. This homogenized mixture is centrifuged at 13000 rpm for 5 minutes. Then, 200µl from the upper phase is removed and measurement was made by the ABSCIEX API 3200 tandem mass spectrometer device. For the matrix effect, 2500 and 625ppb standards were used, and the % matrix effect of these standards was calculated. In the transport study, samples at concentrations of 10000 and 625ppb were studied in a specific order. Averages and standard deviations of low concentration samples coming after low and high concentration standards were calculated using the EP Evaluator Release 8.0.0.171 version program.

RESULTS: For the creatinine, the matrix effect of the 2500ppb standard was %21.42, while the matrix effect was %14.91 for the 625 ppb standard. The carryover study for creatinine was determined 0.0033 mg/dL.
CONCLUSIONS: It appears that there is no significant carryover and matrix effect for creatinine.

Keywords: Creatinine, LC-MS/MS, carryover, matrix

PP1-30
THE EFFECT OF SODIUM FLOURIDE (NAF) APPLICATION IN NRK-52E CELL LINE AND CERTAIN MINERALS ON APOPTOSIS AND DNA DAMAGE

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OBJECTIVES: It is known that fluoride inhibits protein synthesis or secretion, affecting certain signaling pathways such as cell propagation and apoptosis. The present study was planned to investigate the effects of certain compounds (Se, Mg, Al, Ca) on apoptosis and DNA damage in NaF adminis tered NRK-52E cell lines.
MATERIALS-METHODS: Cells were propagated in vitro with two to three regular passages per week. The MTT and NaFI C50 values and the prolifera- tion doses for the minerals compounds were determined. Cells were cultured in 96-well culture plates at a rate of 104 and in flasks at a reate of 106. The cell line groups were determined as follows: control, NaF, minerals and NaF minerals. The control group was accepted as 100% vital and MTT viability results were determined as percentages. The prepared cell lysates were incubated for 24 hours, followed by the tryPPin proceOPto collect the cells were determinedwith the ELISA method using commercial kits.
RESULTS: A statistically significant correlation was determined between the apoptosis parameters and oxidative DNA damage ($p \leq 0.05$) in the comparison of parameters between all groups. Furthermore, a statistically significant difference ($p \leq 0.05$) was found between caspase-8 and oxidative DNA damage.
CONCLUSION : Due to the ionic nature of the minerals , it was possible to prevent apoptosis in general synergistically with NaF, and NaF would protect the cell from apoptosis in NRK-52E cells based on the cell type.

Keywords: Cell culture, 8-OHdG, NaF, apoptosis,NRK-52E.

PP1-31
QUALITY EVALUATION ACCORDING TO NATIONAL GUIDELINES IN MEDICAL LABORATORIES

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OBJECTIVE : T.R. Ministry of Health requires internal quality control configuration and external quality control program at appropriate intervals within the framework of standards . We evaluated our suitability to the quality require - ments reported by the guides with the total error values calculated from internal and external quality control data.
MATERIALS -METHODS : In our study, internal quality data of April 2017 and external quality data of 2016 were used . 20-day internal quality control results in April 2017 were used in the calculation of% CV, and data obtained from Riqas external quality evaluation results were used for bias . Parameters were evaluated according to a guideline that prepared by the Ministry of Health's work on the Limits of Total Allowed Errors. Biochemical parameters evaluated in the study were tested in three units that emergency , oncology and routine biochemistry laboratories with Beckman Coulter AU680, AU480, AU5800 devices . RESULTS : The external quality control results for Bias are within ± 2 SD, and our internal quality control results are in accordance with Westgard rules . All of the evaluated 15 biochemical parameters were within the allowable total error limits determined by the study of Ministry of Health in all three units and they were below the highest permiOPible coefficient of variation (CV %) determined by the study.
CONCLUSION: Although external quality results were inside ±2sd and internal quality results were in accordance with Westgard rules, monitoring of interna- tional and national guidelines are considered to be important for increasing the quality of medical laboratory results.

Keywords: Qality, Allowable Total Error, National guideline

PP1-32
THEORETICAL AND PRACTICAL TRAINING OF STUDENTS ABOUT VENOUS BLOOD SAMPLING (PHLEBOTOMY) GUIDELINE IN ANTALYA TRAINING AND RESEARCH HOSPITAL

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OBJECTIVES: The objective of our study was to share the experience of an education program on Venous Blood Sampling Guideline and phlebotomy performed on trainee students of summer internship at our hospital.
MATERIALS-METHODS: An education program about phlebotomy in accord- ance with the Venous Blood Sampling Guideline was performed on 127 students who started summer internship in our hospital.The students were observed for the practise of phelobotomy on the following days. A checklist of stePP stated in the guideline was created. Following the theoretical education, the phlebotomy practise was monitored . After this process , they were asked for the mistakes they had done. In addition, they were warned for the mistakes that they could not be aware of and they were told to do the phlebotomy again.
On the third step, they performed blood collection without knowing they were observed. After the unannounced observation, they were informed about the mistakes they had done . Unannounced observations were repeated until a minimum of errors occurred.
RESULTS: In the first informed observation, one student had repalpation and the other had not inverted the tubes enough. Three unannounced observa- tions were done and these observations showed that mistakes were done in the stePP of identification, correct disinfection, repalpation, removing the tourniquet, blood collection in the correct order of the tubes, and inversion of the tubes for sufficient times. These errors have gradually decreased. CONCLUSIONS: In order for the theoretical venous blood collection training to be effective, a close follow-up of practical practice is required.

Keywords: Phlebotomy,theoretıial and practical training,Venous Blood Sampling Guideline

PP1-33
THE CALCULATION OF THE TOTAL ERROR FOR THE PARAMETERS STUDIED IN ROUTINE AND EMERGENCY BIOCHEMISTRY LABORATORY

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OBJECTIVE: The concept of TE has been suggested to provide much more quantitative approach for the evaluation of the method performance used in clinical laboratories. The formula used in the estimation of TE is equal to the sum of Bias% and 1.65xCV%. TE can be calculated by using the precision of daily internal quality control data (CV%) and bias data from the external quality control program. In this study, we aimed to find TE values and evaluate the consistency of these values for laboratory parameters of the routine and emergency biochemistry with other commonly used total allowable error (TEa) limits.
MATERIALS-METHODS: TE was calculated for 26 parameters worked in Sivas Numune Hospital, routine and emergency biochemistry laboratories at Department of Clinical Biochemistry, by using the data of precision from internal quality control data of the previous three months and bias data from the external quality assessment data. Estimated TE was compared with the limits based on biological variation, Federal Medical Association Manual (Rilibak) and Australasian group (RCPA).
RESULTS: The TE values of creatinine, calcium, phosphorus, sodium, potaOPi- um, chloride parameters were higher than TEa based on biological variation while the TE values for calcium was higher than those based on RCPA. Howev- er , all the TE results were within TEa limits of Rilibak .
CONCLUSIONS: The calculation of TE is an easy way to evaluate the performance of the methods used in clinical laboratories. All of the methods used in clinical laboratories can be periodically evaluated by the values of TE.

Keywords: Total error, bias, precision

PP1-34

PH OPTIMIZATION OF THE BIOSENSOR DEVELOPED FOR THE DETERMINATION OF CARBONDIOXIDE

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OBJECTIVES: Carbon dioxide(CO2) is a colorless and odorless gas vital to life on Earth. Carbon dioxide (CO2) is a gaseous waste product from metabolism. The measurement of Carbon Dioxide is useful in the assessment of acid-base balance disturbances. Elevated CO2 is observed in metabolic alkalosis and compensated respiratory acidosis. Low CO2 is observed in compensated respiratory alkalosis and metabolic acidosis. In this study, pH optimization of the biosensor developed for the determination of CO2 was studied.
MATERIALS-METHODS: The determination of the concentration of CO2 was based on by using fosfoenolpiruvat carboxylase (PEPC) coupled with malate dehydrogenase (MDH) enzymes reaction's, HCO3- used as a substrate. The bioactive layer was prepared by immobilizing the phosphoenolpiruvat carboxylase (PEPC) and malate dehydrogenase (MDH) enzymes on the gold electrode with bovin serum albümin (BSA), gelatin, glutaraldehyde with the help of UV light. For the optimization study, sodium phosphate buffers with pH values of 2.5, 3.9, 6.6, 8.2 and 9.5 were used. The cyclic voltamogram is used to determine the current range at which the response can be measured. RESULTS and CONCLUSION : In this study the best measurement was obtained at pH 9.5 by using sodium phosphate buffer. The response current in the 0,7 V was realized in the cyclic voltammogram where the scanning speed was 0.02

Keywords: Biosensor, Carbondioxide, Optimization

PP1-35

THE EFFECTS ON BIOMARKERS OF CAPE APPLIED TO A GASTRIC CANCER CELL LINE

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OBJECTIVES: Gastric cancer has a high incidence and is one of the leading causes of mortality both in males and females. Angiogenesis is the formation of new capillaries from existing blood vessels through which oxygen and nutrients are transported to the tissues to promote growth, and it plays a pivotal role in the invasion and metastasis of cancer caused by oncogenes. In the present study, we aimed to investigate the relationship between angiogenesis and angiogenic and anti-angiogenic markers such vascular endothelial growth factor (VEGF), matrix metalloproteinase (MMP), trombospondin -1 (TSP-1) and endostatin in a caffeic acid phenilethyl ester (CAPE)-administered gastric cancer cell culture.
MATERIALS-METHODS: Cytotoxicity following CAPE administration was quantified by MTT test. Angiogenic behavior of cells was examined immunohistochemically by VEGF, MMP and Endostatin, and TSP-1 level was measured by LC PCR test.
RESULTS: The MTT test showed that CAPE administered at a concentration of 0.5 µg/mL exerted a cytotoxic effect on a gastric cancer cell line. Gene expression depicted by LC PCR showed that VEGF, MMP and TSP levels were reduced, while the endostatin level was increased.
CONCLUSIONS: Changes in MMP, VEGF, TSP and endostatin suggest that CAPE has a significant therapeutic effect on gastric cancer. In the light of these findings, CAPE, which is a natural and inexpensive substance, could be effective in the treatment of cancer patients and advanced studies need to be carried out.

Keywords: Angiogenesis, VEGF, MMP, CAPE, Endostatin, TSP-1

PP1-36

THE EFFECTS OF SHORT TERM AND LONG TERM EXPOSURES TO 3G-MOBILE PHONE RADIATION ON DETOXIFICATION ORGANS OF WISTAR RATS

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OBJECTIVES: The possible health effects of radiofrequency radiation due to wireless communication systems, base stations and mobile phones are one of the most important issues facing society. In the present study, the biochemical effects for 10 days and 40 days radiofrequency radiation on the liver, the kidney and the lung tissue were analyzed.
MATERIALS-METHODS: Thirty healthy female Wistar albino rats were used. The animals were randomly divided into four groups. Exposure groups were exposed to 3G modulated 2100 MHz RFR signal for 6 h/day, 5 days/week for 10 days and 40 days. In all experimental groups, tissue samples were prepared for 8-hydroxy-2-deoxyguanosine (8OHdG, pg/mL) and malondialdehyde (MDA, nmoL /g tissue) analysis.
RESULTS: The assessment of comparison between the liver 8OHdG levels of 10 days and 40 days exposure groups showed a statistically significant decreased ($p< 0.05$). In the kidney tissue, 8OHdG level of 10 days exposure groups were found non-significantly increased compared to its control group ($p>0.05$) but this level decreased after 40 days exposure with respect to control group ($p<0.05$). Measurement showed that kidney MDA levels statistically significant increased after 40 days exposure groups compared to control groups ($p<0.05$). No differences were observed for all parameters for lung tissue ($p>0.05$).
CONCLUSION : The findings showed that the liver tissue can be vulnerable against RFR. However, DNA repair mechanisms might response during long term RF exposure. In the kidney tissue, reactive intermediates induced oxidative DNA damage during short term RF exposure. After long term RF exposure, the levels of DNA damage were tendency to reduce.

Keywords: Radiofrequency, 8OHdG, MDA

PP1-37

THE ANTICANCER EFFECTS OF NEW AMIDE DERIVATIVES COMPOUNDS ON PC-3 PROSTATE CANCER CELL LINE

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OBJECTIVES : Prostate cancer is the most common cancer type in men and ıt is the second most common type of cancer that is responsible for cancer deaths after lung cancer. The use of chemotherapeutic agents is at the top of methods used to fight cancer. Chemotherapeutic agents are compounds containing amide, ester, hydroxyl, amino, nitro functional groups. Many amide derivative compounds are known to be toxic to prostate carcinoma cells. In this study, it was aimed to obtain amide derivative compounds by reacting lysine, isoleucine, histidine, valine , proline , phenylalanine ,tyrosine amino acids with p-nitrobenzoyl chloride to show anticancer activity of these compounds on PC-3 prostate cancer cell lines.
MATERIALS AND METHODS: Amides were synthesized by using the methods in the literature. PC-3 prostate cancer cell lines were used in the cell culture. Cells were cultured in RPMI-1640 medium at 37 ° C and 5% CO2. The synthesized amides were applied to the cells at 25, 50, 75 and 100 µM concentrations for 24 and 48 hours. The WST-I method was used for the cytotoxicity test. Results were given % living cell
RESULTS: In 24 hours incubation and 100 µM concentration, cell viability values for amides of phenylalanine, lysine and histidine were respectively calculated as 80.76%, 84.61% and 76.62%. In 48 hours incubation and 100 µM concentration, cell viability values for amides of phenylalanine, lysine and histidine were respectively calculated as 72.72%, 82.86% and 73.07%.
CONCLUSION : The synthesized amides exhibit cytotoxic properties close to chemotherapeutics used in the treatment of prostate cancer.

Keywords: Prostate cancer, Anticancer agents, Amide

PP1-38

"IS THERE ANY POTENTIAL ANTICANCER EFFECT OF RALOXIFENE AND FLUOXETINE ON DMBA-INDUCED RAT BREAST CANCER?"

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OBJECTIVES: Breast cancer is the most common cancer among women in the world and the incidence is increasing alarmingly. It was aimed to determine effect of Raloxifene (RAL) and Fluoxetine (FLX) on selected parameters in 7,12-dimethylbenz (a) antheracene induced (DMBA) mammary carcinoma.
MATERIALS-METHODS: Forty-three female Wistar Albino rats were assorted into four groups according to the following experimental regimen. DMBA (Group I), DMBA+ RAL (Group II), DMBA+FLX (Group III), DMBA+RAL+FLX (Group IV). Breast cancer was induced with a single dose of 80 mg/kg.bw of DMBA. Breast cancer was allowed 90 days to develop and grow. Mammary tissue Vascular Endothelial Growth Factor (VEGF), Macrophage Colony Stimulating Factor (M-CSF), Matrix Metalloproteinase-9 (MMP-9) and its specific tissue inhibitor metalloproteinase-1 (TIMP-1) levels were determined by Enzyme-Linked Immuno Sorbent Assay method.
RESULTS: The tissue VEGF levels were lower in Group IV compared to DMBA group ($p<0,05$). Decreased M-CSF levels were observed in all therapeutic groups rather than DMBA group ($p<0,05$) but the most effective decrease was found in Group IV ($p<0,005$). When compared to DMBA group, MMP-9 levels were statistically significant decreased in Group II and Group IV ($p=0,005$ and $p<0,05$, respectively). However; TIMP-1 levels were higher in the whole therapeutic groups rather than DMBA group and the most effective and statistically significant increase was observed in Group IV ($p<0,001$).
CONCLUSIONS: Results of the present study suggest that combinational therapy of Raloxifene with Fluoxetine might lead to a better outcome targeting breast tumor.

Keywords: DMBA, breast cancer, Raloxifene, Fluoxetine

PP1-39

THE EFFECTIVENEOP OF TWO DRUGS WITH DIFFERENT CLINICAL USAGE AREAS IN THE DMBA-INITIATED RAT BREAST CANCER

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OBJECTIVES: Breast cancer represents one of the most frequently diagnosed cancers and predominant causes of death in women worldwide. The present study was to investigated therapeutic effects of Raloxifene (RAL) and Fluoxetine (FLX), both alone and in combination on selected parameters against 7,12-dimethylbenz(a)anthracene (DMBA)-initiated rat mammary carcinogenesis.
MATERIALS-METHODS: Rats were divided into 4 groups. To induce breast cancer, Group I received a single dose of 80 mg/kg body weight of DMBA by gavage. Group II, III and IV also received DMBA as in Group I and breast cancer was allowed 90 days to develop and grow and then these treatment groups treated with RAL, FLX and RAL+FLX, respectively. Plasma Vascular Endothelial Growth Factor (VEGF), Macrophage Colony Stimulating Factor (M-CSF), Matrix Metalloproteinase-9 (MMP-9) and its specific tissue inhibitor metalloproteinase-1 (TIMP-1) levels were determined by ELISA method.
RESULTS: Plasma VEGF levels decreased meaningfully in all treatment groups when compared with DMBA group ($p<0.05$). On the other hand the decreases in plasma M-CSF levels were not significant. The RAL and FLX combination significantly reduced plasma MMP-9 levels ($p<0.05$) compared to the DMBA group. There was a statistically-significant decrease in TIMP-1 levels in the all treatment groups as compared to DMBA group (for Group II; $p<0.005$, for Group III; $p<0.001$, for Group IV; $p<0.005$).
CONCLUSIONS: The current study suggests that combined use of Raloxifene, a selective estrogen receptor modulator, and Fluoxetine, a selective serotonin reuptake inhibitor, may be useful in the treatment of breast cancer.

Keywords: Breast cancer, DMBA, Raloxifene, Fluoxetine

PP1-40

DNA/PROTEIN BINDING AND DNA PHOTOCLEAVAGE PROPERTIES OF THE WATER SOLUBLE BODIPY COMPOUNDS

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OBJECTIVES: Cancer, is a major public health problem, causes to die several million people every year in the world. Photodynamic therapy (PDT), is an invasive medical treatment of cancer, based on production of reactive oxygen species with irradiation of photosensitizer and elicit tumour ablation. BODIPY (4,4-difluoro-4-bora-3a,4a-diaza-s-indacene) and its derivatives are used as photosensitizer for PDT due to stability, long visible-light absorption band, tumours selectivity and low toxicity in the dark. The main purpose of this research was to study interaction of the synthesized water soluble BODIPY compounds with DNA/BSA and determine their potential for cancer treatment.
MATERIALS-METHODS: The binding properties of two water soluble BODIPY compounds with CT-DNA have been investigated absorption titration, competitive ethidium bromide, viscosity and electrophoresis experiments. The DNA-photocleavage activities of compounds were investigated using supercoiled pBR322 plasmid DNA on agarose gel electrophoresis. To determine to quenching mechanism of BSA with compounds were performed using UV-Vis absorption spectroscopy.
RESULTS: The DNA binding studies claimed that compounds intercalate with CT-DNA via $3.58 \pm (0.08) \times 105$ M-1 and $1.27 \pm (0.10) \times 105$ M-1 of intrinsic binding constants (Kb) values. The compounds have remarkable photocleavage activities in the presence of irradiation at 650 ± 20 nm via hydroxyl radical and singlet oxygen pathways. The BSA binding results demonstrated that the compounds bind to protein with $4.31 \pm (0.07) \times 105$ M-1 and $3.43 \pm (0.04) \times 105$ M-1 of Kb.
CONCLUSIONS: The results suggested that synthesized water soluble BODIPY compounds have great potential for cancer treatment.

Keywords: BODIPY, DNA binding, photocleavage, protein

PP1-41

DNA METHYLATION MEASUREMENT OPTIMISATION FOR APC GENE

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OBJECTIVES: Since hypermethylation of promoter region of tumor suppressor genes have a role in tumor development, the DNA methylation measurement can be used for diagnosis and prognosis of cancer. In this study, the Korea Research Institute of Standards and Science (KRISS) and TUBITAK National Metrology Institute (UME) aim to fill this gap with a TUBITAK project titled “An internationally accepted standard measurement system for DNA methylation measurements”.
MATERIALS-METHODS: For APC gene, candidate reference materials were produced by KRISS including methylated (APC-M100) and unmethylated (APC-M0) plasmids. Using this reference material, measurement protocol was optimized with different of MgCl2 concentrations, annealing temperatures and HRM (High Resolution Melting) dyes. DNA methylation measurements were carried out with LC480 Real-Time PCR system.
RESULTS: All the optimisation stages were performed with the initially equalised APC-M0/APC-M100 plasmid dilutions. The only HRM kit that does not contain MgCl2 was the LC480-HRM Master mix, therefore, LC480-HRM master mix was initially optimised for different MgCl2 concentrations. Based on the result of the MgCl2 optimisation experiments, it was decided to use the "3 mM MgCl2" concentration in subsequent experiments. Although, the initial concentration of plasmids were equalised, among the tested HRM kits, only LC480-HRM Master Mix (Roche), with the help of MgCl2 optimisation, were able to produce equal melting fluorescent signals.
CONCLUSIONS: The reference material is required for accurate quantification of gene specific DNA methylation. New DNA methylation reference materials

should be developed for non-invasive early diagnosis of cancer and follow-up of the treatment of in cancer types.

Keywords: APC hypermethylation, plasmid reference material, method optimisation

PP1-42
THE IMPORTANCE OF PTEN AND BRAF MOLECULES IN NSCLC

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OBJECTIVES: Lung cancer, is a malignant lung tumor characterized by uncontrolled cell growth in tissues of the lung.. Primary lung cancers, are carcinomas that derive from epithelial cells. The main primary types are small-cell lung cancer (SCLC), and non-small-cell lung cancer (NSCLC). The closely follow-up of patients having the predisposing disorders can yield an increase in the rates of early diagnosis and curative treatment. In the current study, we aim to determine the serum levels of BRAF and PTEN by ELISA verified lung cancer, healthy controls .
MATERIAL -METHOD and RESULTS : The results are compared with the controls by using statistical tests. The mean (x), standard deviation (sd) and median (m) values of BRAF were 14.11 ± 15.278, 7.85 ng/mL and 5.6 ± 3.48; 7. 45 ng/mL, respectively, in healthy controls. Values of PTEN were 35.13 ± 29.65, 49.8 and 6.08 ± 8.35; 5.5 ng/mL, respectively . In patients with small cell lung cancer, serum protein BRAF levels were found to be higher than healthy controls and statistically significant ($p = 0.032$). There was a statistically significant difference ($p = 0.018$) in serum protein levels in patients with small extracellular lung cancer compared to healthy control. No statistical significance was found between gender, stage, metastatic -non metastatic adenocarcinoma -squamous carcinoma in any parameter.
CONCLUSION : We believe they will be useful markers for clinicians to help decide the diagnosis of lung cancer.

Keywords: NSCLC, BRAF, PTEN

PP1-43
THE EFFECT OF HISTONE DEACETYLASE INHIBITOR SUPEROLANILID HYDROXAMIC ACID ON TRANSFORMING GROWTH FACTOR BETA PATHWAY IN CHOLANGIOCARCINOMA CELL LINE

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OBJECTIVES: TFK-1 cell line is a malignant tumor originating from extrahepatic cholangiocarcinoma. Histone deacetylase inhibitors (HDACI) are a new claOP of anticancer agents that have a potential role in the regulation of gene expression, induction of apoptosis and arresting cell cycle. Superoanilide hydroxamic acid (SAHA) is a HDACI approved for a resistant or recurrent cutaneous T-cell lymphoma. Transforming growth factor beta (TGF-β) plays a dual role in cancer. It acts as a tumor suppressor during the premalignant phase of carcinogenesis , inhibiting cell growth and inducing apoptosis or differentiation . Namely cancer cells that have lost this inhibitory growth response exploit the ability of TGF -β to modulate processes such as cell invasion , angiogenesis , immune regulation , interactions between tumor cells and their microenvironment that make them more malignant . TGF -β plays an important role in these processes and its release may cause tumor growth. In this study, we aimed to investigate the effect of SAHA on gene expression and protein level of TGF - which shows dual property on TFK - 1 .
MATERIALS -METHODS : Protein levels were determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) method. Gene expression levels were measured by RealTime PCR.
RESULTS: SAHA statistically increased TGF-β protein level and gene expreOPi on ($p<0.001$, $p<0.008$).
CONCLUSIONS: Although HDACI has been proposed for cancer therapy and is used for its ability to reduce the severity of inflammatory autoimmune diseases, SAHA from HDACI has been activated at both gene and protein levels. Therefore applicability to SAHA is not clear in TFK-1. We think that it can be illuminated by future studies.

Keywords: Cholangiocarcinoma, TGF-β, SAHA

PP1-44
THE EFFECTS OF SUBEROYLANILIDE HYDROXAMIC ACID ON TRANSCRIP- TIONAL ENHANCER FACTORS GEN EXPRESSION IN CHOLANGIOCARCINOMA CELL LINE

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OBJECTIVES: Cholangiocarcinoma (TFK-1) derived from gall epithelium is a malign tumour of which the incidence and mortality ratio has been increasing. Suberoylanilide hydroxamic acid (SAHA) is a histone deacetylase inhibitor (HDAC) used for inhibition of tumour, induction of genes having role in apoptosis. SAHA is one of the most advanced in clinical fields as an anticancer agent. In mammals, TEAD proteins produced by translation of genes named TEAD 1-4 coding four homolog members in transcriptional enhancer factors malignity . This study aims to research the effect of SAHA on TEAD 1-4 gene expression levels in TFK - 1 cell line .
MATERIALS -METHODS : Total RNA was extracted by TRizol. IPPogen-RT Kit was used for cDNA synthesis from the obtained RNA. The cDNAs were amplified with FAM -labeled primer probes specific for the mRNA sequence of TEAD 1-4 genes . Gene expression levels determined by Real Time PCR method .
RESULTS : It is found that SAHA statistically increased the level of TEAD 1 ($p<0.001$), TEAD 2 ($p<0.001$), TEAD 3 ($p<0.001$) ve TEAD 4 ($p<0.002$) gene expressions .
CONCLUSIONS : Activation and expression of TEADs can be determined by deviation of the number of DNA copies , regulations on transcription levels and regulation of miRNA during post transcription level and even post -translational modifications . Therefore , it is not still understood the role of TEADs in the initiation process of carcinogenesis . It is essential to research the activation and expression of different transcriptional coactivators , where TEADs connect , to better understand the dual role of TEADs during physiolog ical and pathological processes.

Keywords: TEAD, TFK-1, SAHA

PP1-45
ROLE OF HOGG1 SER326CYS GENE POLYMORPHISM IN PATIENTS WITH RENAL CELL CARCINOMA

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OBJECTIVE : Renal cell carcinoma accounts for 2% to 3% of all malignant diseases in adults. Human 8-oxoguanine glycosylase 1 (hOGG1) gene has the role of removing have described the influence of Ser326Cys polymorphism of the hOGG1 gene on cancer susceptibility. However, the results have remained inconclusive and controversial. The aim of this study was to investigate the effect of HOGG 1 Ser326- Cys gene polymorphism on the susceptibility of renal cell carcinoma in Turkish population.
MATERIAL-METHODS: In this study, the association between HOGG1 Ser326-Cys polymorphism and renal cell carcinoma was investigated. Consecutive patients with histologically confirmed renal cell carcinoma and healthy controls were prospectively enrolled in this study between 2015 and 2017. Genotyping was determined using polymerase chain reaction restriction fragment length polymorphism (PCR-RFLP). For the statistical analyses Chi-square ($\chi 2$) test, Mann-Whitney U test and logistic regreOPion test were used where appropriate.
RESULTS: There were no significant differences in terms of the age and BMI between renal cell carcinoma patients and controls. There was no association between HOGG1 Ser326Cys polymorphism and renal cell carcinoma.
CONCLUSION: We suggest that the HOGG1 Ser326Cys gene polymorphism is not a risk factor for the development of renal cell carcinoma in Turkish popula tion.

Keywords: Renal cell carcinoma, HOGG1 Ser326Cys gene polymorphism, Turkish population, PCR

PP1-46

MULTIDRUG RESISTANCE IN PACLITAXEL- SELECTED VARIANTS OF ENDOME-
TRIOID OVARIAN ADENOCARCINOMA CELL LINE MDAH-2774

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OBJECTIVES: Gynecologic malignant tumors have high morbidity and mortality and epithelial ovarian carcinomas are one of the most common gynecologic malignancies. Paclitaxel, cisplatin, doxorubicin etc. drugs are used for the chemo- therapy of epithelial ovarian cancer. During treatment with these drugs of the epithelial ovarian cancers, a drug resistance mechanism is activated in the cancer cells –multidrug resistance—(MDR 1), and the drugs are efflux by the P-glikoprotein (Pgp). Recent researches focus on inducing the effectiveness of cancer chemotherapy. For the investigation of new methods for treatment cancer, drug-resistanced cell lines (upregulated of MDR-1 gene expression) are important reqirements to compare cell lines that have not any resistance at laboratuary conditions. Our aim was to have gianed the MDR-1
resistance to paclitaxel at MDAH 2774 –endometrioid ovarian
adenocarcinoma- cell line. Determined as a range from 2 to 6 nM with growth inhibition assay. For seven weeks, IC50 concentration of paclitaxel was transffered to cell culture medium day-by-day and at the end of seven weeks MDR-1 gene expression levels were determined and compared MDR-1 gene expression of the MDAH 2774 cell line. RESULTS: As a result of MDR-1 gene expression analysis paclitaxel-selected variants have upregulated MDR-1 gene expression profile. CONCLUSION: Consequently we obtained at our research, paclitaxel-drug resistanced variant of MDAH 2774 and this variants can be useful for cancer treatment studies as an experimental group.

Keywords: Multidrug resistance, Paclitaxel, ovarian cancer

PP1-47

DETERMINATION OF THE EXPRESSİON LEVEL OF PECAM-1 IN PATIENTS WITH EYELID, CONJUNCTIVAL AND ORBITAL TUMORS

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OBJECTIVE: Eyelid, conjunctival and orbital tumors are an extremely rare malignant neoplasm all over the Word. However, these tumors are the most commonly observed cancer types in ophthalmology patients. The most common diagnosis is basal cell carcinoma (BCC) among these patients (~90%). A crucial event in cancer metastasis is the trans-endothelial migration of tumor cells. The interactions between tumor and endothelial cells involves multiple adhesion molecules. In addition, angiogenesis also plays an important role in tumor growth and metasta- sis. Platelet endothelial cell adhesion molecule (PECAM-1) is a member of the immunoglobulins superfamily and plays important roles in many biological proceOPes including leukocyte trans-migration, angiogenesis, apoptosis, and the regulation of inflammatory response. The present study aims to investigate the expression of PECAM-1 in conjunctival and orbital tumor patients from rare tumor types.
MATERIALS-METHODS: In this study, we determined the expression levels of PECAM-1 expression in 20 patients with eyelid, conjunctival and orbital tumors by RT-PCR. The data were analyzed with ΔΔCt method. RESULTS : PECAM -1 mRNA expression level in the tumor tissue were 2.47 - fold higher than in the control tissue . A significant difference in PECAM -1 expression.
CONCLUSION : The result of this study demonstrated that increased PECAM -1 expressions might be associated with eyelid , conjunctival and orbital tumor metastasis and tumor-related angiogenesis . We think that further understanding of the PECAM -1 mechanism might be a promising strategy to prevent metastasis formation.

Keywords: Eyelid, Tumor, PECAM-1, Expression, RT-PCR

PP1-48

PEROXISOME PROLIFERATOR-ACTIVATED RECEPTOR GAMMA (PPARGAM - MA), TOTAL ANTIOXIDANT (TAS) AND TOTAL OXIDANT STATES (TOS) IN PATIENTS WITH THYROID CANCER

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OBJECTIVE : Thyroid cancer , one of the rapidly increasing cancers in recent years, is the most common malignancy of the endocrine system .PPARs are a family of nuclear receptors that provide modulation of glucose-lipid metabolism and genes involved in inflammation .Recently it has been reported that PPARgamma affects cell proliferation and differentiation in various malignancies .We think that this study will be important in terms of treatment and diagnosis as the free radicals are responsible for the pathogenesis of thyroid diseases and the complications observed in the later stages of the disease.
MATERIAL -METHOD : This study included 24 patients with suspected thyroid cancer and 24 patients with pathologic malignancy and 38 patients with benign disease .PPARgamma , TAS and TOS activities were measured spectrophotometri - cally from serum samples obtained from patients. Statistical analyzes of the data were evaluated using the SPOP 20 package program. The mean ±standard deviation for all parameters was calculated .Normal distribution of variables was assessed by the Kolmogorov - Smirnov test. Mann - Whitney U was used for nonparametric variables.
RESULTS : As a result of our study , PPARgamma levels in the malignant group were significantly higher than the benign group ($p < 0.003$).In addition to this, no significant difference was found between total antioxidant and total oxidant levels between bening and malignant patient groups .
CONCLUSION : As a result of our study , we found that there was no significant difference between TAS and TOS levels of patients with malignant and benign nodules , but PPAR gamma levels were found higher in malignant patients .Further studies are needed to determine the likely causes of this rising.

Keywords: Peroxisome proliferator-activated receptor gamma, thyroid cancer, Total Antioxidant Status, Total Oxidant Status

PP1-49

INVESTIGATION OF CYTOTOXIC PROPERTIES OF EUPHORBIA MACROCLADE BOIOP WATER EXTRACT ON DU-145 CELL LINE

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OBJECTIVE: Drug development studies from medical plants have a very important role in the treatment of cancer . Some species of Euphorbia genus are used as medical herbs in the treatment of skin diseases , migraine , ulcers, cancer , warts and other diseases. Prostate cancer is the most common cancer diagnosed in men and the second most common cancer -related death in men . In this study ; it was aimed to investigate the cytotoxic effects of water extracts of Euphorbia macroclada Boiss's flowers, leaf and body on DU-145 prostate cancer cells.
MATERIALS-METHODS: Cytotoxic activities of water extracts of flower, leaf and body of Euphorbia macroclada Boiss were determined by MTT method. GPS which were read spectrophotometrically at 570 nm, were analyzed by the excel program and IC50 growth inhibition values were determined . Quantitative iodide (PI; Sigma) staining , which allows discrimination of apoptosis by necrosis.

RESULTS : According to the results of the study , flower , body and leaf water extracts of Euphorbia macroclada Boiss showed cytotoxic effects on DU-145 prostate cancer cells. It has been determined that this effect varies both dose and time dependently.
CONCLUSIONS: As a result; the flower, body and leaf water extracts of Euphorbia macroclada Boiss have been shown to have cytotoxic effects on the DU -145 prostate cancer cell line.

Keywords: Euphorbia macroclada Boiss, DU-145, MTT

PP1-50
CARDIOTOXIC EFFECTS OF DEGUELIN AND DOCETAXEL IN EXPERIMENTAL LUNG CANCER MODEL

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OBJECTIVE : To investigate the cardiotoxic effects of Deguelin and Docetaxel in the in vivo lung cancer model.
MATERIALS -METHODS : Experimental design ; Control , Cancer , Cancer + DMSO , Cancer +Deguelin , Cancer +Docetaxel , Cancer +Combination . A metastatic lung cancer model was established by Lewis Lung Carcinoma cell line in 42 adult C57BL / 6 female mice. Seven days after the injection of cancer cell lines, the doses set in the cell lines were applied 6 times in advance, as would be to the groups every other day.Heart tissues were taken to ependorf tubes PBS (pH 7.4) and homogenized .Oxidative stress index (OSI) and superoxide dismutase (SOD) enzyme activity analyzes were performed to determine cardiotoxic effects $p < 0.05$.
RESULTS : At the end of the study , 2 subjects died from cancer + Docetaxel group. In the treatment group with Deguelin, tumor development is significantly lower than other cancerous and treatment groups .There was no statistically significant difference between OSI and SOD analyzes in tissue homogenates ($p > 0.05$). Histochemical analysis showed no ischemia or necrosis in any group.
CONCLUSIONS : Docetaxel which was applied in standard therapy in lung cancer , and Deguelin which is chemotherapeutic candidate molecule were applied the determinated doses for the experimental animal it was observed that the agents used in the experimental model were not superior to each other in terms of cardiotoxic effects in terms of histochemical and oxidative stress markers .We think that Deguelin , an agent that alone or in combination does not bring an additional cardiotoxic burden invivo, can be a promising agent in the use of lung cancer.

Keywords: Cardiotoxic Effect, Deguelin, Docetaxel, Experimental Lung Cancer Model, C57BL, Lewis Lung Carcinoma

PP1-51
INVESTIGATION OF THE RELATIONSHIP BETWEEN MIR 146 A POLYMORPHISM AND STOMACH, COLON AND RECTUM CANCERS

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OBJECTIVE: MicroRNAs are small RNA molecules that non-coding proteins of about 22 nucleotides in length. Mir146a, a member of the microRNA family, plays an important role in the regulation of many biological pathways such as the regulation and differentiation of hematopoietic cells. The relationship between mir146a polymorphism and stomach, colon, rectum cancers have been investigat ed in Turkish population.
MATERIALS-METHODS: Polymorphism in mir146a gene rs2961920 and rs2910164 have been determined in 212 patients (stomach:73, colon:76 and rectum:63) and in 77 healthy controls by Real-Time PCR. Findings were evaluated by logistic regression and Khi ($\chi 2$) tests.
RESULTS: When stomach, colon and rectum cancer patients and controls were evaluated by logistic regreOPion analysis for age, gender, smoking habits and their cancer stories in family, there was no statistically significant relationship. The comparison of stomach, colon and rectum cancer patients and controls determined a statistically significant relationship for alcoholic drink consumption ($p<0,05$). There was statistically significant relationship between mir146a rs2961920 polymorphism and stomach and colon cancers in the investigated Turkish population ($p<0,05$).
CONCLUSION : There was statistically significant relationship between this polymorphism and stomach cancer in wild type (GG) and heterozygous (CG) genotypes when the stomach cancer patients and control group were evaluated for mir146a rs2910164 polymorphism ($\chi 2$:7,213, p:0,007). Similarly , there was statistically significant relationship between this polymorphism and stomach cancer in wild type (GG) and homozygote (CC) genotypes ($\chi 2$:5,39, p:0, 020).

Keywords: Stomach cancer, Colon cancer, Rectum cancer, Polymorphism, mir146a, Turkish population

PP1-52
FUNCTIONAL ANALYSIS OF HUMAN BAX GEN PROMOTER REGION

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OBJECTIVES : Cancers often result in a number of genetic changes in human life. Oncogenes encode proteins that normally stimulate growth . Malignant transformation occurs as a result of over -synthesis , translocations and mutations . Tumor suppressor genes normally encode proteins that inhibit growth . Undesirable conditions can occur if deletions occur in these genes, if the transcription event does not occur and if protein inactivation results in loss of function.
MATERIALS - METHODS : Characterization of the proapoptotic BAX gene and the functional analysis of the promoter region , which have an important potential in the apoptosis -free mechanism , were performed . The 5000 bp promoter region of BAX gene was identified primarily by using bioinformatics programs and various databases . However , the overall analysis of our study was performed on a 2000 bp promotor fragment that we thought was functional
RESULTS : In this context , first, a genome transcription initiation site, a TATA binding box and probable p53 binding sites were showed . Later literature reviews and software programs were used to identify possible transcription attachment regions and motifs on this region.
CONCLUSION : These 2000 bp parts were divided into four sub-parts according to their functional properties . Each fragment was cloned into the pGEM -T Easy vector . Human genomic DNA was first purchased . PCR was performed with primers designed specifically for each region , and each region was obtained from agarose gel. The pure bands of each region transfer into the Escherichia coli JM109 bacterium by cloning into the pGEM -T Easy vector . Plasmid isolation was performed from each cloned fragment.

PP1-53
INVESTIGATION OF THE EFFECT OF HUMAN BAX GENE PROMOTER DELETIONS ON GENE EXPRESSİON

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OBJECTIVES : Cancer is a molecular heterogeneous disease and one of the major causes of death worldwide . Having genetic and epigenetic variations in different histopathologies makes it difficult to understand this disease and to create new therapies. Cell proliferation is regulated by the balance between proapoptotic and antiapoptotic genes. A damage in these genes leads to cancer . In this study , the effect of the proapoptotic BAX gene , which has an important

potential in the apoptosis mechanism , on the expression of the deletions in the promoter region was examined.
MATERIALS - METHODS : For this purpose , the 2000 bp promoter region of BAX gene was identified by using bioinformatics programs and various databases . This 2000 bp region is divided into three different parts . Each promoter fragment was cut with restriction enzymes and cloned into pGL -3 luciferase vector .
RESULTS : The promoter constructs were constructed by transferring to the luciferase vector . These constructs will then be used for luciferase activity measurement.
CONCLUSION : As a result of the analysis studies made , these 2000 bp parts were divided into three sub -parts according to their functional properties . PCR was performed with primers designed specifically for the selected regions and each region was obtained in pure form . The resulting PCR products and vector were cut with the same restriction enzymes. The pure bands of each region were extracted from the gel and cloned into pGL-3 luciferase vector and transformed into Escheri - chia coli JM109 bacterium . Plasmid isolation was performed from each cloned fragment.

Keywords: BAX gene, cancer, promoter analysis, transcription factor.

PP1-54
THE EFFECTS OF TETRAHYDROCARBAZOLE-DERIVED COMPOUNDS ON PROLIFERATION AND MIGRATION OF MDA-MB-231

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OBJECTIVES : Tumor invasion and metastasis , both hallmarks of tumor malignancy, are responsible for more than 90% of all cancer-related deaths and thus an agent that could efficiently inhibit the migration and invasion of cancer cells would be a useful candidate to suppress tumor metastasis. The aim of the study was to investigate the effects of tetrahydrocarbazole-derived compound 6 and compound 17 on the viability and migration ability of MDA-MB - 231 breast cancer cells .
MATERIALS -METHODS : Cells were cultured and treated with different concentrations of the compound 6 (0.4-40 microM) and compound 17 (0.8-80 microM) for 24 and 48 hours . Proliferation was evaluated by trypan blue exclusion assay . The effect of the compounds on migration ability of MDA -MB -231 cells was determined by wound healing assay. Morphological alterations were monitored by inverted light microscopy .RESULTS : Treatment with 40 microM of compound 6 and 80 microM of compound 17 decreased cell viability by 50 and 60 %, respectively compared to untreated control cells . Additionally , treatment of the cells with compound 6 (4 and 40 microM) and compound 17 (8 and 80 microM) for 48 h inhibited cell migration by 20 -60 % and 10 -50 % , respectively .
CONCLUSION : The data demonstrate for the first time that both compounds inhibit the migration and viability of highly metastatic MDA-MB-231 breast cancer cells in a time and concentration -dependent manner . Based on the results , it is suggested that the compounds might be used for the treatment of breast cancer.

Keywords: BAX gene, cancer, promoter analysis, transcription factor.

PP1-55
THE EFFECT OF COMBINATION OF ERAD INHIBITION WITH HORMONE DEPLETION ON PROSTATE CANCER CELLS

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OBJECTIVE: Prostate cancer is the second most common cause of deaths in men and androgen signaling via androgen receptor plays a critical role in the development of this disease. ERAD, which plays a role in several pathological processes such as diabetes, neurodegenerative diseases and cancer, is primer mechanism in the regulation of misfolded , non -organized proteins . Any defect in ERAD leads to the accumulation of misfolded proteins and triggers off ER stress . In response to ER stress , "UPR (unfolded protein response)" becomes active and long -term UPR stimulation is known to induce apoptotic cell death . Therefore , in this study we aimed to investigate the utility of ERAD inhibitors in the treatment of prostate cancer.

MATERIALS -METHODS : Here we examined the effect of DBEQ , an ERAD inhibitor, in hormone-dependent LNCaP cells. In starvation (hormone depletion) and non- starvation conditions , DBEQ was administered to the cells at specific times and doses to investigate AR , PPA and CHOP levels by immunoblotting , cell proliferation by XCelligence and tumor growth ability by soft agar.
RESULTS : In conclusion , we showed that DBEQ , which causes ER stress , has anticancer effect by decreasing cell proliferation , AR and PSA levels as well as tumor growth ability . However , for the first time , it was determined that combination of DBeQ treatment and starvation , AR and PSA levels were significantly reduced and cell proliferation was suddenly decrease due to high inhibition .
CONCLUSION: The combined effect of ERAD inhibition and hormone depletion may represent a new potential therapeutic strategy for the treatment of metastatic prostate cancer.

Keywords: AR, DBEQ, ERAD, PROSTATE CANCER, PSA, UPR

PP1-56
EVALUATION OF CLINICAL USEFULNEOP OF INTRAOPERATIVE PARATHYROID HORMONE (PTH) ASSAY: A UNIVERSITY EXPERIENCE

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OBJECTIVE : The classical approach for primary hyperparathyroidism is surgical removal of the hyperfunctioning tissue. The purpose of this study was to evaluate the usefulness of intraoperative parathyroid hormone (PTH) assay during surgery.
MATERIALS -METHODS : The patients admitted to Surgery Department and underwent to parathyroidectomy (31 female and 7 male) were included into this tubes from patents before surgery (0 min., baseline levels), at 5th minute of intraoperative and at 10th min. of intraoperative. Samples were transported to the laboratory immediately and intraoperative PTH levels were measured by chemiluminescent method on DXI 800 (Beckman Coulter , Co , US) in 15 min. Percentage change in PTH was calculated . Serum total calcium levels of the patients were measured by photometric method on AU 800 (Beckman Coulter , Co, US).
RESULTS: Of the 38 patients, 14 underwent parathyroidectomy for primer hyperparathyroidism due to parathyroid adenoma, 24 for secondary hyperparathyroidism due to chronical renal disease. Percentage change in PTH was 58.7 at 5th min and 66,9 at 10th min. the reduction was more than 50 % for both.
CONCLUSION: This study show that intraoperative PTH assay is a useful and reliable method in guiding of parathyroid surgery.

Keywords: intraoperative PTH, primer hyperparathyroidsim, surgery

PP1-57
PROTECTIVE EFFECTS OF DEXPANTHENOL AGAINST GENTAMICIN-INDUCED NEPHROTOXICITY IN RATS

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OBJECTIVES : In this study, we aimed to investigate the antioxidant and anti-inflammatory effects of dexpanthenol in gentamicin -induced nephrotoxicity through the assessment of biochemical and histopathologic parameters.
MATERIALS-METHODS: A total of 40 rats were randomly separated 4 groups 10 rats: Group I (Control) was given physiologic serum (0.5 cc, i.p.) for 8 days, Group II (Dexpanthenol) was administered dexpanthenol (500 mg/kg, i.p.) for 10 days, Group III (Gentamicin) was administered gentamicin (100 mg/kg, i.p.) for 8 days, and Group IV (Gentamicin +Dexpanthenol) was administered gentamicin (100 mg/kg, i.p.) for 8 days and dexpanthenol (500 mg/kg, i.p.) for 10 days. Serum BUN, kreatinin (Cre), total antioxidant capacity (TAS) and total oxidative stress (TOS) levels were measured by autoanalyzer , TNF-α levels were assayed by ELSIA method.

Renal tissue Malondialdehit (MDA) levels and Catalaz (CAT) and Glutation peroxidase (Gpx) activities were asayed by spectrophotometric method. Histopathological evaluation was alsa perfromed in renal tissue.TNF-α levels and renal MDA levels were significantly higher and catalase (CAT) and glutathione (GSH) were significantly lower compared to other grouPP ($p<0.05$). In the levels were significantly lower and CAT and GSH were significantly higher compared to the gentamicin group ($p<0.05$). Histopathologic examination revealed severe tubular necrosis in the gentamicin group and reduced necrosis.

CONCLUSION: Dexpanthenol provides renal protection against gentamicin-in-duced nephrotoxicity through its antioxidant and anti-inflammatory effects.

PP1-58

INVESTIGATION OF ANTICANCER ACTIVITIES OF EUPHORBIA MACROCLADA BOIOP METHANOL EXTRACTS IN DU-145 PROSTATE CANCER CELLS

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OBJECTIVES: Chemotherapeutics used in the treatment of prostate cancer have many undesirable side effects. Therefore, the discovery of new anti-cancer compounds is gaining importance in order to improve the quality of life and to eliminate these side effects in prolonged treatment of prostate cancer. In this study; it is aimed to investigate anticancer activity in the DU-145 prostate cancer cell line of flower, body and leaf methanol extracts of Euphorbia macroclada Boiss.

MATERIALS-METHODS: Methanol extracts from flowers, body and leaf of Euphorbia macroclada Boiss were prepared. The effects of the extracts on cell viability were determined by 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) method. The results were analyzed by the excel program and the concentration values (IC50) of the extracts, which cause 50 % mortality in DU-145 prostate cancer cells, were determined. Quantitative measurement of cell death was performed with Hoechst (HO; Sigma)/propidium iodide (PI; Sigma) staining, which allows discrimination between apoptosis and necrosis.

RESULTS: According to our experimental results, it was found that methanol extracts of Euphorbia macroclada Boiss flower, body and leaf were that significantly decreased DU-145 cell line viability with time and dose dependently compared with the control group.

CONCLUSIONS: As a result; methanol extracts of Euphorbia macroclada Boiss flower, body and leaf showed cytotoxic effects by reducing DU-145 prostate cancer cell line viability.

The synthesis of the herbal drug candidate active ingredients and the production of synthetic drugs remains important today. For further studies, active substance analysis and activity experiments are planned.

Keywords: Euphorbia macroclada Boiss, Prostate cancer, DU-145

PP1-59

CYANIDE MEASUREMENT IN HUMAN SERUM: COMPARING TWO DIFFERENT IMPLEMENTATIONS OF THE NINHYDRIN METHOD

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OBJECTIVE: Cyanide is a fast acting toxic agent. Today, the most frequent cause of cyanide poisoning is fire; however cyanide levels are not measured in these cases due to cumbersome methods. We previously optimized the ninhydrin method to human serum. Our aim was to determine if results were affected by not using oxygen-free solvent for ninhydrin; which would increase the speed of measurement.

MATERIALS-METHODS: Cyanide measurement with ninhydrin is performed by measuring absorbance of the cyanide-ninhydrin complex at 490 nm. We compared two implementations of the ninhydrin METHOD: 1) implementation of the method with oxygen-free solvent (classic implementation), 2) implementation of the method without oxygen-free solvent. Serum was obtained from healthy adult volunteers and pooled. Samples with 0.5, 1, 2, 3, 4 and 5 mg/L cyanide were prepared (at least 3 samples for each). Measurements were done with a Shimadzu UV-1700 spectrophotometer.

RESULTS: The R^2 values of two separate implementations were 0.986 and 0.953, respectively. Results were accepted as the mean of 3 measurements. In samples containing 0.5, 1, 2, 3, 4 and 5 mg/L of cyanide, results were as follows: first implementation: 0.33, 0.83, 1.77, 2.90, 3.51 and 3.80 mg/L; second implementation: 0.04, 0.74, 1.50, 2.34, 3.0 and 3.36 mg/L. All values were significantly lower in the second implementation ($P=0.0485$).

DISCUSSION: Although relatively better results were obtained at concentrations of 1, 2 and 3 mg/L; the presence of oxygen inhibits the formation of the cyanide-ninhydrin complex. Thus, use of oxygen-free solvent is essential for the ninhydrin method.

Keywords: Cyanide measurement, ninhydrin, oxygen

PP1-60

EVALUATION OF LABORATORY SAFETY OF THE LABORATORY STAFF

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OBJECTIVES: Unsuitable working conditions and exposure to violence is a job security problem for healthcare staff working in the hospitals. The aim of our study was to evaluate the working conditions of the laboratory staff and their violence exposure ratio in Turkey.

MATERIALS-METHODS: Turkish Biochemical Society has developed an online questionnaire (SurveyMonkey) and sent to the laboratory profeOPionals via e-mail. The survey consisted 16 questions about demographic information, biosafety, violence and healthcare.

RESULTS: The questionnaire was filled by laboratory specialists (80%), aged between 40-49 (48%), working in educational research hospitals (44.4%) and university hospitals (33.3%), especially in biochemistry labs. (95.6%).

The results of the survey have shown that health scan for HBV, HBA, HIV was performed in 68.3% of the laboratories, 70% of laboratory staff were vaccinated against HBV. Unfortunately, only 9.6% is forced to health screening such as mammography, occult blood test. In %64 of the labs, educational seminars were not planned about healthy lifestyle. In 82.9% of the labs, the door is kept closed, unfortunately there is no security camera in 63.4% of the laboratories, and no security staff nearby in 34.1%. The verbal violence exposure ratio of the laboratory staff weekly by patient relatives is 34.1%, by other hospital personnel (doctor, intern, nurse) is 20%. In 61.5% of the hospitals, there is no banner about 'No violence against health workers'.

CONCLUSION: Hospital management and laboratory directors should optimize the safe working conditions of the laboratory staff. Periodic health scanning should be mandatory for the lab staff.

Keywords: Laboratory safety, job safety

PP1-61

HOW DID I PROVE THE INNOCENCE OF MY LABORATORY

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INTRODUCTION: Pre-analytical errors account for 60–70% of the total errors in laboratory medicine. Variables are mostly out of reach of the laboratory, yet the laboratory is blamed for a wrong result.

CASE: A 68 year old male with atrial fibrillation and flutter was hospitalized in the cardiology clinic for about 6 days. At the 7th day of admiOPion, a control complete laboratory manager I was called to investigate the situation and I was advised to re-run the samples. When I searched the records of the patient, I noticed that all CBC requests were accompanied by a biochemistry request. Interestingly, the biochemistry results showed a co-ordinated absurdity. Faulty results in two different instruments with the same couple of samples are unusual. Before questioning the analytic phase, I decided to perform a blood group test for the last individual.

CONCLUSION: A feedback from the clinician is always a valuable impact for the laboratory. However, concerning the high rate of errors, problems in pre-analytic phase should be ruled out before investigating the analytic or postanalytic phases.

Keywords: laboratory management, pre-analytic phase, wrong specimen

PP1-62
RESTRICTION OF THE TEST REQUESTING FREQUENCY TO AVOIDING UNNECESSARY TESTING

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OBJECTIVES: Increasing healthcare costs around the world has made the "correct " use of medical laboratories more debatable . In order to reduce the costs , as of 13.12.2013 , in some tests , the process of restricting test requesting frequency has been put into effect in Bayburt State Hospital. In this study, the effect of this process on the average number of test requests was investigated by means of comparison of test numbers between restricted and unrestricted units .
MATERIALS-METHODS: The total test number of restricted tests in the hormone unit (TSH, fT3, fT4, vitamine B12, folate, ferritine , E2, testosterone , prolactin , progesterone, LH, FSH, AFP, CEA, CA15-3, CA125, CA19-9, total-PPA, PTH) and unrestricted tests in the biochemistry unit (glucose , urea , creatinine , uric acid, T.protein, albumin, T.bilirubin, D.bilirubin, ALT, AST, GGT, ALP, LDH, CK, amylase, Na, K, Cl, Ca, P) for 1year period before (01.01.2013-31.12.2013) and after restriction (01.01.2014-31.12.2014) and the total number of patients requested from these units was taken into account and the average amount of the test requests per patient was calculated.

RESULTS : In the year of 2013 and 2014 , 363884 and 393515 patients was admitted to the hospital respectively .Total test amount is 88947 requested from 38353 patients in hormone unit , and 475909 requested from 78539 patients in biochem - istry unit in 2013.After restriction total test amount is 112651 requested from 49146 patients in hormone unit,and 685661 requested from 96714 patients in biochemis try unit.
CONCLUSIONS: The avarage amount of the tests per patient requested for restricted hormone unit decreased by1% from 2.319 to 2.292. But the avarage amount of tests per patient requested for unrestricted biochemistry unit increased by 17% from 6.059 to 7.089 .This situation suggests that if restriction was not made a similar increase in the amount of test requests in the hormone unit could be seen.

Keywords: increasing healthcare costs, laboratory management, restriction of test requesting frequency, unnecessary testing

PP1-63
EFFECTIVE LABORATORY USE

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OBJECTIVES: We aimed to compare verified total test numbers (VTTN) and ordered test numbers per patient (OTNPP) for central and emergency laboratories.

MATERIALS-METHOD: Mean OTNPP was calculated usingVTTN and number of test ordered patients between 01.03.2016-30.06.2017. Data of central and emergency laboratories were grouped as biochemistry , hormone , complete blood count (CBC), coagulation and urinalysis , while external laboratory data were evaluated as test count and SUT point. Changes were investigated by the ratio of same test groups in central and emergency laboratories.

RESULTS : Increased OTNPP was observed for biochemistry , CBC and urinalysis in emergency laboratory compared to central laboratory , since 01. 05.2016 . This elevation may be explained by the test runs in emergency laboratory that were ordered from evening polyclinics started since 01.04.2016. VTTN and OTNPP for external laboratory were increased between 01.03.2016- 31.03.2017, but decreased after 01.04.2017 . This decrement may be caused by informing clinicians about elevation of external laboratory test orders during meetings and by taking precau - tions to prevent unnecessary test orders since 01. 04.2017 . Hormone OTNPP for both central and emergency laboratories were not changed significantly . Monthly fluctuations were observed in OTNPP for coagulation tests. This may be due to use of other laboratory coagulation analyzer in breakage of coagulation analyzer of central or emergency laboratory , and ordering of coagulation tests at evening polyclinics.

CONCLUSION : Effective communication with clinicians is important for rational laboratory use. Use of the instruments in other laboratories is more appropriate than having the same type of multiple instruments when instruments are broken.

Keywords: Central laboratory, emergency laboratory, rational use of laboratory.

PP1-64
LIMITATION OF HEMOSTASIS MIXING TEST?

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OBJCETIVE : Heamostasys mixing test is a very usefull test in regards to determine the absence of clotting factor fort he patients intented to bleed of existance of inhibitors . Based on the result of Mixing tes, some advanced lab tests such as anticoagulant or factor levels are further syudied. Unlike to PT test, aPTT tes is not standardized . There exist many aPTT reactives with different sensitivities . The purpose of this study is to analyze the aPTT results obtained from different reactives for the case where mising test was performed due to elongated aPTT results.
MATERIALS-METHODS: Mixing tests were studied for 240 cases where aPTT found elongated in two different days by using Lupus insensitive aPTT reactive. Further , aPTT reactives were alteredfrom the previous ones for the cases we perform mixing test. İt was requested some advanced test based on the mixing test results .
RESULTS: it was observed an improvement with the mixing test for %75 of the cases. İt was further found that aPTT is normal by performing with second aPTT reactive in 10 cases out of 25 non improved case with ths inhibitör suspecion. İt was found in the etiologocal studies that 3 case with lupus anticoagulan positive, 3 cases with heavy factor absence, 2 cases with vWF absence, and 20 cases with light factor absences.
CONCLUSION: we think that to prepeat the aPTT test with another reactive will be a better option in terms of cost and time fo the patients with elongated aPTT

Keywords: aPTT, mixing test, coagulation test

PP1-65
CONTRIBUTION OF AUTOMATISATION FOR LEAN LABORATORIES

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OBJECTIVES : The way to the lean laboratory is to determine and eliminate waste of time, place, and resources. The cost will be reduced when the waste is reduced; quality , safety and speed of service offered will increase . With this study , we demonstrate the contribution of online automatisation system to lean laboratory goal.
MATERIALS-METHODS: For the analysis of serum, we identified all the steps in turn arround time , taking steps that do not add value as waste steps . We used Beckman Coulter 's lean scorecard application for this. we identified a total of 18 waste steps . For preanalytical , analytical and postanalytical processes , we have examined how much we have eliminated the waste steps in the previous workflow with online automation.
RESULTS : We found that we achieved in the preanalytical phase 63%, in the analytical phase 100%, and in the postanalytical phase 75% improvement in the wasting steps in our laboratory . The preanalytical phases we have improved ; centrifugation , serum indices control, decapping , more than one tube per patient . Analytical processes such as the loading and unloading of the racks into the analyzers , the rerun and reflex test work have become fully automatic . The postan - alytical processes such as not validated tests and test- added samples , recapping , storage of samples were also done by automation . Sample storage time was extended to three days.
CONCLUSION: Simplifying the efficiency and competence in the laboratory is an important step . Workflow must be constantly developed and improved . Laboratory automation solutions make it easy to reach lean laboratory goals.

Keywords: lean laboratory, automation, waste

PP1-66

THE ROLE OF PENTRAKSIN-3 IN THE DEVELOPMENT OF PRIMARY OPEN-ANGLE GLAUCOMA AND PPEUDOEXFOLIATION GLAUCOMA

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OBJECTIVES: C-reactive protein(CRP) is a circulating acute-phase reactant whose concentration increases in various systemic inflammatory and infectious conditions. The levels of high-sensitivity C-reactive protein and CRP in patients with glaucoma have been evaluated in previous studies, but the poOPible role in etiopathogenesis of the disease has not been defined. Pentaxin-3 (PTX 3), a member of the same family, is an acute phase reactant similar in structure and function to CRP. Therefore, in this study, it was aimed to investigate the probable association of pentraxin levels, an inflammatory marker, with Pseudoexfoliation glaucoma (PEG) and primary open-angle glaucoma (POAG) in the aqueous humor.

MATERIAL-METHODS: The study included two patient groups: groups with PEG aqueous humor taken during cataract surgery were assessed by ELISA RESULTS: The Mann-Whitney U test was used to compare the cataract group selected as the control group with the PEG and POAG group. Kruskal-Wallis test was used for comparison of cataract-POAG-PEG groups. No statistically significant difference was obtained as a result of the comparisons (p>0. 05).
CONCLUSION: Due to the first study on the subject, it is suggested that further studies with a larger sample size are needed to understand the role of PTX 3 in the development of disease in different glaucoma subgrouPP, including the measure- ment of serum PTX 3 levels and CRP levels.

Keywords: Aqueous humor, primary open-angle glaucoma, PPeudoexfoliation glaucoma, pentraksin-3, CRP

PP1-67

LEVELS OF VITAMIN IN ELDERLY POPULATION AGED 65 YEARS AND OVER

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OBJECTIVE: The elderly population over 65 years is increasing worldwide. Vitamin D deficiency is common in the elderly population. The aim of our study was to determine the prevalence of vitamin D among this group. MATERIALS-METHODS: Vitamin D levels of the patients over 65 years admitted to Hopa State Hospital between January and December 2015 were retrospectively reviewed using their records in the hospital data information system. Those with any chronic diseases were not included. The patients included (n=558) were assessed according to their gender and vitamin D levels. The serum 25(OH)D level lower than 20 ng/mL is considered as vitamin D deficiency, between 21 and 29 ng/mL as vitamin D insufficiency, and greater than 30 ng/mL as normal.

RESULTS: The mean vitamine D level of the patients was found as 16,13±5.65 ng/ml and showed no significant difference in terms of gender (14,94±3,52 ng/ml for women, 17,33±2.13 ng/ml for men) (p>0.05). The incidence of vitamin D deficiency was found to be 73.30% in the whole study population while 76.30% in women and 63.97% in men.

CONCLUSIONS: Vitamin D deficiency and insufficiency were determined in the geriatric population at a considerable level and we speculate that this can be related to limited exposure to sunlight and dietary factors.

Key words: Gender, Vitamin D deficiency, Age

PP2-01

THE EFFECT OF ACRYLAMIDE ON HUMAN BRONCHIAL EPITHELIAL CELL BEAS-2B

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OBJECTIVES: Acrylamide is found in many areas such as various industrial sectors, laboratories, cigarette smoke, and high-temperature processed foods. The effects of acrylamide, of which different toxic effects were discovered previously, were studied mainly in the nervous system and reproductive system. There are few studies on its effect on lungs. The aim of this study is to investigate the effect of acrylamide on human bronchial epithelial cells BEAS-2B. MATERIALS-METHODS: Cells were cultured with medium containing 10% FBS and passaged before reaching 80% confluency. In the experiment, cells detached with trypsin were counted and plated at a density of 5. 000 cells per well into a 96 well plate. Then 0, 1, 2, 4, 8, 10, 15, 20 mM concentrations of acrylamide were applied 55M %.40 XBT added, and absorbance values of the 96 well plate were measured at 570 nm in the ELISA reader. RESULTS: The half-maximal inhibitory concentration (IC50) of acrylamide for BEAS-2B cells was found to be 3.70 mM. Acrylamide reduced the viability of BEAS-2B cells dose-dependently. A sharp decrease was observed in viability especially between the acrylamide doses of 2-6 mM.

CONCLUSIONS: Acrylamide has a cytotoxic and anti-proliferative effect on the human bronchial epithelial cell BEAS-2B in a dose dependent manner.

Keywords: acrylamide, BEAS-2B cells, MTT assay, lung

PP2-02

RELATION BETWEEN RED BLOOD CELL DISTRIBUTION WIDTH (RDW) AND SCHIZOPHRENIA

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OBJECTIVES: The aim of the study is to examine the effect of inflammation on the pathogenesis of schizophrenia by comparing red blood cell distribution width values in schizophrenia patients to those in a control group.

MATERIALS-METHODS: This retrospective study was conducted in the Laboratory of the Mental Health Hospital by including all data collected between January 2013 and December 2014. All patients who were diagnosed with schizophrenia in Elazig Mental Health Hospital were included in the study. Red blood cell distribution width was examined using a Mindray BC 3000 Plus instrument (Mindray Bio-Medi-cal Electronics CO. LTD, Shenzen, China) by the electrical impedance method. Statistical analyses were conducted using the Kolmogorov-Smirnov test, Student's t-test, the Mann-Whitney U-test, Chi-square analysis or Fisher's exact test within the scope of the SPSS (v.21) software. RESULTS: RDW-SD values were significantly higher in the schizophrenia group statistically than in the control group (48.43 ± 5.14 fL and 43.75 ± 4.66 fL, P < 0.001). Similarly, patients with schizophrenia displayed elevated RDW-CV levels compared with controls (14.14% ± 1.16% and 13.71 % ± 1.39%, p< 0.001).

CONCLUSIONS: We propose that red blood cell distribution width, a frequently assessed hematological parameter, is a useful diagnostic and prognostic marker of schizophrenia, with potential utility in risk estimation and treatment monitoring.

Keywords: schizophrenia, RDW, inflammation

PP2-03

EFFECTS OF TAKEN MEASURES ON REJECTION RATE IN PREANALYTICAL PROCEOP

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OBJECTIVES: Preanalytical errors are responsible for majority of laboratory errors (46-68.2%). It is responsibility of medical laboratories to determine and reject nonconforming samples, evaluate rejected samples at regular intervals if necessary, take corrective measures. In this study, we examined reasons for rejection and percentages of rejected samples on a monthly basis according to units. We searched the effect of the measures taken to increase rates.

MATERIAL-METHODS: Rejected samples from our laboratory between 01.05. 2016 -01.04.2017 were investigated on basis of reason of rejection and units. Reasons for rejection were determined by Pareto analysis and calculated as % rejection rate each month. Deviation from proceOP excellence was assessed by sigma analysis. Error sources were compiled and recorded for corrective and preventive actions for the solution.

RESULTS: According to Pareto analysis, more than 90% of rejected samples in laboratory are samples not delivered to laboratory, hemolyzed samples and insufficient samples, respectively. The highest rejection rates were in emergency department, pediatric, cardiology, oncology and orthopedic clinics. When analyzed monthly, the sigma level for samples not delivered to laboratory ranged from 3,3 to 3,6; for hemolyzed sample ranged from 3,2 to 3,5 and for insufficient sample ranged from 4,2 to 4,3.
CONCLUSIONS: Sigma levels for samples not delivered to laboratory and hemolyzed samples are acceptable but at minimum levels. It is determined that the sigma level of insufficient sample is at good level. It was observed that precautionary measures positively affected samples not delivered to laboratory.

Keywords: Preanalytical phase, rejection rates, sigma level

PP2-04

DEVELOPMENT OF NOVEL AND VALIDATED IMPEDIMETRIC BIOSENSOR FOR DETECTION OF FETUIN-A IN REAL BLOOD SAMPLES

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OBJECTIVE: Fetuin A (HFA) is a negative acute phase reactant protein which decreases in many diseases. However its levels increase during the fetal process. The aim of this study is to develop a modified biosensor system to detect HFA in real blood samples. For this purpose, we designed an Electrochemical Impedance Spectroscopy (EIS) based anti-Fetuin-A modified biosensor system and analysed HFA levels in real blood samples. The same samples were all analysed with ELISA and the results were compared for validation of the new system.

MATERIALS -METHODS : In the new EIS based biosensor, gold screen printed electrodes (AuSPE) were used as transducer. Electrodes were modified layer-by-layer. Firstly, a self-assembly monolayer (SAM) was formed on gold surface by 4- aminothiophenol (4-ATP), then polyamidoamine (amine modified), PAMAM(G 5), layer was formed by using glutaraldehyde as cross-linker .Then Anti-Fetuin -A (AntiFetA) was immobilized on Au/4ATP/PAMAM electrode via glutaraldehyde.

RESULTS: The biosensor was tested in real blood samples and the results were compared with ELISA test. The samples were from both ectopic pregnancy (n=6) and healthy pregnant cases (n=14). The calibration curve was prepared electron transfer resistance of the electrode (ΔRet) as ohm and 5 to 400 ng/mL with a R2= 0.9925. The LOD and LOQ of the biosensor was calculated as 1.44 ng/mL, 4.38 ng/mL, respectively . Linear regression analysis indicated that the newly developed biosensor results agreed well with that of the conventional ELISA assay (r=0.9998). The total analysis time was 30 minutes with the new biosensor compared with the 2,5 hours with the ELISA method.

CONCLUSION : The novel EIS based biosensor has the advantages of not requiring a pre-treatment phase, high accuracy and faster analysis time when compared with the conventional method as well as being cost-effective. Thus it is a promising analytical technology in routine HFA analysis after the completion of more detailed validation studies.

Keywords: biosensor, immunosensor, impedance, fetuin-a, PAMAM, ectopic pregnancy

PP2-05

CAN CURCUMIN BE A POTENTIAL CHELATOR FOR THE REMOVAL OF IRON FROM IN VITRO?

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OBJECTIVES: Iron overloads are serious clinical condition in the health of humans and are therefore a key target in drug development. The aim of this work is to study the coordination of Fe (III) ions with curcumin ligand that may be used in iron overload treatment . Cytotoxicity , electrochemical activities and catalase activities of Fe (III) complex with ligand of curcumin were investigated .
MATERIALS -METHODS : In this study Fe(III) complex of curcumin was synthesized and structurally charecterized by FT-IR,UV - Vis ,elemental analysis and magnetic susceptibility . Electrochemical behavior of complexes were examined at cyclic voltammetry .
The cytotoxiciy was evaluated by MMTT assay. Catalase activity was measured using commercial kit .
RESULTS : Curcumin formed with iron a brown -red complex . The catalase activities of complex was investigated . It was showed that the complex has catalase activity . Complex showed higher antioxidant effect to wards ECV304 cell line at IC 50 values of 3.71 than curcumin . The electrochemistry studies showed that potentially 0.18V.

CONCLUSION : In this study a Fe(III) complex of curcumin was synthesized and value is within the range of compounds that are expected to show superoxide dismutase activity .The complex shows an important catalase activity . The complex exhibited very high cytotoxic activity and showed a cytotoxic effect that was much better than that of the ligand. The observed cytotoxicity could be pursued to obtain a potential drug.These results indicate that using of curcumin for this aim in further studies is appropriate.

Keywords: iron, curcumin, MTT, CV, ligand, catalase

PP2-06

ASSOCIATION OF BIOCHEMICAL PARAMETERS AND NEUROD1 GENE MUTATIONS IN HEALTHY AND DIABETES OBESE PATIENTS

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OBJECTIVES: Diabetes is an increasingly common disease. currently over 400 types of genes that are effective in the process of developing diabetes. NEURO D 1 Gene is one of the genes that are associated with the development of diabetes, this gene encodes a member of the NeuroD family of basic helix-loop-helix transcrip-tion factors. protein NEUROD 1 functions as a regulatory switch for endocrine pancreatic development.
MATERIALS -METHODS : 25 patients selected regardless of sex from Tabriz clinics and 5 cc blood samples were taken for DNA extraction. The biochemical parameters were measured by the alpha auto analyzer and DNA quality and quantity were extracted determined by spectrophotometry and electrophoresis on agarose gel and DNA sequences determined by PCR technique .
RESULTS : Results of biochemical tests showed that the mean values for TC, TG, HDL and LDL in patients significantly higher mean serum levels of FBS , HbA 1c, TC, TG and LDL and significantly lower mean serum levels of HDL were noted in patients with diabetes . The functional study showed that the mutant protein exhibited a 25% reduction in transcriptional activity of insulin gene when compared to the wild type. The data analyzed by R program .
CONCLUSIONS : The results of the study indicate that there is a relation between Neuro D1 genotype and biochemical parameters and diabetes risk. Mutation in Neuro D1 gene can change biochemical parameters and finally development Diabetes. Control the Neuro D1 gene can be useful for control Diabetes.

Keywords: Neuro D1, Biochemical parameters, Diabetes.

PP2-07

INVESTIGATION THE LEVELS OF BDNF ON SERUM AND RETROPERITONEAL FAT tissue IN DENERVATED RATS

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OBJECTIVES: The sympathetic nervous system plays a critical role in the control of fat storage and mobilization, through its innervation of many peripheral metabolic tissues including retroperitoneal fat tissue (RFT). Brain-Derived Neurotrophic Factor (BDNF) is a member of the neurotrophin family which affects the survival, growth, and function of neurons in the central and peripheral nervous system. Besides these functions of BDNF, it has central role in energy metabolism . In this study, serum and retroperitoneal fat tissue BDNF levels were examined in high-fat diet fed retroperitoneal fat nerve denervated rats.

MATERIALS -METHODS : Four experimental grouPP were formed each consisted of eight 100-150 g, 3-5 weeks old Sprague-Dawley rats. During 10 weeks, first two groups were fed with high-fat diet and other two groups were fed with standard EJFU 3'5 P denervated . Second (YD-) and fourth (SD-) groups were not denervated . At the end of the feeding periods , BDNF concentrations were determined in serum and RFT samples by ELISA . In this study , Kruskal-Wallis test was used to compare all groups and Mann-Whitney U-test was used as a post-hoc test.

RESULTS: The serum levels of BDNF were not found different in all groups ($p>0.05$).
CONCLUSION : It can be mentioned that denervation may not affect the BDNF levels in serum and RFT but high fat diet may stimulate BDNF synthesis depending on obesity in RFT.

Keywords: White adipose tissue, denervation, ELISA, obesity, high fat diet

PP2-08

THE RADIOPROTECTIVE EFFECTS OF PROPOLIS AND CAFFEIC ACID PHENETHYL ESTER ON TONGUE TISSUE OF RATS EXPOSED TO TOTAL HEAD IRRADIATION

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OBJECTIVES : In this study , we aimed to investigate the protective effects of propolis and caffeic acid phenethyl ester (CAPE) in preventing harmful effects of free radicals resulting from ionizing radiation.
MATERIALS-METHODS: In this study, 54 male Wistar-Albino rats were used. The study groups consisted of 6 subgroups consisting of 3 control, radiotherapy (R), B single dose of 5 Gy of radiotherapy on the first day. Biochemical parametres of the tongue were measured by spectrophotometry method in order to determine whether propolis and CAPE have protective effects or not.
RESULTS: The total SH values in the propolis + R were found to be statistically significantly higher than in all other groups . In group R, PON values were found to be sgnificantly lower than in all other groups. The TAS values in the propolis + R group were statistically significantly higher when compared to all other groups except the normal control group. As a result of the analyses in terms of oxidant parametres, it was determined that LOOH, TOS, XO and OSI values in group R were significantly higher than the other groups. The OSI values in the control group of CAPE + R were found to be statistically significantly higher when compared to all other groups except the control group of propolis + R.
CONCLUSIONS: These results suggest that propolis and CAPE have antioxidant effects against the damage caused by ionized radiation.

Keywords: Radiation, Caffeic acid phenethyl ester, Propolis, Total antioxidan status, Total oxidan status

PP2-09

THE EFFECTS OF CERTAIN VITAMINS ON APOPTOSIS IN SODIUM FLUORIDE (NAF) ADMINISTRATED OSTEOBLAST CELL LINES

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OBJECTIVE: The present study was designed to determine the effects of vitamin A and E on caspase (9,8,3) enzymes gene expression in osteoblast cell line treated with sodium fluoride (NaF) in cytotoxic concentrations.
MATERIAL -METHOD : Cell culture, MTT viability test, Revers Transcriptas - PCR and Real time-PCR metods were used for this study, concentration to NaF IC50: 5000 µM and vitamins (A:10, E: 60 µM).
RESULTS : Based on the MTT test, cell proliferation was lower in the NaF + vitamin A group and higher in NaF+vitamin E group when compared to the NaF-administered group. Based on the Real Time PCR results, caspase-3 expressions increased 2 fold with NaF administration, 4 fold with vitamin A administration, 6 fold with NaF+vitamin E administration , while remained the same with NaF+ vitamin A administration . Caspase -8 expressions increased 7 fold with NaF administration , 6 fold with NaF+vitamin E administration , did not change with vitamin A administration . Caspase -9 expressions increased 23 fold with NaF+ vitamin E administration.
CONCLUSION : Based on the caspase enzyme expression levels, it was found that NaF caused apoptosis in osteoblast cells using the receptor pathway , and the administration of vitamin A with NaF blocked this pathway. The use of vitamin E in combination with NaF was demonstrated to have a synergistic effect and could cause apoptosis by increasing the expression of both intracellular and receptor pathway caspases. However, it was concluded that these results were incompatible with the MTT test findings , and that translational factors might be active on these and different cell deaths.

Keywords: NaF, Cell culture, Apoptosis, Vitamins

PP2-10

DAMAGE AND INFLAMMATORY EFFECTS OF ELECTROMAGNETIC RADIATION GENERATED BY WIRELESS INTERNET NETWORKS (2.45 GHz EMR) ON THE RAT TESTICULAR TISSUE

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OBJECTIVES : Electromagnetic radiation (EMR) may have adverse effects . In most countries , WLAN systems operate at a frequency of 2450 MHz band . Inflammation is an immune system response process to injury and tissue damage . The relationship between inflammation and infertility is an important issue. Our aim was to investigate the possible deleterious effects of EMR on the reproductive system , especially the testes, by investigating whether increased the inflammation in the rat testis tissue and serum and also caused histopathological changes such as necrosis and spermatogenesis in the testis tissue .
MATERIALS -METHODS : Twenty -two Wistar rats were randomly divided into two groups (group 1: control group , group 2: study group : exposed to 2450 MHz EMR . After 30 days , the rats were sacrified . The levels of LI6, IL10, IL32, CRP were measured in serum wheras the levels of IL6, IL10, IL32, were measured in the testis tissue . In addition , the other testicular tissue , fixed in the formol was assessed histopathologically in terms of coagulation , necrosisi and spermatogenesis.
RESULTS : IL-6 and CRP levels were found to be significantly increased in Group 2 serum samples ($p <0,05$), compared to Group 1. On the other hand histopathological evaluation of testis tissue showed that significant coagulation necrosis and decreased spermatogenesis in G2 compared to the control group ($p <0 .05$).
CONCLUSION: This study suggests that 2450 MHz EMR increases systemic inflammation and leads to damage of the testicular tissue , which may have negative effects on the reproductive system, especially testicular tissue.

Keywords: Electromagnetic Radiation (EMR), Inflammation, cytokines, reproduc- tive system

PP2-11

PROTEASE PRODUCTION WITH STENOTROPHOMONAS RHIZOPHILA P34 ISOLATED FROM GUT OF AQUATIC INSECT

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OBJECTIVES: The aims of this study were to isolate protease producing bacteria from the intestine of aquatic insects , and to optimize some culture conditions for protease production with the most productive isolate.
MATERIALS-METHODS: Surface sterilization of insects collected from aquatic habitats were performed in 70% ethanol prior to dissection . The guts excised from the insects were transferred into sterile saline water inside the tube. The tubes were vortexed . Then , 0.2 mL of prepared suspensions was spread on isolation medium. Colonies developing on medium were purified. They were then screened for protease production capacities . The best isolate was used for protease production in liquid culture . During protease production by the best isolate, different temperature (15-35 °C), pHs (5.0-9.0) and incubation times (24-120 h) were tested . The activity assay was measured spectrophotometrically using casein as substrate.
RESULTS: Among the total thirty bacterial isolates, the isolate P34 isolated from the gut of insect Dytiscus circumflexus showed the highest protease activity. It was identified as Stenotrophomonas rhizophila according to 16s rRNA gene sequencing . The most favorable culture parameters for protease production from *S. rhizophila* P34 were temperature 30 ºC, pH 8.0 and incubation time 48 h.
CONCLUSION : This study demonstrated that the gut microbiota of aquatic insects was a good isolation source of protease producing bacteria . In next studies, their gut microbiota may be investigated to explore the microorganisms producing other important enzymes such as lipase, tannase, cellulase and pectinase.

Keywords:aquatic insect, optimization, protease, Stenotrophomonas rhizophila

PP2-12
THE EFFECTS OF ORDER OF BLOOD DRAW INDEPENDENT FROM K-EDTA ON POTAOPIUM RESULTS

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OBJECTIVES: It is recommended that blood sample should be drawn into serum tubes before tubes with the anticoagulant to prevent the contamination. This study was aimed to compare sodium, potassium and chloride results obtained from serum tubes (ST) filled before and after tube with K-EDTA (ET). The present study was also carried out to determine the effect of the order of blood draw independent from K-EDTA on the test results by comparing the test results from blood samples successive drawn.
MATERIALS-METHODS: 785 patients were included in the study. Patients were separated into two groups. In Group 1, blood samples were drawn following order: ST, ET, and ST. The order of blood drawn was performed as ST, ST, and ET in Group 2.
RESULTS: The results obtained from serum tubes were compared within the group. The agreement of the results was determined by comparing of 95% limits of agreement with CLIA total allowable error (TEa) limits. Contrary, for sodium and chloride, 95% limits of agreement were within CLIA TEa limits in both Group 1 and 2.
CONCLUSIONS: Serum tubes successively filled may have significantly different potassium results. Therefore, if reanalyzing of potassium result is required, two blood samples should be taken and analyzed potassium values in both of these.

Keywords: order of blood draw, potassium, pre-analytical phase

PP2-13
DEVELOPMENT OF FLUORESCENCE RESONANCE ENERGY TRANSFER BASED IN VIVO BIOSENSOR FOR SULFATE DETERMINATION

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OBJECTIVES: Sulfate plays a role in many biochemical processes. In living cells sulfate accumulates by direct uptake via blood, release of sulfatase-activating sulfate, and oxidation of sulfur-containing compounds. It is known that the use of various medicines also increases the amount of sulfate ions. In this study, it was aimed to develop a biosensor for the analysis of sulfate ion in E. coli cells.
MATERIALS-METHODS: Genetically encoded biosensors are tools that can be used successfully in both in vitro and in vivo applications. In this study, sulfate binding protein (SBP) was used as the biosensor recognition reagent and a fluorescent resonance energy transfer (FRET) biosensor consisting of the fusion protein "EYFP: SBP: ECFP" was designed with fluorescence proteins. The plasmid carrying the FRET protein-encoding gene was transformed into E. coli cells and the cells were incubated in different concentrations of the sulfate-containing modified M9 growth medium. FRET measurements were performed using a fluorescence spectrophotometer.
RESULTS: Sulfate analysis was performed at a concentration range of 10-50 mM with the developed FRET biosensor system.
CONCLUSIONS: In this study, genetically coded FRET biosensor was developed for the first time in the literature for in vivo sulfate determination. In addition to the E. coli cells selected as a model, it is planned to investigate the potential of biosensors in other cells.

Keywords: FRET, genetically encoded biosensors, sulfate analysis

PP2-14
EVALUATION OF SERUM FERRITINE LEVELS IN ALCOHOL DEPENDENT SUBJECTS

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OBJECTIVES: Alcohol consumption and related problems have been increasing all over the world in the past 25-30 years, and the alcohol dependency diagnosis is based on the clinical history. Biochemical changes are used to evaluate the disease process. In this study, we aimed to evaluate serum ferritin levels in alcohol dependent subjects and to contribute to the follow up and treatment of these patients.
MATERIALS-METHODS: Ferritin levels in serum samples taken from 30 alcohol dependent patients between 18-65 years old who applied to Psychiatry Clinic of Pamukkale University Hospital and serum samples from 30 healthy subjects were measured by electrochemiluminescence immunoassay. SPSS 22 program was used for statistical analysis. The normal distribution suitability of the variables was assessed by the Kolmogorow-Smirnov test. Nonparametric Mann Whitney - U test was used.
RESULTS: There was a significant difference in serum ferritin levels between the alcoholics and control group ($p < 0.001$) and serum ferritin levels were higher in the alcoholics. When we evaluated the ferritin levels of alcoholics as patients had lower ferritin levels and 20 (66.7%) patients had higher ferritin levels, and 6 (20 %) patients ferritin levels were within the reference range.
CONCLUSIONS: We can say that alcohol dependents subjects have higher levels of serum ferritin than healthy individuals and that they can give more detailed information about alcohol and ferritin association with new studies with more patients.

Keywords: alcohol, dependency, ferritine

PP2-15
4,5-DIHYDRO-1H-PYRAZOLES AS CHOLINESTERASE AND AB AGGREGATION INHIBITORS FOR ALZHEIMER'S DISEASE

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OBJECTIVES: Alzheimer's disease (AD) currently affects more than 30 million people worldwide. AD is associated with several pathogenesis such as acetylcholine (ACh) deficiency, beta peptide (A) aggregation, tau protein hyperphosphorylation and oxidative stress are several pathogenesis associated with the disease. 4,5-Dihydro-1H-pyrazole derivatives exhibited a wide spectrum of biological activities including cholinesterase inhibition and A antiaggregation. Herein, we aimed to design, synthesize and determine the in vitro ChE inhibitory, Aβ antiaggregating, cytotoxic and neuroprotective activities of a new series of 4,5-dihydro-1H-yprazole derivatives as multi-target-directed ligands (MTDL) against AD.
MATERIALS-METHODS: In the first step, the starting compounds (chalcones) were obtained via the condensation of 4-methoxyacetophenone with substituted benzaldehydes. Then the chalcone derivatives were treated with hydrazine hydrate in acetic acid to gain the target compounds. The compounds were tested for their potential to inhibit human recombinant AChE and equine BChE enzymes by the Ellman method. The compounds with ChE inhibitory activities were also examined for their Aβ antiaggregating, cytotoxic and neuroprotective activities.
RESULTS: Besides their remarkable ChE inhibitory and Aβ antiaggregating activities, some of the synthesized 4,5-dihydro-1H-pyrazole derivatives demonstrated significant neuroprotection against H_2O_2- and Aβ-induced cell death.
CONCLUSIONS: All these results suggested that 4,5-dihydro-1H-pyrazole derivatives could be a promising multitarget lead candidate against AD.

Keywords: 4,5-dihydro-1H-pyrazole, Alzheimer's Disease, cholinesterases, amyloid, neuroprotection

PP2-16
ANTIULCEROGENIC EFFECT OF CITRUS LIMONUM LEAF EXTRACT IN STOMACH ULCER ON RATS

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OBJECTIVES: Experimental results showed that fruit extracts of Citrus limonum (CL) has beneficial effects on gastric ulcer. In this study, it is aimed to investigate the antiulcerogenic and antioxidant activity of the water extract of CL on indomethacine induced rats.

MATERIALS-METHODS: Thirty-five Sprague Dawley female rats (weights ranging 180– 220 g) were randomly divided into 7 groups, as each composed of 5 rats. After CL leaf water extracts of 250 mg/kg, 500 mg/kg and 1000 mg/kg doses and 20 mg/kg doses of famotidin orally administered , 25 mg/kg doses of indomethacine were orally applied to rats in order to make ulcer. On the sixth hour of indomethacin administration all rats were sacrificed using thiopental (50 mg /kg). The stomachs were removed , and ulcer areas were evaluated macroscopically . Superoxide dismutase activity (SOD), glutathione (GSH) and malondialdehyde (MDA) levels in stomach tissues of rats were determined by ELISA method with respective kits .
RESULTS : It is determined that 250 mg/kg dosage form of CL have significant healing effect on the ulcer area which were induced by indomethacine . A significant increase were observed on SOD actvity and GSH levels of experimental group (administration of citrus limonum water extract) In contrast , MDA level of IND group was measured higher with respect to the control group , while MDA level of the extract administration group is lower ($p<0.001$).

CONCLUSIONS : We can conclude that the water extract of CL leaves reduces free radical formation and has antiulcerogenic effects on stomach tissue.

Keywords: Antioxidant, antiulcerogenic effect, Citrus limonum, indomethacine, rat.

PP2-17
COMPARISON OF MEASURED AND CALCULATED IONIZED CALCIUM RESULTS

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OBJECTIVES: Ionized calcium (iCa) concentration can be calculated (ciCa) with serum albumin, total protein and total calcium (tCa) values or preferably measured. We aimed to compare ciCa values by using three different formulas in two different analyzers with iCa values measured by blood gas analyzer (BGA)
MATERIALS -METHODS : We collected iCa values measured on a BGA and simultaneously studied albumin , total protein and tCa results on a routine chemistry analyzer . Albumin , calcium , total protein were studied with bromocresol green (BCG), o-cresolphthalein, and biuret methods on a Beckman Coulter AU5800 analyzer . iCa was measured by a direct potentiometric method using a BGA (Radiom - eter ABL 800 Flex). The concordance between formulas and methods was evaluated with correlation and regression analyses.
RESULTS: ciCa calculated with three different formulas were found higher than iCa ($p<0.01$). There was a weak correlation between iCa and ciCa (for both analysers)
CONCLUSION: iCa and ciCa values are very different from each other. Additionally, using different tubes (gel seperator tubes vs heparinized tubes), different matrix different samples may play an important role for discrepancy. Consequently, iCa values should be measured and reported.

Keywords: gas analyzer, ionized calcium, method comparison

PP2-18
COMPARISON OF NUCLEATED RED BLOOD CELL COUNT AS A HEMATOLOGICAL PARAMETER IN THREE DIFFERENT ANEMIA TYPES

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OBJECTIVES: Nucleated red blood cells (NRBC) count is one of the major parame- ters that indicates severity of erythropoietic stress level. The purpose of this study was to investigate the relationship between NRBC and three different types of anemia [iron deficiency anemia (IDA), megaloblastic anemia (MA) and chronic disease anemia (CDA)]
MATERIAL-METHODS: A total of 2163 patients were involved in this study. B12, folate and MCV values, for CDA Hb, erythrocyte sedimantation rate, CRP, MCV and ferritine values were accepted as criteria and studied on a Sysmex and CDA groups. After the check of data distribution, relationship between three different anemia and %NRBC is evaluated with Kruskal Wallis test or ANOVA .
RESULTS : Mean values of NRBC in IDA, MA and CDA groups were 0.0025, 0.086, and 0.0027, respectively. Difference between the NRBC% valuesof IDA and CDA groups were not significantly different ($p>0.05$). The difference between IDA and MA, and CDA and MA for NRBC% values were significantly different ($p<0.05$ for both).
CONCLUSION: Increased NRBC ratio in most hematological diseases indicates poor prognosis. Our study demonstrates that NRBC ratio is failed to differentiate IDA and CDA, but increased in MA group. After further studies with more subjects, NRBC may be used in the differential diagnosis of MA.

Keywords: chronic disease anemia, iron deficiency anemia, megaloblastic anemia, nucleated red blood cell

PP2-19
ARE BARRICOR TUBES SUITABLE FOR EMERGENCY LABORATORIES?

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OBJECTIVES: In emergency laboratories, our goal is to improve laboratory work - flow efficiency and reduce turnaround time (TAT). Barricor tubes (BD Diagnostics) including mechanic separator system technology , forms a barrier between plasma and the cells following 3 minutes of centrifugation , without waiting for clotting . This study was designed to assess the performance of the Barricor tube against the existing serum separator tubes (OPT).
MATERIALS-METHODS: Specimens were obtained from the emergency department (ED). Barricor tube was filled following OPT for biochemical tests and cardiac markers . Cardiac markers (myoglobin , CK-MB , cTnI) were measured by Access immunoassay analyzer (Beckman Coulter).
AU 680 (Beckman Coulter) was used for the measurement of biochemical parameters including ALP, AST, ALT, albumin, amylase, bilirubin, BUN, calcium, creatinine , cholesterol , CK, Fe, ferritin , folic acid, fT4, fT3, HDL, glucose , GGT, LDH,, uric acid , TSH , total protein , triglycerides , UIBC , vitB 12 and electrolytes (Mg, Na, K, Cl, P).
RESULTS : Paired patient sample comparisons of the 31 biochemical parameters yielded linear regression slopes ranging from 0.918 to 1.097 and Pearson correlation coefficients ranging from 0.876 to 1.000 . The lowest correlation coefficient was observed for K. For cardiac markers, linear regression slopes ranged between 0.959-0.1.013 and Pearson correlation coefficients from 0 .998 to 0 .999 .
CONCLUSION : We have shown that Barricor tube is a good alternative to traditional OPT for cardiac markers and biochemical testing. We were able to get clean plasma with no gel artifacts or fibrin clots . Therefore , we planned to use Barricor tubes for ED patients in order to reduce our TAT.

Keywords: Barricor tubes, cardiac markers, turnaround time

PP2-20
THE EFFECT OF CULTIVATION CONDITIONS ON ANTIOXIDANT, ANTI-INFLAMMATORY CAPACITIES AND PHENOLIC COMPOUND CONTENT OF CHLORELLA MINIATA EXTRACTS

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OBJECTIVES: The interest in materials possessing antioxidant activity and anti-inflammatory potential had grown dramatically in the last decades. The main objective of this study was to determine the antioxidant activity and anti-inflam- matory potential of the extracts of microalgae Chlorella miniata (UTEX#490) which was produced under different cultivation conditions (temperature and light intensity).
MATERIALS-METHODS: The microalgae were produced with constant aeration, and agitation and a total of 7 different temperatures and 7 light intensities were used as experimentation points. After 21 days of cultivation the algae were harvested and soxhlet extraction had taken place. Determination of the antioxidant activity had been carried out by the utilization of Trolox equivalent antioxidant capacity (TEAC), ferric reducing antioxidant capacity (FRAP), total antioxidant capacity (TAO) and the determination of anti-inflammatory potential assays were xanthine oxidase inhibition (XOI), and hyaluronidase inhibition (HI). The results were supported by LC extracts had high amounts of salycyclic and

caffeic acid which is proved to have high anti-oxidative capacity.
CONCLUSIONS : Overall the species Chlorella miniata possess good potential of antioxidant and anti-inflammatory capacities. The effects of the cultivation parameters on these assays were found to be relevant.

Keywords : Antioxidant capacity , Anti-inflammatory potential Chlorella miniata,

PP2-21
EVALUATION OF THE DIAGNOSTIC RELIABILITY OF DIFFERENT RBC INDICES IN THE DIFFERENTIATION OF THE BETA THALASSAEMIA MINOR FROM IRON DEFICIENCY

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OBJECTIVES : β-thalassaemia minor (BTM) and iron deficiency anemia (IDA) are the most common causes of microcytosis and hypochromasia. Hence, determi -nation of red cell indices by electronic cell counters can be used as first indicator of possible β-thalassaemia minor or iron deficiency anemia in population. Our aim was to compare the validity of the Mentzer and Shina &Lal indices to differentiate between β-thalassaemia minor and iron deficiency anemia . MATERIAL -METHODS : This retrospective study included 74 certainly diagnosed patients (45 BTM and 29 IDA) with MCV < 80 fl who admitted to Selçuk University Medical School Hospital between August 2016 and August 2017 . All β-thalassaemia minor patients were microcytic and/or hypochromic and with HbA 2 ≥ 3.5%, while the iron deficiency patients were microcytic and / or hypochromic and with serum ferritin level ≤12 µg/dl Patients with another chronic disease and inflammatory disorders were excluded . We established new cut-off values by receiver operating characteristic curves for the Mentzer and Shina&Lal indices. Analysis was performed with medcalc v16.2.1

RESULTS : Mentzer Index showed the highest reliability , as it had the largest area under the curve (AUC=0.945), whereas Shine and Lal Index showed the lowest reliability (AUC=0.805). In our population proposed cut-off for BTT is 13.1 for Mentzer and 954 for Shine&Lal.

CONCLUSION : Our study showed that , Mentzer Index can be used in differentiation between β-thalassaemia minor and iron deficiency anemia.

Keywords: Mentzer, Shine&lal,: β-thalaOPaemia minor, iron deficiency anemia

PP2-22
DETERMINATION OF ANTIOXIDANT AND ANTIMICROBIAL ACTIVITIES OF SOME PLANTS GROWN IN ERZURUM PROVINCE

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OBJECTIVE : Antioxidants have vital effects on preventing chronic and degenerative illness such as cancer , autoimmune disorders , aging , cataract , rheumatoid arthritis , cardiovascular and neurodegenerative diseases and can enhance immune function . The purpose of the study was to investigate the antioxidant and antimicrobial properties of 13 different extracts of products , such as leaves and scapus of plants such as Ferula (Ferula comunis L.), Evelik , (Rumex patientia L.), Acanthus (Gundelia tournefortii L.), Esgin (Rheum ribes L.), Ciris (Asphodeline taurica), Bird bread (Polygonium arenastrum), Meadow onion (Allium schoenopra- sum L.), Yaban Casırı (Ferula orientalis L.). This samples are known as wild vegetables for medical purpose and grown in the province of Erzurum.
MATERIALS -METHODS : Methods that determine antioxidant capacity include ; FRAP (ferric ion reducing antioxidant power), DPPH (free radical), Analysis of total polyphenol , CUPRAC (Cupric Reducing Antioxidant Capacity) and Total flavonoids assay and the method Minimum Inhibitory Concentration (MIC) that determines antimicrobial activity.
RESULTS : According to determination of antioxidant results , Esgin (Rheum ribes L.) plant obtained from Erzurum province has the highest antioxidant activity in almost applied all antioxidant analyzes . As a result of the antimicrobial analyzes performed, it was found that the leaf portion and the stem portion of Yaban Casırı showed very good activity against the majority of the test microorganisms among all the plants.
CONCLUSION: Based on these results, it is possible to conclude that Eşgın (Rheum ribes L.) can be the potent source of natural antioxidants. The replacement of synthetic with natural antioxidants may be advantageous.

Keywords: Wild vegetables, antioxidant, antimicrobial

PP2-23
INVESTIGATION OF THE EFFECTS OF POMELO'S ON HCA I-II ISOENZYME ACTIVITIES

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OBJECTIVE: At least 16 different isoenzymes of α-carbonic anhydrases (CAs) have been found in various tissues of mammals by today. These enzymes play crucial physiological roles. Most of the studies have been put forward that CAs 's are associated with the diagnosis and treatment of many diseases such as diuretics , glaucoma , epilepsy , Alzheimer Disease , cancer and osteoporosis . Therefore , inhibitors and activators of carbonic anhydrase enzyme are very important . For this reason, we tried to detect new inhibitors and activators of CAs isoenzymes in our study.
MATERIAL-METHODS: The ethanol, methanol, and water extracts of fruit and shell of the pomelo (Cıtrus Grandıs L. Osbeck) plant obtained by appropriate extraction methods and the pomelo shell oil extract obtained with the soxlet apparatus were investigated effects on hCA I-II isoenzyme activity. By HPLC, the content of phenolic compound and sugar content of fruit and shell of pomelo plant was determined, and fat composition in fat extract was determined by GCMS.
CONCLUSION: We think that pomelo oil may be beneficial in Alzheimer's disease due to the activation effect and the inhibitory extracts may be useful in diseases such as obesity and glaucoma.

Keywords: Pomelo, inhibitor, activator, Alzheimer Disease, in vitro

PP2-24
EXAMINATION OF MONOAMINE OXIDASE ENZYME ACTIVITY IN THE SERUM OF MALE STUDENTS SMOKERS AND NONSMOKERS IN AĞRI İBRAHIM ÇEÇEN UNIVERSITY DEPARTMENT OF NURSING

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OBJECTIVE : It is known that cigarette damage both the person using it and the passive smokers. The monoamine oxidase (MAO) enzyme oxidizes monoamines , disrupting amine neurotransmitters such as dopamine , norepinephrine and serotoni n. In this study, it was aimed to determine the effects of cigarette smoking on the frequency of smoking and plasma MAO enzyme levels in nursing students.
MATERIALS-METHODS: In our research, we create a group from Agri Ibrahim Cecen University's 57 male nursing students who accepted to participate in this study in between 2016 and 2017 academic year. We took the blood samples for investigate purposes the level of MAO enzyme with questionnaires of demographic characteristics and smoking prevalence under the observation of the students.
RESULTS: In this study, 57 were male and the age range was 18-24. The number of non-smoking male students (AE) the number of male students (AE) was 20 (35.09%), 15 (%16,32) passive smoker male students (BE) and 22 (%38,59) smoker male students (CE). Specific activity values were determined for MAO enzyme at three different experimental groups. Groups were determined as follows: AE group 0.802 EU/mg protein , BE group 0.754 EU/mg protein , CE group 0.684 EU/mg protein.
CONCLUSIONS: We found that smoking and exposure to cigarette smoke rates were higher in especially male students. MAO enzyme activity had a low level in smoker compared to nonsmokers.

Keywords: Monoamine oxidase, cigarette, inhibiton

PP2-26

A SPECIAL STUDY MODULE IN MEDICAL EDUCATION: RESVERATROL ANALYSIS IN RED WINE BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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OBJECTIVE :The Special Study Modules (SSM), established within the first three years of medical education at Dokuz Eylül University School of Medicine , are educational activities aimed at developing independent learning skills, learning and applying the basic principles of scientific methodology , achieving written and oral presenta- tion skills.
MATERIALS-METHODS: We herein present an example of a laboratory research SSM entitled "Resveratrol analysis in red wine by HPLC ". HPLC is the most commonly used instrument among the analytical separation techniques . The susceptibility to widespread use is that it is easily adaptable to quantitative determinations , and suitable for separation of non-volatile or easily decomposable compounds. In this SSM, resveratrol, known as an antioxidants synthesized in high amounts in the crust of colored grape varieties , was analysed by HPLC . Study of resveratrol levels in NH - UP NH - according to grape variety and region.
RESULTS -CONCLUSION : The students prepared a report and presented orally their results at the final of the SSMs period. The student feedback results showed that the students faced a bit of difficulty reading the scientific articles and understand the logic of the device before starting laboratuary work. However, they felt that they learned how to read and discuss the articles, they were happy with the research skills. Additionally , they also learned an analytical technique and thought about where to use it in the future . We were also happy to introduce sophisticated device such asHPLC to medical studentswho especially are interested in the laboratory.

Keywords: High Performance Liquid Chromatography, resveratrol, A Special Study Module

PP2-27

AN EXPERIMENTAL SPECIAL STUDY MODULE IN MEDICAL EDUCATION: MEASUREMENT OF SELENIUM LEVELS IN CELL LYSATES BY ATOMIC ABSORPTION SPECTROSCOPY

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OBJECTIVES : Special Study Modules (SSM), practiced in Dokuz Eylül University School of Medicine , are an educational method which provide research and basic laboratory methods to the medical students. The objectives of SSM were to train the students in independent learning, team working, the basic principles of scientific methodology and writing scientific report , preparing scientific poster , and presenting the results of scientific research orally.
MATERIALS -METHODS : With this aim, the glioblastoma multiforme cell lysates treated with seleno-L-methionine from our previous study were used in this SSM. In this SSM, AAS was used for measuring the level of selenium. We had two groups : Se-Met treated and Se-Met non-treated (control). We incubated these two groups three different time-points (24-48-72 hours) and incubated the only Se-Met group four different Se-Met doses (50-100-500-1000M).

RESULTS : Increased selenium levels which entered into the cell were observed in time and dose dependent manner . The highest Se-Met dose entered the cell was observed for each concentration in 48 hours . The range of Se-Met levels were between 0,5-120 g/L.
CONCLUSION : They had new ideas regarding sample and standard preparation , standard curve , trace elements , the components and types of AAS . In the end, the students prepared a scientific poster and presented it in SSM Symposium in Dokuz Eylul University . According to the feedback , students liked the laboratory , but they preferred to be in the clinic.
The most exciting thing for the students was attending a symposium and sharing their results with their lecturers and friends.

Keywords: medical education, research, special study module

PP2-28

EVALUATION OF 2. IVB "BIOMARKERS " SYMPOSIUM IN TERMS OF SBE STUDENTS PARTICIPATING AS ELECTIVE COURSES

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The main theme of the IVD symposium organized in May 2017 was ; Biomarkers in disease and health.DEU. Rectorate , DEÜ. SBE and TBD İzmir Sb. in cooperation with DEU . 55 scholarship quotas were allocated to SBE graduate students.
As a scholarship and credited SBE course , the students who were at the symposium were asked to make assessment about the 12 separate questions that will be replaced with the exam scores as the measurement and evaluation . Other questions included demographic information, except for 4 questions rated on the score. In the eighth question in this context , the participant students were asked to choose three of the sessions attended at the symposium and to write the main ideas they obtained . This question revealed 20 students ' influences and comments on the opening lesson 'use of liquid biopsy in cancer'. Other sessions where they express their influence ; neurodegenerative diseases , cardiovascular , cancer related .The last question in the same category was their personal or scientific developmental implications to the early realization plan under the influence of the symposium.
It is not very common for scientific symposiums organized in our country to be regarded as lectures with credits from the point of view of students at the same time.DEU. SBE is the institutions that implement the application with TBD.In addition to the scientific achievements of the students , it is possible to acquire extensive scientific activities in the early stages of their academic life.

Keywords: education, symposium,ıvd, TBD İzmir, Biomarkers

PP2-29

USING OF SCLERODERMA MODEL IN THE MICE AS A TEACHING OF FIBROSIS

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OBJECTIVES : We planned a Special Study Modules (SSM) for six second- year students in the category of laboratory research entitled “A model of scleroderma induced by bleomycin in mice ”.This SSM aimed to teach pathological process of fibrosis by using in vivo scleroderma model in mice . This SSM aimed to teach pathological process of fibrosis by using in vivo scleroderma model in mice.
MATERIALS -METHODS : They prepared the experimental animal ethics application and approved by the Dokuz Eylul University Experimental Animal Ethical Committee .Students started the experimental study . Scleroderma was induced in Balb/c mice by local injection of bleomycin for 21 days. 3 female Balb/c mice were used:Control group (n:1) was given 100 µL subcutaneous (sc) saline once a day, first BLM group (n:1) was given 1 µg / µL sc BLM once a day, second BLM group (n:1) was given 1,5 µg / µL sc BLM once a day .Four micrometer (µm) skin sections were stained with hematoxylin &eosin for the determination of dermal thickness.

RESULTS : 1 µg/ µL BLM dose was the best for scleroderma animal model .The students prepared a written report and presented orally their results at the final of the SSMs period.
CONCLUSIONS : The student feedback results showed that the students faced, at the beginning, a bit of difficulty reading the scientific articles and they were happy with the wet and animal laboratory , research skills that they acquired.

Students stated that understanding of the fibrotic disease and its molecular mechanism was is very important for the treatment.

Keywords: Spesial study model, Scleroderma, Fibrosis

PP2-30

A NOVEL IMMUNOTHERAPEUTIC AND ANTI-CANCER DRUG GA-40

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OBJECTIVES : Search for nontoxic naturally-occurring substances that can cause selective destruction of cancer cells directly or by activating antitumor immunity are the two major strategies for development anti-cancer drug discovery. As a result of such works anti-cancer drug GA-40 was developed and obtained from ecologically pure plant, widely used in Georgia for cancer medical treatment (Know - how).
MATERIALS -METHODS : The cytotoxicity of the GA-40 was studied with MIT-test analysis in short-term primary suspension of cell cultures from human lung adenocarcinoma , ovarian cancer , dermoid fibrosarcoma , skin cancer.

RESULTS :Preclinical and clinical trials of GA-40 shows, that it is not toxic and has no contraindications for the patients. GA-40 by its direct action on mononuclear cells causes the activation of anti-tumor cellular immunity , cytotoxic -T cells , macrophages , production of tumor necrosis factor and interferon -γ. In order to increase the storage time and to retain the anticarcinogenic activity, the lyophilized form of GA-40 was prepared. Using the high pressure liquid chromatography , polyacrylamide gel-electrophoresis and MTT-test for evaluation the cytotoxic activity against the cancerous cells. It was established that according to chemical content and to cytotoxic activity against the cancerous cells the lyophilized GA-40, stored at 4-10°C, within 3, 6, and 12 months maximally maintained the anti-carcinogenic property.
CONCLUSION : GA-40 may serve as an anti-carcinogenic preparation for human carcinomas.

Keywords: anti-cancer drug, oncology, immunomodulation

PP2-31

ANTIOXIDANT , ANTI -INFLAMMATORY AND DNA -DAMAGE PROTECTION ACTIVITIES OF VACCINIUM ARCTOSTAPHYLOS FRUIT EXTRACTS

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OBJECTIVES : The genus of Vaccinium is represented nearly 450 species worldwide and generally they are distributed in different regions of North America , Europe and Asia. The fruit extracts of Vaccinium species have been used as antidiarrheal , antidiabetic , antimicrobial and anti - inflammatory . In this work, we aimed to investigate antioxidant activity and some biological activities associated with antioxidant capacity of Vaccinium arctostaphylos fruit extracts .
MATERIALS -METHODS : Methanol , ethanol (EE) and water extracts of Vaccinium arctostaphylos fruits were prepared to determine (a) in vitro antioxidant capacity (by using 2,2-diphenyl -1-picrylhydrazyl assay , superoxide radical scavenging activity , phosphomolybdenum -reducing antioxidant power, ferric reducing antioxidant power and total phenolic-total flavonoid contents), (b) protective effects of extracts against DNA oxidative damage (c) anti - inflammatory activity of EE with the formalin - induced paw edema test (100 mg/kg, 300 mg/kg p.o.) in mice . RESULTS : EE showed a stronger antioxidant activity compared with other extracts in the biochemical assays tested. Similarly , EE exhibited higher protec - tive effect to DNA damage among the other extracts. Moreover, both doses of EE showed a significant ($p<0.001$) reduction in paw edema compared with control (normal saline) in formalin test, demonstrating its anti- inflammatory activity.
CONCLUSIONS: These results suggest that Vaccinium arctostaphylos would be a potential therapeutic agent for the treatment of oxidative stress-induced abnormalities such as inflammation and DNA damage.

Keywords: antioxidant, anti-inflammatory, oxidative damage, Vaccinium arctostaphylos.

PP2-32

BIOLOGICAL ACTIVITY ASSESSMENT ON AQUEOUS ETHANOL EXTRACT OF AN ENDEMIC PLANT- ASTRAGALUS DUMANII. EKICI & AYTAÇ GROWING IN SIVAS

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OBJECTIVE : Astragalus L. is the largest genus belonging to family of Leguminosae and widely distributed in the world. The plant widely prescribed for diuretic, tonic, hepatoprotective , antioxidant , immunostimulant and antiviral as well as used as forage for animals . However , there was no report about the biological activity of endemic plant Astragalus dumanii.

MATERIALS -METHODS : The antioxidant properties of A. dumanii ethanol extract were investigated using total phenol , total flavonoid , DPPH and ABTS radical scavenging activity . Ellman method used for acetylcholinesterase (AChE), butyrylcholinesterase (BChE) enzymes and Tao procedure used for alpha glycosidase inhibition assessment.

RESULTS : The total phenol content of root and aerial part of A.dumanii were found as 5.31 ± 0.03mg/g), 13.23 ± 0.05 mg/g, flavonoid content as 8.26 ± 0.004 ve 7.93 ± 0.005 (mg QE/g), the IC50 value for DPPH and ABTS scavenging activity were 1.08 ± 0.04 ve 0.82 ± 0.01 mg / mL for aerial part extract and 1.39 ± 0.03 ve 0.011± 0.002 mg / mL for roots, respectively . AChE , BChE , and α-glycosidase enzymes inhibition IC50 values were obtained as 2.25 and 1.47 µg / mL for AChE , 1.77 and 0.83 µg / mL for BChE , 10.66 and 0.48 µg / mL for α-glycosidase.

CONCLUSION : All the obtained data indicate that; the ethanol extract of A. dumanii roots and aerial parts have antioxidant effect and can be used for the isolation of active ingredients for antidiabetic drug development due to the enzyme inhibition of α-glucosidase or Alzheimer's drug candidate by inhibiting of AChE and BChE.

Keywords: A.dumanii, Antioxidant, antidiabetic, enzyme inhibition

PP2-33

INVESTIGATION OF ANTIOXIDANT ACTIVITY OF METHANOL, ACETONE AND WATER EXTRACTS OF RANUNCULUS CONSTANTINOPOLITANUS (DC.)D'URV

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OBJECTIVE : In ancient time plants have been used for prepare food, beverage, perfume and medicine . Ranunculaceae family represented by 2500 species , distributed all over the world . Ranunculus , a representative genus of the Ranunculaceae family , has been reported as an anti-infl ammatory , analgesic , antiviral, antibacterial, antiparasitic and antifungal agent. R.constantinopolitanus (Arabic name : Hawdhan Fari) is an Eastern Mediterranean plant . The present study is to determine the in-vitro antioxidant activities of methanol, acetone and water extracts prepared from the flower, stems, leaves and seeds of Ranunculus Constantinopolitanus(DC.) d'Urv.
MATERIALS-METHODS: The antioxidant activity of the different extracts was evaluated by DPPH and ABTS radical scavenging activity, total phenolic , total flavonoid content, and iron chelating activity tests. ABTS assay is applicable to hydrophilic and lipophilic systems ; whereas DPPH hydrophobic systems .
RESULTS : Among the tested extracts prepared from different parts of R. constantinopolitanus , the total phenol content was higher in the seed methanol extract as 111.62 mg/g, while flower methanol extract was found as rich with total flavonoid content for 32.19 mg/g.

The seed methanol extract was most effective in DPPH radical scavenging with IC 50 value for 135.6 µg/mL, flower water extract was more potent in ABTS radical scavenging activity with IC 50 value for 8.077 µg/mL.
CONCLUSION : All data indicate that; the different extracts from various parts of R .constantinopolitanus exhibited good free radical scavenging activity, this may be attributed to the content of phenolic compounds and flavonoids presented in the extract. This results complying with previous reports on Ranunculus species rich with flavonoids.

Keywords : Ranunculus Constantinopolitanus , antioxidant , DPPH, ABTS, Iron chelating

PP2-34
THE ASSESSMENT OF OXIDATIVE STRESS BIOMARKERS IN BLOOD SAMPLES TAKEN FROM DIFFERENT TUBES

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OBJECTIVES : Accurate test results are possible by standardizing analysis conditions . The pre-analytical stage is the process until it begins to be analyzed from sample acquisition and this stage of process greatly affects test results . This study aimed to investigate whether different sample tubes on oxidative stress biomarkers determining ischemia modified albumin (IMA), total oxidant status (TOS) and total antioxidant status (TAS) levels from oxidative stress biomarkers in serum and plasma specimens obtained from blood samples taken with and without anticoagulants tubes.
MATERIALS -METHODS : In this study , IMA , TOS and TAS levels were determined in serum and plasma obtained from blood samples taken from volunteers in six different tubes (separator and non-separator tube , EDTA , citrate , heparin and fluoride containing anticoagulant tubes) and compared to each other . IMA was measured by Bar-Or method , TOS and TAS were determined using colorimetric commercial kits and albumin was performed with AU 5800 autoanalyzer (Beckman Coulter).
RESULTS : There was a significant difference between results of parameters except TAS parameter in separator and non-separator tubes (IMA; $p<0.001$, TOS; $p<0.0001$). There was a significant difference between IMA , TOS and TAS measurements in both non-separator and separator tubes and measurements in the anticoagulated tubes ($p<0.001$).There was a significant difference between IMA, TOS and TAS measurements in four different anticoagulated blood samples ($p < 0 .0001$).
CONCLUSIONS : These results show that the results are significantly different according to type of blood sample used in the measurements of oxidative stress biomarkers (IMA , TOS and TAS) and that the sample type to be used for the measurements should be standardized.

Keywords : Free Radicals , Oxidative Stress , Plasma , Reactive Oxygen Species , Serum

PP2-35
DETERMINATION OF ANTIOXIDANT CAPACITY OF GENISTEIN

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OBJECTIVES : Genistein is an important isoflavone . Most prophylactic and adjuvant treatment is recommended for some chronic diseases including obesity and cardiovascular diseases . Vegetables are a powerful source of natural antioxidants . For example , vitamin C, α-tocopherol , carotenoids , flavonoids and phenolic acids inhibit the damage of reactive oxygen species. Antioxidants do not remove oxidant products from the center , nor can they completely prevent oxidation. In our study, antioxidant and radical elimination activities of genistein phenolic compound were evaluated.
MATERIALS -METHODS : Fe3 + - Fe2 + reduction capacity , cupric ions (Cu2 +) reduction capacity , DPPH · + removal , ABTS · + removal , DMPD · + removal , bipyridyl reagents and chelating activities were studied separately by the cuprac method . BHA , BHT , α-tocopherol and troloxy were also used as reference antioxidant compounds for each method.
RESULTS : Compared to BHA , BHT , α-Tocopherol and Trolox which are standard antioxidants at 20 µg / mL concentrations of genistein compound, the Fe 3 + reduction power is 0,263 and the reduction power according to Cu 2 + methods is 0,141 . The IC 50 values of DPPH ·, ABTS · +, DMPD · + and bipyridyl metal chelating activities were 43.31 µM, 26.65 µM, 16.11 µM, and 13. 59 µM, respectively , when compared with standard antioxidants BHA , BHT , α- Tocopherol and Trolox.
CONCLUSION : According to the data obtained from this study, when genistein was compared with standard antioxidant compounds such as α-tocopherol , trolox, BHA, BHT in vitro, high antioxidant activity was detected in genistein.

Keywords: Antioxidant, Antioxidant activity, Genistein

PP2-36
THE ANTIULCEROGENIC EFFECT OF CITRUS LIMONUM LEAF ETHANOL EXTRACT IN THE GASTRIC-ULCER MODEL

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OBJECTIVES : Our aim in this study is to investigate the antiulcerogenic and antioxidant effect of plant leaf extracts of Citrus Limonum (CL), known to be a natural antioxidant , by using indomethacin (IND) -induced ulcer model in rats.
MATERIALS -METHODS : In our study , 35 Sprague -Dawley female rats , consisting of 7 groups , were used. The experimental groups were healthy , IND, famotidine + IND, 250, 500 and 1000 and high dose group. After 5 minutes, 25 mg / kg dose of IND was administered orally to the ulcer formation after the extracts were administered to the other groups except healthy group . After 6 hours experiment was terminated . The biochemical analyzes (oxidant - antioxidant) were performed by means of ELISA kit.
RESULTS : CL ether extract was found to be statistically significant as a result of comparison with SOD enzyme activity, glutathion and malondialdehyde levels of the control group at 250 mg /kg of dosed groups ($p < 0 .001$).
CONCLUSIONS : In contrast to IND , it has been determined that antioxidant defense system in CL and famotidine treated tissues are positively affected and the produced in the gastric mucosa reduce the negative effects of ulcer formation.

Keywords: Antioxidant, antiulcerogenic effect, Citrus Limonum, indometazine

PP2-37
DETERMINATION OF ANTIOXIDANT CAPACITY OF OLEUROPEIN ISOLATED FROM OLIVE LEAF (OLEA EUROPAEA L.) ETHANOL EXTRACT VIA DPPH AND ABTS/TEAC METHODS

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OBJECTIVE : This study was designed to determination of antioxidant capacity of oleuropein isolated from olive leaf ethanol extract via DPPH and ABTS / TEAC methods.
MATERIALS -METHODS: This study dwells on two widely used spectrophotometric methods , 1,1-diphenyl -2-picrylhydrazyl (DPPH) and 2,2-azino-bis-(3-ethylbenzthiazoline -6-sulfonic acid) (ABTS) assays , which assess the free radical scavenging activity of bioactive compounds . DPPH method is based on the decrease of the absorbance of the DPPH• solution (when methanol is used as the solvent), at 515 nm, due to its inactivation from antioxidants . ABTS method is based on the decrease of the absorbance of the ABTS +• solution (when ethanol is used as the solvent), at 734 nm, due to its inactivation from antioxidants. Oleuropein with the antioxidant activity is the main bioactive compound of olive leaf . In the first part of the study , olive leaf ethanol extract was prepared and oleuropein was isolated from the extract. Then, the free radical scavenging capacity of oleuropein , calculated as the inhibition percentage of ABTS.+ and DPPH• , was equated against a Trolox standart curve prepared with different concentrations.
RESULT : Different concentrations of oleuropein were prepared in 1, 5, 10, 15, 20, 30 and 40 ug/mL. The concentration of oleuropein in 30 ug/mL was found to be more effective than that of the others. Oleuropein was correlated with DPPH and ABTS free radical-scavenging capacity. Oleuropein had the ABTS capacity

(66.11 %) and the DPPH capacity (70.99 %).
CONCLUSION : The results indicate that oleuropein isolated from olive leaf ethanol extract exhibits antioxidant capacity in terms of DPPH and ABTS/TEAC.

Keywords: Antioxidant capacity, ABTS/TEAC, DPPH, Oleuropein, Olive leaf

PP2-38

EXAMINATION OF THE EFFECTS OF L-NAME (N-NITRO L-ARGININE METHYL ESTER) AND VITAMIN E ((α-TOCOPHEROL) ON SOME BLOOD PARAMETERS CHANGING AFTER CIGARETTE SMOKE EXPOSURE IN MALE RATS

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OBJECTIVES : It was aimed to investigate some blood parameter values in rats exposed to cigaratte smoke obtained from commercial cigaratte by inhalation for 42 days. It is possible that toxic substances in cigarettes and carried in blood may damage the balance between oxidant and antioxidant system.In this study, it was aimed to investigate the effect of L-NAME and alpha-tocopherol on oxidative stress resulting from tabacco smoke exposure .
MATERIALS-METHODS: In the study, 45 male Wistar albino rats were divided into five groups and each group had 9 rats; Control , tobacco smoke , tobacco smoke +Vitamin -E, tobacco smoke +L-NAME , tobacco smoke +Vitamin -E+L-NAME. Tobacco smoke was administered by inhalation in special cages, 200 mg/kg-BW Vitamin -E and 50 mg/kg-BW L-NAME was administered by intraperitoneal during 42 days. On day 43, blood samples were taken from the rats. Total protein , ALT, AST, Triglyceride , HDL, LDL and cholesterol levels were examined in blood samples .
RESULTS : In the tobacco smoke group; It was observed significant increase in Total protein,LDL,Triglyceride , ALT, AST and cholesterol levels(p <0.05) and significant decrease HDL levels compared to the control group (p <0.05). In treatment groups, ALT, AST, LDL, Triglyceride and cholesterol levels decreased and HDL level increased (p<0,05). There was no significant difference between treatment groups in HDL value .
CONCLUSIONS : Exposure to cigaratte smoke has been found to cause adverse changes in some blood parameters . It was observed that these adverse changes could be normalized by L-NAME and Vitamin-E application.

Keywords: Oxidative stress, vitamin E (alpha-tocopherol), L-NAME (N-nitro L-arginine methyl ester), cigaratte smoke, blood parameters

PP2-39

THE ANTIULCEROGENIC EFFECT OF CITRUS LIMONUM LEAF ETHER EXTRACT IN THE GASTRIC-ULCER MODEL

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OBJECTIVES : Our aim in this study is to investigate the antiulcerogenic and antioxidant effect of ethanol extract of Citrus Limonum (CL), known to be a natural antioxidant, by using indomethacin (IND) -induced ulcer model in rats.
MATERIALS -METHODS : In our study , 35 Sprague -Dawley female rats , consisting of 7 groups, were used. The experimental groups were healthy, IND, famotidine + IND, 250, 500 and 1000 mg/kg group. Euthymia was induced by oral administration of ND at a dose of 25 mg/kg 5 minutes after the ethanol extract was administered to the healthy and ND groups. After 6 hours experiment was terminated. SOD enzyme activity, GSH and MDA levels were measured by removing stomach tissues from all groups.
RESULTS : The CL ethanol extract was found to be statistically significant in comparison with the control group of SOD enzyme activity , GSH and MDA levels in the 250 mg/kg dosed groups (P <0.001).
CONCLUSIONS : In contrast to ND, it was determined that antioxidant defense system in CL and famotidine treated tissues were positively affected and the produced in the gastric mucosa reduced the negative effects of ulcer formation.

Keywords: Antioxidant, antiulcerogenic effect, Citrus Limonum, indometazine

PP2- 40

INVESTIGATION OF THE EFFECT OF L-NAME (N-NITRO L- ARGININE METHYL ESTER) AND VITAMIN E (A-TOCOPHEROL) ON OXIDATIVE DAMAGE OF LIVER TISSUE RESULTING FROM CIGARETTE SMOKE EXPOSURE IN MALE RATS

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OBJECTIVES: Smoking is the main cause of many diseases today. Nicotine and some heavy metals in the cigarette cause damage to the liver, heart, lungs, etc. due to oxidative stress . Several studies have shown that L-NAME inhibits oxidative stress via NOS (nitric oxide synthase). Vitamin E(alpha-tocopherol) has been shown to be effective on oxidative stress by inhibiting lipid peroxidation. In this study , it was aimed to investigate the effect of L-NAME and alpha -tocopherol on liver damage resulting from cigarette smoke exposure.
MATERIALS-METHODS: In the study, 45 male Wistar albino rats were divided into five groups and each group had 9 rats; Control , tobacco smoke , tobacco smoke +Vitamin -E, tobacco smoke +L-NAME , tobacco smoke +Vitamin -E+L-NAME. Tobacco smoke was administered by inhalation in special cages, 200 mg/kg-BW Vitamin -E and 50 mg/kg-BW L-NAME was administered by intraperitoneal during 42 days. On day 43, tissue samples were taken from the rats. MDA, CAT, MPO, GSH, NO levels were examined in tissue homogenates.
RESULTS : In the cigarette smoke group; There was a statistically significant increase in MDA, NO, and MPO levels compared to the control group(p<0,05) and a significant decrease in GSH and CAT levels was observed(p<0,05). It was determined that antioxidant parameters and MDA returned to normal in the treatment groups (p<0,05). Histological examinations also revealed that the damage caused by cigarette smoke exposure was eliminated in the treatment groups.
CONCLUSIONS: Oxidative stress parameters were normally misdiagnosed with smoking in liver. It was observed that these adverse changes could be normalized by L-NAME and Vitamin-E application.

Keywords: Oxidative stress, vitamin E (alpha-tocopherol), L-NAME (N-nitro L-arginine methyl ester), cigarette smoke, liver damage

PP2-41

DETERMINATION OF ENVIRONMENTAL POLLUTANT EFFECTS OF ZINC AND COPPER PYRITHIONE (ZN/CU PYRITHIONE) BY OXIDATIVE MARKERS IN ZEBRA FISH (DANIO RERIO)

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OBJECTIVE : Cu pyrithione are antifolating agents. They are commonly used biocides for antibacterial and antifungal effects in living organisms . In this study, we aimed to investigate the toxic effects of both environmental pollutants on zebra fish by evaluating the oxidative parameters.
MATERIALS -METHODS : Zebrafish was exposed to Zn/Cu pyrithione at different concentrations and their toxic effects were evaluated. Male and female zebrafish , 3-4.5 cm long, were used in this study. Zn pyrithione (1 µg/L), Cu pyrithione (0.1 µg/L), Zn/Cu pyrithione (0.1 µg/L Cu + 1 µg/L Zn) and control groups were formed at 4 different aquariums containing 20 fish. Samples were taken for the planned experiments at 24 and 96 hours following the treatment of Zn/Cu pyrithione . Advanced oxidation protein products (AOPP , µmol/mg), malondialdehyde (MDA, nmol/gr) levels were studied for whole body samples by spectrofotometric manual methods.
RESULTS : When we compared the control group (9,00±3,61) to experimental pyrithione 96 hours (30.40 ± 6.52)] the MDA values of the grouPP were found to be statistically significantly different (p<0.05).
CONCLUSION : Environmental pollutants might have an endocrine disruptor (EDC) effect , especially on non -target organisms . In this study , it was observed that the peroxidation level.

Keywords : Zn/Cu pyrithione , EDC , zebrafish (Danio rerio), environmental pollutants

PP2-42

INVESTIGATION OF THE LEVELS OF MALONDIALDEHYDE, VITAMIN E AND SELENIUM IN PATIENTS WITH FAMILIAL MEDITERRANEAN FEVER

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OBJECTIVES : Familial Mediterranean Fever (FMF) is an autosomal recessive inherited autoinflammatory disease characterized by attacks of polyserositis and fever. Oxidative stress is increased in inflammatory conditions. In our study, we aimed to investigate malondialdehyde (MDA), one of the oxidative stress markers, and antioxidant vitamin E and selenium (Se) levels in FMF patients with MEFV gene mutation.
MATERIAL-METHODS: A number of thirty patients diagnosed with FMF and have MEFV mutations and 30 healthy volunteers were included in the study. The levels of MDA, vitamin E and Se were measured by thiobarbituric acid, Martinek and atomic absorption spectrophotometry methods in both groups respectively.
RESULTS: In our study, the levels of vitamin E and Se were significantly lower in the patient group ($p < 0.01$ and $p < 0.05$, respectively). In terms of MDA levels, statistically no significant difference was found between the groups ($p > 0.05$).
CONCLUSION : The levels of Se and vitamin E were found statistically significantly lower in the patient group. Although serum MDA levels were higher in patient group, statistically no significant difference was found between the groups. In addition, when MDA levels were compared between MEFV gene mutations, MDA levels were found to be higher in patients with mutation in exon 10. This elevation may be significant in terms of oxidative stress. Our data suggest that it is possible to clearly reveal the relationship between MEFV gene mutations and oxidative stress in FMF disease. A comprehensive and detailed study with high number of patients is needed to confirm these results.

Keywords: Familial Mediterranean Fever, malondialdehyde, MEFV, selenium, vitamin E

PP2-43

EXAMINATION OF THE PROTECTIVE EFFECT OF L-NAME (N-NITRO L-ARGININE METHYL ESTER) AND VITAMIN E (α-TOCOPHEROL) AGAINST OXIDATIVE STRESS CAUSED BY EXPOSURE OF CIGARETTE SMOKE TO LUNGS IN MALE RATS

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OBJECTIVES : Cigarette smoke causes chronic diseases, especially lung diseases which is the main source of morbidity and mortality. Many studies have shown that increased oxidant burden in smokers contributes to lung damage through many biological actions. The effect of L-NAME on oxidative stress has been shown in various studies. Vitamin-E was also demonstrated in several studies to be effective to inhibit lipid peroxidation and oxidative stress. In this study, it was aimed to investigate the protective effect of L-NAME and alpha-tocopherol against the oxidative stress caused by exposure to cigarette smoke in the lungs.
MATERIALS -METHODS : In this study, five experimental groups (control, cigarette) Cigarette smoke was administered by inhalation in special cages, and Vitamin E dase (MPO), glutathione (GSH) and nitric oxide (NO) levels were determined spectrophotometrically in lung tissue .
RESULTS : Compared to the control group exposed to cigarette smoke, a statistically significant increase was noted by 34% in MDA, by 45% in CAT, by 41% in MPO, and by 56% in GSH, whereas by 56% decrease in NO was observed . The highest activity (65% and 32% of control, respectively).
CONCLUSIONS : Smoking has been shown to cause oxidative damage to the lung tissue. The protective effect of L-NAME and Vitamin E on oxidative stress was observed.

Keywords: Oxidative stress, Vitamin E (alpha-tocopherol), L-NAME (N-nitro L-arginine methyl ester), cigarette smoke, lungs

PP2-44

ANTIOXIDANT EFFECTS OF EPIGALLOCATECHIN-3-GALLATE IN SCLERODERMA EXPERIMENTAL MODEL

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OBJECTIVES : The aim of study is to evaluate the antioxidant effects of epigallocatechin-3-gallate (EGCG) in bleomycin induced scleroderma model. Scleroderma is the complex autoimmune disorder of the immune system and connective tissue with unknown etiology. Scleroderma can affect not only the skin but also the functions of veins and internal organs in many patients . Although there is no specific treatment for scleroderma . EGCG is a phenol with antioxidant effects in many disease processes.
MATERIALS-METHODS: Thirty-two healthy female Balb-c mice (22±5 g body weight) were used in this study. The mice were randomly divided into four groups : control (n=8), Bleomycin (n=8), Bleomycin + EGCG (n=8) and EGCG (n = 8). At the end of experiment , skin tissue specimen were collected . Immunohistopathological and histopathological examinations of skin tissues were also done . The skin was also assessed for total superoxide dismutase (SOD) activity and malondialdehyde (MDA) content . The phosphorylation of p38 mitogen-activated protein kinase (MAPK) and Akt were analyzed by western blotting.
RESULTS : When compared to sham ,control and EGCG-treated group were observed to have reduced connective tissue fibrosis in the dermis area according to Masson Trichrome results. EGCG groups showed a significant reduction in fibrosis at the dermal surface area. SOD activity was increased in the EGCG groups compared to the positive control group, and MDA was decreased in the EGCG groups at the lower level. p-38 MAPK signaling repressed and p-Akt protein increased in EGCG groups compared with the control groups .
CONCLUSION: These results suggest an antifibrotic role for EGCG.

Keywords: Scleroderma, bleomycin, antioxidant mechanism

PP2-45

THE RADIOPROTECTIVE EFFECT OF CAFFEINE ACID PHENETHYL ESTER IN THE BRAIN OF TOTAL HEAD IRRADIATED RATS

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OBJECTIVES: In this study, we evaluated if caffeic acid phenethyl ester (CAFE) has protective effect on the damage in brain tissue induced by gamma radiation applied to rats, considering that may have inhibitory effects on ionizing radiation damage. To this end, 36 Male Wistar-Albino rats were used in our study.
MATERIALS -METHODS : Our study groups are consisted of 4 subgroups : 2 control, radiotherapy (R), and CAFE + R. All of the groups except the control received a single dose of 5 Gy of radiotherapy on the first day. On day 11, brain tissues of all rats were removed and homogenized in phosphate buffer.
RESULTS: Total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), paraoxanase (PON), arylesterase (ARE), ceruloplasmin (SER) and total sulfhydryl (SH) parameters were measured to determine if CAFE has protective effect. In conclusion, ARE, PON activities and total SH levels were statistically increased compared to the group R and LOOH, TOS and OSI levels significantly decreased.
CONCLUSIONS : Our findings show that CAFE might be having antioxidative effects to oxidative damage induced by radiation in brain of rats. However, to be confirmed these findings, it is needed to be supported by pharmacological and toxicological studies.

Keywords: Arylesterase, caffeic acid phenethyl ester, paraoxanase, radiotherapy, ceruloplasmin, total SH.

PP2-46

TOTAL ANTIOXIDANT CAPACITY, NITRIC OXIDE CONCENTRATION AND NITRIC OXIDE SYNTHASE ACTIVITY IN PATIENTS WITH MULTIPLE SCLEROSIS

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OBJECTIVES : Multiple sclerosis (MS) is a chronic autoimmune neurodegenerative disorder of central nervous system which causes sensorial disturbances , physical and cognitive disabilities . Reactive oxygen species and reactive nitrogen species can be produced by macrophages , microglias , and astrocytes and lead to axonal , neuronal injury . This study aims to investigate oxidative and nitrosative stress status with three biomarkers in MS patients .
MATERIALS -METHODS : 30 patients with MS, 30 healthy controls and 21 patients with pseudotumor cerebral(PTC) was recruited from neurology clinic of Ankara Education and Research Hospital. Disabilities of patients were quantified by expanded disability status scale (EDSS). Total antioxidant capacity (TAC), nitric oxide levels, and nitric oxide synthase activities were measured in serum of patients with MS and healthy controls , cerebrospinal fluid of patients with MS and PTC in the Research Laboratory of Ankara University Faculty of Medicine Department of Medical Biochemistry . Comparison of biochemical parameters between groups was carried out by Mann-Whitney U test. Spearman correlation test was utilized to establish a possible relationship between biochemical parameters and EDSS score.
RESULTS : Our results showed that serum TAC was significantly lower in patients with MS than healthy controls (p=0.003). Additionally , serum nitric oxide synthase activity is higher in patients with MS than healthy controls (p=0.002). Nevertheless , no statistical significance was observed in the comparison of parameters measured in CSF and correlation test results .
CONCLUSION : The present study indicates that oxidative stress can be a contributory factor for MS. Moreover increased nitric oxide synthase activity may implicate a role in the disease process.

Keywords: Multiple sclerosis, oxidative stress, total antioxidant capacity, nitric oxide, nitric oxide synthase

PP2-47

INVESTIGATION OF THE LIPID PROFILE MALONDIALDEHYDE LEVEL AND MYELOPEROXIDASE ACTIVITY IN PREECLAMPPIA

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OBJECTIVES : Preeclampsia is a systemic disease characterized by abnormal placentation resulting in placental ischemia, increased inflammation, endothelial damage and increased vascular resistance . The aim of this study was to investigate lipid profile , malondialdehyde (MDA) level and myeloperoxidase (MPO) activity in preeclampsia.
MATERIALS and METHODS : Blood specimens were collected from 43 pregnant women diagnosed as preeclampsia and 43 pregnant women without any medical history which constitue the control group. Lipid profile were measured using routine methods . MPO activity and MDA level were measured by spectrophotometrically.
RESULTS : There were no significant differences between the groups with respect to demographic data . Serum total cholesterol (p <0.001), LDL -C (p <0.05), TG (p <0.001) and serum MDA (p<0.05) levels were significantly higher in the preeclamptic group than the control group. MPO levels were higher in the preeclampsia group than the control group, but not statistically significant. HDL-C (p<0.001) in the preeclamptic group was statistically significantly lower than the control group . Correlation analysis showed a positive correlation between MPO activity and VLDL-C (r = 0,151, p = 0,043).
CONCLUSIONS: According to our findings, elevated LDL, MDA level and decreased HDL level may be indicate of oxidative stress in preeclampsia. We suggest that defining oxidant status in pregnant women may be a good marker for risk assessment of preeclampsia.

Keywords: HDL-C, LDL-C, Malondialdehyde, Myeloperoxidase, Preeclampsia

PP2-48

PRENATAL EFFECTS OF 1800 MHZ ELECTROMAGNETIC FIELD ON RAT LIVERS

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OBJECTIVES : In this study, the efects of prenatal electromagnetic field (EMF) exposure on the liver of rats were investigated after birth by biochemical and histological means
MATERIALS -METHODS : The animals were allocated into 4 groups . The untreated ones served as controls , and the EMF-treated ones for 6, 12 and 24 hours served as the study groups. A generator with 1800 MHz EMF output was placed under the cages for 6, 12 and 24 hours / 20 days. For data analysis SPSS 20.0 was used . The datas were presented as mean ± SD. Differences among groups were analysed by one-way analysis of variance (ANOVA) and Mann-Whitney U test.
RESULTS : While there was a significant increase in the malondialdehyde (MDA) levels of the liver tissue in the treated groups (EMF-6, 12 and 24), the reverse was true for glutathione (GSH) (p<0,01). Significant increases in the serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) were evident in the treated groups (p<0,01). While total oxidant status (TOS) levels significantly increased in the EMF 6 (p<0,05), 12 and 24 (p<0,01), serum total antioxidant status (TAS) levels declined . Serum calcium (Ca) levels were also significantly higher in the treated groups (p<0,01).Histopathologic analysis revealed intense vacuolization and degeneration of the hepatocytes near the portal area in the treated groups but not in the controls.
CONCLUSION : 1800 MHz radiation from cellular phones may affect biological systems by increasing free radicals , which may enhance lipid peroxidation , and by changing the antioxidative activities of the liver.

Keywords: Pregnancy, Electromagnetic Field, Liver Toxicity

PP2-49

PREOPERATIVE AND POSTOPERATIVE OXIDATIVE STRESS STATUS IN MORBID OBESE PATIENTS UNDERGOING LAPAROSCOPIC SLEEVE GASTRECTOMY

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OBJECTIVES : Obesity is a multifactorial chronic disease characterized by fat accumulation in the body. Many studies on obesity and oxidative stress have found that obesity increases oxidative stress . The aim of our study was to compare preoperative and postoperative oxidative stress status within the first six months term in morbid obese patients who have operated with laparoscopic sleeve gastrectomy (LSG) method.
MATERIALS -METHODS : The study population consisted of 23 morbid obese patients who had operated with LSG method in Selcuk University Faculty of Medicine Department of General Surgery between April-November 2015. Serum TOS (Total Oxidant Status) and TAS (Total Antioxidant Status) levels were determined by using a colorimetric method. Analysis was carried out by using Rel

Rel Assay Diagnostics kits in Beckman Coulter AU5800 routine biochemistry autoanalyzer .
CONCLUSIONS: Oxidative stress is the consequence of a reduction in the reactive oxygen species (ROS). When the results obtained in our study were evaluated, it was observed that in the long term free radical and ROS production decreased, in the short term the antioxidant systems increased in the patients who were operated with LSG method.

Keywords: LSG, morbid obesity, oxidative stress, TOS, TAS

PP2-50
INHIBITION OF GLUTATHIONE S-TRANSFERASE BY USNIC AND CARNOSIC ACID

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OBJECTIVES: Glutathione S-transferases (GSTs) are seen to play a key role in the detoxification of xenobiotics and endogenously toxic compounds. Lichens are symbiotic organisms that can be produce various chemicals that used for pharmaceutical purposes. In this study, inhibitory effect of two (usnic and carnosic) lichen acids were tested against GST.
MATERIALS-METHODS: For this purpose, GST was purified from human erythrocytes using Glutathione -agarose affinity chromatographic method. Usnic and carnosic acid were tested various concentrations on in vitro GST activity.
RESULTS : GST was purified from human erythrocytes with 6.39 EUxmg -1 specific activity and 62.31% yield. IC50 values of usnic and carnosic acid were found as 23.1 µM and 53.31 µM respectively . Ki constants of usnic and carnosic acid were found 11.68±1.88 µM and 28.22±9.06 µM respectively . The inhibition mechanism of both compounds was determined competitive.
CONCLUSION: GSH and related enzymes are effective detoxification system that play an important role in the protection of cells. Therefore , GST inhibitors are accepted as promising therapeutic agents for control the development of resistance amongst anticancer agents . Our results showed that tested compounds were determined to be competitive inhibitors of the enzyme and could be used as chemopreventive agents.

Keywords: Glutathione S-transferase, usnic acid, carnosic acid, inhibition

PP2-51
THE EFFECTS OF QUARCETIN ON OXIDATIVE STRESS IN THE FRUCTOSE INDUCED METABOLIC SYNDROME MODEL

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OBJECTIVE: The purpose of this study is to examine the possible protective and therapeutic effect of quercetin administration in the fructose mediated metabolic syndrome rat model. In our study, the effect of quercetin on Total Oxidant (TOS) and Total Antioxidant Capacity (TAS) levels in the liver was investigated.
MATERIALS-METHODS: 24 Spraque-Dawley rats were divided into 4 groups (n = 6) as control, fructose, quercetin, fructose + quercetin. In the 10-week period , quercetin was administered via oral gavage at 15 mg/kg daily and fructose was administered in drinking water at 20%. At the end of the 10th week, the animals were sacrificed under anesthesia , blood and liver tissue samples were taken, serum glucose, lipid and insulin levels were measured and insulin resistance was calculated . TAS and TOS levels were determined in liver tissue of rats.
RESULTS :Metabolic syndrome was successfully established with fructose. According to the controlgroup, oxidative stress was increased in fructose groups and antioxidant capacity was minimally increased but not statistically significant. According to the control group, the oxidative stress in the quercetin group was minimized, but there was no statistical significance and the antioxidant capacity remained unchanged . In the quercetin plus fructose group, the TAS and TOS levels were not statistically significant compared to all groups .
CONCLUSION : Although it has been shown in many literature that it has a potential antioxidant activity, it appears in the results of our study that quercetin is not effective in these doses in the fructose mediated metabolic syndrome model

Keywords: fructose, quercetin, oxidative stress, liver

PP2-52

PLASMA LEPTIN LEVEL AND THIOL/DISULPHIDE HOMEOSTASIS IN VOLLEYBALL PLAYERS

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OBJECTIVES: Leptin is a protein involved in the regulation of food intake and in the immune and inflammatory responses. Adverse effects of leptin include oxidative stress mediated by activation of NADPH oxidase. Thiols enter the oxidation reaction by oxidants and form disulfide bonds. In this study, we aimed to determine the effect of regular exercise on the leptin and thiol /disulphide homeostasis parameters and the correlation level of these parameters.
MATERIALS-METHODS: Woman and man volleyball players (n=24) from the Gaziantep and sedentary healthy controls (n=24) participated in the study. To measure the level of plasma leptin ELISA method was used. Thiol/disulphide homeostasis was measured by a automatic spectrophotometric method.
RESULTS: There was no significant difference between volleyball players and control groups in terms of age and BMI (both p> 0.05). Plasma leptin level (p = 0.001), disulphide level, disulphide / total thiol and disulphide / native thiol (p <0.05) were statistically lower in the volleyball players than in the control group. There was no statistically significant difference between total thiol and native thiol levels between the groups (p >0.05). No correlation was found between plasma leptin levels and any of the thiol/disulphide parameters.
CONCLUSIONS: The increase in ROS production is one of the negative effects of leptin. In our study, we found low disulphide levels with low leptin levels in the volleyball players. In addition to regular exercise, low leptin levels may also contribute to a decrease in disulphide levels.

Keywords: Leptin, Thiol/disulphide, Exercise

PP2-53
EFFECTS OF A-LIPOIC ACID ON BLOOD AND tissue OXIDATIVE STRESS PARAMETERS IN EXPERIMENTAL HYPERTHYROIDISM

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OBJECTIVE: The aim of the study was to to evaluate the effects of α-lipoic acid (ALA) on prooxidant -antioxidant balance in liver tissue and in serum liver and kidney function tests in experimental hypertyroidism.
MATERIALS-METHODS: Sprague-Dawley albino male rats (weighing 250-350 g) were used in all experiments. Rats were randomly divided into four groups, as control, ALA, T4 and T4+ALA, each group having 6 rats. For the evaluation of prooxidant-antioxidant balance, reactive oxygen species (ROS), malondialdehyde (MDA), protein carbonyl (PC), ferric reducing antioxidant power (FRAP), glutathione (GSH) levels, and superoxide dismutase , catalase and glutathione peroxidase activities were determined in liver. Histopathological examinations were also performed . Hyperthyroidism was induced by the administration of L- thyroxine (T4, 12 mg/L) in drinking water for 10 weeks. The ALA [100 mg/kg/ day; % 0.2 (w/w) in diet] was administered in last 5 weeks of experimental period.
RESULTS : The susceptibility of liver to oxidative stress was observed to increase. Significant increases in ROS, MDA, PC levels in hyperthyroid rats were found in liver of hyperthyroid rats. Additionally, increased FRAP and decreased GSH levels were observed. ALA treatment lowered the elevated serum free T3 and T4 levels and significantly decreased ROS, MDA and PC levels in liver tissue. Serum liver and kidney function tests in hiperthyroid rats did not alter.
CONCLUSION : Our results indicate that ALA treatment is effective in the improvement of the changes in prooxidant-antioxidant balance, and may be useful as supportive agent for the treatment of hypertyroidism.

Keywords: Proxidant-antioxidant balance, hyperthyroidism, α-lipoic acid

PP2-54

EVALUATION OF OXIDATIVE STRESS BEFORE AND AFTER SURGERY IN PATIENTS WITH BENIGN PROSTATIC HYPERPLASIA

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OBJECTIVE : The aim of this study was to assess oxidative stress in patients with benign prostatic hyperplasia by comparing with healthy controls and evaluate the effect of operation on some oxidative stress parameters by comparing their preoperative and postoperative parameters.
MATERIALS-METHODS: Sixteen patients with BPH and sixteen healthy male volunteers were included to this study. Total five mL of blood sample was obtained from each volunteer. Sixty days after surgery ,blood sample was also taken from patients with BPH. Malondialdehyde (MDA) and superoxide dismutase (SOD) were detected with spectrophotometric methods. 8-hydroxy-2'-deoxyguanosine /deoxyguanosine (8-OHdG/106 dG), total CoenzymeQ 10 (total CoQ10), and coenzymeQ 10 (CoQ10) levels were measured with high pressure liquid chromatography (HPLC).
RESULTS: Before surgery, MDA and total CoQ10 levels in BPH patients were lower than those healthy control group (p=0,042), while 8-OHdG/106 dG level was high (p<0,001). There was no significant difference between CoQ10 and SOD values in these two groups. Postoperative 8-OHdG/106 dG and SOD levels were significantly lower than preoperatives (p<0,001). While the level of total CoQ 10 increased significantly after the operation (p = 0.019), decreasing oxidized CoQ10 levels was observed but this was not statistically significant. There was no significantly change in MDA levels.
CONCLUSION : MDA and total CoQ 10 values were unexpectedly low in patients with BPH, while 8-OHdG/106 dG was found to be high suggesting that the presence of oxidative stress in BPH is controversial . A decrease in postoperative 8-OHdG/106dG levels suggests that the surgical operation has a positive effect on oxidative DNA damage.

Keywords: Benign Prostatic Hyperplasia, coenzymeQ10, 8-hydroxy-deoxyguanosine, Malondialdehyde, Superoxide dismutase

PP2-55

THIOL/DISULPHIDE HOMEOSTASIS IN PROSTATE CANCER PATIENTS

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OBJECTIVES : One of three cancer diagnosed men is prostate cancer. Age, family history, environmental factors, nutrition status, oxidative stress accused in ethiopathogenesis. Thiol is a compound with a sulfhydrylgroup. Thiol groups are oxidized by reactive oxygen species result in generating disulphide bonds. With reduction of disulphide bonds to thiols , a homeostasis of thiol/ disulphide generates. We aimed to exhibit whether there is a relation between Gleason score that has prognostic importance in prostate cancer and thiol/ disulphide levels.
MATERIALS-METHODS: 70 male patients who applied to Recep Tayyip Erdoğan University Education and Research Hospital Urology Clinic and underwent prostate biopsy with positive results were enrolled in our study. Gleason scores obtained from biopsy materials were classified to five groups according to the World Health Organization 2016 agreement for prognostic grading system (group 1=3+3; group 2=3+4; group 3=4+3; group 4=8; group 5=9-10). Erel and Neselioglu's assay was used to analyze thiol /disulphide levels. SPSS software applied for data evaluation. Relation between groups was evaluated using Oneway ANOVA analyze.
RESULTS: Groups consisted of 44, 8, 11, 3, and 4 patients respectively. Mean ± standard deviation of total thiol levels were 314±70, 329±91, 283±76, 265±78 335±89 µmol/L, disulphide levels were 22±14, 24±9, 20±14, 14±7, 31±6 µmol/L respectively. No statistically significance was detected between groups for thiol and disulphide levels.
CONCLUSIONS : It is known thiol /disulphide homeostasis is altered in malignancies and inflammatory diseases . We effort to reveal relation of the homeostasis with prostate cancer prognosis . Inequality of patient numbers in groups , especially in worst prognosis groups like group 4 and 5 was limitation of our study . Therefore to clear the relation of thiol /disulphide homeostasis with prostate cancer prognosis , wider studies consisted equivalent number of patients particularly in worst prognostic groups are needed.

Keywords: Prostate cancer, Gleason score, Thiol/disulphide homeostasis

PP2-56

THE EFFECTS OF SHORT-TERM STARVATION ON SERUM METABOLITES, ANTIOXIDANT ENYZME ACTIVITIES AND ENDOGENOUS RESERVES OF RAINBOW TROUT (ONCHORHYNCHUS MYKIOP)

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OBJECTIVE: This study was conducted to investigation the effects of short-term starvation on the serum metabolites and antioxidant enyzmes, thiobarbituric acid reacting substance levels, endogenous reserves in liver and muscle tissues of rainbow trout (Onchorhynchus mykiss).
MATERIALS -METHODS : This study was designed as one day, two days and eight days of fasting. Alterations in protein and lipid levels in liver and muscle tissues as well as serum metabolites values of the fish were determined. Catalase, superoxide dismutase, glutathione peroxidase and glutathione reductase activities and thiobarbituric acid reacting substances levels in liver and muscle tissue of the fish were analysed with the enzyme -linked immunosorbent assay (ELISA). Serum metabolites levels expressed as mg dL-1.
RESULTS: Eight-days of fasting caused in a significant decrease in glucose, total protein , triglyceride , cholesterol , high -density lipoprotein and low -density lipoprotein levels as well as protein and lipid reserves in liver and muscle tissue of fish (p<0.05) (except for total protein and lipid in liver). In liver tissues, fasting period increased the thiobarbituric acid reacting substances levels (p>0.05) and decreased the antioxidant enzymes activities in the T1, T2 and T3 groups . Catalase and glutathione peroxidase enzymes were statistically significant (p<0.05). In muscle tissue, although thiobarbituric acid reacting substances levels were low (p<0.05), antioxidant enzymatic activities were high (p>0.05).
CONCLUSION : This study showed that liver may be a good indicator in determining the damage caused by fasting and fasting stress in the fish.

Keywords: Rainbow trout, fasting, metabolic effect, lipid peroxidation, antioxidant enzyme

PP2-57

WITH CD, PB OR BOTH… HOW DO YOU PREFER YOUR BREAD? (BIOCHEMICAL EFFECTS OF HEAVY METALS ON CROPP)

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OBJECTIVES : Rise of civilization is accompained by industrial sewages, like heavy metals (HM), strong acids and etc. resulting in pollution . In the energy flow pyramid, plants are influenced just after soil is polluted, due to spreading out of wastes through the water and air flow. HMs, an agent for oxidative stress, can be moved from plants to other higher organisms via food chain . Although , antioxidant defense systems in plants play very crucial role to resist oxidative stress . In this study, we aimed to evaluate the biochemical effects of HMs on wheat (Triticum aestivum cv. Bezostaja) and barley (Hordeum vulgare cv. Erginel) species from Central Anatolia , through examinations of their some antioxidant mechanisms.
MATERIALS -METHODS : To determine effects of different HMs, selected concentrations (0, 150 , 300 uM) of PbCl 2, CdCl 2 and PbCl 2+CdCl 2 combinations were applied and protein, GSH contents and GST activities are compared with control samples for each species.
RESULTS : Generally , lower concentrations of Pb were not provoked the antioxidant systems in plants, as much as Cd and combinations do. However , with higher concentrations of HMs, all examined parameters were found to be increased by comparing to control samples. Especially , maximum values were obtained with Cd and combination applications.
CONCLUSIONS : In crops studied, all parameters were severely effected with applied HMs as a result of oxidative stress. Therefore, to determine the hazardous effects of HMs and effective concentrations, further studies with other HMs and

their different concentrations on different species could produce reliable comparisons.

Keywords: Heavy metals, croPP, GSH, GST, protein

PP2-58

THE INVESTIGATION OF AUTOANTIBODY FORMATION AGAINST OXIDATIVELY MODIFIED CARBONIC ANHYDRASE I AND II

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OBJECTIVES : Carbonic anhydrase (CA) is a metalloenzyme with wide tissue distribution and in some rheumatoid disease autoantibodies formed against these enzymes . Recent studies have suggested that oxidative stres triggers anti-CA antibody formation . In this study we aimed to investigate the effects of CA modifications with 4-hydroxynonenal (HNE), malondialdehyde (MDA), peroxynitrite (PN) on CA autoantibody formation.
MATERIALS -METHODS : In the present study, CA I and CA II isoenzymes , isolated from human erythrocytes, were modified with HNE, MDA and PN and the modification were verified with Western Blot analysis . Balbc mice were immunized with these agents to determine the effects of the modification on antigenicity and also antibody titers were detected by ELISA in the sera of mice.
RESULTS : When modified forms compared with native CA I in mice, it was found that MDA decreased ($p<0.05$) the antigenicity while PN increased ($p<0.01$), however , in CA II form, HNE decreased ($p<0.05$) the antigenicity while PN increased ($p<0.01$).
CONCLUSIONS: Oxidative modifications altered the antigenic properties of CA isoenzymes, especially PN modifications increased the antigenicity.

Keywords : Carbonic Anhydrase , Oxidative Stress , Autoantibodies , Protein Modification.

PP2-59

THE INVESTIGATION OF AUTOANTIBODY FORMATION AGAINST OXIDATIVELY MODIFIED CARBONIC ANHYDRASE I AND II

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OBJECTIVE: The aim of this study is to investigate whether acrylamide applied during pregnancy affects on the oxidant /antioxidant balance in the mother 's blood .
MATERIAL -METHOD : The pregnant rats used in the study were randomly distributed into 5 groups (Control , Corn Oil, Acrylamide [10 mg/kg/day by weight], Vitamin E [100 mg/kg/day by weight], Acrylamide + Vitamin E], 8 rats each. The animals were fed ad libitum during the study. Rat blood samples were taken on the 20th day of pregnancy and serum samples were extracted . Malondialdehyde (MDA), reduced glutathione (GSH) levels, total antioxidant capacity (TAS), total oxidant capacity (TOS) were determined on the maternal serum samples .
RESULTS : It was determined that serum MDA , TOS levels significantly increased and serum GSH and TAS levels significantly decreased after acrylamide administration when compared to other groups ($p<0.05$). However, concomitant vitamin E application with acrylamide significantly increased serum GSH, TAS levels and significantly decreased serum MDA , TOS levels when compared to the acrylamide group ($p<0.05$). Acrylamide administration during pregnancy led to oxidative stress by impairing the oxidan/antioxidant balance in pregnant rat blood , while vitamin E removed the toxic effects caused by acrylamide administration by increasing serum GSH and TAS levels and decreasing serum MDA and TOS levels .
CONCLUSION : In conclusion , pregnant women could be recommended to consume sufficient amounts of food that contain vitamin E to prevent toxic effects of food-borne acrylamide, which is almost inevitable due to the prevalent fast-food consumption culture.

Keywords: Rat, pregnancy, blood, acrylamide, vitamin E, oxidative stress

PP2-60

EFFECTS OF ACRYLAMIDE AND VITAMIN E ADMINISTERED DURING PREGNANCY ON FETAL BRAIN DEVELOPMENT

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OBJECTIVES: The aim of this study is to investigate whether acrylamide applied during pregnancy affects on the fetal brain development.
MATERIAL -METHOD : The pregnant rats used in the study were randomly divided fetuses were removed by caesarian section on the 20th day of pregnancy and biochemical and histological examinations were conducted on fetal brain tissues.
RESULTS: It was observed that acrylamide administration led to neuron structure degeneration and hemorrhagic damages in fetal brain tissues and significantly decreased brain-derived neurotropic factor levels ($p<0.05$). It was also observed that acrylamide increased malondialdehyde , total oxidant capacity levels and decreased reduced glutathione , total antioxidant capacity levels ($p<0.05$). However , concomitant vitamin E application with acrylamide significantly reduced acrylamide -induced damage in fetal brain tissue in terms of the above parameters ($p<0.05$).
CONCLUSION: These results indicate that acrylamide applied during pregnancy has shown neurotoxic effect on fetal brain development by decreasing fetal brain BDNF levels and also concomitant vitamin E administration with acrilamide has brought the fetal brain BDNF levels up close to the control group values.

Keywords: Fetal brain, acrylamide, vitamin E, brain-derived neurotrophic factor (BDNF), oxidative stress

PP2-61

THE RELATIONSHIP BETWEEN IRON TOXICITY AND INFERTILITY

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OBJECTIVES: Infertility, specified as couples in reproductive times which would be unable to conceive in a year without any birth control measure, has increased over the last five years worldwide. Oxidative stress is among the events influencing this increment. Living beings are constantly in contact with heavy metals situated on the earth. Nondegradable and nondisposable heavy metals create toxicities with I proteins of glutathione system was investigated in rat testis .
MATERIALS -METHODS : 15 male rats of Sprague Dawley (110-130 g) were divided into 5 grouPP. Water was given to control group. Water containing 0.87, 3, 30 and 300 ppm iron was given to another group for 100 days, respectively . After 100 days, gene expression of glutathione system including Gr, Gpx, and Gst genes was examined by real time PCR in rat testis. Enzyme activities and reduced GSH level were spectroscopically examined .
RESULTS: While GSH level is increased at 0.87 ppm, decreased at 3, 30 and 300 ppm. While gene expression of Gr, Gpx and Gst was increased at 3 ppm significantly decreased at 0.87, 30 and 300 ppm for Gr and Gst. However , no changes is seen for Gpx. While GR enzyme activity is not changed with iron, its activity is decreased at other concentrations except of 0.87 ppm. Moreover , GST enzyme activity is increased in all concentrations .
CONCLUSIONS: It was observed that iron toxicity markedly affected the glutathione system at gene and protein levels.

Keywords: Enzyme activity, glutathione system, infertility, iron overload, oxidative stress, real time PCR

PP2-62

ELECTROCHEMICAL CHARACTERISATION OF HYDROGEN PEROXIDASE ENZYME

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OBJECTIVES: The detection of hydrogen peroxyde is very important in various fields including clinic , food , pharmaceutical and environmental analyses . Because of hydrogen peroxyde is a chemical threat to the environment and the production of enzymatic reactions. At the same time, it has been recognized as one of the major factors in the progression of important diseases. Accurate and reliable determination of hydrogen peroxyde has been widely investigated using chromatography , chemiluminscence and electrochemistry technologies. Among these methods , electrochemical detection is a most promising approach to achieve accurate, separate, and rapid hydrogen peroxyde monitoring with using biosensor system.
MATERIALS-METHODS: We investigate the electrochemical characterisation for developing a new technic for detecting hydrogen peroxyde in samples. The technic is based on electrochemical sensors with immobilized enzyme (Horseradish Peroxidase EC:1.11.1.1). The reaction on the electrode surface was monitored by potentiostat system.
RESULTS: Cyclic voltammograms have been carried out between - 0.4V and 0.6 V potentials vs. Ag/AgCI. Hydrogen peroxide concentration was detected by using differential pulse method between 0.3 and -0.25V potentials by observing the differentiations in the current values. The biosensor responses were correlated linearly with the hydrogen peroxide concentrations betvveen 0.99 and 100.0µM.
CONCLUSION : Investigation of the hydrogen peroxidase enzyme 's electrochemical characterisation for determination of hydrogen peroxide was performed. Determination of hydrogen peroxide by using biosensor method is a new approach. This method is more sensitive, specific, economic, and less time consuming than other methods . And with this method it is also possible that hydrogenperoxide concentration detemination without any pre-operation within less than 1 minute turnaround time.

Keywords: Electrochemistry, Hydrogen peroxidase, Characterisation

PP2-63

ANTI-OXIDANT EFFECT OF CAPE ON A RAT MODEL OF MYOCUTANEOUS ISCHEMIA REPERFUSION INJURY

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OBJECTIVES: Ischemia followed by reperfusion, which causes severe oxidative injury to tissues and organs, still remains a serious problem in clinical procedures . When ischaemia-reperfusion (IR) injury occurs, the increase in generation of reactive oxygen species (ROS) during the reperfusion phase leads to damage tissue by lipid peroxidation. Minimizing the adverse effects of IR injury would ameliorate outcomes in surgeries and decrease acute and chronic rejections in transplant recipients. CAPE is an active component of propolis which has anti-inflammatory , immunomodulatory properties and protective effects against IR injury. We aimed to investigate the anti-oxidant effect of CAPE on a rat model of myocutaneous ischemia reperfusion injury.
MATERIALS -METHODS : 21 rats were divided into three groups as; sham-operated group , vehicle-treated IR and CAPE-treated IR where CAPE was intraperitoneally injected before ischemia . Tissue samples obtained were evaluated at 7 d after reperfusion via determining oxidative stress markers such as MDA (Yagi and Ohkowa) SOD (ELISA) and CAT (Aebi).
RESULTS : In the IR group oxidative stress increased , since MDA ($p<0.05$) levels increased while antioxidant enzyme (SOD , CAT ; $p<0.01$, $p<0.01$) activities decreased at 7d after reperfusion in comparison to the sham group. However, CAPE treatment decreased the IR-induced increase in MDA ($p<0.05$) levels and markedly ameliorated the reduction of SOD ($p<0.05$) and CAT ($p<0.05$) activities at 7d after reperfusion when compared to the vehicle-treated IR group.
CONCLUSIONS : Our results are evidences that CAPE treatment ameliorates myocutaneous IR injury by suppressing oxidative stress . Therefore , it is promising as a potential therapeutic agent for myocutaneous IR injury.

Keywords: Ischaemia-Reperfusion, oxidative stress, CAPE

PP2-64

THE EFFECTS ON THE SERUM METABOLITES, ENZYME ACTIVITIES AND HISTOPATHOLOGY OF RAINBOW TROUT (ONCHORHYNCHUS MYKIOP) OF SHORT-TERM STARVATION AND RE-FEEDING

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OBJECTIVE: Here, we were to investigation the effects on the serum metabolites enzyme activities and histopathology of rainbow trout (Onchorhynchus mykiss) of short-term starvation and re-feeding.
MATERIALS -METHODS : This study was designed to be three day (T1), six days (T2) and nine days (T3) starvation and then one day re-feeding. Changes in serum metabolites , gill and liver histopatology were investigated . Enzyme activities (CAT, SOD, GPX and GR) and thiobarbituric acid reacting substance levels (TBARS) in liver, heart and muscle tissues of rainbow trout were analysed with the enzyme-linked immunosorbent assay (ELISA). Serum metabolites levels expressed as mg/dL-1, IU/L-1 and mmol/L-1.
RESULTS : While there were significant decreases in levels of glucose , total protein , high density lipoprotein (HDL), triglyceride and Sodium (Na) in T3 group , there was only a significant increase in low density lipoprotein (LDL) level of T3 group ($p<0.05$). In the liver , although there were increased in thiobarbituric acid reactive substances (TBARS) ($p<0.05$), catalase (CAT), superoxide dismutase (SOD), glutathione peroxidase (GPx) and glutathione reductase (GR) levels were decreased ($p<0.05$) (except for glutathione reductase (GR)). In muscle tissue, there was no significant difference between thiobarbituric acid reactive substance levels (TBARS). But, the increase in catalase (CAT) and superoxide dismutase (SOD) levels were statistically significant ($p<0.05$). There were significant differences in the histopathology of the liver and gill tissues of T 3 group when compared to other groups.
CONCLUSION : Liver and liver histopatology may be useful in determining the effects of fasting and fasting stress in the fish.

Keywords: Rainbow trout, starvation, metabolic effect, lipid peroxidation, antioxidant enzyme, histopatology

PP2-65

IRON PROPHYLAXIS INCREASES DNA DAMAGE AND OXIDATIVE STRESS AT 6 MONTHS AGE

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OBJECTIVE: Many countries start iron prophylaxis for all infants at 4 months of age. However, some infants may not need iron prophylaxis. This study aimed to investigate the effects of iron prophylaxis on DNA and oxidant system.
MATERIALS-METHODS: In our country, all infants start iron prophylaxis at 4 months old according to the "Iron-like Turkey" project. Infants at 6 months of age are included in the study . Group 1 was composed of infants under iron prophylaxis. Infants not under iron prophylaxis are enrolled in Group 2. Groups are compared in respect to epidemiologic features , anemia indices , iron parameters, DNA damage and oxidant-antioxidant activity.
RESULTS: Thirty-eight infants recieved iron prophylaxis and twenty-six infants did not recieve iron prophylaxis . Thirty-one were male and thirty three were female. The average weight did not differ between groups (8148±894 gr vs 8173± 1024 gr). Hemoglobin and blood iron levels did not differ between groups . Hemoglobin (11,33±0,789 g/dl vs 11,08±0,966 g/dl), ferritin (33,1 (7,6-237) ng/ml vs 30,4 (1,8-124) ng/ml), blood iron level (45,5 (23-127) ug/dl vs 51,5 (18-124) ug/dl), iron binding capacity (317,13±44,06 ug/dl vs 337,92±76,84 ug/dl), transferrin (258,36±39,8 mg/dl vs 275,84±61,3 mg/dl). Compared to Group 2, Group 1 had significantly higher DNA damage (41.05 vs 27.78) and oxidant activity (12.47 vs 10.75)
CONCLUSION : Iron prophylaxis results in significant DNA damage and oxidative stress in six month old infants. Dietary enrichment of iron instead of iron drops may be a more appropriate option for iron supply.

Keywords: DNA damage, Infant, Iron deficiency anemia, Iron prophylaxis, Oxidative stress

PP2-66

INVESTIGATION OF VITAMIN B12, FOLATE AND HOMOCYSTEINE LEVELS IN SERUM, TOTAL-NATIVE THIOL AND OXIDATIVE STRESS STATUS AND DNA DAMAGE IN PERIPHERAL MONONUCLEAR LEUKOCYTE BEFORE AND AFTER TREATMENT IN CHILDREN WITH B12 DEFICIENCY

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OBJECTIVES : In developing countries vitamin B12 and folic acid deficiencies are the most common causes for childhood megaloblastic anemia . Deficient levels of folic acid and vitamin B12 are associated with DNA damage and hypomethylation of DNA which are major causes for cancer . Also , high concentration of serum homocysteine is an important risk factor for cardiovascular disease . The aim of our study is to investigate oxidative stress status , thiol homeostasis and peripheral mononuclear leukocyte (PML) DNA damage before and after treatment in pediatric patients with vitamin B12 deficiency.
MATERIALS -METHODS: Heparinized venous blood samples were taken from 40 patients with vitamin B12 deficiency anemia before and after treatment. 1 ml of blood was used to separate PML to measure DNA damage. Remaining blood was centrifuged to obtain plasma samples . Plasma vitamin B12, folic acid and homocystein levels were measured by luminometic immunoassay method . Plasma vitamin B12, IL1β, IL6 and TNFα were determined by immunometric methods using commercial kits. Plasma total antioxidants status (TAS), total oxidant status(TOS), oxidative stress index(OSI), total thiol, native thiol and thiol disulphide levels were detected by photometric methods. PML DNA damage was measured with alkaline single cell gel electrophoresis assay (Comet Assay).
RESULTS: Our results show that vitamin B12 deficiency causes oxidative stress, DNA damage and disruption in thiol homeostasis . Vitamin B12 treatment ameliorates oxidative stress, thiol balance and DNA damage in these patients.
CONCLUSION : Considering these findings a vitamin B12 deficiency treatment should be initialized immediately to prevent oxidative stress and DNA damage.

Keywords: vitamin B12, DNA damage, folat

PP2-67

NUCLEATED RED BLOOD CELL COUNTS IN NEONATES' HOSPITALIZED IN INTENSIVE CARE UNITS

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OBJECTIVES : Nucleated red blood cells (NRBCs) are the precursors of red blood cells. In normal conditions NRBC are not present in circulating blood. Studies suggested that NRBC are increased in preterm or term neonates with fetal distress , intrauterine growth restriction , perinatal asphyxia , and hypoxic - ischemic encephalopathy .The aim of this study is to analyze the presence of NRBC in newborns who are hospitalized in the neonatal intensive care unit from birth to hospital discharge.
MATERIALS -METHODS : This study was conducted retrospectively . NRBC were analyzed in neonatal samples (n=135) after birth (NRBC 0), in the first (NRBC 1), third (NRBC 3), seventh (NRBC 7),fourteenth days of life (NRBC 14) and on day of discharge (NRBCfinal) using Sysmex XN 1010 blood counter . Gestational week (GW), birth weight , first and fifth minute APGAR scores , duration of oxygen supply are recorded .Results are presented as mean±SEM and data was analyzed using ANOVA and post -hoc test , p<0.05 was accepted as significant.
RESULTS : NRBC count in blood samples from 135 newborns were analyzed (56 M/79 F). Mean GW was 30,8±3,1;mean birth weight was 1519 ± 543grams; 1st minute APGAR score was 6,4±1,6 and 5th minute was 7,8±1,4 (p<0.001); duration of oxygen supply was 36,5 ± 38,1%, duration of hospitalization was 39 ± 42 days. Counts of NRBC0 was 2,55 ± 0,39 10^3/uL, NRBC1 1,81 ± 0,36 10^3 /uL , NRBC 3 0,76±0,23 10^3/uL , NRBC 7 0,25 ± 0,10 10^3/uL , NRBC 14 0,09 ± 0,03 10^3/uL and NRBC final 0,06 ± 0,02 10^3/uL. Results indicate a statistically significant decrease in NRBC count as the neonates ' age increase (p<0.001).
CONCLUSION: Our results suggested that NRBC counts are higher in newborns that are hospitalized in neonatal intensive care unit and decreased after time duration.

Keywords: Nucleated red blood cells, neonatal, APGAR

PP2-68

THE VALIDATION OF REFERENCE INTERVALS: A VALIDATION STUDY FROM BURSA

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OBJECTIVE : The standard approach for the validation of reference intervals (RIs) recommended by the IFCC , CLSI Guideline C28 -A3 (Defining , Establishing and Verifying Reference Intervals in Clinical Laboratory) for routine practice in laboratories is to collect and analyse 20 samples from healthy subjects. The guideline states that if 18 are within range , it can be accepted and if >10% fall outside the limits , another 20 samples should be obtained . In this study , a validation study was performed in the Clinical Biochemistry Laboratory, Uludag University Medical Faculty.
MATERIALS -METHODS : Blood samples were taken from 22 females and 22 males and 26 biochemical analytes were measured. Outliers were excluded using the Tukey test . When an analyte required gender partition , 20 values were evaluated for each group, otherwise 40 (20 male, 20 female).
RESULTS: Of the 26 analytes, 24 were validated. For GGT, <2 male values fell outside the defined limits and were validated , whereas >2 female results were outside the limits. For Cl, >10 % of the results were outside the limits, but after 2 nd measurement validation was accepted with 4 outside values.
CONCLUSIONS: Although the procedure seems clear, there are details requiring a practical explanation . When a test requires age or gender partition , further clarity is needed as to whether 20 samples should be tested from each group, and the limit of outside values for the other group after 1 has been accepted. If only 20 are required for non-partitioned tests, 10 male and 10 female samples should be initially selected.

Keywords: Reference limits, validation, CLSI C28-A3

PP3-01

CHERRY CONSUMPTION MAY CAUSE UNEXPECTEDLY HİGH INR RESULTS

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OBJECTIVE : Warfarin is the drug of choice for anti -thrombotic therapy . Bleeding, which is the most frequent complication, is generally due to drug-drug interactions or dosing problems . After ruling out these two common causes elevated INR may pose a dilemma for the clinician .
CASE: A 58 year old patient was using Warfarin and followed by INR test result. He admitted to cardiology out-patient clinic because of bruising on his arms and legs . He reported regular intake of Warfarin and he was not using another medication . When his late diet was questioned he reported quite a lot of cherry consumption . ACL TOP 300 instrument failed to give a numerical INR result. The result was immediately reported as a "critical value" and the clinician was alerted to evaluate the patient in course of clinical findings and history . The patient was hospitalized, 2 units of fresh frozen plasma were given and followed for recovery. After a final INR value of 4.1 was achieved, he was informed about dietary and medical interactions of warfarin in detail , and discharged .
DISCUSSION : In a review article in 2014 , a total of 23 citations were found about Warfarin -Fruit interactions . The majority of cases involved cranberry products , while pomegranate juice , avocado , grapefruit juice , and mango were also implicated. Warfarin apparently has the potential to interact with several fruit products . Until further information is available , clinicians should encourage patients to consume the fruits with known interactive actions.

Keywords: Cherry, fruits, warfarin

PP3-02

INVESTIGATION OF SERUM PENTRAKSIN 3 AND C-REACTIVE PROTEIN IN ACUTE PHASE REAGENT IN ORAC CELL ANEMIA

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OBJECTIVES: Sickle cell anemia is an autosomal recessive disease that a single mutation causes the 6th amino acid of the beta chains to be a valine instead of a glutamate . SCA is associated with both inflammation and tissue ischemia . Therefore, acute phase proteins such as Pentraxin3(PTX3) and C-reactive protein (CRP) have been reported to be elevated in patients with inflammatory and ischemic conditions. In this study, it was aimed to investigate the long pentraxin PTX3 and short pentraxins CRP levels, which are acute phase reactants in SCA patients.
MATERIALS -METHODS : This study included a total of 89 individuals who applied to the Mersin University Faculty of Medicine department of hematology clinic. Among these 44(25 males ,19 females) patients aged 23-40 years were diagnosed with OHA and 45 healthy controls(19 males, 26 females) aged 21-48 were diagnosed any disease. CRP levels were measured by immunoturbidimetric method in Cobas Integral-800 device and PTX3 levels were determined by Elisa method using Pentraxin -Human /SUNREDBIO kit. Statistical analyzes were performed using SPSS-17 packet program. P<0.05 was considered statistically significant.
RESULTS : PTX 3 (p=<0,001) and CRP (p=<0,001) levels were found statistically significant between patient and control group . The mean age difference between the patient and control group was not significant (p=0, 128). There was no significant relationship between PTX3 and CRP (r=-0,188, p=0,221) in the patient group and between PTX3 and CRP (r=-0,117,p=0,445) in the control group .
CONCLUSIONS : PTX 3 and CRP levels were significantly higher in SCA -diagnosed patients. We therefore believe that PTX3 and CRP levels can be used as a marker in the diagnosis of SCA.

Keywords : Acute phase protein , biomarkers , C-reactive protein , pentraxin -3, sickle cell anemia

PP3-03

INVESTIGATION OF SERUM PENTRAKSIN 3 AND C-REACTIVE PROTEIN IN ACUTE PHASE REAGENT IN ORAC CELL ANEMIA

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OBJECTIVES: Platelet Rich Plasma (PRP) encourage wound healing and tissue regeneration due to the platelets present in it. However, the therapeutic efficacy of PRP is controversial due to the lack of standardized protocols. We aimed to obtain the most suitable PRP in which have at least count of WBC and RBC.
MATERIALS -METHODS: 23 male patients with 20-60 years who do not have any abnormalities of WBC, RBC and PLT counts in CBC enrolled in the study. We performed variable centrifugation rates and protocols like using 3ml, 5ml and 8ml tubes which contains sodium citrate at constant temperature condition (21°C) to find the most suitable procedure . WBC , RBC and PLT were counted by SYSMEX XN5000. Centrifugation protocols were performed in 230×g for 10min (PRP) in the first step and 2000×g for 10min ((Platelet Concentrated Plasma (PCP)) in the second step. PCP optained that; At 2000×g, PRP was centrifuged to precipitate the platelets , followed by removal of approximately 9/10 of the supernatant. The PCP obtained by resolving with its own plasma.
RESULTS: There were the largest counts of PLT (672.000/µL-3.380.000/µL), at least counts of WBC (20/µL-460/µL) and count of RBC was 10.000/µL - 50.000/µL in the PRP after centrifugation in 230 xg 10min . We succeed to obtain the plasma which had at least count of RBC, WBC and as concentrated as possible count of PLT for the PCP.
CONCLUSIONS : Platelet counts in PCP are about 20 -fold higher than concentrations in whoole blood . These results shed light on standardizing to obtain PCP at maximum concentrations

Keywords: Platelet Rich Plasma, Platelet Concentrated Plasma, PRP, PCP

PP3-04

INVESTIGATION OF SERUM PENTRAKSIN 3 AND C-REACTIVE PROTEIN IN ACUTE PHASE REAGENT IN ORAC CELL ANEMIA

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OBJECTIVES: It is essential that the anticoagulant agent used should not interact with the chemical composition of blood and the analytical methods. In this study, we aimed to compare the effect of two different tubes containing lithium-heparin and sodium-citrate as anticoagulants on D-Dimer results.
MATERIALS -METHODS : We included 58 patients in the study . Becton Dickinson [BD] Vacutainer LH lithium -heparin tube and BD Vacutainer 9NC sodium-citrate tube were used for D-dimer test and measurements were done on a Roche -Hitachi Cobas c501 analyzer using latex -based immunoturbidimetric method. The bias% between D-dimer results were calculated. The concordance between results was assessed by correlation and regression analyses and the difference between means were assessed by paired t-test.
RESULTS : The bias % between the D-dimer results of the lithium -heparin (reference tube) and sodium-citrate tube was 18%. When we calculated bias with the patients over the reference range (>0.5 mg/L, n:24), the bias was decreased to 8%. Pearson 's correlation coefficient showed a positive and strong correlation (r = 0 .992 , p < 0 .01). Linear regression equation was found as y = 1.0475 x-0.0424 . There was no significant difference between the D-dimer results by the paired t- test (p> 0.05).
CONCLUSION : Study results show that the use of lithium heparin or citrate tubes does not affect D-dimer results. It is recommended that the D-dimer test should always analzyed at the same tube (citrate or heparin /EDTA plasma) to avoid from possible preanalytical errors. However, in emergency cases, sodium citrate tube can be used safely instead of heparinized tube at Cobas c501 analyzer.

Keywords: anticoagulant, D-dimer, plasma, preanalytical phase, tube comparison

PP3-05

THE EFFECT OF FASTING-TO-SATIETY ON ERYTHROCYTE SEDIMENTATION RATE

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OBJECTIVE : One of the preanalytical factors affecting laboratory test results is fasting -to-satiety state. Generally , clinicians prefer patients to give blood in the fasting state. There are not enough studies for the erythrocyte sedimentation rate (ESR) in the literature about how many laboratory tests are affected by hunger and satiety. In this study, it was investigated whether ESR, which is one of the tests used to measure the acute phase response , changes according to the fasting -to-satiety state.
MATERIALS -METHODS: Blood samples were collected from 12 volunteers (8 males, 4 females) between 18-50 years of age at 9:00 am, 10:00 am, 11:00 am and 12:00 pm on 3.8 percent sodium citrate tubes. A standard breakfast of 750 kcal was given to the volunteers after drawing the blood at 09.00 hrs. The samples taken at 09.00 were considered hunger level -basal. The samples taken at 10.00, 11.00 and 12.00 were compared with the baseline level.
RESULTS : The mean age of the volunteers was 34.4 ± 5.79. The ESR from volunteers was found to be lowest at 09.00 [5.5 (3.92-9.8)] and the ESR of the samples taken at 10.00, 11.00 and 12.00 was found to be statistically higher than the basal level [6.2 (4.3-10.7), 6 (4.6-11.8) and 7.8 (4.3-11.5); P values 0.012, 0. 005 and 0.012, respectively].
CONCLUSION : In our study, we found that ESR was affected by the fasting-to-satiety cycle and increased in satiety state. We think that blood samples should be taken at fasting state as much as possible.

Keywords : fasting -to-satiety , erythrocyte sedimentation rate , the preanalytic factors

PP3-06

THE EFFECT OF D-DIMER LEVELS ON HEMOGRAM PARAMETERS

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OBJECTIVES: D-Dimer is a reliable and sensitive index of fibrin deposition and stabilization. Neutrophil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) are novel and inexpensive markers of inflammation that can be studied in all centers. In this study, we aimed to investigate if D-Dimer has any effects on hemogram parameters or not.
MATERIALS -METHODS : This retrospective study was done with the data obtained from 2335 patients. D-Dimer level and hemogram parameters [(red blood cell (RBC), hemoglobin (Hb), white blood cell (WBC), platelet (PLT), mean platelet volume (MPV), NLR and PLR] of patients were obtained. NLR and PLR were calculated as the ratio of neutrophils to lymphocytes and platelets to lymphocytes respectively. Patients were divided into 2 groups according to their levels of D-Dimer: Group 1: < 500 µg/L, Group 2: > 500 µg/L.
RESULTS : No significant difference was observed between the groups with regard to RBC, Hb, MPV, NLR and PLR. However ,there were significant differences among the groups with regard to total WBC (p =0.02) and platelet count (p = 0.03).
CONCLUSION : These results serve the idea that the effects of D-Dimer on the hematopoietic system should be further investi ¬gated experimentally and clinically.

Keywords : D-Dimer, Neutrophil -to-lymphocyte ratio, platelet -to-lymphocyte ratio

PP3-07

MIDKINE BE ACCEPTED AS A NEW OVARY RESERVE BIOMARKER AT THE POLYCYSTIC OVARY SYNDROME ? A PROSPECTIVE STUDY

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OBJECTIVES :Midkine (MK) is a growth factor which has roles in growth, development , proliferation and tissue repair. MKs ' roles in infertility is still understudied . This study was designed to investigate in Turkish population whether MK can be used as a new biomarker in addition to anti-Müllerian hormone (AMH) for the polycystic ovary syndrome (PCOS) or not?
MATERIALS -METHODS :This prospective study (Cerrahpasa Faculty of Medicine Ethical Committee No:3/2011) included 130 PCOS patients and 90 fertile women (FW) aged 24-41 years were scheduled for intracytoplasmic sperm injection (ICSI) at in vitro fertilisation unit during 2011-2016. FSH and LH (RIA), E2 and PRL (IRMA), AMH and MK (ELISA) serum evels on menstrual cycle day 3, body mass index (BMI), MII oocyte rate and fertilisation rate (FR) were all evaluated by ANOVA test and $p<0.05$ was considered statistically significant.
RESULTS: Mean values of hormone and MK levels for the control group (FW) were FSH 5.7 mIU/ml, LH 3.2 mIU/ml, E2 39.1 pg/ml, PRL 15.67 ng/ml, AMH 3 ng/ml, MK 250 pg/ml, MII oocyte rate 74%, FR 93 %, BMI 26.8 kg/m2. For the PCOS group , these were FSH 5.4 mIU /ml ($p<0.05$), LH 5.6 mIU /ml ($p<0.0001$), E2 41.9 pg/ml ($p<0.05$), PRL 15.44 ng/ml ($p>0.05$), AMH 5.83 ng/ml ($p<0.00001$), MK 420 pg/ml ($p<0.000001$), MII oocyte rate 45 % ($p<0.00001$), FR 50 % ($p<0.000001$), BMI 27.3 kg/m2 ($p>0.05$). MK levels (The cut-off value: 420 pg/ml) were proportionally increased with AMH.
CONCLUSION :Consequently , MK can be evaluated as a promising additional ovary reserve biomarker at PCOS.

Keywords : Midkine , Anti-Müllerian hormone , Polycystic ovary syndrome , Intracytoplasmic sperm injection, Serum cut-off value

PP3-08

EFFECT OF CENTRIFUGATION RATE ON SERUM INTACT PARATHORMONE MEASUREMENT IN HEMODIALYSIS PATIENTS

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OBJECTIVES : Since there is no renal excretion of the PTH 7-84 fragment in hemodialysis patients, the reliability of the results in measurement of serum iPTH levels with 2nd generation commercial immunoassay kits is controversial . The effect of centrifugation speed on serum immunology tests has rarely been studied . In this study , we aimed to investigate the effect of double centrifugation on serum iPTH measurement.
MATERIALS -METHODS : Totally 150 patient serum samples (Group I,n=66, hemodialysis patients; Group II, n=32, iPTH>68 pg/mL, creatinine <1.5 mg/dL; Group III, n=32, iPTH <68 pg/mL, creatinine <1.5 mg/dL) were included in the study. Following sample taking, serum samples were centrifuged at 1250xg for 15 minutes. After iPTH measurement, Group I-II-III were centrifuged at 6700xg for 10 minutes and iPTH levels were measured again. To measure the efficacy of the waiting , iPTH levels of 20 patients were re-measured equally without the second centrifugation. iPTH measurements were made on the Architect i2000SR (Abbott ,IL,USA). Bias %, paired sample t-test and ANOVA were used for statistical comparisons.
RESULTS : For Group I, bias=-7.91%, t=6.34 and $p<0.05$ were calculated . For group II, bias =8.83%, t=7.258 and $p<0.05$ were calculated . For group III, bias=-9.88%, t=9.219 and $p<0.05$ were calculated . In the group without double centrifugation , bias =-3.90%, t=0.004 and $p<0.05$ were calculated . When the groups were compared in terms of bias values , no statistically significant difference was found between the second centrifugation groups (Group I, II, III) ($p>0.05$).
CONCLUSION : This study shows that double-centrifugation does not make a significant difference when iPTH is measured in hemodialysis and other patient serum samples.

Keywords: Centrifugation, clinical chemistry tests, parathyroid hormone

PP3-09

THE EFFECTS OF DIETARY SATURATED FATTY ACIDS AND FRUCTOSE ON ACC-1 AND PROINFLAMMATORY MEDIATORS IN MICE LIVER

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OBJECTIVE : It has been reported that dietary saturated fatty acids and fructose may alter the level of some peptides in the liver, but the effects have not been known precisely yet. This study was performed to examine the effects of dietary saturated fatty acids and fructose on fatty acid synthesis and some proinflammatory mediators in mice liver.
MATERIALS-METHODS: Male mice (C57Bl/6, 8-week old, n=40) individually housed and fed ad libitum. Following wash-out period, groups were either fed with a standard chow (C), high monounsaturated fatty acid (MUFA), high saturated fatty acid (SFA) (40kcal%) or high fructose (F) (35kcal%) diets. After the dietary manipulation period, animals were sacrificed. Expression levels of peptides related to the fatty acid biosynthesis (ACC1-phosphorylated ACC1) and proinflammatory peptides (TNFα-IL1β-IL6-TLR4) in the liver were analyzed by Western-blot.
RESULTS : Western-blot analysis revealed that all groups showed high ACC1 expression , whereas the expression levels of phosphorylated ACC 1 were increased in the SFA-F groups. It was also observed that the level of TNFα expression was higher in the SFA-F groups. Although the IL1β and IL6 bands were similar in the MUFA -SFA-F groups , no bands observed in the control group. In addition , TLR4 expression levels in SFA-F groups were higher than control-MUFA groups.
CONCLUSION : High saturated fatty acids and fructose diet affected peptides related to fatty acid synthesis and proinflammation in the liver. Consumption of high quantities of saturated fatty acids and fructose might be recognized as a central factor in the development of chronic disease.

Keywords: Fatty acid synthesis, Inflammation, Fatty Acids, Fructose

PP3-10
DOES MYO-INOSITOL OXYGENASE ENZYME PLAY A ROLE IN THE AETIOLOGY OF POLYCYSTIC OVARIAN SYNDROME?

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OBJECTIVES : In polycystic ovary syndrome (PCOS), myo -inositol (MI) supplements have shown many beneficial effects . MI restores ovarian activity leading to the improved fertility , decrease insulin resistance and androgen production, increases oocyte quality and improving anthropometric measures and lipid profiles in patients with PCOS . In this study , therefore , we aimed to investigate the serum level of myo-inositol oxygenase (MIOX), which is the only enzyme catalysing MI in vivo, in patients with PCOS.
MATERIALS -METHODS : Serum MIOX enzyme levels and other laboratory parameters were compared between sixty patients , who were diagnosed with PCOS for the first time, and sixty healthy individuals of similar age and sex.
RESULTS : MIOX serum levels were not different between the two groups (p = 0.7428). MIOX median and 95% CI were 19.4 and 10.6-39.1 in the control group and 16.4 and 7.6-46.2 in the patient group respectively. Demographic data, biochemical and haematological parameters , hormone parameters were not different except for the lymphocyte count between the two groups. Lymphocyte count was higher in the patient group. Despite the ratio of LH/FSH was high in the patient group, it was not statistically significant.
CONCLUSIONS: Serum MIOX levels do not change in PCOS. It was, therefore, concluded that MI deficiency observed in PCOS was not related to the level of MIOX enzyme which cleaves MI.

Keywords: Myo-inositol oxygenase, polycystic ovarian syndrome, myo-inositol, inositol, D-chiro-inositol

PP3-11
INVESTIGATION OF EFFECTS OF TRIBULUS TERRESTRIS ON LIPID PROFILES AND OXIDIZED LDL IN THE RATS WITH FRUCTOSE INDUCED METABOLIC SYNDROME

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OBJECTIVE: In this study, we aimed to contribute to the literature by examining the effects of Tribulus terrestris(TT) extract on lipid profile and Oxide LDL (Ox-LDL) levels in the etiopathogenesis of metabolic syndrome (MetS) and the development of complications in rats with fructose-induced metabolic syndrome.
MATERIAL-METHODS: 21 Sprague-Dawley rats have been used in this 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 extract for 8 weeks after MetS was formed. After the study. in blood samples were taken , serum glucose , HDL -C, LDL -C, TC, TG, Ox-LDL and insulin levels were studied by ELISA using commercial kits.
RESULT: Serum glucose(124,30±12,68 mg/dL), TG(93,7±9,80 mg/dL), TC(85, 21±8,91 mg/dL), LDL-C(12,25±1,75 mg/dL), Ox-LDL (3,98±0,44 microgr/mL), insulin(10,18±0,55 mIU/L) and HOMA-IR(3,12±0,30) levels were compared to the control group found statistically significantly high in the MetS group (p<0.01). Serum LDL(45,58±2,33 mg/dL), Ox-LDL(3,51±0,186 microgr/mL), insulin(8,71±0,56 mIU/L) ve HOMA-IR (2,34±0,28) levels was compared to the give TT extract group found statistically significantly decreased in the MetS group (p<0.05). But serum HDL levels (13,91±1,25 mg /dL) significantly increased compared to MetS group(12,25±1,75 mg/dL) (p<0.05).
CONCLUSION : It was observed that administration of TT extract in MetS-induced rats with fructose had positive effects on lipid profile and serum Ox-LDL levels. The use of the TT extract seems to be a promising option in the treatment and the prevention of MetS development.

Keywords: Metabolic Syndrome, Ox-LDL, Tribulus terrestris

PP3-12
SERUM OMENTIN-1 LEVELS IN OBESE CHILDREN

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OBJECTIVES: Obesity is an important cause of morbidity, it has seen increasing frequency in childhood. Studies have reported that 33% of adults and 20-27% of children and adolescents are obese . Recently it has been shown that the prevalence of obesity in the childhood group is higher than past years. Omentin is an adipokine which is synthesized from visceral fat tissue but not synthesized in subcutaneous fat tissue. Omentin has been shown to increase insulin-mediated glucose uptake , especially in adipose tissue . Studies have shown that plasma omentin levels in obese , PCOS and diabetic patients , which play an important role in the pathogenesis of insulin resistance and in these conditions omentin is significantly lowered . The aim of this study is to investigate the relationship between obesity and omentin levels in children .
MATERIALS-METHODS: The study included obese children with a body mass index (BMI) greater than 95% percentile in and healthy children BMI lower than 85 % percentile . Obese and healthy individuals had similar age and sex distributions . Glucose , insulin , lipid profiles , thyroid panels and metabolic markers were evaluated .
RESULTS: The levels of omentin in obese children were significantly lower than control group (p <0.05). Spearman correlation analysis results for all participants showed that omentin levels were negative related with triglyceride, cholesterol, ft 4, insulin , homa -IR, body weight , waist circumference and BMI -percentile values.

CONCLUSION : Our findings indicate that serum omentin-1 levels are lower in obese children than in non-obese individuals . Omentin -1 can be used as a metabolic biomarker in children and adolescents.

Keywords: Omentin-1, omentin, obesity, childhood obesity, adipokines

PP3-13
CRP LEVELS IN SERA OF PATIENTS WITH PRIMARY SYPHILIS

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OBJECTIVE : Syphilis is a bacterial disease caused by the spirochete species called Treponema pallidum. The bacteria induce inflammatory cytokines which involve in immune response in early syphilis . Consequently oxidative stress markers are increased in early syphilis . CRP , acute phase reactant , has been investigated in syphilis in recent years. The aim is to evaluate CRP levels in sera of patients with primary syphilis.
MATERIALS -METHODS : During the last five years , 315 suspected primary syphilis patients were investigated by VRLD tests (Syphillis Rapid Test Cassetle Wellkang Ltd t/a Wellkang Tech Consulting Rapid Diagnostics , London , UK). 30 healthy control group was included. CRP serum levels were measured Cobas 6000 model.
RESULTS : Out of 315 suspected primary syphilis patients 12 were positive VRLD tests (10 males, 2females). The ages of patients and controls were 28-46, 25-48 years respectively . Mean serum CRP levels were 2.11 ± 0.05 mg /l, 0.60 ± 0.18 mg /l in syphilis patients and controls respectively . There was a significant difference between the two groups (P <0,05).
CONCLUSIONS: Significant increase of CRP in syphilitic patients was showed. This may be attributed to humoral , mild inflammatory and delayed hypersensitivity responses to T. pallidum in chancre lesions as well as oxidative stress. Results of our study are consistent with other studies.

Keywords: Primary syphilis, CRP, VDRL

PP3-14
USE OF ALTERNATIVE BIOCHEMICAL PARAMETERS IN BLOOD CULTURES IN THE DIAGNOSIS OF INFECTION IN THE EMERGENCY DEPARTMENT

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OBJECTIVE :Procalcitonin (PCT) and C-reactive protein (CRP) are important biological markers used in the diagnosis of severe infections. Although blood culture is the gold standard diagnostic method for the diagnosis of infectious diseases, the results can be obtained after 48 hours. The aim of this study is to investigate the diagnostic accuracy of complete blood count parameters as RDW, PDW, NLR, PLR, CRP, and PCT levels, which can be used as a alternative to culture for the diagnosis of infection faster.
MATERIALS -METHODS :We retrospectively investigated 1034 patients who were admitted to the emergency department of Tepecik Training and Research Hospital. Patients were divided into two groups according to the results of blood culture: group 1; bacteremia group with positive blood culture (n=220) and group 2; nonbacteremia group with negative blood culture (n=812). Bacteremia group was further divided into two subgroups: gram positive bacteremia (n=167) and gram negative bacteremia (n=53).
RESULTS : The PCT, CRP, RDW, PDW, NLR and PLR values were significantly higher in patients with positive blood culture compared with negative blood culture. The serum PCT levels were 3.80 (0,83-37,68) and 0,43 (0,16-2,61) ng/mL,respectively(p<0.001) in the patients with gram negative and gram positive bacteremia. Cut off value of PCT at 0,45ng/mL had %90 sensitivity and %64 specifity at gram negative bacteremia diagnosis.
CONCLUSION :It is important that RDW, PDW, NLR, PLR values can be measured quickly, easily and cheaply by automatic hematological analysis. However, among the markers tested, PCT has the best diagnostic performance for gram negative bacteremia.

Keywords : Procalcitonin , C-reactive protein , bacteremia , blood cultures , complete blood count

PP3-15
EXAMINATION THE ANTIOXIDANT AND PREVENTIVE EFFECTS OF BROMELAIN IN GASTRIC ULCER MODEL IN RATS

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OBJECTIVES: Bromelain is found in all parts of the Pineapple, which represents the combination of protease enzymes that have similar effects. The research on the effects of Bromelain, focused anti-inflammatory, fibrinolytic, antitumoral and antibacterial effects . In our study , we have investigated antioxidant and preventive effects of Bromelain in ethanol induced gastric ulcer model in rats.
MATERIAL-METHODS: We examined in gastric tissue reactive oxygen species (ROS) by chemiluminescence (CL), Malondialdehyde (MDA) and Glutathione (GSH) levels measured by spectrophotometer , Cytokines levels determined by ELİSA. Rat were administered saline or bromelain by oro-gastric gavage for 4 days. On the 5th day, gastric ulcer induced by ethanol and rats separeted 4 group (n=6), Control, Bromelain, Ulcer and Bromelain-treated ulcer. After decapitation samples were rapidly removed.
RESULTS : TNF-α and IL-1β (pg/ml): Control : 45,3±7,4, Ulcer: 102,6±11, Bromelain : 51,9±1,7, Bromelain -treated ulcer:81,4±15 and Control: 95,2±1,3, Ulcer: 129,5±7, Bromelain :98,8±2,6, Bromelain -treated ulcer: 100,6± 8. ROS, CL levels (rlu/mg): Control (lum):59,2±24, Ulcer : 471 ,4±121 , Bromelain : 60,1±23, Bromelain-treated ulcer:107±12 and Control (luc): 67,6±39, Ulcer: 427, 9 ±87 Bromelain : 125,7±19, Bromelain -treated ulcer:127±28. MDA (nmol/g): Control : 33,1±0,8, Ulcer: 60,3±6, Bromelain : 38,7±0,6, Bromelain -treated : 40,1±1,4 and GSH (µmol/g): Control:14,2±0,6, Ulcer: 9,4±1,5, Bromelain: 16,7± 3,8, Bromelain-treated: 12,1.
CONCLUSIONS : According our results were observed , that Bromelain leads decreased inflammatory cytokines significantly (p <0.05) and induced GSH and decreased MDA levels vs. ulcer groups (p <0.01) significantly . Macroscopic ulcer index of tissues supports our findings. Additionally , Bromelain reduced ROS levels vs. ulcer groups significantly (p <0.001). These findings indicate a preventive and antioxidant potential of Bromelain against gastric ulcer.

Keywords: Bromelain, Gastric ulcer, ulcer prevention, protease enzymes

PP3-16
NEUTROPHIL TO LYMPHOCYTE RATIO IN PATIENTS WITH ISCHEMIC STROKE

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OBJECTIVES: A stroke is classically defined as any disease process that results in a loss of blood flow to the brain , causing permanent focal neurologic syndromes. Strokes are the second most common cause of death after coronary artery disease as a major cause of disability worldwide and a major contributor to the global burden of disease in western countries. As an important and easy-to-measure inflammatory marker , neutrophil -to-lymphocyte ratio (NLR) may present a high association with mortality in patients with stroke. The aim of this study is to evaluate the neutrophil to lymphocyte ratio (NLR) in these patients with ischemic stroke.
MATERIALS -METHODS : This is a retrospective observational study ; evaluating the NLR of 60 healthy control aged 59.18.6±8.04 years and 61 patients with ischemic stroke aged 62.47±12.61 years. Patients with chronic hepatic and renal disease and inflammatory disorders were excluded in the study. NLR ratio was calculated with Abbott Cell Dyne heamotolgy analyzer. Statistical analysis was performed with IBM SPSS v21.
RESULTS : The ischemic stroke patients [2.38 (0.85-3.62)] had significantly higher NLR compared to the control group [1.79 (0.92 -3.14)] (p<0.001) respectively.
CONCLUSIONS : NLR may be calculated as a simple and basic marker for detection of inflammation of ischemic stroke patients . Novel aspects of neutrophil biology may also contribute to ischemic brain injury. This ratio can be used in clinical settings such as ischemic stroke.

Keywords: Neutrophil, Neutrophil to Lymphocyte Ratio, Ischemic Stroke

PP3-17
INVESTIGATION OF PROCALCITONIN LEVELS IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVE : Chronic obstructive pulmonary disease (COPD), a common preventable and treatable disease, is characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. The most important risk factor for COPD is exposure to cigarette smoke. Other risk factors include air pollution , childhood infections , genetic , advanced age, airway hyperresponsiveness , and occupational exposure . Procalcitonin (PCT) is a biomarker that is used to predict bacterial infections at a dose of 13 kDa consisting of 116 amino acids. Findings from studies indicate that serum PCT levels have a high sensitivity and specificity in monitoring inflammatory response in patients presenting with COPD exacerbation. Our goal in our study is to assess the clinical utility of PCT in the diagnosis of COPD with these findings.
MATERIAL -METHOD : 69 controls and 149 COPD patients were included in the study and PCT values were evaluated retrospectively in the laboratory automation system.
RESULTS : PCT values were significantly higher in patients with COPD compared to control group (0,799 ± 0,31 vs 0,600 ± 2,32, p <0.01).
CONCLUSION : Many patients with COPD are chronically colonized with bacterial pathogens . In bacterial colonization , it damages the air pathway , resulting intense inflammation and even more intense colonization . Exacerbations are manifested by increased inflammatory markers in the airway and inflammatory markers such as PCT. From these findings, it is thought that PCT can be used as a marker for the determination of COPD severity and prediction of prognosis.

Keywords: COPD, Procalcitonin, Inflammation

PP3-18

THE RELATIONSHIP BETWEEN DISEASE ACTIVITY SCORE AND ERYTHROCYTE SEDIMANTATION RATE AND C-REACTIVE PROTEIN LEVELS IN RHEUMATOID ARTHRITIS PATIENTS

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OBJECTIVES : Rheumatoid arthritis (RA) is a systemic inflammatory disease that can involve other tissues and organs as well as synovial tissues . RA patients who have active disease with longer disease duration have a two-to threefold increase mortality and morbidity . In this study the relationship between disease activity score (DAS 28 score) and serum C-reactive protein (CRP) and erythrocyte sedimantation rate (ESR) levelswere searched in patients with RA . MATERIALS -METHODS : In 77 RA and 31 healthy control subjects , CRP and ESR level were measured and DAS 28 score calculated . CRP (mg /dL) and ESR (mm /hr) levels were compared with DAS 28 score . RESULTS : The mean CRP level was 1.3 ±5.1 mg/dL in the patient group, and 0.3 ±0.2 mg/dL in the control group . CRP level was significantly higher in the patient group ($p<0.05$). The mean ESR level was 31.9 ±22.2 mm/hr in the patient group , and 25.2 ±15.2 mm/hr in the control group . There was not a significant difference in ESR levels between two groups . CONCLUSIONS : The determination of disease activity in patients with RA is important and will change the treatment strategies . The search for simple and useful marker in daily practice continues from this point . In this study it was observed that CRP could meet this need.

Keywords: CRP, ESR, DAS 28 score, Rheumatoid Arthritis

PP3-19

THE EFFECT OF ANTI-TNF THERAPIES ON SERUM PROHEPCIDIN LEVEL IN THE PATIENTS WITH RHEUMATOID ARTHRITIS

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OBJECTIVES : Cytokines has been shown to play an important role in the pathogenesis of rheumatoid arthritis . Hepcidin production is induced by regulatory cytokines , IL-6 and inflammation . In our study; we aimed to assess the effect of anti-TNF therapy on prohepcidin level in patients with RA.
MATERIALS-METHODS: 59 patients, aged 18-75, diagnosed as RA according to 2010 ACR/EULAR classification criteria and 64 healthy volunteers who were appropriate in terms of age and gender were included in the study. Patients were divided into anti-TNF and DMARD groups according to the drugs they used. Prohepsidin , Hgb , Fe , Ferritin and Transferrin levels were measured in all groups.
RESULTS: Hgb ($p =0.026$) and iron ($p = 0.001$) levels in the control group were significantly higher than in the anti-TNF and DMARD groups . There was no statistically significant difference between the groups in ferritin and transferrin levels. According to DMARD (594.2 pg/ml) and control group (534.4 pg/ml), prohepcidin level was lower in anti-TNF group (491.04 pg/ml) but there was no statistically significant difference ($p> 0.05$). There was no statistically significant difference in prohepcidin levels between patient [(anti -TNF + DMARD) (569,1 pg/ml)] and control groups (534.4 pg/ml) ($p> 0.05$).
CONCLUSIONS : In our study , we found low prohepsidin levels in the anti-TNF group but the lack of cytokine data was a major limitation of our study. To contribute to the effectiveness of our work , it is required to have longer-term and comprehensive studies evaluating RA patients who are early period and have had no medical treatment.

Keywords: Rheumatoid arthritis, IL-6, prohepcidin, anti-TNF treatment

PP3-20

EFFECTS OF ALISKIREN, A RAAS INHIBITOR, ON CARRAGEENAN- INDUCED PLEURISY MODEL OF RATS

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OBJECTIVES : Pleurisy is one the most prevalent inflammatory diseases in all acute lung injuries . Renin angiotensin aldosterone system (RAAS) has been reported to contribute in Pleurisy. However there are only limited studies to show relation between RAAS and Pleural inflammation . Aliskiren (ALIS) is an antihypertensive drug and inhibits this system in the first step . Our aim is to investigate the potential preventive effects of aliskiren in a model of carrageenan (CAR)-induced lung injury. In addition, we aimed to compare effects of aliskiren with standard anti -inflammatory agents : dexamethasone (DEXA) and Indomethacine (INDO).
MATERIAL -METHODS : The rats were divided into seven groups (n=5): SHAM , CAR , CAR +ALIS 50mg/kg, CAR +ALIS 100 mg/kg, CAR +ALIS 200 mg/kg, CAR +INDO , CAR +DEXA . Pleurisy model was applied by CAR (0,2 ml % 2) injection into the pleural cavity. After experiment biochemical (SOD, GSH and MDA) and molecular (TNF -α, IL-1β, and NF -KB) examination were performed on lung tissues of rats .
RESULTS : In this study, pleural inflammation decreased superoxide dismutase (SOD) activity and glutathione (GSH) and increased malondialdehyde (MDA) levels in lung tissues of rats while aliskiren increased the SOD and GSH , and decreased MDA. Also pleurisy caused a significant increase in pro-inflammatory cytokine mRNA expressions (TNF -α, IL -1β and NF -KB) while aliskiren administration decreased these cytokine mRNA expressions .
CONCLUSIONS : This study suggested that aliskiren, a RAAS inhibitor, protects the lung from CAR -induced pleurisy damage by regulating inflammation and antioxidant-oxidant balance.

Key words: Aliskiren, pleurisy, cytokines, oxidative stress, rat

PP3-21

LIDIPS, LIPOPROTEINS, INFLAMATORY AND ATHEROGENIC MARKERS IN PATIENTS WITH BEHÇET ' S DISEASE

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OBJECTIVES: Behçet' s Disease is an inflammatory vaculitis which is presented with immunological and endothelial changes . The synergistic effect of endothelial dysfunction with focal lipid deposition , immune system activation , oxidative stress and atherogenic dyslipidemia in inflammatory vasculites is well known . The aim of this study is to evaluate blood levels of diagnostic markers which can be used in Behçet' s patients with vascular involvement.

MATERIALS -METHODS : 50 Behçet ' s patients (22 of which had vascular involvement) and 30 healthy controls who were admitted to Ankara Numune Training and Research Hospital Rheumatology outpatient clinics were included. hsCRP , Tumor necrosis factor -α (TNF -α), apolipoproteinA 1 (apoA 1), apolipoproteinB (apoB), HDL , LDL , Triglyceride , Total cholesterol , homocysteine and ischemia modified albümin (İMA) levels were analyzed . Normality tests were made with Shapiro -Wilk test . Between group comparisons were made with ANOVA for normally distributed variables and with Kruskall -Wallis test for non -normally distributed variables . $p< 0.05$ was accepted statistically significant.
RESULTS : hsCRP , TNF -α, homocysteine , IMA , apoA 1, apoB and HDL levels in patient and control groups were significantly different ($p <0.001$, $p=0.001$, $p<0.001$, $p<0.001$, $p=0.005$, $p<0.001$, $p<0.001$ respectively).

In Behçet 's patients with vascular involvement , homocysteine and TNF -α levels were significantly higher than in Behçet 's patients without vascular involvement (p=0.035, p=0.010 respectively).
CONCLUSION : Increased levels of inflammatory and atherogenic markers in Behçet 's patients is an expected outcome due to inflammatory nature of the disease . Especially , elevated levels of homocysteine and TNF -α make these markers candidate diagnostic tools which can be helpful in clinical evaluation of Behçet's patients with vascular involvement.

Keywords: Behçet's disease, inflammation, atherosclerosis

PP3-22

INVESTIGATION OF PLATELET TO LYMPHOCYTE RATIO IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVES : Chronic obstructive pulmonary disease (COPD) is a chronic airway inflammatory disease with a high prevalence rate worldwide and is one of the main causes of morbidity and mortality globally . The pathogenesis of chronic obstructive pulmonary disease (COPD) is traditionally based on airflow limitation . Platalet to lymphocyte ratio (PLR) are novel inflammatory markers which have been investigated for a variety of chronic diseases . Our aim in this study is to determine the PLR levels in individuals with COPD diagnosis and its clinical utility in diagnosis of the disease.
MATERIALS -METHODS : 67 control , 149 COPD patients were enrolled to this study. Participants with known systemic diseases, including cardiovascular disease , renal disease , gastrointestinal disease , acute infection , chronic inflammation and cancer were excluded. Platalet and lymphocyte counts were measured with Beckman Coulter LH 780 heamotology analyzer . Statistical analysis was performed with SPSS v21.
RESULTS : PLR was significantly higher in patients [200.6 (27.6-1156.2)] compared to controls [135.6 (37.8-455.0)] (p<0.001).
CONCLUSION : Inflammation plays an important role in COPD pathology . Studies have shown that PLR levels are increased in various inflammatory diseases. Our results support our findings in this study. As a result, it is thought that PLR can be used as a useful and economical marker in the diagnosis of COPD.

Keywords: COPD, PLR, Inflammation

PP3-23

THE RELATIONSHIP BETWEEN PROCALCITONIN LEVELS AND ISCHEMIA MODIFIED ALBUMIN

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OBJECTIVES : PCT which is usually produced by thyroid parafollicular C cells is propeptide of calcitonin . During the systemic infection , tissues other than thyroid can also secrete PCT. PCT is also an acute phase protein such as CRP . However , PCT appeared earlier than CRP at the early stage of inflammation . Ischemia modified albumin (IMA) is a new marker used in states which accompanied by inflammation . We plan to see IMA value which change at the different PCT levels.
MATERIALS -METHODS : IMA levels were measured in patients who had PCT, CRP, and hemogram screening in our hospital . 5 groups were seperated according to PCT levels :1.group :<0,5ng/ml,2.group :0,5-2ng/ml, 3.group : 2-5ng/ml,4.group :5-10ng/ml,5.group :>10ng/ml. At the difference between CRP, PCT, neutrophil/lymphocyte ratio, WBC and IMA levels were evaluated, nonparametric Kruskal Wallis test was used due to the values didn' t show normal distribution but spearman correlation test was used to the correlation was examined.
RESULTS : A total of 50 patients (19female , 31male; mean age 57±24years) were included in the study . There wasn' t statistically significant difference among the groups in terms of IMA , CRP, WBC and N/L ratio. There was not significant correlation PCT between İMA,CRP, WBC and N/L ratio. However, there was significant positive correlation N/L ratio between CRP and WBC (respectively r:0,304, p:0,032, r:0,558, p<0,001).
CONCLUSIONS : There wasn't significant correlation PCT between IMA in the study . This may be due to the effect of patient care . We think that it is appropriate to reevaluate the relationship between PCT and IMA by planning the study with pretreatment and more homogenous patients.

Keywords: Ischemia modified albumin, Procalcitonin, C-Reactive Protein

PP3-24

EFFECT OF DIFFERENT EXTRACTION TECHNIQUES ON ANTI-INFLAMMATORY ACTIVITY OF PROPOLIS

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OBJECTIVE: Propolis is a honeybee product and it has been used for its health benefits, which are strongly related to its phenolic content.The aim of this study was to investigate the effect of different extraction techniques on the phenolic content and the anti -inflammatory / antioxidant effects of solid propolis samples.
MATERIALS -METHODS :Ethanol , water and polyethylene glycol were used to dissolve the propolis samples and ultrasonic treatment was also applied to propolis samples extracted in water . Antioxidant activity was determined by utilization of FRAP , TEAC and DPPH methods . Anti -inflammatory activity was evaluated through measuring the percent inhibition of hyaluronidase and xanthine oxidase activity by propolis extracts . The phenolic molecules were determined with LC MS/MS.
RESULTS : PEG -extracted propolis samples which have highest levels of Epicatechin (1.54 ng/mL), Vanilic acid (830 ng/mL), Quercetin (306 ng/mL) and Ellagic acid (348ng/mL), showed higher antioxidant activity compared to other propolis samples . Hyaluronidase activity was inhibited by propolis samples which was extracted by water with ultrasonic treatment (40Hz) for 5 minutes the most . Ultrasonic treated samples also returned results of significantly higher phenolic compounds mainly ; cafeic acid , caempherol , ferulic acid, rutin, paracoumaric acid, ellagic acid, naringenin , pelargonidine , trans cinnamic acid in propolis samples compared to ethanol and PEG extracted propolis samples.
CONCLUSIONS : Our data showed that the anti-inflammatory and antioxidant effect of propolis samples were closely correlated with its phenolic content which are released by extraction techniques . Ultrasonic treatment seems as an efficient and simple method to yield more phenolic compounds.

Keywords: propolis, anti-inflamatuvar, extraction techniques

PP3-25

ELEVATED NEUTROPHIL / LYMPHOCYTE RATIO IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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OBJECTIVES : Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory disease of the lung . It is a preventable and treatable disease defined by poorly reversible airflow limitation . Chronic inflammation involves activation and recruitment of leukocytes , especially neutrophils . Neutrophil / lymphocyte ratio (NLR) has emerged as a new biomarker of inflammation. Our aim was to find out the neutrophil/lymphocyte ratio in patients with COPD the diagnosis and follow-up.
MATERIALS -METHODS : Within the past year 67 control , 149 COPD patients were enrolled to this retrospective study . Participants with known systemic diseases , including cardiovascular disease , renal disease , gastrointestinal disease, acute infection, chronic inflammation and cancer were excluded . Neutrophil and lymphocyte counts were measured with Beckman Coulter LH 780 heamotology analyzer. Statistical analysis was performed with SPSS v21.
RESULTS: NLR was significantly higher in patients [6.2 (0.8-241)] compared to controls [2.4 (0.9-53)] (p<0.001).
CONCLUSIONS : In such clinical settings , physiological response of circulating leucocytes is characterised by an increase in neutrophil counts and a decline in lymphocyte counts. According to this study's results, NLR might be useful marker for COPD.

Keywords: COPD, İnflamation, NLR

PP3-26

THE EFFECT OF THE TRICYCLIC ANTIDEPRESSANT AMITRIPTYLINE ON MAMMALIAN BUTYRYLCHOLINESTERASE : IN VITRO AND IN SILICO STUDIES

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OBJECTIVE : Butyrylcholinesterase (BChE), which is best known for its abundant presence in plasma , acts as a "gatekeeper ", detoxifying neurotoxic carboxylic /phosphoric acid esters before they reach to acetylcholinesterase (AChE). It also hydrolyzes acetylcholine when AChE is inhibited . BChE is believed to play an important role in Alzheimer 's disease (AD) progression . In this study , we aimed to investigate the inhibitory activity of amitriptyline , a tricyclic antidepressant, against horse serum BChE.
MATERIALS -METHODS : Horse serum BChE activity in the presence of amitriptyline was measured by Ellman's colorimetric method using the substrate analog butyrylthiocholine. Binding pose prediction for amitriptyline and bonding calculations for the BChE–amitriptyline complex were performed by molecular docking and protein–ligand interaction profiling, respectively.
RESULTS: Enzyme kinetic data showed that amitriptyline was a potent inhibitor of horse serum BChE (IC50 = 10 μM), acting in a linear-mixed type inhibitory manner ($V=1070 \pm 28$ U mg^{-1} protein; $K_s = 0.169 \pm 0.019$ mM; $K_i = 2.25 \pm 0.66$ μM; $\alpha = 3.26 \pm 1.52$). Computational studies demonstrated that amitriptyline was well accommodated in the active-site gorge of horse serum BChE through a combination of hydrophobic, π-stacking and ionic interactions.
CONCLUSIONS : Amitriptyline itself inhibits horse serum BChE at doses only slightly above therapeutic doses . Therefore , it is tempting to speculate that amitriptyline may guide to the design of structurally analogous BChE inhibitors that can be used as more effective anti-AD agents.

Keywords : horse serum butyrylcholinesterase , Alzheimer 's disease, amitriptyline, enzyme inhibition, molecular docking

PP3-27

THE EFFECT OF HDL-BOUND AND FREE PON1Q192R ISOENZYMES ON COPPER-INDUCED LDL OXIDATION

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OBJECTIVE : High -density lipoprotein (HDL) confers protection against atherosclerosis and the antioxidative properties of paraoxonase 1 (PON1) has been suggested to contribute to this effect of HDL. The PON1 exist in two major polymorphic forms (Q and R), which regulate the concentration and activity of the enzyme . The aim of this study was to evaluate the effects of the purified PON1 Q192R and the partially purified HDL-bound PON1 Q192R isoenzymes (HDL-PON1 Q192R) on LDL oxidation.
MATERIALS -METHODS: PON1Q or PON1R isoenzymes were purified from human serum . HDL -bound PON1 Q192R allozymes partially purified from human serum . LDL oxidation was achieved by incubating lipoprotein with copper ions (CuSO4) in the absence or presence of purified serum PON1 Q192R or HDL-bound PON1 Q192R.
RESULTS : Cupric ion -induced LDL oxidation was reduced up to 48% by purified PON1 Q192, but only 33% by an equivalent activity of PON1 R192. HDL-PON1 Q192 isoenzyme caused a 65% reduction, whereas HDL-PON1 R 192 isoenzyme caused only 46% reduction in copper ion-induced LDL oxidation.
CONCLUSION : PON1Q and PON1R allozymes may have different protective characteristics against LDL oxidation . These data indicate that the protection against LDL oxidation provided by HDL -PON1 Q192R isoenzymes is more prominent than the purified enzymes.
Keywords : Paraoxonase 1, PON1 polymorphism , High -density lipoprotein , Purification, Low-density lipoprotein oxidation

PP3-28

INHIBITION OF COPPER-INDUCED LDL OXIDATION BY PON1Q192R ISOENZYMES: EFFECT OF CALCIUM

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OBJECTIVES : Human serum paraoxonase 1 (PON1) is a calcium dependent esterase that hydrolyzes organophosphates and also arylesters such as phenyl acetate. PON1 prevents LDL oxidation by hydrolyzing lipid peroxides. PON1 is inhibited by various chelating agents, heavy metal ions, and sulfhydryl reagents. In our study we investigated the effect of calcium on LDL oxidation of purified PON1 Q192R isoenzymes.
MATERIALS -METHODS : PON1 Q192R isoenzymes were partially purified from human serum. Both allozymic forms were treated by preincubation with 1 mM EDTA for 15 minutes . LDL oxidation was induced by copper ions . Formation of thiobarbituric acid-reacting substances (TBARS) was used as a measure of lipid peroxidation . Arylesterase activities were measured spectrophotometrically by using phenylacetate as the substrates.
RESULTS : Addition of 1 mM EDTA to partially purified HDL-PON1 Q192R isoenzymes inhibited 100% arylesterase activities . Inactivation of PON1 for arylesterase activity by the addition of EDTA did not reduce the abilities of both allozymic forms in protecting LDL from oxidation.
CONCLUSION : Ca+2-dependent inhibition of PON1 Q192R arylesterase by using the metal chelator EDTA , did not alter PON1's ability to inhibit LDL oxidation . PON 1's ability to protect LDL from oxidation may not require calcium.

Keywords: Paraoxonase 1, PON1 polymorphism, calcium, LDL oxidation

PP3-29

EVALUATION OF CHALCONE DERIVATIVES AS INHIBITORS OF GLUTATHIONE S-TRANSFERASE

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OBJECTIVES : Glutathione S-transferases (GSTs) are the superfamily of multifunctional detoxification isoenzymes and play crucial role cellular signaling . The present paper focuses on the role of 2' -hydroxy -4-methoxychalcone , 4' -hydroxychalcone , 4- fluorochalcone , 4,4' - diflurochalcone , 4- fluoro -4' -methoxychalcone , 4-methoxychalcone , 4-nitrochalcone and in vitro inhibition of GST activity.
MATERIALS -METHODS : For this purpose , GST was purified from human erythrocytes using GSH-agarose affinity chromatographic method. The chalcone derivates were tested various concentrations on in vitro GST activity .
RESULTS : GST was purified from human erythrocytes with 3.0 EUxmg -1 specific activity and 29.03% yield. Ki constants of compounds were found in the range of 7.76-41.93 μM. According the results, 4- fluorochalcone showed better inhibitory effect compared to the other compounds . The inhibition mechanisms of 2' -hydroxy -4-methoxychalcone and 4-methoxychalcone were non-competitive , while 4' - hydroxychalcone , 4- fluorochalcone and 4,4' -diflurochalcone were competitive . 4- fluoro -4' - methoxychalcone and 4-nitrochalcone had no inhibitory activity on GST.
CONCLUSION : Chalchone derivatives are showed highly inhibitory effect on GST enzyme activity. Hence, this compounds and their derivatives can be used in medical.

Keywords: Enzyme purification, inhibition, chalcone, glutathione S-transferase

PP3-30

IN VITRO INHIBITION EFFECTS OF SOME NATURAL PHENOLIC COMPOUNDS ON SOME ENZYME ACTIVITIES

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OBJECTIVES : Humans have been use natural products for medicinal usage for years. Also, natural products of therapeutic significance are compounds derived from animals , plants , or any microorganism . In this study , chrysin , carvacrol , hesperidin , zingerone , and naringin as natural phenols showed excellent inhibitory effects against human (h) carbonic anhydrase (CA) isoforms I and II, α -glucosidase , acetylcholineesterase (AChE), and butyrylcholinesterase (BChE).
MATERIAL -METHODS : In this part, both CA isoenzymes were separated and purified by Sepharose- 4B-L-tyrosine sulphanilamide affinity chromatography in a single stage. The inhibitory efficacy of natural phenolic compounds on BChE/ AChE activities was obtained conforming to the spectrophotometric procedure of Ellman et al. On the other hand, α-Glycosidase inhibitory efficacy was performed using p-nitrophenyl-D-glycopyranoside (pNPG) as the substrate, according to the procedure of Tao et al .
RESULTS : These phenolic compounds were tested for the inhibition of α-glycosidase , CA , AChE , and BChE enzymes and demonstrated efficient inhibition profiles with Ki values in the range of 3.70±0.92–79.66±20.81 nM against hCA I, 2.98±0.33–84.88±40.32 nM against hCA II, 4.93±2.01-593.60± 134.74 nM against α-glycosidase, 0.52±0.18-46.80±17.15 nM against AChE, and 1.25 ± 0. 22 - 32. 08 ± 2.68 against BChE .
CONCLUSIONS : The inhibition of α-glucosidase, acetylcholinesterase (AChE) and butyrylcholinesterase (BChE) enzymes of these compounds may be beneficial for diabetes, alzheimer and other neurodegenerative diseases.

Keywords : acetylcholinesterase , α-glycosidase , butyrylcholinesterase , carbonic anhydrase, enzyme inhibition

PP3-31

RAPID METHOD FOR DETERMINATION OF ACUTE MYOCARDIAL INFARTION : A NEW DESIGN OF ELECTROCHEMICAL BIOSENSOR

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OBJECTIVES: AST has significant clinical value in acute myocardial infarction. We aimed to design a biosensor for the quantitative determination of AST enzyme in a short time and an affordable cost .
MATERIALS -METHODS : Polymerization of the biosensor active layer developed for the AST assay was immobilized with UV, BSA, gelatin, malate dehydrogenase, AST and glutaraldehyde. L-Alanine changing in the range of 1.5-15 mM and α-oxoglutarate 25-100 mM were investigated in the reaction medium. The results were compared with spectrophotometric results. Optimization of the bioactive layer used for the designed biosensor were performed .
RESULTS : The response current in the range of 0.2-1.2V was realized in the cyclic voltamogram where the scanning speed was 0.02V/s. In bioactive layer optimization , 0.06g of BSA, 0.45g of gelatin and 2.5% of glutaraldehyde were determined . Bland Altman analysis comparing the averages of biosensor and spectrophotometric results and Pearson correlation analysis in which correlations were evaluated .
CONCLUSION : The AST biosensor we designed and 10µl of the RandoxAS 1267 enzyme kit were used at reasonable cost and in a short period of time 1 minute 12seconds. We think that it could be suitable for clinical use as a point of care testing . Correlation analysis revealed a strong and significant correlation between the two methods when the r-value was 0.999 and the p-value was <0.01. In addition , despite the use of 500 µl of kit per sample by spectrophotometric method we can obtain results for more than one sample with 10µl AST enzyme immobilized on Au-electrode with the biosensor we designed.

Keywords: Acute myocardial infarction, Aspartate aminotransferase, Biosensor

PP3-32

INVESTIGATION OF THE IN VITRO EFFECT OF ZINC ON THE LACTATE DEHYDROGENASE ACTIVITY

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OBJECTIVE: Zinc is a inorganic substance taken from outside of the body. It has important role in an organism , because it organizes activity of enzyme and controls gene expression, joins structure of proteins and makes their stabilization. In this study , examining the effect of zinc sulfate on the activity of the enzyme lactate dehydrogenase in the last step of glycolysis was aimed .
MATERIALS -METHODS : Lactate dehydrogenase was addded in the presence of zinc sulfate at 3 different concentrations as 1mg /ml ,0.5 mg /ml , and 0.25 mg/ml. Activity values at 5 different substrate (pyruvate) concentrations were determined spectrophotometrically .
RESULTS: Km and Vmax values were determined. The Vmax value of LDH was calculated to be 1.43 µmol pyruvate/ mg protein/ minute , Km value 32.57 mM. When 1, 0.5 and 0.25 mg/ml zinc sulphate were added to the reaction , LDH enzyme inhibition rates were 81 .2% , 77 ,7% and 70 .7% respectively .
CONCLUSIONS : Changes in the activity of the enzyme LDH have been associated with many diseases. In this study it was determined that the increase in zinc sulphate concentration caused a significant decrease in both the Km and Vmax values of the enzyme and that enzyme inhibition continued even if the substrate concentration was increased . This indicates that the inhibition type is uncompetitive inhibition. For this reason, excessive zinc ingestion or exposure to substances with zinc in the structure may cause adverse effects on the organism.

Keywords: Zinc, Lactate Dehydrogenase, Inhibition

PP3-33

ANTI-INFLAMMATORY EFFECT OF HIBISCUS SABDARIFFA L. BY LIPOXYGENASE INHIBITION

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OBJECTIVES: Lipoxygenases (LOXs, linoleate: oxygen reductase, E.C.1.13.11. 12) are a family of iron-containing dioxygenases . Prevention of inflammation is important in multifactorial diseases such as arthritis , respiratory insufficiency , cancer, allergies, autoimmunity , neurodegeneration etc. In this context, there are many studies on the investigation of specific inhibitors of lipoxygenases which is one of the enzymes that effect inflammation . Recently natural sources such as plants with biological activity gain importance because of their reduced side effects. In this study, it was aimed to investigate the effect of Hibiscus sabdariffa plant extract on the inhibition of lipoxygenase enzyme.
MATERIALS-METHODS: Hibiscus sabdariffa methanolic extract was examined for total phenol and flavonoid contents by using routine methods. The estimation of antioxidant activity was performed by DPPH radical scavenging and lipoxygenase activity by FOX (ferric oxidation -xylenol orange) assay . Lipoxygenase inhibition was measured at varying phenol concentrations and IC 50 values were calculated by linear regression formulations.
RESULTS : Total phenol and flavanoid contents of Hibiscus sabdariffa extract were determined as 300 µg GAE /ml , and 26.1 µg QE/ml , respectively . The antioxidant activity (EC50) was found 7,12 ± 0,19 µg phenol/ml. IC50 value of plant extract with lipoxygenase inhibitory activity was calculated as 58.3 ± 2 µg phenol/ml.
CONCLUSIONS : Hibiscus sabdariffa which is rich in phenolic compounds has antioxidant and lipoxygenase inhibition activity . According to the results plant extract may be a potential source for prevention of inflammation . However, it is obvious that purification and structure determination of active components and in vivo analyzes etc. is necessary for drug development.

Keywords: Hibiscus sabdariffa, inflammation, lipoxygenase inhibition

PP3-34

ANTI-INFLAMMATORY EFFECT OF HIBISCUS SABDARIFFA L. BY LIPOXYGENASE INHIBITION

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OBJECTIVES : Alzheimer's disease is the frequent cause of dementia affecting people, and is associated with loss of cholinergic neurons in parts of the brain.

In the human body, tyrosinase is responsible for the formation of melanin, a biological pigment found in the hair, skin and colored part of the eyes. The present study was aimed to determine the in vitro acetylcholinesterase (AChE), butyrylcholinesterase (BChE) and tyrosinase inhibitory activities and antioxidant capacity of the metanolic extracts of the aerial parts Capparis ovata.
MATERIAL -METHODS : Inhibitory activities of AChE and BChE of the methanolic extract were evaluated by colorimetric Ellman's method. Tyrosinase inhibitor activity was determined by Masuda's method. Antioxidant activity of the aqueous and methanolic extract was determined using DPPH, FRAP, CUPRAC and Total phenol contents tests. Statistical differences between the treatment and the control were evaluated by ANOVA test.
RESULTS : AChE % inhibition results for concentrations of 25-50-100-200 µg/mL were found as 9.2±0.9; 29.3±0.8; 43.5±0.7; 50.2±0.9; BChE inhibition results 9.1±0.6; 14.1±0.7; 20.9±0.9; 33.8±0,5($p<0.05$), respectively. No significant results were found in the study of tyrosinase inhibitor activity. The IC50 values for DPPH assay have been found as 0,3685±0,0027; 1,0126±0,0082 (mg/mL); FRAP values are 192±3,341; 95±1,470(µM Trolox/g); CUPRAC values 384±4, 621; 1638±13,789 (µM Trolox /g); total phenolic content values 5,3±0,201; 3±0,0981 (mg gallic acid/g) ($p<0.05$) for aqueous and methanolic extract of the plant, respectively.
CONCLUSIONS : Inhibitory activities of AChE and BChE of the plant was found significiant compared with reference compound. The plant can be used as a native drug source in the treatment of Alzheimer's disease. Data from present results revealed that C. ovata act as an antioxidant agent due to its free radical scavenging activity.

Keywords: Antioxidant, Capparis ovata, Cholinesterase, Tyrosinase

PP3-35

INVESTIGATION OF THE EFFECTS ON TYROZINASE ENZYMES OF 3 SPECIES BELONGING TO POLYGONACEAE FAMILY GROWING IN AKKUS

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OBJECTIVES: Tyrosinase is an important enzyme in the synthesis of melanin in cells. The compounds affecting melanin biosynthesis are involved not only in cosmetics but also in the treatment of pigmentation disorders, hyperpigmentation and hypopigmentation . In this study, it was aimed to investigate tyrosinase enzyme activity studies on Polygonum persicaria, Rumex acetosella and Rumex patientia plants belonging to Polygonaceae family naturally grown in Akkuş region .
MATERIAL -METHODS : Carried out tyrosinase enzyme inhibition and tyrosinase enzyme activation studies on methanolic extracts prepared from plants. Studies of tyrosinase enzyme inhibition was practised the method which was developed by Masuda et al. using 3,4-dihydroxy-L-phenylalanine (L-DOPA) as a substrate . Studies of tyrosinase enzyme activation were carried out spectrophotometrically the method using 8-methoxypsoralenin (8-MOP) as the standard.
RESULTS : As a result of the study, P. persicaria and R. acetosella species were found to have inhibitory activities on the tyrosinase enzyme and the IC50 values were calculated as 971.55 and 252.59 µg / mL, respectively . R. patientia was found to have an activator on the tyrosinase enzyme and the AC50 value was determined as 33 .11 µg /mL .
CONCLUSIONS : In the light of the results, tyrosinase enzyme activity studies are important for investigating the usefulness of species in skin disorders and the neuroprotective effect. These species can be used as a natural drug source for the treatment of skin diseases.

Keywords: Akkus, Pigmentation, Polygonaceae, Tyrosinase

PP3-36

THE EFFECT OF DELTAMETHRIN ON PLACENTAL GLUTATHIONE S-TRANSFERASE P1-1: EXPERIMENTAL AND COMPUTATIONAL STUDIES

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OBJECTIVES : Pyrethroids , of which Deltamethrin (DEL) is a member , are widely used insecticides in agriculture and public health, with considerable attention as an alternative to the highly toxic pesticides such as organophosphates . Recent studies revealed that DEL caused DNA damage and disruption in renal and hepatic function in pubescent female rats. This has not been proven yet in human. There is need therefore to evaluate the toxicity of DEL and assess its impact in the event of human exposure. Glutathione S-transferase P 1-1 (GSTP1-1) is a significant enzyme with important roles in the detoxification of endo- and xenobiotics by catalyzing their conjugation to reduced glutathione (GSH), and regulation of cell survival and apoptosis by inhibiting C-Jun-N terminal kinase-1. In our study, it was aimed to study the interaction between human placental GSTP1-1 (hpGSTP1-1) and DEL.
MATERIALS-METHODS: Effect of DEL on hpGSTP1-1 activity was monitored in the presence of different [DEL] by using varied [GSH] and fixed [CDNB] and vice versa.
RESULTS: The IC50 value of hpGSTP1-1 by DEL was found to be 6.2 µM. The Vm and Km at fixed [CDNB]-varied [GSH], and fixed [GSH]-varied [CDNB] were 10.4±0.22 and 8.7±0.33 U mg-1 protein and 0.31±0.02 and 0.30±0.03 mM, respectively. The inhibition types in both cases were non-competitive with the Ki values of 5.61±0.32 ([GSH]-varied) and 7.96±0.97 µM ([CDNB]-varied).
CONCLUSION: The molecular docking studies suggest that DEL binds to a site located at the intermonomer space of the hpGSTp 1-1 enzyme and caused conformational changes that inhibit the enzyme noncompetitively.

Keywords : Deltamethrin , detoxification , human placental GSTP 1-1, inhibitory kinetics

PP3-37

DETERMINATION OF IN VITRO EFFECT OF TRAMADOL HYDROCHLORIDE ON HUMAN ERYTHROCYTE CARBONIC ANHYDRASE I AND II ISOENZYMES

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OBJECTIVE ; Carbonic anhydrase (CA , Carbonate Hydrolase , EC 4.2.1.1) commonly found in all organisms and is a metalloenzymes containing zinc (Zn^{2+}) ion in the active site and defined as PH regulatory enzyme in many tissues including erythrocytes . Carbonic anhydrase enables this reaction to take place very quickly by enzymatically catalyzing and thus acts as an important buffer in the acid -base balance . The aim of this study was to investigate the in vitro effects of Tramadol hydrochloride (HCl) on human erythrocyte I and II isoenzymes , one of the centrally acting analgesics used in the treatment of moderate to severe pain.
MATERIAL -METHODS ; We purified CA I and II from human blood erythrocytes using by Sepharose -4B-l tyrosine -sulfanilamide affinity gel chromatography . The inhibitory effects of Tramadol HCI on two isoenzymes were checked using IC50 values . The inhibition of hCA-I and hCA-II, with Tramadol HCI was investigated by using the esterase assay with 4-nitrophenyl acetate as substrate.
RESULTS ; The CA I isoenzyme was purified ~106.04 fold with yield of 58%. The CA II isoenzyme was purified ~425.33 fold with yield of 51%. The specific activities of isozymes were calculated as 915.09 and 3670.59 EU / mg protein, respectively . At the end of the inhibition studies Tramadol HCL competitively inhibited. Ki values were determined for CA I: 10,34 mM; CA II: 3,88 mM.
CONCLUSIONS; In this study, strong inhibitory effect of Tramadol HCL on CA I and II isoenzymes was detected . Therefore , this drug should be used with caution in patients with impaired acid-base metabolism.

Keywords : Tramadol HCl , Affinity chromatography , enzyme inhibition , carbonic anhydrase

PP3-38

COMPARISON OF HYDROLYSIS OF 4-METHYLUMBELLIFERYL PALMITATE BY LIPASES AND BUTYRYLCHOLINESTERASE

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OBJECTIVE: In our previous in vitro and in vivo studies, we showed that there is a strong association between human serum butyrylcholinesterase (BChE) and lipid metabolism with exercise and fatty acids . Aim of the study was to determine whether this link has a role in lipid hydrolysis of BChE.

METHODS-MATERIALS: We evaluated the possible lipolytic activity of pure human serum BChE compared to two different lipases (pancreatic and wheat germ). To determine the kinetic behavior of BChE, firstly kinetics were performed using butyrylthiocholine at 0.01 to 4.0 mM final. Lipolytic activity measurement was carried out using 4-methylumbelliferyl (4-mU) palmitate at pH:8. This method was implemented by changing the lisosomal acid lipase (LAL) method used for Wolman analysis.
RESULTS: Michealis-Menten chart of BChE was drawn. Using lipases as control enzyme, we found that BChE is able to hydrolyze 4-mU palmitate. The results showed that BChE has a Km value that was 10 times bigger than that of wheat germ lipase. BChE seems to hydrolyze 4-mU palmitate with an efficiency comparable to approximately 10% that of human pancreatic lipase.
CONCLUSION: It has been shown that BChE is capable of lipid hydrolysis. This study is part of the first study to show possible lipolytic activity of BChE in the literature. For the first time, comparison was made with butyrylthiocholine hydrolysis with the same substrate hydrolysis of other lipases. We believe that BChE has affected not only cholinergic activity but also one of the basic enzyme that affected serum lipolytic activity.

Keywords: human serum butyrylcholinesterase, lipolytic activity, lipase, palmitate

PP3-39

THE ROLE OF FAS -670 A/G GENE VARIANT ON INFLAMMATORY BOWEL DISEASE

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OBJECTIVES: Inflammatory bowel diseases (IBD) are characterized by remissions and inflammations of chronic disease groups, affect gastrointestinal tract in acute and subacute. FAS is a type 1 membran protein its molecular weight is 45 kd, and belongs Tumor Necrosis Factor (TNF) super family. FAS is also called Apo 1 or CD 95. It is not known that effects of FAS/FASL system on IBD. First step of possible role is that intestinal cells which expressing FAS are targeted by FASL(+) lymphocytes. Thus intestinal cells die by apoptosis and it cause making more permeable of intestinal epithelial. Even though FAS is known death receptor which induces apoptosis, recent studies shows that FAS-FASL system induces macrophages to produce proinflammatory cytokines. In our country, there is no research on FAS gene polymorphisms associated with IBD. In this study, we aim to investigate role of FAS -670A/G gene variant on pathophysiology of IBD.
MATERIALS-METHODS: FAS -670 A/G (rs1800682) gene variant was detected by using Real-Time PCR method in 125 IBD patients and 101 healthy controls.
RESULTS: It was shown that frequency of GG genotype was increased in patients compared to controls significantly (p<0,001). Also, AG genotype (p<0, 001) and A allele (p<0,001) frequencies were higher in controls than patients.
CONCLUSIONS: FAS -670 A/G GG genotype seemed to be as a protective allele against to IBD, however AA genotype and A allele were associated with elavated risk of IBD.
Istanbul University Scientific Research Projects Unit supported this study. Project No: 20728

Keywords: FAS, Inflammatory bowel disease, Risk

PP3-40

DETERMINATION OF RELATIONSHIP BETWEEN HUMAN ANTIMICROBIAL PEPTIDE LL-37 LEVELS AND ATHEROSCLEROTIC RISK FACTORS

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OBJECTIVES: Recently, relation between atherosclerosis and innate immunity has been remarkable. The development of atherosclerosis includes the migration of immune cells which can release antimicrobial peptides. Human cathelicidin antimicrobial peptide hCAP-18, is cleaved by proteinase 3 generating a 4.5 kDa C-terminal fragment named LL-37. The aim of the study was to explore the relation between LL-37 levels and atherosclerotic risk factors.
MATERIAL-METHODS: In this study, we evaluated plasma LL-37 level and other clinical markers in a total of 67 subjects (42 patients with ≥70% coronary stenosis of any coronary artery and 25 controls <70 coronary stenosis or none; mean age 60.05±10.75 and 55.76±12.85 years respectively). Plasma levels of LL-37 were measured by ELISA using the Human Cathelicidin antimicrobial peptide (CAMP) kit (SunredBio, Shanghai).
RESULTS: Plasma LL-37 level was 1.23 [0.70-1.86] in patients and 1.27[0.00-2.20] ng/mL in control. Plasma LL-37 levels showed no significant correlations with atherosclerotic risk factors such as smoking (p=0.675), alcohol consumption (p=0.628), hyperlipidemia (p=0,980), hypertension (p=0.489), family history (p=1.000), total cholesterol (r=0.008, p=0,951), HDL cholesterol (r=0.006, p=0.958), LDL cholesterol (r=0,007, p=0,953), VLDL cholesterol (r=-0.082, p= 0.509), CRP (r=-0.021, p=0.864) and body mass index (r=0.103, p=0.407).
CONCLUSION: It was determined that, there wasn't any association between plasma LL-37 levels and atherosclerotic risk factors and it could not have an important role in atherosclerosis. Further research is needed to clarify the relation between atherosclerosis and immunity, in order to reduce the residual risk for cardiovascular disease.

Keywords: Antimicrobial peptide, atherosclerosis, atherosclerotic risk factors, cathelicidin, LL-37

PP3-41

THE LEVELS OF MONOAMINE OXIDASE AND TAU PROTEIN IN ARRHYTHMIA PATIENTS

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OBJECTIVES: Cardiac arrhythmia is a characteristic disorder characterized by irregular heartbeats and is a major cause of morbidity and mortality. L-Monoamine oxidases (MAO) (EC 1.4.3.4) are a family of enzymes that catalyze the oxidation of monoamines which their substrates catecholamines play a major role in the regulation of cardiac function. Tau protein promotes assembly and stabilizes microtubules, which contributes to the proper function of neuron. This is the first study, we aimed to evaluate the levels of MAO and Tau protein in arrhythmia patients.
MATERIALS-METHODS: The study included 30 arrhythmia patients with no other systemic disease. 30 patients were selected as randomized (14 women, 16 men; range of age 6–68 years) and 30 healthy individuals as control (15 women, 15 men; range of age 7–72 years). Blood samples were taken from patients and controls and, the levels of MAO and Tau protein in serum samples were measured by ELISA.
RESULTS: In the present study, MAO activity and Tau protein levels in arrhythmia patients increased 10-15 times than control groups (p<0.05).
CONCLUSION: Our results indicated that increased activity of MAO and Tau protein levels may be important biomarkers in the diagnosis and treatment of arrhythmia patients.

Keywords: MAO, Tau Protein, Arrhythmia patients

PP3-42

THE IMPORTANCE OF ERYTHROCYTE MEMBRANE CHOLESTEROL AMOUNT IN DETERMINING CORONARY ARTERY DISEASE AND SEVERITY

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OBJECTIVES: Lipid hypothesis, in particular hypercholesterolemia, is the most widely accepted hypothesis among the other hypotheses proposed to explain the etiology of atherosclerosis. The cholesterol that forms atherosclerotic plaque structure is essentially the free form of cholesterol present in cell membrane and

this form of cholesterol is theorized to originate from the erythrocytes. This study aims to determine the contribution of the amount of the erythrocyte membrane cholesterol (EMC)in defining the severity of the disease in correlation with the number of clogged arteries in patients with coronary artery disease (CAD).
MATERIALS-METHODS: An angio control group consist of individuals without angiographic findings (n=81) and group of patients with one (n=47), two (n=71) and three (n=44) clogged arteries and also a healthy control group with similar demographic characteristics were included in this study. Lipid profiles(TAG,TC, LDL,HDL)and hsCRP levels were examined using auto-analyzer. EMC levels were measured according to the cholesterol oxidase methodology in extracts collected using Folch and Stanley method for lipid extraction from erythrocytes.
RESULTS : EMC levels were found to be significantly elevated in total patient group, angio control group, one clogged artery and more than one clogged arteries groups compared to healthy control group ($p<0.05$). However, EMC levels did not show a significant difference between patient sub-groups ($p>0.05$).
CONCLUSIONS : EMC levels were observed to be elevated in all patient groups independent of angiographic findings compared to healthy control group. Although it is considered that EMC levels might not have a high potential to discriminate between the severity levels of the disease, it could be a powerful diagnostic marker as an alternative to hsCRP in diagnosis of KAH

Keywords : Atherosclerosis , C reactive protein , Erythe rocyte Membrane Cholesterol

PP3-43

AN ASSOCIATION OF LDL SUBFRACTION WITH SORT1 GEN EXPRESSION IN CORONARY ARTERY DISEASE

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OBJECTIVES : Cardiovascular disease (CVD) is the leading cause of death in developing countries .Recently , most researches have focused to shed light on multiple genome-wide association studies attempting to link genetic variations to lipid metabolism and gene expression level.Of these, SORT 1 gene, encoding for sortilin, was associated with LDL-C level and coronary artery disease (CAD). The aim of present study is to investigate an association of SORT 1 gene expression with pro (small dense LDL -C, sdLDL)- and anti (large bouyant LDL -C, lbLDL -C) - atherogenic LDL-C subfractions in 162 individuals with CAD.
MATERIALS -METHODS : Lipid , lipoprotein profile (TG , TC , LDL -C and HDL -C), apoprotein levels (apo AI and apo B) and advanced lipoprotein test (LDL subfractions) were analyzed using an enzymatic method with commercially available kits, an immunoturbidimetric method with kits and electrophoretically by using high-resolution 3% polyacrylamide gel tubes, respectively .Total RNA was extracted using the Qiagen RNeasy extraction kit and reverse-transcribed into cDNA using random hexamer primers and Reverse Transcriptase kit. The levels of sortilin gene expression were determined using Taqman assay probe (Hs00907094 _MI FAM).The human 18S(4319413 e) was used as a reference gene .Relative gene expression was determined by the ddCT method.
RESULTS : The patients with the higher level of sdLDL-C (> 6 mg/dL) had higher level of SORT 1 gene expression than that of lower level of sdLDL-C (1.11 a.u. vs. 1 a.u.) while the participants carrying the higher level of lbLDL-C (> 35 mg/dL) level had lower SORT1 gene expression compared to that of higher level of lbLDL -C (1. 29 a.u. vs. 1 a.u.) ($p<0,05$).
CONCLUSIONS: This finding suggests that level of SORT1 gene expression may be closely associated with pro-and anti-atherogenic LDLsubfractions.

Keywords: Coronary Artery Disease, LDL Subfraction, SORT1 Gene Expression

PP3-45

SERUM LEVELS OF SPHINGOMYELINS AND CERAMIDES IN ACNE VULGARIS

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OBJECTIVES : This study aimed to identfy levels of C16-C24 sphingomyelins (SMs) and C16-C24 ceramids (CERs) in serum obtained from Acne Vulgaris (AV) patients and controls .
MATERIALS-METHODS : Serum was collected from AV patients and 20 age, gender matched control subjects. Serum levels of C16-C24 SMs and C16-C24 CERs were determined by an optimized multiple reaction monitoring (MRM) method using ultra fast-liquid chromatography (UFLC) coupled with tandem mass spectrometry (MS/MS). Total cholesterol (TC) and triglyceride (TG) levels were assayed by standard kit methods using autoanalyzers .
RESULTS : A significant increase was observed in serum levels of C16 SMs in patients with AV compared to controls. No significant difference was found in C 18 and C24 SM levels between the two groups. Very-long-chain C24 CER was significantly decreased in AV patients compared to controls. Long chain C16-C 20 CER levels showed no significant difference between AV patients and controls. Triglyceride levels were significantly increased, while TC levels showed no significant difference in AV patients compared to controls . A significant positive correlation was found between serum total cholesterol levels and all measured SMs and CERs in both the control and patient groups .
CONCLUSION: Patients with AV have increased circulating levels of 16 SM and lower circulating levels of C24 CER compared to healty controls , which may provide prognostic value for the disease .
This study was supported by The Scientific Research Projects Coordination Unit (BAP) (project no: TYL-2017-2533)

Keywords: Acne Vulgaris, ceramid, triglycerides

PP3-46

SMALL DENSE LOW-DENSITY LIPOPROTEIN CHOLESTEROL LEVELS MEASURED BY IMMUNOTURBIDIMETRIC METHOD

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OBJECTIVES : The properties of the low-density lipoprotein (LDL), such as size and density , have been proven to affect the risk of the cardiovascular disease; measuring small dense low-density lipoprotein (sLDL) selectively is important to evaluate real atherogenic risk of the individuals. In our study, we aimed to evaluate correlations between serum sLDL-cholesterol (sLDL-C) levels measured by immunoturbidimetric method (Randox Ltd, Ireland) and laboratory data including lipid profile and C-reactive protein values, clinical data.
MATERIALS-METHODS : Females ≥55 years (N=43) and males ≥45 years (N=25) having no known systemic disease or diabetes mellitus , except hypertension and dyslipidemia , were included the study. Individuals with the history of the following drugs were excluded ; lipid lowering drugs , alpha-blockers , beta-blockers , prostaglandin analogues . Data including waist circumference, height-weight measurements, drug/smoking/illness history and blood pressuremeasurements were all recorded.
RESULTS : There were correlations between sLDL-C and total cholesterol ($r=0.592$; $p<0.0001$), triglyceride ($r=0.517$; $p<0.0001$), calculated LDL-C (cLDL -C: $r=0.433$; $p<0.0001$), non-high-density lipoprotein cholesterol (non-HDL-C: $r=0.617$; $p<0.0001$) in the individuals.
CONCLUSIONS : We found no correlation between sLDL-C and body mass index or waist circumference . But, there was a correlation between sLDL-C and triglyceride, so sLDL-C may reflect abdominal fat distribution. Under the health issues of the elderly, calculated non-HDL-C values may be suggested as a better choice in assessment of prevalence of people having higher atherogenic risk, in common with other long-term studies.

Keywords: Abdominal fat, dyslipidemia, small dense low-density lipoprotein, aging

PP3-47

SMALL DENSE LOW-DENSITY LIPOPROTEIN CHOLESTEROL LEVELS MEASURED BY IMMUNOTURBIDIMETRIC METHOD

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OBJECTIVES: A series of the metabolic events that occur following the digestion and absorption of lipids after a fatty meal has been defined

as postprandial lipemia. Increased atherogenic lipoproteins play an important role in the development of atherosclerosis in the postprandial period. Free cholesterol in the erythrocyte membrane is thought to affect atherosclerotic plaque development and stability. Metabolic syndrome (MetS) is clinically characterized by high plasma fasting triglyceride (TG), glucose , low high density lipoprotein cholesterol (HDL-C) levels , hypertension and abdominal obesity . In this study we aimed to investigate the relationship between EMC and postprandial lipemia in individuals with MetS.
MATERIALS -METHODS : In study group were included 32 healthy and 48 MetS, total 80 subjects male age range of 25-65 years. Oral triglyceride tolerance test (OTTT) were applied them and area under curves (AUC) were calculated by using TG levels at the fasting state and at 4th hours after OTTT . EMC were determined enzymatic colorimetric methods after isolation of erytrocyte membranes by high speed centrifugation.
RESULTS : EMC of subjects with MetS were significantly higher than of subjects with healthy ($p<0.05$). In MetS group , positive correlation was found between EMC and TK ($r=0.289$, $p=0.046$), apo A1 ($r=0.362$, $p=0.013$) and apo B / apo A1 ($r=0.386$, $p=0.007$) levels.
CONCLUSION : It can be mentioned that there was an association between postprandial lipemia and EMC in the individuals with MetS and so as well as the atherogenic principles in terms of risk for CVD of increased EMC can be examined in addition.

Keywords : Cardiovascular Disease , Cholesterol , Erythrocyte Membrane , Metabolic Syndrome, Postprandial Lipemia

PP3-48

ATHEROGENIC INDEXES OF PLASMA IN CLINICAL PRESENTATION OF CORONARY ARTERY DISEASE AND SEVERITY

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OBJECTIVES : Atherosclerosis is the main cause of cardiovascular disease . Coronary artery disease (CAD) is the cause of one third of deaths worldwide . Among hypotheses proposed to explain the etiology of the disease , lipid hypothesis is widely accepted. Patients with CAD have characteristic atherogenic lipoprotein profile of plasma such as a high ratio of LDL -C to HDL -C and increased TG level.The present study aimed to investigate an association of the conventional and advanced lipid indexes and with coronary artery stenosis and severity .
MATERIALS-METHODS: An angio control group consist of individuals without angiographic findings(n=81) and group of patients with one(n=47),two(n=71) and three(n=44)clogged arteries and a healthy volunteer group(n=49).Conventional lipid and lipoprotein profile(TG,TC,LDL-C and HDL-C),apoprotein levels(apo AI and apo B) and advanced lipoprotein test(LDL subfractions) were analyzed using an enzymatic method with commercially available kits , an immunoturbidimetric method with kits and electrophoretically by using high-resolution 3 % polyacrylamide gel tubes , respectively .
RESULTS : Patients with CAD had significantly higher values of atherogenic index of plasma(AIP) and ratios of TG/HDL-C, apoB/apoAI , SdLDL /LbLDL , and lowerLDL -C/apoB ratio compared to the healthy individuals ($p<0.05$). Compared to healthy group, similarly, these ratios remained higher in individuals with symptomatic angino and no angiographic finding but AIP value and TG/ HDL -C ratio were unchanged .Patients with at least two-vessel disease in comparison with one-vessel disease group had statistically higher AIP value , apoB / AI ratio and lower LDL -C / apoB ratio (p : 0 .05).
CONCLUSIONS : The results suggest that the AIP value as well as the ratios of apoB/A1 and LDL-C/apoB can be indicative of both the presence and severity of CAD.

Keywords: Atherogenic Index, Coronary Artery Disease, LDL subfraction.

PP3-49

INCREASED PLASMA CERAMIDE AND SPHINGOMYELIN LEVELS PRIMARY CILIARY DYSKINESIA PATIENTS

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OBJECTIVES : Primary cilliary dyskinesia (PCD) is characterized by failure of cilliary structure and / or function where cystic fibrosis (CF) by chloride channel impairment and mucus composition change . Impairment of mucocilliary clearance and concurrent respiratory tract infections are common in both. Lung disease has a better prognosis in PCD . In this study we investigated sphingomyelin (SM) and ceramide (C) levels in CF and PCD.
MATERIALS-METHODS: Blood samples were obtained from pediatric patients with CF (N = 17) and PCD (N = 8), during acute pulmonary infection and at discharge after treatment . SM16, SM18, SM24, C16, C18, C20, C22 and C24 levels were measured in plasma by LC-MS / MS. Results were compared with healthy controls of similar age (N = 9).
RESULTS : All SM and C levels measured at exacerbation and discharge were higher in PCD than those of CF ($p<0.001$ / $p<0.05$). Compared with controls SM18, C16, C18, C20 and C24 levels were higher in exacerbation in PCD ($p<0.05$).
CONCLUSIONS : Previous studies reported that immune response and clinical course were different between PCD and CF. SM and C levels , which are significantly higher in our patients with PCD than that of CF, are likely to modulate immune response and inflammatory course . There is a report that ceramides played a role in primary cillia formation and function. Cell culture and animal studies may be useful in elucidating association among C, SM and PCD pathology.

Keywords: primary ciliary dyskinesia, cystic fibrosis, ceramide, sphingomyelin, LC-MS / MS

PP3-50

INVESTIGATION OF CYTOTOXIC EFFECTS OF THYMOQUINONE ON HL60 CELL LINE

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OBJECTIVES : Thymoquinone (TQ), the most abundant active component isolated from Nigella sativa . TQ has anticancer , anti-oxidant and anti-inflammatory properties in several cancer types. Idarubicin is a highly cytotoxic drug used in hematological malignancies such as acute leukemia and lymphoma. In this study, we aimed to investigate of combine effect of idarubicin and TQ on HL 60 acute promyelocytic leukemia cell line .
MATERIALS -METHODS : The cytotoxic effect of single concentrations of idarubicin (5, 1 and 0,1 µM) and thymoquinone (10, 5 and 1 µM) on the HL-60 cell line was analyzed by MTT and WST-1 test. Combinations of thymoquinone and idarubicin were established with the results obtained and cytotoxic effects were examined by cell viability tests .
RESULTS : It was shown that idarubicin becomes more toxic on HL 60 cells when it gives combine with thymoquinone . Thymoquinone increased the anti-cancer properties of idarubicin . Idarubicin is a toxic drug even when it is administered alone (IC 50 2,5 µM). However , when it combined with thymoquinone , idarubicin showed the same toxic effect at lower concentrations (IC 50 1 ,0 µM).
CONCLUSIONS : Although idarubicin is effective in cancer therapy, excessive adverse effect and drug resistant are important disadvantages of idarubicin . Combine administration of idarubicin with thymoquinone will reduce both drug resistance and side effects as idarubicin is given at lower doses. Therefore , we think that administration of thymoquinone preparations with idarubicin or consumption of thymoquinone -containing foods , alleviate the course of the disease and increase the quality of life by decreasing side effects in the treatment of cancer.

Keywords: cancer, HL60, idarubicin, thymoquinone

PP3-51
STUDYING THE NEURODEGENERATIVE MECHANISMS OF A TRANSGENIC MOUSE MODEL VIA MALDI-IMAGING TECHNIQUE

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OBJECTIVE:Transgenic mouse models are valuable in studying disease genesis and progression. Disease mechanisms have been widely studied through tissue or biological fluid extracts in proteomics research. Recently, mass spectrometry methods like MALDI-Imaging where tissue samples are analyzed directly have become widespread.
MATERIAL -METHODS AND RESULTS : Our research involves the investigation of neurodegenerative mechanisms 'genesis and the progression dependent on age associated amyloid beta accumulation in a transgenic mouse model that carries five familial Alzheimer's disease mutations. Furthermore, we have done Morris water tank test to access cognitive impairment at months 3, 6 and 12. Our goal is to monitor the spatial molecular level protein differentiations in the brain sections as the cognitive impairment progresses.
CONCLUSION : We believe that our findings could be useful in order to discover early molecular mechanisms of Alzheimer 's disease for the sake of discovering new alternative drug targets for therapy.

Keywords : MALDI -Imaginh , Proteomics , Alzheimer ' s Disease , Transgenic Mouse Model, 5XFAD

PP3-52
MONITORING SOME YOPM-PROTEIN INTERACTIONS USING FLUORESCENCE COMPLEMENTATION ASSAY

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OBJECTIVES: It was aimed to monitor the protein-protein interactions between YopM protein from Yersinia spp. and Type III secretion regulator proteins (LcrV and LcrG)by using green fluorescent protein (GFP) complementationstrategy.
MATERIALS-METHODS: In order to fuse N-terminal GFP fragment (NGFP; 1-157.amino acids) and the gene fragments encoding LcrV/LcrG proteins, fusion PCR was used. Similarly, C-terminal GFP fragment (CGFP; 158-238. amino acids) was fused with the gene fragment encoding YopM protein. The plasmid encoding NGFP:LcrV or NGFP:LcrG fusion protein and the plasmid encoding CGFP :YopM fusion protein were co-transformed into E. coli cells. GFP fluorescence was monitored by using fluorescence spectrophotometer and fluorescence microscope.
RESULTS : As a result of interaction between YopM and LcrG proteins, non-fluorescent N-terminal GFP and C-terminal GFP fragments complemented and GFP fluorescence was monitored. However, a similar interaction between YopM and LcrV was not determined.
CONCLUSIONS : In this study, fluorescence complementation approach was used for the first time to understand the protein-protein interactions of YopM. It is proposed that the results obtained from this study will contribute to the understanding the function of YopM and the design of effective drugs against the diseases caused by Yersinia spp. pathogens.

We thank Ege University Research Foundation for financial suport (project number:15-FEN-024)

Keywords: split-GFP, Type III secretion system, Yersinia spp., YopM

PP3-53
DEVELOPMENT OF DNA APTAMERS AGANIST VIRULANCE PROTEASE OF PATHOGENIC STREPTOCOCCUS PYOGENES

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OBJECTIVES : Streptococcus pyogenes (group A Streptococcus (GAS)) causes various infections such as pharyngitis, impetigo, necrotizing fasciitis, and toxic shock syndrome. SpyCEP is an extracellular protease produced by S. pyogenes and has the ability to cleave CXC chemokines.
In this study, it was aimed to develop DNA aptamers that can specifically bind to SpyCEP using SELEX technology .
MATERIALS-METHODS: The gene fragment encoding SpyCEP protease was codon optimized . The pET21a (+) vector carrying the gene was transformed into competent E. coli cells. SpyCEP was purified using Co-NTA agarose magnetic beads and enzyme activity was determined by ELISA measurements. 13 SELEX rounds were performed and sequence analysis was performed by cloning the final library. Aptamer sequences were analyzed using the MEME Suite program and conserved motifs were identified .
RESULTS : In this study , SpyCEP protease -specific DNA aptamers were developed and the effect of aptamers on enzyme activity was investigated
CONCLUSIONS: SpyCEP is an important factor for S. pyogenes virulence. For this reason, it is proposed that the targeting of this protease will present a novel therapeutic approach with conventional therapy .
We thank , TÜBİTAK (project number : TÜBİTAK 214Z290) and the E. Ü. Research Foundation (project number 16-FEN-001) for financial support.

Keywords: Aptamer, SELEX, SpyCEP, Streptococcus pyogenes

PP3-55
QF-PCR EVALUATION OF INVASIVE PRENATAL DIAGNOSIS OF PREGNANCIES WITH RISK OF HEMOGLOBINOPATHY

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OBJECTIVE: QF-PCR has been used since the late 1990s. The aim of our study is to evaluate the risk of aneuploidy by QF-PCR in prenatal diagnosis of hemoglobinopathy risk. QF-PCR based on analysis of polymorphic short tandem repeats (STRs) and is widely used for prenatal rapid aneuploidy detection .
MATERIAL-METHOD: We report retrospectively our prenatal diagnosis results between 2008 and 2012 in Çukurova University Hospital , Biochemical and Molecular Genetic Diagnosis Center. Prenatal diagnosis was recommended in 800 high-risk pregnancies (because of age >35) and patients agreed to invasive prenatal diagnosis. Chromosome analysis and QF-PCR were performed in all patients.
RESULTS: Normal results were reported in 800 CVS by QF-PCR and confirmed by fetal karyotyping. Anomaly detection rates were similar for the two methods. The CVS results for hemoglobinopathy were homozygous beta thalassemia (155), double heterozygous thalassemia (140), sickle cell anemia (280), wild type (110), alpha thalassemia (115).
CONCLUSION : QF-PCR is a fast and reliable prenatal diagnosis method in all indication groups as hemeoglobinopathy pregnancies and may be preferred as the sole prenatal investigation in patients without fetal ultrasonographic findings.

Keywords: QF-PCR, hemoglobinopathy, aneploidy, prenatal diagnosis, STR

PP3-56
QF-PCR EVALUATION OF INVASIVE PRENATAL DIAGNOSIS OF PREGNANCIES WITH RISK OF HEMOGLOBINOPATHY

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OBJECTIVES : Programmed death-1 (PD-1) is one of the interesting target/ prognostic marker that bear further investigation in gastric cancer (GC), particularly given it's success in the treatment of other inflammation /immune-associated malignancies . The immune control point ,PD-1, is expressed by activated T cells and negatively regulates the immune response.The relationship between the immune response-related genes and cancer has been demonstrated in a number of studies. The aim of this study was to investigate whether specific

genetic polymorphisms of PD-1.5 (C/T) could be associated with gastric cancer development and progression in a Turkish population.
MATERIALS-METHODS: PD-1.5 (C/T) polymorphism was investigated in 239 Turkish subjects (88 patients with GC and 151 healthy individuals as controls) by using polymerase chain reaction -restriction fragment length polymorphism (PCR-RFLP).
RESULTS : Between gastric cancer patients and the control group , the frequencies of PD1.5 C/T genotypes CC, CT, and TT were, 26.1%, 60.2%, and 13.6% in patients, and 41.7%, 45.7%, and 12.6% in the control group. Our results showed that genotype distribution at position PD-1.5 C/T were significantly different between patients and the control group (p = 0.047).
CONCLUSION : Further researches comprising more patients are required to clarify whether a particular genotype of the PD-1.5 polymorphism is associated with gastric cancer and clarify the association of PD-1.5 (C/T) polymorphism and clincopathological characteristics. "Clinical Investigations Ethics Committee of Samatya Education and Research Hospital" was approved by ethics committee.

Keywords: PD-1.5 (C/T), polymorphism, gastric cancer.

PP3-57
THE INVESTIGATION OF THE RELATIONSHIP BETWEEN TIP60 AND STAT3

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OBJECTIVES: When a foreign substance enters the cell, the immune response is pathway , which is regulated by Hamp (Hepsidin antimicrobial peptide), is activated. The signal transducer and transcription activator 3 (STAT3) is a member PG + the cancer , and also transmits cytoplasmic signals to extracellular stimuli . Our previous study, we reported that the expression of Hamp was changed in liver -specific Tip 60 (Tat İnteractive Protein -60 kDa) conditional knockout mice. In this study , the relationship between STAT 3 and TIP 60 that has important and vital functions such as DNA repair , cell cycle , apoptosis , cancer , transcriptional regulation and cellular response mechanisms was investigated at the gene and protein level.
MATERIALS-METHODS: The quantitative gene and protein expression of STAT3 were investigated by using real time PCR, western blot and immunohistochemistry analysis in control, LPP-induced inflammation and liver-specific Tip60 conditional knockout grouPP mice. Unpaired t-test was performed with statistical program GraphPad Prism version 5.00.
RESULTS: The gene and protein expression of STAT3 were increased in LPP-induced inflammation group. While the gene expression of Stat3 is unchanged in Tip60 conditional knockout mice, a significant increase was seen in STAT3 protein expression.
CONCLUSION: It can be said that TIP60 has a role in inflammation and also in post-translational modification of STAT3 which is associated with cancer. This work was funded by grants from the Scientific and Technological Research Council of

Keywords: TIP60, STAT3, Inflammation, Knockout, Expression

PP3-58
THE EFFECT OF ACUTE INFLAMMATION ON ANTIOXIDANT SYSTEM AND VARIOUS PATHWAYS RELATED WITH THIS SYSTEM

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OBJECTIVES : Inflammation is defined as a complex biological response of body to endogenous and exogenous stimuli . In this study , behaves of the antioxidant defense system acting as a barrier to block transformation of acute inflammation , which is beneficial for the host into chronic inflammation that triggers a variety of pathological conditions with increased reactive oxygen species was investigated for the first time at the molecular level.
MATERIALS -METHODS : Quantitative gene expressions of inflammatory markers (Il-6 and Tnf-α), antioxidant enzymes , Nfkb regulating tumorigenesis pathways , Mtdh essential for Nfkb activation , Sirt 1 playing major role in epigenetic mechanisms and Hamp controling iron homeostasis were measured using Real Time PCR. Metabolite levels of oxidative stress markers and total iron content were examined . Histopathological analyzes were performed to determine the presence of tissue damage.
RESULTS : Increase in Il-6 and Tnf-α quantitative gene expression levels showed that model was formed. Oxidative stress formation followed by acute inflammation was shown by reduction in GSH and increase in MDA levels. Significant decrease in the gene expression levels of Sod, Cat, Gr, Gst and 6pgd was observed , increase in Gpx and G6pd. Inflammatory cell infiltration , congestion, necrosis and intracellular edema were determined. Increase in Nfkb and Hamp, decrease in Sirt1 and no changes in Mtdh expressions were observed.
CONCLUSIONS : It was determined that antioxidant defense system is insufficient in oxidative stress mechanism by virtue of acute inflammation , however it tries to perform homeostasis.
Funding : This work was supported by Atatürk University Scientific Research Projects Coordination Commission (Project number:2015/97).

Keywords : Inflammation , Reactive Oxygen Species , Antioxidant Defense System, Gene Expression, Rat

PP3-59
RETROSPECTIVE COMPARISON OF DEMOGRAPHIC DATA AND HEMATOLOGICAL PARAMETERS IN PATIENTS WITH VITAMIN B 12 ORDER

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OBJECTIVES : We aimed to compare the demographic data and hematological parameters of patients with B12 order.
MATERIALS -METHODS : Patients who applied to the Mustafa Kemal University , Faculty of Medicine for a period of two years and were first ordered to have vitamin B12 levels were included in the study. The demographic data of the patients were collected via the Hospital Information Management System (HBYS). Vitamin B12 levels were measured by electrochemoluminescence method and hemogram counts by auto analyzer . Patients were divided into two groups , B12 level <350 pg /ml (group I) and > 350 pg /ml (group II), and hemogram parameters were compared . Patients with malignancies , thalassemia , myelodysplastic syndrome , folate values <5,38 ng /ml and ferritin values <7 ng / ml were excluded and correlations of MCV with B12 levels were evaluated.
RESULTS: The most frequently order indications were anemia (n = 2622, 36%), weakness /tiredness (n = 498, 6.8%) and diabetes mellitus (n = 330, 4.5%).The order prevalence was higher in males (66%) than females (34%). MCV levels in Group I were significantly higher than Group II (p <0.001), and there was a negative correlation between MCV and vitamin B12 (r, -0.056, p <0.001). There was also a significant correlation between in patients with high MCV (> 98 fL) and low B12 (<350 pg / ml) (r: -0.257, p: 0.007).
CONCLUSIONS : These findings suggest that 350 pg / ml can be used as a clinical decision point for macrocytic anemia in terms of vitamin B12 deficiency.

Keywords: Vitamin B12, mean corpusculer volume, macrocytic anemia

PP3-60
NEUROHORMONES

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OBJECTIVE: Appetite plays a role in the complex neuroendocrine system

operation for the life. Human beings are in to appetite control, weight loss-gain. Some hormones affect your food intake in short period are cholecystokinin , ghere- lin . Some of them affect your food intake in long period are leptin , insulin . Sufficient and well-balanced nutrition helps the body for its energy homeostasis . Alpha-melanocyte-stimulating hormone (αMSH) is anorexigenic and increase energy expenditure . Endogenous melanocortin receptor antagonist agouti -related protein (AgRP) is orexigenic -appetite stimulant and anabolic peptide . Circulating levels of αMSH and AgRP of which the potential role especially in malnutrition or being fat have been studied lately . The alterations at levels of these peptides have been studied with regard to the homeostatic model assessment of insulin resistance - HOMA-IR which is a feature of risk metabolic syndrome and fatty liver disease.
MATERIAL- METHODS: The study groups have been comprised of same age-sex two groups of normal to over-weight adults.
RESULT: It was concluded that differences were not found between normal or over-weight people relating to AgRP levels but αMSH levels were decresed in over-weight adults than in normal weight. HOMA-IR were positively correlated with glucose and insulin levels in groups.
CONCULUSION : It appears that αMSH levels could be helped understand the metabolic regulation and energy balance. Further research in the area would lead to the development of new treatment strategies for weakness and obesity . The interaction between appetite ,dietary behavior , genetic makeup , environmental factors,skills especially children,adolescents and young people have influence on growth and psychosocial development are of interest in the world population.

Keywords: Food intake, Neurohormone, Peptide

PP3-61
EVALUATION OF PLASMA D-DIMER LEVELS IN PATIENTS WITH PRIMARY OPEN-ANGLE GLAUCOMA

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OBJECTIVES: Glaucoma is likewise one among many aging associated diseases (AADs) associated with increased rigidity of the tissue. In our study, we aimed to investigate whether plasma D-Dimer levels have any clinical value in patients diagnosed primary open angle glaucoma (POAG).
MATERIALS -METHODS : Firstly, cases were divided into 2 groups; group 1: healthy individuals (N=37); group 2: POAG (N=71). Later , patients were classified in 2 subgroups according to imaging findings of retinal nerve fibre layer (RNFL) thickness via optic coherence tomography ; one group having RNFL ≥87 µm (N=31) and the other group having RNFL <87 µm (N=34).
RESULTS : There was no difference in gender , body mass index , waist circumference and D-dimer values between the groups . In patients with RNFL <87 µm, had significantly higher diastolic blood pressure values (p<0.001) than controls . In the same group, there were correlations between D-dimer and age (r=0.625 , p<0.0001), albumin (r=-0.481 , p=0.005), serum creatinine (r=0.356, p=0.046), estimated glomerular filtration rate (r= -0.396, p=0.025), alanin amino transpherase (r=-0.469, p=0.007), systolic blood pressure (SBP) (r=0.389, p=0.028), neutrophil count (r=0.503, p=0.003), neutrophil /lymphocyte ratio (r=0.440 , p=0.012). Applying multiple regression analysis backward method , independent associations were found between D-dimer and albumin , SBP (β-constant= -0.016, p=0.987; β-albumin= -3.189, p=0.003; β-SBP= 3.555, p=0.002).
CONCLUSIONS: According to the vascular/ischemic theory, a perfusion deficit could induce glaucomatous optic neuropathy. Further investigations are needed to show whether endothelial biomarkers are meaningful to support this theory in occurrence and progression of POAG.

Keywords : aging, D-dimer, optic coherence tomography , primary open-angle glaucoma, retinal nerve fiber layer, systolic blood pressure

PP3-62
PLATELET/LYMPHOCYTE RATIO IN PATIENTS WITH VITAMIN B12 DEFICIENCY

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OBJECTIVES : Vitamin B12 is a cofactor in DNA synthesis , methylation , neurotransmitter synthesis and in the homocysteine/methionine cycle. Mental and neural functions may be impaired in patients with vitamin B12 deficiency . The complete blood count is one of the most commonly used basic test in clinical settings and also has been presented in several studies to predict several disease out¬comes. The aim of this study is to evaluate the PLT/LYM values in patients with vitamin B12 deficiency.
MATERIALS -METHODS : This is a retrospective observational study ; evaluating the PLT/LYM values of 210 without vitamin B12 deficiency aged 28.7±10.2 years and 188 patients with vitamin B12 deficiency aged 28.4±11.5 years . Patients with chronic hepatic , iron deficiency , renal disease and inflammatory disorders were excluded in the study. PLT/LYM levels were measured with Beckman Coulter LH 780 hematology analyzer . Statistical analysis was performed with SPSS v21.
RESULTS : Although the PLT/LYM ratio was higher in patients with vitamin B 12 deficiency compared with control group [114(56-326) versus [108 (54-248], this difference was not statistically significant (p=0.057).
CONCLUSIONS : Platelet-to-lymphocyte ratio has been found to be associated with different types of malignancies , metabolic syndrome , infectious diseases , cardio vascular disease, end stage renal disease and other inflammatory diseases. According to this study's results , monitoring PLT/LYM might not be useful in patients with suspected vitamin B12 deficiency.

Keywords: Lymphocyte, Platelet, PLT/LYM ratio, Vitamin B12

PP3-63
THE EFFECTS OF VITAMIN D SUPPLEMENTATION ON HEALTHY AND HYPERCHOLESTEROLEMIC RABBITS ON LEVELS OF OSI AND PARAOXONASE

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OBJECTIVES: Conflicting data are available in literature regarding the effects of vitamin D (VitD) supplementation diet on lipid panel . Therefore , we had the purpose to evaluate the effects of VitD supplementation on lipid panel by a controlled experimental study, and those of VitD supplementation on oxidative stress index (OSI) and paraoxonase -1 (PON 1) values in healthy and hypercholesterolemic male rabbits.
MATERIALS-METHODS: Thirty new zealand rabbits were randomly separated into control, VD, HC+VD and HC groups. Control and VD groups were fed with standard chow, whereas HC+VD and HC groups were fed with 0.5% cholesterol chow a period of 8 weeks . During this period , VD and HC+VD groups were orally administered with 300 IU/kg/day VitD.
RESULTS : The increase in serum total cholesterol (TC) and OSI level of HC group were significant compared to those in HC+VD group. Decreases in serum HDL-cholesterol (HDL-C) and TC levels of VD group were significant within the groups.
CONCLUSIONS : Without any doubt it is important that our VitD level is in the ideal range for healthy living. However it is also necessary to increase the level of serum HDL -C (and hence PON 1), which is decreases as a result of VitD supplementation . Therefore, we believe that with VitD supplementation , regular physical activity that increase serum HDL-C is required.

Keywords: Vitamin D, Paraoxonase-1, Oxidative Stress Index, HDL Cholesterol, Rabbit

P3-64
EFFECT OF VITAMIN C AND VITAMIN E ON SERUM BIOCHEMISTRY FOR PROTECTION IN FLOROSIS

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OBJECTIVES : In Turkey , endemic chronic fluoride poisonings ar e encountered in Van-Muradiye, Çaldıran regions and Ağrı-Doğubeyazıt region which isadjacent to this region. In this study, it was aimed to investigate the effects of vitamins C and E in fluorosistant protection.
MATERIALS -METHODS : In the study, 6 groups were formed from Wistar-Albino rats, Control, Corn oil, NaF, and Protection groups (n: 8). Control group was given drinking water, corn oil 0.2 ml / oral, NaF group for 150 ppm NaF drinking water. Vit C (100 mg / kg), Vit E (300 mg / kg) and Vit C + Vit E (100 mg / kg + 300 mg / kg) were given for 16 weeks/every other day 150 ppm NaF (in drinking water) for the protection group. Biochemical analyzes were carried out in the Department of Biochemistry at YYU Medical School .
RESULTS : Vit E and Vit EC significantly decreased CK-MB levels compared to NaF and control groups ($p<0.05$), CK and Urea levels were significantly lowered only by VitEC administration ($p<0.05$). NaF and Vitamin significantly decreased LDH levels ($p<0.05$). It was determined that the levels of AST and ALT decreased significantly with NaF administration and significantly increased with Vit E and Vit EC application ($p<0.05$).
CONCLUSION: It was concluded that the Vit EC application to protect would benefit certain degrees on Fluorosis.

Keywords: Fluorosis, Vit E, Vit C, Serum Biochemistry

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INVESTIGATION OF THE EFFECTS OF ACUTE COPPER-OXIDE NANOPARTICLE (CUO-NP) CONSUMPTION IN THE RAT HEART: BIOCHEMICAL AND HISTOPATHOLOGICAL ASSESSMENT

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OBJECTIVES: Cardiovascular diseases are main cause of death in the world. At the same time, consumption of copper oxide nanoparticle (CuO-NP) causes damage in heart cells. In this study, we investigated the cellular damage that may occur in the heart of the rat after consumption CuO-NP of biochemical and histopathological levels. CuO-NP are used in many different sectors for different targets. According to the results of recent studies, the heart is one of the target organs for the CuO-NP entering the body from any pathway . However, the underlying mechanism of apoptosis that occurs in heart cells due to exposure to CuO-NP is still unclear. In rat exposed to CuO-NP, the role of oxidative damaging free radical and histopathological changes in cardiac tissue after heart failure was investigated.
MATERIALS -METHODS : In this study, saline was administered to the control group and CuO at the same time -NP was administered to the experimental group during 5 days, once a day. Animals were decapitated 24h after the last gavage. Heart tissues of both groups were stained with H&E and compared by light microscopy. In the experiment, Wistar Albino male rats (6-8 w, 250-300 g) were divided into 2 groups as Group 1:control (n=20) and Group 2:CuO-NP (200 mg/kg) (n=20).
RESULTS : In heart tissue biochemical markers MDA, CAT, NO and in serum TNF-alfa and IL-6 levels and histopathological changes were measured. The difference was significant ($p<0.01$).
CONCLUSION: As a result of this study, we are thinking about biochemical and histopathological changes after CuO-NP exposure and explain the mechanism underlying these changes and not to consume them.

Keywords: FCopper Oxide Nanoparticle (CuO-NP), Heart, Free Radical, Histopathological