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In this issue 15th Meeting of Balkan Clinical Laboratory Federation
04 - 07 September 2007, Antalya, Turkey

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B J C L

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EXHIBITION

BCLF

15th Meeting of Balkan Clinical Laboratory Federation
04 - 07 September 2007, Antalya, Turkey

SCIENTIFIC PROGRAMME

**Kongre boyunca, tüm konferans ve panellerde İngilizce – Türkçe "Simultane Tercüme" yapılacaktır.*

Tuesday, 4 September 2007

08:30-18:00 **Registration**

PLATIN HALL

17:00-17:30 **Opening Ceremony**

Chairpersons: Nada Majkic-Singh, *Serbia*
Nazmi Ozer, *Turkey*

Welcome addresses
Welcome addresses of Mr. Nazmi Özer

President of the Organizing Committee
Welcome addresses of Mrs. Nada Majkic-Singh, *President of BCLF*

Welcome addresses of Mr. Victor Blaton, *President of FESCC*

Welcome addresses of Mrs. Jocelyn M.B. Hicks, *President of IFCC*

17:30-18:30 **Opening Lecture**

Laboratory Medicine, past, present and future
Jocelyn M.B. Hicks, *USA (IFCC president)*

19:30-20:30 **Welcome Reception**

Wednesday, 5 September 2007

08:30-17:30 **Registration**

PLATIN HALL

Chairpersons: Tomris Ozben, *Turkey*
Ghassan Shannan, *Syria*

09:00-09:30 **L-01**
Diagnostic guidelines - A service for clinicians and patients
Mathias Mueller, *Austria (IFCC Past-President)*

09:30-10:00 **L-02**
Targeting HDL for the prevention and management of cardiovascular disease
Victor Blaton, *Belgium (FESCC President)*

10:00-10:30 **L-03**
Posterior and intermediate pituitary lobes: Neuroendocrine, clinical and diagnostic implications
Gabor L. Kovacs, *Hungary (FESCC Member at Large)*

10:30-11:00 **Coffee Break / Poster Mounting**

Chairpersons: Anyla Bulo-Kasneci, *Albenia*
Mithat Bozdayi, *Turkey*

11:00-11:30 **L-04**
Regulation of mast-cells' mediators secretion-hope for allergy treatment
Israel Pecht, *Israel*

11:30-12:00 **L-05**
ANCA-associated vasculitis in ischemic stroke and hepatitis C virus infection
Manole Cojocaru, C. Burcin and A. Atanasiu, *Romania*

12:00-13:30 **Lunch / Company Presentation**

13:30-15:30 **Panel: Molecular Diagnostics in Clinical Practice**
Moderator: Professor Pinar T. Özand, *Turkey*

L-06
Clinical proteomics; Discovery of biomarkers in the diagnostic industry
Michael Fountoulakis, *Roche-Switzerland*

L-07
Pharmacogenomics; From gene to patient: towards individualized drug therapy
Michael Eichelbaum, *Germany*

L-08
DNA Chips; High-resolution array comparative genomic hybridization: Applications and experiences
Fikret Erdoğan, *Germany*

L-09
Genomics and Proteomics: New approaches and biomedical opportunities for clinical chemistry
Kiro Stojanoski, *Macedonia*

15:30-16:30 **Coffee Break / Poster Evaluation / BCLF BOARD MEETING**

Oral Presentations Session
Platin Hall

Chairpersons: Orhan Değer, *Turkey*
Gulsevim Saydam, *Turkey*

16:30-16:45 **OP-01**
Emerging managerial concepts and accreditation of clinical laboratories in Europe
Bernard Gouget, *France*

16:45-17:00 **OP-02**
Six sigma and lean concept in laboratory medicine
Abdurrahman Coşkun, *Turkey*

17:00-17:15 **OP-03**
Reference intervals for hematology parameters in Turkey
Yeşim Özarda İlçöl, *Turkey*

17:15-17:30 **OP-04**
New techniques in order to diminish the necessary number of normal patients' results in the "average of normals method"
Petros Karkalousos, *Greece*

17:30-17:45 **OP-05**
A Simple Method for the Simultaneous Determination of Immunosuppressants in Blood Using LC-MS/MS
Gerard Bondoux, *France*

17:45-18:00 **OP-06**
Laboratory investigation of hemoglobinopathies: HPLC retention time as a diagnostic tool
Jamshid Chamani, *Iran*

18:00-18:15 **OP-07**
A simple automated citrate determination method in urine
Berkay Çataloğlu, *Tukey*

18:15-18:30 **OP-08**
Decreasing Matrix Effect on Diazo Reaction by Changing Sample Volume and Nitrite Concentration in Total and Direct Bilirubin Determinations
Serkan Ahioğlu, *Turkey*

Oral Presentation Session
Gümüş Hall

Chairpersons: Şebnem Kösebalaban, *Turkey*
Erdinç Çakır, *Turkey*

16:30-16:45 **OP-17**
Gas chromatographic analysis of FFAs in biological fluids for the screening of mitochondrial and peroxisomal disorders
Ahmet Ceyhan Gören, *Turkey*

16:45-17:00 **OP-18**
Correlation between serum cystatin C, renal function tests, CRP and lipids
Sevil Kurban, *Turkey*

17:00-17:15 **OP-19**
Correlation Between Serum Homocysteine and Lipids Levels
Ayşe Özcan, *Turkey*

17:15-17:30 **OP-20**
Reduced urinary excretion of homocysteine could be the reason of elevated plasma homocysteine in patients with psychiatric illnesses
Hüseyin Erdoğan, *Turkey*

17:30-17:45 **OP-21**
Comparison of insulin sensitivity in normoweight and overweight women ; Increased susceptibility to insulin resistance associated with abdominal obesity
Dilara Uncu, *Turkey*

17:45-18:00 **OP-22**
Prolidase Enzyme Activities in Pleural Fluid and Serum as Diagnostic Tools in Tuberculous Pleurisy
Ömer Özcan, *Turkey*

18:00-18:15 **OP-23**
Functional vitamin B12 deficiency represented by elevated urine methylmalonic acid levels in patients having migraine
Osman Metin İpçioğlu, *Tukey*

18:15-18:30 **OP-24**
Assessment of cobalamin deficiency without measuring serum vitamin B12 levels
Ömer U. Yanar, *Turkey*

18:30–20:30 **Visit to Antalya Museum / Wine and Cheese (Excursion)**

Thursday, 6 September 2007

08:30-17:30 **Registration**

PLATIN HALL

Chairpersons: Todor Gruev, *Macedonia*
Diler Aslan, *Turkey*

09:00-09:30 **L-10**
Target value for inaccuracy and importance of harmonization
Yahya Laleli, *Turkey*

09:30-10:00 **L-11**
Management of risk in laboratory practice
Ana Stavljenic-Rukavina, *Croatia*

10:00-10:30 **L-12**
Rational laboratory diagnostic and possibilities of inadequate analyses application
Danica Popovic-Pribilovic, *Montenegro*

10:30-11:00 **L-13**
The initial experiences in auditing of quality management implementation in Slovenia
Pika Mesko Brguljan, Sasa Bratoz, *Slovenia*

11:00-11:30 **Coffee Break / Poster Mounting**

Chairpersons: Kamen Tzatchev, *Bulgaria*
Hatice Paşaoğlu, *Turkey*

11:30-12:00 **L-14**
New perspectives in antenatal screening for Down's syndrome
Demetrios Rizos, *Greece*

12:00-12:30 **L-15**
The prevalence of beta thalassemia in students screening Lushnja district, Albania
Etleva Refatllari, *Albania*

12:30-14:00 **Lunch / Company Presentation**

Chairpersons: Gheorghe Benga, *Romania*
Arzu Seven, *Turkey*

14:00-14:30 **L-16**
Prediction of type II diabetes-new diagnostic perspectives
Adlija Jevric-Causevic, *Bosnia and Herzegevonia*

14:30-15:00 **L-17**
Abdominal obesity, diabetes and cardiovascular risk
Anna Tzoncheva, *Bulgaria*

15:00-16:00 **Coffee Break / Poster Evaluation**

66:00-18:00 **Round Table Discussion: Continuing Education**
Club Room

Moderators: Nada Singh, *Serbia*
Eser Yıldırım Sozmen, *Turkey*

L-18
The Greek Experience
Angeliki Stathaki-Ferderigou, *Greece*

L-19
Serbian Experiences in Continuing Medical Education
Nada Majkic-Singh, *Serbia*

L-20
Organization of Continuing Medical Education in Laboratory medicine in Republic of Macedonia
Valentina Koloska, *Macedonia*

L-21
Continuing Education and Training of Specialists of Clinical Chemistry and Laboratory Medicine in Turkey
Dogan Yucel, *Turkey*

Oral Presentations Session
Platin Hall

Chairpersons: Orhan Canbolat, *Turkey*
N. Leyla Açan, *Turkey*

16:00-16:15 **OP-09**
Lipoprotein (a) and apolipoprotein(a) polymorphism in diabetic children
Katerina Tosheska-Trajkovska, *Macedonia*

16:15-16:30 **OP-10**
27 bp insertion/deletion polymorphism in intron 4 of eNOS gene in Turkish patients with Systemic Sclerosis
İncilay Sinici, *Turkey*

16:30-16:45 **OP-11**
A genetic association between Myocardial Infraction (MI) and Interleukin-1 B (+ 3953) gene polymorphism in turkish population
Ahmet Arman, *Turkey*

16:45-17:00 **OP-12**
Thalassemia mutation type of hatay-altinozu region
Murat Tahiroğlu, *Turkey*

17:00-17:15 **OP-13**
Prostate specific antigen gene expression and telomerase in breast cancer patients: relationship to steroid hormone receptors
Nosratollah Zarghami, *Iran*

17:15-17:30 **OP-14**
Decreased plasma apelin is positively correlated with adiponectin in patients with treatment naive type 2 DM
Serkan Tapan, *Turkey*

17:30-17:45 **OP-15**
Plasma adiponectin and resistin and insulin resistance in women with polycystic ovary syndrome
Mine Yavuz Taşlıpınar, *Turkey*

17:45-18:00 **OP-16**
Paraoxonase-1 activity in relation to 4-hydroxynonenal and malondialdehyde in chronic renal failure
A. Yeşim Göçmen, *Turkey*

Oral Presentations Session
Gümüş Hall

Chairpersons: Kıymet Aksoy, *Turkey*
Metin Yıldırımkaya, *Turkey*

16:00-16:15 **OP-25**
Discovery and monitory dis-lipid syndroms by hitachi analyzer 912
Aurelian Udristioiu, *Romania*

16:15-16:30 **OP-26**
The system of mononuclear phagocytes during prolonged experimental crush syndrome (PECS)
Adelina Torgomyan, *Armenia*

16:30-16:45 **OP-27**
The effect of Artemisia dracunculus leaves extract on platelet morphology by electron microscopy
Razieh Yazdanparast, *Iran*

16:45-17:00 **OP-28**
ADMA and oxidative stress in chronic renal failure patients: Relationship to cardiovascular complication
Mohamed Gad, *Egypt*

17:00-17:15 **OP-29**
Relationship between serum ADMA levels and respiratuary function tests
Ali Ünlü, *Turkey*

17:15-17:30 **OP-30**
Effects of the hypobaric-hypoxia upon both the urinary excretion and the peripheral blood circulation
Simona Berbecar, *Romania*

17:30-17:45 **OP-31**
Are preservatives necessary for 24 hour urine measurements?
Gülsen Yılmaz, *Turkey*

17:45-18:00 **OP-32**
Microbial agents identified with VITEK 2 COMPACT and their resistance phenotypes to antibiotics
Simona Berar, *Romania*

18:00-18:30 **Closing Lecture:**

Biomarkers of cardiovascular disease: Evidence based considerations
Svetlana Ignjatovic and Nada Majkic-Singh *(BCLF President), Serbia*

18:30- 18:45 **Fifteen Years of BCLF**
Stoyan Danev, *Bulgaria (BCLF, Member at Large)*

18:45-19:00 **Closing Ceremony**

20:30-23:30 **Gala Dinner & Award Ceremony**
Convention Center, Platin Hall

Friday, 7 September 2007

Free Day **Excursion**

BCLF

15th Meeting of Balkan Clinical Laboratory Federation
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INVITED LECTURE ABSTRACTS

Tuesday, 4 September 2007

OPENING LECTURE
LABORATORY MEDICINE: PAST, PRESENT AND FUTURE

Jocelyn M. B. Hicks
Pediatrics and Pathology, the George Washington School of Medicine, Washington, DC, US

In order to put the present and future of laboratory medicine in perspective, it is important to see how far we have progressed in the past few decades. This is best done by a brief look at the past.
The present focuses on Point-of- Care testing, Evidence Based Laboratory Medicine, Molecular Diagnostics, sophisticated approaches such as Tandem Mass Spectrometry and consolidation of tests on to a single platform. Some of the present, and ever evolving challenges in the United States are short staffing and an aging workforce.
The future will clearly focus much more on Molecular Diagnostics, single cell analysis, such as is currently used for In Vitro Fertilization Laboratories, and multiplex testing using DNA chips. There is also the “omic” revolution which I will discuss, as well as nanotechnology, and the need for personalized and preventive Laboratory Medicine. The increasing use of information technology will have a major impact on our field. The necessity to reduce laboratory errors is and will be of utmost importance.
In addition to all of these factors the challenge for developing countries will be the improvement of analytical quality and transferability of results, as well as the problems of appropriate testing for prevalent diseases such as HIV, malaria, etc.

Wednesday, 5 September 2007

L-01
DIAGNOSTIC GUIDELINES: A SERVICE FOR CLINICIANS AND PATIENTS

Mathias M. Müller
Austrian Society of Quality Assurance and Standardisation, Vienna, Austria

In Laboratory Medicine meaningful, accurate and precise routine measurements are essential for diagnosis, risk assessment, treatment and follow-up of patients. In regard to recent technological innovations in laboratory science the number of tests offered by laboratories have highly increased. Immunoassays, flow cytometry, molecular biology techniques request new concepts for the rationale and proper use of laboratory tests and to support clinicians and laboratorians in the interpretation of complex test results. Diagnostic guidelines developed will compensate higher laboratory expenses when introducing these new techniques. Similar to clinical trials for the investigation of new therapies, specific diagnostic clinical outcome oriented trials are necessary for establishing evidence based diagnostic guidelines. So far hints for appropriate diagnosis are often included in clinical guidelines not taking technical quality specifications into account.
Diagnostic strategies recommended in Laboratory Medicine guidelines have to cover the following topics:

- Exact definition and prevalence of the disease or clinical condition to be investigated
- Recommendation of laboratory tests to be used
- Preparation of patient, sampling conditions
- Analytical performance of laboratory tests (methods, quality, standardisation)
- Diagnostic validity of recommendation
    - Reference ranges
    - Medical decision limits for discrimination between clinical conditions
    - Sensitivities, specificities, predictive values of tests
    - Interpretation of test results

The establishment and the continuous updating of diagnostic guidelines following the above principles is an interdisciplinary task making the diagnostic process more outcome and patient oriented. This will certainly contribute to a better understanding of health care professionals.

L-02
TARGETING HDL FOR THE PREVENTION AND MANAGEMENT OF CARDIOVASCULAR DISEASE.

Victor Blaton,
KU-Leuven and Department Clin Chem Az St Jan Av Ruddershove 10, 8.000 Brugge Belgium.

Epidemiological studies have identified, low-density lipoproteins (LDL) and high-density lipoproteins (HDL) as independent risk factors that modulate cardiovascular disease (CVD) risk. Low HDL is often present in high risk patients with CVD. Other lines of evidence suggest that raising HDL would reduce the risk of CV-events. Infusion of apoA-I/phospholipids complexes was associated with regression of arterial lesions, over expression of human apoA-I in transgenic animals protects against diet induced and genetically determined atherosclerosis. These combined results support the concept that raising HDL may represent a therapeutically target for prevention of CV events.
HDL is a truly independent predictor of risk and evidence now shows that increasing the precursor, apo A (I), is nearly always protective. There are many plausible and proven mechanisms by which HDL can inhibit atherosclerosis, including removal of cholesterol, anti oxidation, anti inflammation and very importantly, anti-monocyte adherence actions. The ability of HDL to inhibit endothelial adhesion molecule expression and to potentiate prostacycline release from the endothelial cells supports cholesterol-independent mechanism of HDL Thus, an understanding of HDL metabolism is critical to explaining why increased HDL is protective.
There are as well epidemiological as patient studies available to show the HDL effect on CVD mortality rates. An understanding HDL metabolism is crucial in shedding light on why raise HDL levels are so important.

L-03
THE POSTERIOR PITUITARY LOBE: NEUROENDOCRINE, CLINICAL AND DIAGNOSTIC IMPLICATIONS

Gabor L. Kovacs
Institute of Laboratory Medicine and Medipolis Knowledge Centre, University of Pecs, Hungary

Based on his own experimental research as well as on literature review, the author summarizes physiological, pathophysiological and diagnostic roles, theoretical and clinical aspects of neurohypophyseal neuropeptides. In addition to the “classical” roles of circulating oxytocin in milk ejection and uterus contraction, recently it has become obvious that oxytocin synthesized in the central nervous system (“brain-born” oxytocin) may play a role in pair-bonding and in the development of attachment. More elaborate evidence is available on the effects of circulating vasopressin on aquaporin receptors, excretion of free water, and on the roles of various vasopressin receptor subgroups. Brain-born vasopressin – and even more efficiently brain-born metabolites of vasopressin – facilitates the activity of the ascending dorsal noradrenergic bundle, resulting in enhanced attention and information processing. Familial neurohypophyseal diabetes insipidus (FNDI) is caused by a defect in vasopressin synthesis and release as a result of a heterozygous mutation in the gene for the vasopressin prohormone. The predominant characteristic of FNDI is excessive thirst and urine production. In a recent study, the author and his coworkers investigated the neuropsychological functioning of members of a family, 50% of whom have FNDI. The major aim of the presentation is to call attention to the new neuroendocrine, clinical and diagnostic implications of neurohypophyseal neuropeptides.

L-04
REGULATION OF MAST CELLS' MEDIATOR SECRETION; HOPE FOR NEW ALLERGY TREATMENT?

Israel Pecht
Dept. of Immunology, the Weizmann Institute of Science, Rehovot, 76100 Israel

The regulatory mechanisms of mast cells secretory response to the stimulus of the type I receptor for IgE (FceRI) are natural primary targets for pursuing novel therapies for allergy. We have investigated two distinct regulatory mechanisms:
One is that leading to desensitization of above cellular response while desensitization has been widely investigated for many non-immune membrane receptors, knowledge of this process in the case of the type I receptor for IgE (FceRI) is rather limited. We investigated and established that this secretory response can be subjected to a desensitization protocol involving prolonged sub-threshold exposure to the stimulus, under physiological conditions. The rat mucosal-type mast cells (RBL-2H3) were found to undergo desensitization when subjected to prolonged FceRI-IgE clustering at levels close to the threshold of secretion induction. This was expressed by marked reduction of secretion to a later optimal stimulus also of de novo synthesized mediators (e.g.LTB4 or TNF-a and IL-4).
In a different study, we have discovered that the complement component C3a inhibits mast cells' secretory response to the stimulus of the FceRI by binding to the b subunit of this receptor. Peptides with sequences derived from C3a were synthesized and also found to be capable of causing this inhibition. Investigation of the mechanism underlying this inhibition process has shown that binding of C3a or the peptides derived from it are interfering with the FceRI-b-induced membrane proximal events. Namely, they suppress phosphorylation of the FceRI-b subunit and the protein tyrosine kinase Lyn as well as the rise in free cytosolic Ca2+ concentrations. Potential use of these peptides for treatment of asthma is currently being investigated.
Keywords: Mast cells; Allergy

L-05
ANCA-ASSOCIATED VASCULITIS IN ISCHEMIC STROKE AND HEPATITIS C VIRUS INFECTION

Manole Cojocaru[1], Inimioara Mihaela Cojocaru[2], Cecilia Burcin[2], Adina Atanasiu[2]
1 Colentina Clinical Hospital, Department of Clinical Immunology
2 "Carol Davila" University of Medicine and Pharmacy, "Prof. Gheorghe Marinescu" Clinic of Neurology, Colentina Clinical Hospital, Romania

Background Hepatitis C virus (HCV) infection has been found to be strikingly associated with autoimmune phenomena. Autoantibodies are commonly found in patients with HCV infection.
Purpose The aim of the present study was to investigate the presence of anti-neutrophil cytoplasmic antibody (ANCA) in patients with ischemic stroke and HCV infection.
Material and Methods ANCA were determined in sera from 36 patients with ischemic stroke and HCV infection (18 females, 18 males, mean age 75±10 years) and 44 healthy controls. Assays employed were indirect immunofluorescence for detection of ANCA and ELISA for anti-proteinase 3 (anti-PR3-ANCA). No one of the patients studied received IFN-a treatment before blood collection.
Results Anti-PR3 ANCA were detected in 21 out of 36 (58 %) sera from HCV patients with PCR positivity. All sera with ANCA showed cANCA patterns and contained anti-PR3 specificity. The results suggest an additional link between ANCA and cerebral vasculitis. Anti-PR3 ANCA is a characteristic antibody for vasculitis in patients with ischemic stroke and HCV infection. HCV patients with ANCA showed a higher prevalence of cerebral vasculitis.
Conclusion We concluded that ischemic stroke should be considered the cerebral vasculitis in HCV infection. Anti-PR3 ANCA constitutes a useful diagnostic tool and a sensitive marker of disease activity in this group of patients with cerebral vasculitis. HCV may be regarded as a possible causative factor in ANCA-associated vasculitis.
Key words: hepatitis C virus infection, vasculitis, ischemic stroke

Panel Speakers / Lectures

L-06
CLINICAL PROTEOMICS. DISCOVERY OF BIOMARKERS IN THE DIAGNOSTIC INDUSTRY

Michael Fountoulakis
F. Hoffmann-LA Roche Ltd., RCMG, Build. 93-814, 4070 Basel, Switzerland

Proteomics finds a wide application in clinical research and in particular in the discovery of early markers for various disorders and therefore it represents an essential research tool of the diagnostic and pharmaceutical industry today. Biomarkers are useful as diagnostic tools if they are present in body fluids which are easily accessible like blood and urine. Because of the predominance of several high abundant proteins, search for biomarkers in body fluids is inefficient and biomarker discovery should be first attempted in tissues.
For biomarker discovery we apply high-throughput proteomics involving analysis of all spots from all two-dimensional gels of the study and detection of differential protein expression on the basis of the mass spectrometry results. Biomarker selection and validation represent more complex steps than the detection of differences in proteins expression levels itself. Proteomics is still under development and the current technologies show certain limitations mainly concerning the detection of low-abundance proteins. In spite of the limitations, proteomics contributed to the discovery of biomarkers for cancer, neurological, metabolic diseases and other disorders. Proteomics possesses the unique power to discover unknown proteins involved in biological processes and it will certainly contribute to the biomarker discovery in the future.

L-07
PHARMACOGENOMICS; FROM GENE TO PATIENT: TOWARDS INDIVIDUALIZED DRUG THERAPY

Michel Eichelbaum
Dr. Margarete-Fischer-Bosch-Institute, für Klinische Pharmakologie, Auerbachstr. 112, D-70372 Stuttgart, Germany

With the complete sequence of the human genome available, individualized medicine may soon become reality. Genomic information may allow more accurate prediction of an individual's drug response and selection of the appropriate drug dosage to achieve the optimal therapeutic response, avoid therapeutic failure and minimize side effects and toxicity.
Although many genes encoding proteins involved in the metabolism, transport and mechanism of action of medications are known to exhibit polymorphism in humans, use of this knowledge in routine clinical practice is limited. Excepting a few examples of drug-metabolizing enzymes, the contribution of genetic polymorphisms to individual differences in drug effects and toxicity is not well understood. Moreover, most studies have focused on the effect of a single polymorphism on drug response. This approach neglects the fact that drug response phenotype, like most disease phenotypes, is a complex polygenic trait also determined by nongenetic factors (3). The extent to which genetic factors contribute to the drug response/toxicity phenotype depends on the extent of the candidate gene's influence on drug disposition and effects. Misconceptions also exist about the information provided by a pharmacogenetic test. Even if a gene has a large effect on a drug's pharmacokinetics or pharmacodynamics, the presence of, a single nucleotide polymorphism (SNP) in that gene will not provide an unequivocal answer but, rather, will indicate the likelihood that an individual patient will show an altered drug response.
Keywords: pharmacogenomics, drug treatment

L-08
HIGH-RESOLUTION ARRAY COMPARATIVE GENOMIC HYBRIDIZATION (CGH): APPLICATIONS AND EXPERIENCES

Fikret Erdogan
Max Planck Institute for Molecular Genetics, Department Ropers, Ihnestr. 73, 14195 Berlin, Germany

High-resolution array Comparative Genomic Hybridization (CGH) is a molecular cytogenetic method for the detection and mapping of chromosomal gains and losses. The method is based on the co-hybridization of differentially labelled test and reference DNA on tiny spots of DNA printed on glass slides. We have established a submegabase resolution whole genome tiling path array CGH platform comprising more than 36000 BAC clones. One application of this technique is the screening of large cohorts in order to define positional and functional candidate genes, which could improve our understanding of the molecular mechanisms underlying certain diseases. The power of this approach will be illustrated on the example of a cohort of 105 patients with congenital heart disease as the sole abnormality at

the time of diagnosis. In that study we have detected a surprising high number of familial as well as de novo aberrations; this is not only of interest for basic research, but has direct diagnostic implications too.
By combining our array platform with other techniques such as chromosome micro-dissection and chromosome sorting, DNA arrays can also be employed to fine map chromosomal breakpoints in balanced translocations and inversions. Molecular cytogenetic breakpoint analysis enables the quick identification of disease causing genes disrupted by the balanced chromosomal rearrangement.

L-09
GENOMICS AND PROTEOMICS: NEW APPROACHES AND BIOMEDICAL OPPORTUNITIES FOR CLINICAL CHEMISTRY

Kiro Stojanoski
Institute of Chemistry, Faculty of Sciences, Sts. Cyril and Methodius University, Skopje, Macedonia

A number of methods and approaches are engaged in the study of genome and proteome in the cells. In the last half century, there has been an exponential expansion of biology research using genetics-based concepts with focus on the studies at molecular level.
The genomic analysis includes technology for DNA sequencing, RNA analysis and bioinformatics tools to catalogue and analyze the data.
However, the effects of cellular, environmental factors or multigenic processes such as ageing or disease cannot be assessed simply by examination of the genome alone and the concept of mapping the human proteome is introduced.
The central tool for displaying the proteome is 2D electrophoresis coupled with methods for protein identification (mass spectrometry, NMR, etc).
In this lecture we describe the impact of the underlying technology on clinical chemistry and biomedical research, and we will discuss the advantages and the limitations of the new approaches.
Also, in this lecture, literature data and our data for genome and proteome analysis will be presented.
The maximum effect of proteomics-based approaches on clinical chemistry has not yet been achieved, partly because of the lack of awareness in the research community about the methods and partly of the naturally occurring lead-in time after any technological advance. Integration of genomics and proteomics-based approaches is needed in order to develop more efficient tools that can be used in biomedical research and clinical practice.

Thursday, 6 September 2007

L-10
TARGET VALUE FOR INACCURACY AND IMPORTANCE OF HARMONIZATION

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The past decade has been a time of significant change in international health. United Nations system aims to make organizations more responsive to the needs of nations for the achievement of International development goals. For achieving this goal, organizations such as IFCC, IUPAC, ISH, NCCLS, or national bodies CAP & CMS, set effective performance characteristics for diagnostic tests to ensure reliable, traceable and comparable laboratory test results and increase both efficiency and the operational effectiveness(1). In the quest for laboratory quality, proficiency testing, accreditation and inter-laboratory quality assessment programs are essential tools to measure harmonization and progress through accuracy (2).
Unfortunately there is no accredited external quality assessment (EQA) program neither in the area of Clinical Biochemistry nor in that of Haematology in Turkey. As Düzen Laboratories Group, an EQA program was planned. This program is aimed to upgrade the status and standards and to build up compatibility, harmonization within test results and increase accuracy (trueness and precision) among private laboratories. Such a programme will;
• Reduce and eventually eliminate the practice of multiple assessments,
• Reduce time interval to determine the effectiveness of medical treatment,
• Enhance the acceptability and reputation of private laboratories in the domestic market.
Design and application details of our EQA program will be presented in this talk, but breifly;
• Almost 95 % of the participating laboratories were evaluated as competent for maintaining reliability and comparability in their individual external quality system (CLIA limits).
• Further progress in harmonization and accuracy was achieved by wider use of calibrator samples provided by kit suppliers for hematology.
• Realizing the biological and analytical variation (biometrological uncertainty), reference change value was lowered by decreasing imprecision.

(1) www.cdc.gov/CLIA/regs/toc.aspx
(2) www.who.int/mdg/publications/MDG_Report_08_2005.pdf

L-11
RISK MANAGEMENT IN MEDICAL LABORATORIES

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The annual rate of illnesses and injuries reported for hospital workers is depending on country about 10 percent and share the same numbers reported for metal workers or auto mechanics. The other controversy is that this problem is somehow hidden and not appropriately discussed among profession. Three groups of illnesses are most often: infections, dermatitis and medication reactions, but within each serious consequence of diseases may appear.
The reasons for the lack of emphasis on employer's health might be found as: common notion that health professionals are capable of maintaining their health without assistance, availability of informal consultation with hospital physician and general orientation particularly in hospitals on patient care. But safety should be taught and implemented on every level in the health care sector, specifically within health care environment for both health care workers and patients. Implementing of general safety and risk reduction programs as part of quality standards is mandatory and accompanied with risk assessment in each part of medical practice including medical laboratories.
In medical laboratories beside high risk of infectious diseases characteristic for all health care workers, laboratory personnel is more exposed to chemical, physical, mutagenic agents and skin irritants. The risk of stress is moreover underestimated in medical laboratories.
Risk assessment therefore must include systematic review and reporting of diseases accompanied with profession, review of pathogenicity of materials, routes of transmission or ingestion and methods of effective prophylaxis The comprehensive program for risk management include measures for reducing the error through prevention, reducing the fear of reporting errors, establishing the procedures for reporting unsafe conditions, advertising safety environment and advocacy for safety and health within medical profession. The management is responsible for creating the safety culture and should demonstrate top leadership commitment to health of their coworkers.

L-12
RATIONAL LABORATORY DIAGNOSTIC AND POSSIBILITIES OF INADEQUATE ANALYSES APPLICATIONS

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In the contemporary medicine the laboratory diagnostic takes the central place with about 60% of information that are being used for setting the diagnosis. The automation service reduces the time necessary for analyses, eliminates the possible mistakes appearing during the manual work, reduces the quantity of samples and reagents necessary for the analysis, the referential methods are applied at work and the quality of analysis control is improved. Rational diagnostic implies adequate usage of all diagnostic facilities where the needs of the patients are fully respected. The results obtained by measuring of certain parameter in blood or in other corporal liquid of a patient, represent its real concentration, that is, they tell us about its physiological state. However, the influence of more factors (pre-analytic, analytic, periodic biological changes, variations caused by patient's state etc.) can disprove this assumption. The results of analyses obtained can be misinterpreted or abused in various ways and for various purposes, either by physician who asks for them or by patient himself.

L-13
THE INITIAL EXPERIENCES IN AUDITING OF QUALITY MANAGEMENT IMPLEMENTATION IN SLOVENIA

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Quality management is an ongoing process, marked mainly by countinuous improvement. Slovenia has not yet started with accreditation of medical laboratories against ISO15189 although it was accepted by the Slovenian Accreditation, the formal accreditation body. So before this » authoritative body« gives (or not) formal recognition that a body or person is competent to carry out specific task « the laboratories were granted more time to prepare.
On the joint initiative of Slovenian Association of Clinical Chemistry (SZKK) and Chamber of

Laboratory Medicine (ZLMS) the Bylaw based on ISO 15189 was passed by Ministry of Health in 2004. In order to assess whether the quality systems comply with legally adopted regulations, the laboratories began with internal audits. To adopt auditing techniques it was necessary to train the staff. SZKK again took the initiative and in collaboration with Slovenian Institute for Quality (SIQ) prepared training for auditing programmes. The course gave the participants a general understanding of ISO15189, of the bylaw and of the auditing programme as well as extensive guidance on how to prepare and conduct the audit. The assessment of quality systems can thus only be performed by trained personnel who is able to review the conformity to requiremnts of the bylaw. The first experiences on internal assesment demonstrated that the laboratories are prepared for external assesments.

L-14
NEW PERSPECTIVES IN THE ANTENATAL SCREENING FOR DOWNES SYNDROME

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Down's syndrome is the most common genetic cause of mental retardation in newborns. Prenatal diagnosis of Down's syndrome and other chromosomal abnormalities is done by karyotyping of fetal cells obtained by amniocentesis or chorionic villus sampling.

Screening tests in both first and second trimester of pregnancy have been developed, trying to identify pregnancies at "high risk" which are candidates for further diagnostic testing.

At the early decade of 90s, screening was entirely done in the second trimester using two (hCG, AFP) to four (plus uE3, and Inhibin) maternal serum markers achieving a detection rate of 65% to 68% with 5% false positive results. The last decade, screening has shifted to the first trimester of pregnancy with the combination of nuchal translucency, a powerful ultrasound marker, with biochemical markers Fb-hCG and PAPP-A. Many prospective studies have confirmed an 80% to 85% detection rate with 5% false positives for this screening protocol.

More recently attention has been given to sequential screening policies where markers measured at both trimesters are combined to give a single risk estimate. The prospective multicenter USA study (FASTER), concluded that sequential screening is expected to achieve a 94% detection rate.

Besides this well established practice of screening in most countries, research has also focused on new ultrasound markers (nasal bone) or new biochemical markers (ADAM 12, ITA, ProMBP) in the first trimester or earlier in pregnancy (7th to 9th week of pregnancy). Very recent studies have shown that concentrations of cell-free fetal DNA, measured in the maternal circulation, may represent a potential new marker for Down's syndrome screening.

L-15
THE PREVALENCE OF BETA THALASSEMIA IN STUDENTS LUSHNJA DISTRICT, ALBANIA

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Background: Thalassemia is one of the major concerns for the Health care system in Albania, especially in the region of Lushnja. It is calculated that in this region the number of patients with thalassemia Major reaches about 100 and the prevalence of carrier status in the general population is 12-15%.We don't have any national preventive program, and about 15-20 new cases are discovered annually.

The aim of the project was to evaluate the prevalence of the thalassemia carrier status in the high school students of Lushnja, and to increase the awareness of the population in the area about the importance of routine screening. USAID in Albania was the financial supporter of this project.

Methods: From May till December 2006 we performed an educational and screening program for thalassemia in 8 high schools of Lushnja. 1820 students agreed to undergo screening which consisted of total blood counts and hemoglobin electrophoresis.

Results: 30% of the 1820 blood samples tested had microcytosis (MCV<78) and hypochromia (MCH<26) but only 7, 58% of them were beta-thalassemia carriers and 1,48% were carriers of Hb S. The prevalence of carriers results greater in lower seaside regions (10-11%) then in the city (4,38%). From our studies it can be observed that there is a selective distribution of thalasemia and drepanocytosis. Prevalence of HbS carriers was grater in the northern parts of the region (8, 57%).

Conclusions: Our data confirmed the high prevalence of beta-thalassemia carriers in Lushnja and suggests long-term application of educational and screening programs.

L-16
PREDICTION OF TYPE II DIABETES- NEW DIAGNOSTIC PERSPECTIVES

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Type 2, non insulin dependent diabetes mellitus (NIDDM)-T2D, is the most common form of diabetes and one of the frequent and complex metabolic disorders, known as a major cause of morbidity and mortality in societies worldwide. This disease, mainly found in adults, but increasingly common in children, is in both populations probably caused by the same genetic factors. Clinical need for precise molecular diagnosis in early onset diabetes has led to a recent boost in efforts related to genetic identification of a disease, covering early senescence and a loss of beta cell function, as well as insulin resistance. Results of a group of researchers from Canada, England and France published in 2007, have revealed almost 70% of the genetic background of the disease and identified a mutation in a zinc transporter known to regulate insulin secretion. Responsible genes predisposing a person to type 2 diabetes have been located on chromosomes 1q, 12q, 20q, and 17q with common variants identified for multifactorial forms of disease. Diagnostically valuable polymorphisms, associated with impaired beta cell function exist at the level of transcription factor7-like2 gene (TCF7L2), and gene variant FABP2 in American population. Newly proposed markers of insulin secretion and insulin resistance are melanin concentrating hormone (MCH) and RBP4 (retinol binding protein)., new diagnostic value is attributed to elevated ALT (within normal range), inflammatory markers and S –adenosylmethionine.

L-17
ABDOMINAL OBESITY, DIABETES ABD CARDIOVASCULAR RISK

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Obesity plays a central role in the insulin resistance syndrome, which includes hyperinsulinemia, hypertension, hyperlipidemia, type 2 diabetes mellitus, and an increased risk of atherosclerotic cardiovascular disease.

The association of obesity with the insulin resistance syndrome and cardiovascular risk is not only related to the degree of obesity but also seems to be critically dependent on body fat distribution. Thus, individuals with greater degrees of central adiposity develop this syndrome more frequently than do those with a peripheral body fat distribution.

The major endocrine function of adipose tissue is secreting several hormones, notably leptin and adiponectin; adipokines such as resistin and acylation-stimulating protein, as well as the recently described visfatin and retinol-binding protein-4. Also adipose tissue releases adipokines involved in inflammation and hemostasis : growth factors (TNF_, transforming growth, factor-beta nerve growth factor, VEGF), cytokines (IL-1_, IL-6, IL-10), chemokines (IL-8), acute-phase proteins (include _1 acid glycoprotein, serum amyloid A, the C-reactive protein homolog pentraxin-3, the lipocalin 24p3, haptoglobin) and prothrombotic factor (plasminogen activator inhibitor-1).

Abdominal fat accumulation has been shown to play essential role in the development of metabolic syndrome. The metabolic syndrome, a cluster of metabolic disorders often associated with visceral obesity, increases cardiovascular mortality and morbidity. Obese patients, particularly those with visceral fat accumulation, have diminished plasma levels of adiponectin, the most abundant protective adipose-specific adipokine.

L-18
THE GREEK EXPERIENCE

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In Greece, the Continuing Education Programs for the Specialists in Clinical Chemistry and Laboratory Medicine are conducted by the existing Scientific Societies, which also provide the appropriate points.

The Greek Society of Clinical Chemistry-Clinical Biochemistry (GSCC-CB) from its foundation in 1992 has, as one of its principal tasks, to establish education programs for its members. So, till 2001 it organized and realized 16 seminar courses in different areas of Clinical Chemistry.

In 2003, the GSCC-CB as a member of IFCC and EC4, has decided to establish a National Register for Clinical Chemists-Clinical Biochemists in a voluntary base. So through its Scientific Committee implemented a new cycle of 18, one day education seminars, the subjects of which comply with the ones of the syllabus of EC4. There have been edited the 18 corresponding booklets and there was also a written test for the participants at the end of each seminar. There was a system of granted points of continuing education for attendance and successful written test. All this materi-

al, which is also available in electronic form from the site of the society, consist the core of the necessary theoretical education of the specialists in Clinical Chemistry and Laboratory Medicine.
This cycle of the 18 seminars in combination with five years of laboratory training according to predefined requirements, which are included in the Professional Training Dossier (PTD) (Logbook), was, for our National Register, the “key” for the successful joining of the European standards of Equivalency (in 2004). So, now, the members of the Greek Register of Clinical Chemistry-Clinical Biochemistry, become immediately European Clinical Chemists (or the most recent title, European Specialists in Clinical Chemistry and Laboratory Medicine).
More over, the GSCC-CB is organizing every two years a National Congress on Clinical Chemistry and Laboratory Medicine and two or three continuing education seminar courses each year. The subject of the last congress that took place in Athens in November 2006 was: CLINICAL CHEMISTRY WITHOUT …BOUNDARIES
and the continuing education program for 2006 and 2007is: Certification-Accreditation of Medical Laboratories, 25-2-2006(realized)
Point Of Care Testing (POCT), 7-10-2006(realized)
Bone Metabolism-Osteoporosis, 10-3-2007(realized)
Biochemistry of Exercise, 26-5-2007
Biochemistry of Nutrition, (date to be announced).
All these scientific activities, along with the attendance on specific topics seminars or congresses are accompanied by a number of points of continuing education (PCE) necessary for the re/registration to the National Register for Clinical Chemists-Clinical Biochemists.
Finally, for the realization of the education program of the Society, the Scientific Committee, is working on new ways (distance learning), that are more easily accessible to its members all over the country.
Keywords: continuing education programs

L-19
SERBIAN EXPERIENCES IN CONTINUING MEDICAL EDUCATION

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The first continuous and organized education for Medical Biochemists (Clinical Chemists) in Serbia dates from 1945, when the Department of Medical Biochemistry was established at the Pharmaceutical Faculty in Belgrade. Further development in the education of Medical Biochemists was in 1955 with the introduction of a postgraduate specialization in Medical Biochemistry at the Pharmaceutical Faculty of Belgrade University. In 1987 at the same Faculty a five years undergraduate branch was established, educating Medical Biochemists under a special program. In order to get a license to work in clinical chemistry laboratories, students must have one year practical work experiences in hospital laboratories after graduation.
The specialists in clinical chemistry up to now are educated in a special 3-year program at the Faculty of Pharmacy or Medical Faculties, covering the organized lectures, practical training in laboratories and examinations. The final examination requires an overall knowledge in medical biochemistry and clinical chemistry. There are also three subspecialisation for clinical chemists: Laboratory Endocrinology, Clinical Enzymology and Clinical Immunochemistry. The program lasts one year. On the completion of the program, a Diploma of Subspecialization in the field is awarded. The Ministry of Education and Ministry of Public Health accredits the programs.
Up to this year we had organized postgraduate studies in medical biochemistry last two year. After passing the examinations, the student is assigned and experimental project by the supervisor. Data obtained from the experiments are presented in a written form and defended before a commission. Candidates for a doctoral degree usually had a Masters Degree. All candidates are assigned a project by their supervisor, which they have to work out experimentally. They then write a thesis, which must be defended in front of commission.
The Society of Medical Biochemists of Serbia was established in 1955, and since its institution until these days, the Society has accomplished significant activities in the field of education of clinical chemists through the organization of congresses (biennial), innovations in laboratory medicine, seminars etc. The Society has significant publishing activity through Journal and professional-methodological guidebooks for the field of medical biochemistry.
Since school-year 2006/2007 the new undergraduate (according to Bologna declaration) and postgraduate program of four-year specialization according to EC4 European Syllabus for Post-Gradate Training in Clinical Chemistry and Laboratory Medicine has been established. Also, in 2006 according to Health Law the new institutions – The Chamber of Biochemists of Serbia has been established with aim to do licensing of the medical biochemists. In cooperation with Ministry of Health the Chamber will prepare the documents that will regulate the program of Continuing Medical Education (CME) and Regulation of Licensing of Medical Biochemists. The program of CME will be accredited by the Republic Health Council, and in program realization will participate the Pharmaceutical and Medical Faculties, The Society of Medical Biochemists and The Chamber of Biochemists of Serbia.
Key Words: Continuing Medical Education, Medical Biochemists, Clinical Chemists, Serbian Experiences

L-20
ORGANIZATION OF CONTINUING MEDICAL EDUCATION IN LABORATORY MEDICINE IN REPUBLIC OF MACEDONIA

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The program of continuing medical education in laboratory medicine in our country is organized through our Society.
The program is accredited in Doctor`s Chamber and organized through our regularly meetings, which are approximately 4-5 per year.
Presenters are Specialists of medical biochemistry, Masters of Sciences and eminent Professors from our country which are working in the different part of biochemistry (hematology, immunology, molecular biology) and clinicians, thus covering the clinical aspect of the disease.
There are approximately two or three presenters per meeting, one biochemists, one clinician and one from the companies presenting the new trends in biochemistry.
Six points are for the presenter and 4 for the listener.
Also there are Symposiums concerning specific topics, working groups and National and International Congresses.
We must point that so fare, our system of education is organized on that way that only doctors and pharmacists are allowed to specialize medical biochemistry with different three years educational programs.
In preparation is a new four year program for specialization of medical biochemistry. The points for registration and accreditation are needed for these two profiles.
Because the waste majority of the members of our society and the laboratory staff in our country are the biologists- biochemists and chemists from the Faculty of natural sciences and mathematics, which are not allowed to specialize medical biochemistry, according to the EC4 recommendations, our society is making effort to implement these recommendations in our country.

L-21
CONTINUING EDUCATION AND TRAINING OF SPECIALISTS OF CLINICAL CHEMISTRY AND LABORATORY MEDICINE IN TURKEY

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Clinical biochemistry, the largest subdiscipline of laboratory medicine worldwide, is an interdisciplinary science between medicine and natural sciences such as chemistry, physics and biology. Therefore, as in Turkey, it has been a professional field accessible by physicians and natural scientists throughout the world. The title of profession is “Specialist of Biochemistry and Clinical Biochemistry” in Turkey. Minimum standard to enter specialty training is a minimum 4-year university degree in medicine, chemistry, biology, veterinary medicine and pharmacy. The candidates from these disciplines compete for vacant residencies by entering a central national examination organized by state. Training is given by biochemistry departments of medical faculties and education and research hospitals of Ministry of Health. Main aim of the training is to have the appropriate management skills to lead a clinical biochemistry laboratory in a 4-year period of residency. The scope of the training, in general, includes technical competency (procedures and instrumentation), clinical interpretation of analytical data, laboratory management, quality assurance and quality systems, data management, consultation with colleagues, legal/regulatory issues and ethics, and research and development experience. Unfortunately, still there is not a standard curriculum for clinical biochemistry in Turkey. A proposal for the new 4-year standard program is awaiting approval of the Ministry of Health. An additional necessity is to be established a university doctoral program for clinical biochemistry.
Continuing education and training in clinical chemistry and laboratory medicine is principally carried out by our organization, Turkish Biochemical Society (TBS) which was founded in 1975. TBS is a member of IFCC-LM and FESCC since 1997. In the continuous education context, TBS works hard by organizing symposia, national and international scientific congresses held in every one and a half year, courses and summer schools (especially on standardization, accreditation and certification, laboratory management, evidence-based laboratory medicine, total quality management and quality systems, clinical enzymology, molecular diagnostics and molecular medicine, metabolic diseases, bioinformatics, education in clinical chemistry and laboratory medicine, etc.), conferences and panel discussions in big cities such as

Ankara, İstanbul and İzmir, organized by local sections of TBS, and by publications (books, booklets and journals). Turkish Journal of Biochemistry, official journal of TBS, has been continuously published since 1976. TBS aims to harmonize EC4 syllabus with our national conditions in a manner of theory and practice inseparableness today.

Key Words: Education, training, clinical biochemistry, laboratory medicine

Closing Lecture

BIOMARKERS OF CARDIOVASCULAR DISEASE: EVIDENCE BASED CONSIDERATIONS

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Application of the principles of evidence-based medicine to laboratory medicine highlights the importance of establishing the role of diagnostic procedures in clinical decision-making. The overall expectation of biomarkers of cardiovascular disease is to enhance the ability of the clinician to optimally manage the patient. Advances in functional genomics, proteomics, metabolomics, and bioinformatics have revolutionized unbiased inquiries into numerous putative biomarkers that may be informative with regard to the various stages of atherogenesis including overt cardiovascular disease and its sequelae. A prerequisite for the clinical use of biomarkers is elucidation of the specific indications, standardization of analytical methods, characterization of analytical features, assessment of performance characteristics, incremental yield of different markers for given clinical indications, and demonstration of cost-effectiveness. To illustrate the opportunities and challenges related to the use biomarkers of cardiovascular disease (circulating, structural, functional, inflammatory and genomic) this work will consider as example biomarkers of acute coronary syndromes according to National Academy of Clinical Biochemistry and IFCC Committee for Standardization of Markers of Cardiac Damage Laboratory Medicine Practice Guidelines.

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ORAL PRESENTATION ABSTRACTS

Wednesday, 5 September 2007

Platin Hall

OP-01
EMERGING MANAGERIAL CONCEPTS AND ACCREDITATION OF CLINICAL LABORATORIES IN EUROPE

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The existing ISO and CEN standards do not cover essential aspects of medical laboratories Each country in Europe has a slightly different approach. The 35000 professionals practising clinical chemistry and laboratory medicine in Europe at large have different backgrounds. The professional duties of the specialists in clinical chemistry differ from country to country in Europe. One of the main goals of the Strategic Plan of the Forum of the European Societies of Clinical Chemistry and Laboratory Medicine (FESCC; IFCC-Europe) is to promote a high scientific and professional standard in the field of clinical chemistry and laboratory medicine in Europe. This can be stimulated by the knowledge of the local conditions in each country and by striving towards a strong and harmonised position in all the European countries. Also, there is a need for harmonization of training, registration of professionals and accreditation of clinical laboratories. The accreditation of laboratories must be based on a total quality management system. The EC4 (European Communities Confederation of Clinical Chemistry) actions have stimulated the development of the ISO/Draft International Standard 15189. This standard seems adequate for the clinical laboratories. However, it is not easy to read. The EC4 Essential Criteria could well serve as a guide, covering additional aspects, e.g. on total quality management and budget management;. Quality improvement in the modern clinical laboratory environment entails the continuous inspection and refinement of processes to ensure the efficient delivery of services. Implementation of ISO 15189 will result in a significant improvement in medical laboratories management system and their technical competence.

OP-02
SIX SIGMA AND LEAN CONCEPT IN LABORATORY MEDICINE

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The Six Sigma methodology represents an evolution in quality management that is being widely implemented in business and industry in the new millennium. The Six Sigma strategy measures the degree to which any process deviates from its goal. The sigma value indicates how often errors are likely to occur. The best or ‘‘world class’’ processes have a level of 6 sigma, which means that in this process fewer than 3.4 errors occur per million products or tests. Sigma metrics are being adopted as a universal measure of quality and the performance of all processes can be characterized on the "Sigma scale." In clinical laboratories the sigma performance of analytical methods can be formulated as below:

Sigma = (TEa-bias)/CV

(TEa: total error allowable)

Ideally, Six Sigma or six SD should fit within the acceptable limits of the method. In patient focused quality management high quality itself is not adequate, the result of patients’ tests should be reported within the given time and in communication with the physicians. For that reason we should combine the Lean concept with Six Sigma to make the work faster (using Lean principles) and better (using Six Sigma principles). Traditionally the ‘Six Sigma’ focused more on quality than the speed and the ‘Lean’ focused on the flow speed than quality improvement. Clinical laboratories, which have been used Lean Six Sigma in total quality management, decreased errors and contributed patients’ safety more than most other healthcare sectors.

OP-03
REFERENCE INTERVALS FOR HEMATOLOGY PARAMETERS IN TURKEY

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Reference intervals serve as the basis of laboratory testing and aid the physician in differentiating between healthy and diseased population. In the present study we calculated laboratory-specific reference intervals for hematology parameters according to nonparametric method. These values were compared with manufacturer suggestions and the values obtained from literature. The study was carried out at the Central Laboratory for Clinical Chemistry, Teaching and Research Hospital,Uludag University, Bursa. Blood samples were drawn from 18– 45 years old 407 (224 women, 183 men) healthy subjects. The Cell-Dyn 3700 (Abbott) hematology analyzer was used for the analyzes. Internal quality and external quality controls were performed.The reference intervals and 90% confidence intervals from the reference individuals were calculated for hemoglobin, hematocrit, red cell count (RBC), white cell count (WBC), mean corpuscular volume (MCV), mean corpuscular hemoglobin concentration (MCHC), red blood cell distribution width (RDW), platelet count (PLT).The calculated reference intervals in the present study with the exception of only few parameters (such as RBC,WBC and MCHC), were not similar to the reference intervals suggested with the reference suggested in the manufacturer insert and suggested from literature. We conclude that the production of laboratory-specific reference interval is an essential function of a clinical laboratory, and the invaluable knowledge about the population.

OP-04
NEW TECHNIQUES IN ORDER TO DIMINISH THE NECESSARY NUMBER OF NORMAL PATIENTS' RESULTS IN THE "AVERAGE OF NORMALS METHOD"

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Introduction: The “Average Of Normals” (AON) method is an alternative quality control method based exclusively on patient’s data. According to it, the average of the daily normal results must be varied within certain limits, if not, there is an analytical systematic error. The most important parameter of AON method is the minimum number (N) of normal results for which their mean value can be used as a substitute of the common control samples. Former studies have proved that this number depends on the ratio Sp/Sa where Sp is the variance between health people and Sa is the analytical variance.

Purpose: To diminish the minimum number N (Nmin) by using Westgard criteria and Exponential Weighted Moving Average (EWMA).

Method: A specific software is constructed based on a large number of simulations according to different analytes, minimum numbers N, human variance, analytical variance, control chart limits and the truncation limits of the normal results. The program can also simulate the Westgard criteria suitable for systematic errors (22s, 10 , 41s) and the moving average method EWMA. In the last case the simulations refer to different weight factors (_) and number of results for each moving average (n).

Results: Many different ratios Sp/Sa were studied (1 … 10). For instance, for Sp/Sa = 8, Systematic error = 2 Sp, Control Limits = 3 Sp, Truncation limits = 2 Sp, the application of 10 rule needs 50 normal results, 41s needs 90 normal results and 22s needs 175 normal results per day. On the contrary, 13S needs 275 normal results and 12,5S needs 200 normal results per day. Unfortunately, EWMA did not give so ambitious results. For the same simulations’ parameters and weighted factor _ = 0,2 and n = 20, there will be needed more than 400 normal results.

Conclusions: If the Westgard criteria are carried out on successive days, they diminish the necessary number of normal results making AON method suitable even for laboratories with small turnover. This does not happen with EWMA method which does not diminish the necessary number of normal results at all.

OP-05
A SIMPLE METHOD FOR THE SIMULTANEOUS DETERMINATION OF IMMUNOSUPPRESSANTS IN BLOOD USING LC-MS/MS

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Background: Simple LC-MS/MS methods for the TDM of single immunosuppressant drugs have been widely adopted. A demand for multi-analyte methods has arisen from the increasing use of multi-therapy and the need to streamline laboratory workflow. Typically, these methods use on-line SPE and tend to reduce sample throughput. We have investigated the use of more advanced MS/MS technology to deliver a rapid multi-analyte method.
Method: A Waters Acquity TQD mass spectrometer was optimised for the analytes (tacrolimus, sirolimus, everolimus and cyclosporin A) and their internal standards. Whole blood was treated with 0.1M zinc sulphate and extracted with acetonitrile containing the internal standards. Seven MRM channels were monitored and the cycle time was 2.5 minutes. Commercially available calibrators were used to construct calibration curves. Whole blood samples from the Tacrolimus International Proficiency Testing (IPT) Scheme (Prof. David Holt, London, UK) were used to determine intra- and inter-day precision and accuracy.
Results: Correlation coefficients, r>0.995, were obtained for each analyte calibration curve. The intra- and inter-day imprecision of a low, medium and high QC for each analyte were all acceptable. All the IPT sample results were within the IPT scheme's acceptance criteria.
Conclusion: A simple and robust method using LC-MS/MS for the determination of multiple immunosuppressants in a single experiment has been demonstrated, without the need for on-line SPE.

OP-06
LABORATORY INVESTIGATION OF HEMOGLOBINOPATHIES: HPLC RETENTION TIME AS A DIAGNOSTIC TOOL

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Structural haemoglobin (Hb) variants typically are based on a point mutation in a globin gene that produces a single amino acid substitution in a globin chain. Although most are of limited clinical significance, a few important subtypes have been identified with some frequency. Homozygous Hb C and Hb S (sickle cell disease) produce significant clinical manifestations, whereas Hb E and Hb D homozygotes mat be mildly symptomatic. Although heterozygotes for these variants are typically asymptomatic, diagnosis may be important for genetic counselling. Alkaline cellulose acetate and acidic citrate agar electrophoreses are the most variety utilized methods for haemoglobin analysis. However, due to their limited resolution, incorrect or unresolved diagnoses of common hemoglobinopathies are sometimes encountered. HPLC methods have been developed for either screening or confirmation of hemoglobinopathies with relatively high sensitivity or specificity. Through the years, we have developed, refined and optimized an HPLC procedure using a porous silica silica coated with polyaspartic acid to improve the eluted time of haemoglobin analysis while maintaining the high sensitivity and resolution necessary for both screening and confirmatory purposes. The method is capable of separating more than 45 commonly encountered haemoglobin variants within 15 min. The method provides not only the identification of the aforementioned haemoglobin and variants but also an accurate quantitation of their concentrations, which are useful for the diagnosis of HPFH. Therefore, the simplicity of the sample preparation, superior resolution of the method, and accurate quantitation of haemoglobin concentration, combined with complete automation, make this an idea methodology for the routine diagnosis of haemoglobin disorder in a clinical laboratory.

OP-07
A SIMPLE AUTOMATED CITRATE DETERMINATION METHOD IN URINE

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In humans, citrate is both metabolized and excreated by the kidney, and its presence in urine contributes to the inhibitory potential against crystalization of calcium salt: Hycocitraturia is seen in a substantial number of patients with calcium nephrolitiasis. We propose a new automated simple citrate method in urine. The principle of the method rests on the quantification of the yellow complex formed with iron chloride III and the urinary citric acid, measurable at 390 nm in acidic medium. All the conditions were combined to optimize it, while covering a satisfying field of measurement. The evaluation of the modified method showed a good precision (repeatability: CV < 3,2%; intraassay CV < 3,9 %; interassay CV <5,15%). The method is linear between 0.05 and 15 mmol/L. The method was well correlated with enzymatic method (r=927 p<0.001 n=100) In conclusion, this modified, simple, fast, inexpensive and easily automatizable technique, seems to be reliable and especially more sensitive, adapting particularly to the detection of subjects suffering a deficit of citrate secretion, one of most significant inhibiting agent of lithiasis kidney formation.

OP-08
DECREASING MATRIX EFFECT ON DIAZO REACTION BY CHANGING SAMPLE VOLUME AND NITRITE CONCENTRATION IN TOTAL AND DIRECT BILIRUBIN DETERMINATIONS

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One of the most important problems in the bilirubin measurements seems to be elimination of sample's matrix effect. Because of matrix differences between calibrators, controls and patient samples, the reaction could not always reached to the endpoint in the classical Jendrassik-Grof method using the reaction between bilirubin and diazotized sulfanilic acid. Nitrite concentration in the reaction mixture has also been found to be critical for direct bilirubin measurements. We measured total and direct bilirubin levels in control materials and in patients with Gilbert's disease and hyperbilirubinemia in the newborn by changing final nitrite concentrations between 0.01-1.5 mmol/L in the reaction mixture. The relationship between nitrite concentration and reaction absorbances were not correlated. The optimal nitrite concentration in the final reaction mixture was 0.1 mmol/L for direct and 0.21 mmol/L for total bilirubin measurements. We adapted the total and direct bilirubin determination methods to the Beckman Coulter Synchron LX-20 automated analyser, Beckman Coulter Synchron CX-5, Olympus AU 800 and Abbott Architect c8000 autoanalysers. Total and direct bilirubin measurements were well correlated between all analysers by using different commercial controls (Beckman Coulter Decision Multilevels, BioRad controls, Roche controls, Olympus Controls) and patient samples (the mean CV% values were between 3.4% and 4.8% for total and direct bilirubin measurements respectively). In conclusion we have improved Jandrassik-Grof based total and direct bilirubin measurement methods which could not effected by sample matrix by changing nitrite concentrations and lowering sample volumes.

Wednesday, 5 September 2007
Gümüş Hall

OP-17
GAS CHROMATOGRAPHIC ANALYSIS OF FFAs IN BIOLOGICAL FLUIDS FOR THE SCREENING OF MITOCHONDRIAL AND PEROXISOMAL DISORDERS

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Free fatty acids are routinely analysed in feeds, seeds and other sources for many decades. Recently, analysis of FFAs in biological fluids has been established in the diagnosis of diet and metabolic diseases. Especially, the proportions of fatty acids in plasma reflect the dietary fat composition of human. The relationship between the amount of polyunsaturated fatty acids in diet and the corresponding proportions of the same fatty acids in plasma lipids are important. This is usually true for the essential fatty acids such as linoleic and linolenic acids. However most other types of fatty acids can be synthesized by human starting from the corresponding precursors, particularly from saturated fatty acids. Analysis of long chain fatty acids in serum has been established as a good initial screening method for the mitochondrial and peroxisomal disorders such as, adiponectin, Zellweger syndrome, neonatal adrenoleukodystrophy, infantile Refsum disease, X-linked adrenoleukodystropy, acyl-CoA oxidase deficiency, D-bifunctional protein deficiency etc. A novel method which reduces sample preparation dramatically to 5 min. and which requires 16 min for the GC analysis, has been developed. This is a rapid, sensitive, accurate and valid alternative method to diagnose mitochondrial and peroxisomal disorders and many others. This novel method takes the advantage of high resolution, fast separation capability and low detection limit for the 20 fatty acids including cis-5,8,11,14,17-Eicosapentaenoic acid and cis-4,7,10,13,16,19-Docosahexaenoic acid.

Keywords: FFAs; GC; Mitochondrial and peroxisomal disorders; biological fluids

OP-18
CORRELATION BETWEEN SERUM CYSTATIN C, RENAL FUNCTION TESTS, CRP AND LIPIDS

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Cystatin C , known as an exstracelluler inhibitor of cysteine proteases, is a basic protein which is filtered in the renal glomeruli, and completely reabsorbed by the renal tubuli, and is not extra-renally eliminated. Several studies have shown that cystatin C performs at least as well as serum creatinine as a renal marker, and that it is a better indicator of changes in glomerular filtration rate (GFR) than serum creatinine.

We evaluated the correlation between serum cystatin C and creatinine, urea, uric asid, calcium, phosphorus, magnesium, albumin, protein, C-reactive protein (CRP), lipids (total cholesterol, high-density-lipoprotein-cholesterol, low-density-lipoprotein-cholesterol and triglyceride) levels in 196 patients (165 M, 31 F) measured in our laboratory between the period of 2005-2006 years. Cystatin C was measured by nephelometric method whereas the other parameters were measured by routine methods.

Cystatin C was positively correlated with creatinine, urea, CRP and magnesium ($p<0,01$), but there was no significant correlation between cystatin C, uric acid, protein, lipids, calcium and phosphorus. On the other hand, cystatin C was negatively correlated with albumin ($p<0,05$).

In conclusion, these results show that cystatin C may be a good marker of inflammation in addition to it is function as a test for GFR. However, follow up studies may provide further information on the association between cystatin C and other parameters, especially serum lipids.

OP-19
CORRELATION BETWEEN SERUM HOMOCYSTEINE AND LIPIDS LEVELS

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Aim: Both hyperhomocysteinemia and hyperlipidemia are known to increase the risk of coronary artery disease. However, the correlation between these two parameters has not been well established.

Methods: For this purpose, we have evaluated serum homocysteine and lipids levels measured in our laboratory between years of 2004-2006. The samples were from 566 male (Group-1) and 583 female (Group-2) subjects.

Results: There was a significant negative correlation between homocysteine and HDL-cholesterol in group-1 (0.01) and there were a significant positive correlation between homocysteine and cholesterol (0.05) and a negative correlation between homocysteine and HDL-cholesterol (0.05) levels in group-2.. Also, there was a significant positive correlation between Lipo(a) and homocysteine levels in both groups.

Conclusions: Our findings show a significant correlation between serum homocysteine and lipids levels, the underlying mechanism of which is not known and needs to be investigated.

OP-20
REDUCED URINARY EXCRETION OF HOMOCYSTEINE COULD BE THE REASON OF ELEVATED PLASMA HOMOCYSTEINE IN PATIENTS WITH PSYCHIATRIC ILLNESSES

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Although increased plasma total homocyteine (tHcy) concentrations were reported in psychiatric diseases, currently the reasons of elevated tHcy levels were not clearly understood. In this study we aimed to investigate the contribution of renal clearence of homocysteine on plasma tHcy load in patients with depression and first episode psychosis. Thirty depression, 14 first episode psychosis patients and 34 healthy individuals (control group) were involved to the study. In patients and control groups, plasma and urine tHcy levels, urine methylmalonic acid (uMMA), serum vitamin B12 and folate concentrations were measured. Although there was not any difference between depression, psychosis and control groups with respect to mean (SD) values of vitamin B12 (289(131), 230 (72) and 249(79) pg/ml, respectively) and folate (6.4(4.0), 5.3(2.3) and 5.7(2.3) ng/ml, respectively), plasma tHcy levels of depression and psychosis group were higher than the control values (16.3(6.2), 15.5(4.3) and 9.9(2.1) µmol/L, respectively). Urine tHcy values of patient groups were significantly lower than those in the control group (14.5(7.6), 15.8(6.8) and 29.6(16.9) µmol/g creatinine, respectively) Tere were elevated uMMA levels in depression and psychosis groups compared with control group (4.9(2.4), 6.6(3.2) and 2.8(1.2) mmol/mol creatinine, respectively). Thre were a significant and negative correlation between urinary tHcy and plasma tHcy levels ($r=-0,258$ and $p=0.011$). In conclusion, reduced urinary tHcy levels in psychiatric patients could be one of the reasons of plasma tHcy elevations with normal folate and vitamin B12 levels. Altered renal handling mechanisms of homocysteine may lead to elevated plasma tHcy levels by reduced clearence of homocysteine via glomerular filtration.

OP-21
COMPARISON OF INSULIN SENSITIVITY IN NORMOWEIGHT AND OVERWEIGHT WOMEN; INCREASED SUSCEPTIBILITY TO INSULIN RESISTANCE ASSOCIATED WITH ABDOMINAL OBESITY

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Insulin resistance (IR) is a pathological situation lack of a physiological response of peripheral tissue to insulin. It is known that abdominal obesity is a strong predictor of insulin resistance independent of total adiposity. Insulin resistance is proposed to have pivotal role in the development of metabolic syndrome. The quantitative insulin sensitivity check index (QUICKI) have been reported to be useful estimates of insulin resistance and sensitivity. The aim of this study is to determine the relationship of BMI and waist or waist/hip(w/h) ratio with insulin sensitivity in normoweight and overweight group. We studied 63 women aged between 25-48 . Subjects were divided into two groups like normoweight (BMI between 20-24.9) and overweight (BMI between 25- 27.9) . QUICKI, waist ,w/h. QUICKI is significantly lower in normoweight group. We found that there is a correlation in normoweight group between waist and QUICKI. We found in the overweight group that there is a correlation between BMI and QUICKI and also a correlation between waist , waist/hip ratio(w/h) with QUICKI. No correlations were found between BMI and QUICKI; and w/h ratio and QUICKI in the normoweight group. We showed in this study that there is relationship between BMI and insulin sensitivity and also waist and w/h ratio and insulin sensitivity in overweight people. Central abdominal fat showed stronger correlations with QUICKI in overweight women.

OP-22
PROLIDASE ENZYME ACTIVITIES IN PLEURAL FLUID AND SERUM AS DIAGNOSTIC TOOLS IN TUBERCULOUS PLEURISY

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Pleural tuberculosis, with or without pulmonary tuberculosis, is present in around 4% of all tuberculosis cases. If undetected, it may resolve spontaneously, but untreated tuberculous pleurisy is associated with progressive disease and a high recurrence rate. The progress mechanisms of tuberculous pleurisy have not been clearly understood yet. Recently upon exposed to cytokines and bacterial products, mesothelium has been shown to produce collagen that may be involved in pleural inflammatory responses. Prolidase is the only enzyme able to hydrolyse the peptide bond in iminodipeptides with a C-terminal proline or hydroxyproline. Thus, it is involved in the final stage of degradation of endogenous and dietary proteins, in particular in collagen catabolism. In this study we aimed to evaluate pleural fluid and serum prolidase activities in patients with tuberculous (TB) pleurisy and compared with those in non-tuberculosus (Non-TB) pleural effusions. Serum and pleural prolidase activities in 21 TB and 22 Non-TB pleurisy patients were analysed by photometric method. Prolidase enzyme activities in serum and pleural fluid of TB group (1072±171 and 1392±215 U/L, respectively) were significantly higher than those values in Non-TB group (787±144 and 943±174 U/L, respectively). Prolidase activities in pleural fluid were significantly higher than those in serum in both groups. There was a significant positive correlation between pleural and serum prolidase activities in TB group (r=0.579 and p=0.006) but not in Non-TB group. In ROC analysis, of sensitivity and of specificity values 86% and 82% for a cut-off value of 1130 U/L pleural prolidase activity and gave 81% and 82% for a cut-off value of 952 U/L serum prolidase activity, respectively. In conclusion, determination of pleural fluid plrolidase activity might be helpfull in the diagnosis of tuberculous pleural effussions.

OP-23
FUNCTIONAL VITAMIN B12 DEFICIENCY REPRESENTED BY ELEVATED URINE METHYLMALONIC ACID LEVELS IN PATIENTS HAVING MIGRAINE

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Background and Aim: Although vitamin B12 is being used as a treatment option in patients with migraine, a possible cobalamin deficiency of those patients was not investigated yet. In this study we aimed to investigate cobalamin metabolism in patients with migraine
Methods: Fifty women having migraine without aura were mtched with healthy controls (n=46) in the same age distribution. Fasting serum vitamin B12, folate, plasma total homocysteine (tHcy) and first morning urine methylmalonic acid (MMA) levels were determined in patient and control groups. Statistical differences in laboratory parameters between patient and control groups were anlysed by SPSS for Windows software.
Results: Vitamin B12 and folate levels of patient group were not different from the control group. Although mean plasma tHcy and urine MMA levels of patient group were significantly higher than those in control group, the small amount of (%12) patients had plasma tHcy levels higher than the reference range whereas 70% of patients had increased urine MMA levels.
Conclusion: There was a functional vitamin B12 deficiency representing itself by elevated urine MMA levels in patients having migraine without aura. We suggested that vitamin B12 treatment for migraine patients should be started thereafter screening for MMA elevations.

OP-24
ASSESSMENT OF COBALAMIN DEFICIENCY WITHOUT MEASURING SERUM VITAMIN B12 LEVELS

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Still, there are no generally accepted guidelines for the definition, diagnosis, treatment, and follow-up of cobalamin deficiency. The new trend is going toward defining cobalamin deficiency by measuring metabolic markers demonstrating tissue level deficiency in the absence of overt clinical signs and symptoms. Among the available tests, total homocysteine (tHcy) reflecting methylcobalamin deficiency and methylmalonic acid (MMA) reflecting adenosylcobalamin deficiency, are widely used in clinical practice to add to serum cobalamin levels. In this study we aimed to investigate the contribution of serum cobalamin levels on the assessment of cobalamin deficiency. Serum vitamin B12, folate, plasma tHcy and urine MMA determinations of 412 patients (220 males, 192 females) admitted to the laboratory between January 2007 and April 2007 were retrospectively obtained from hospital records. Tissue level cobalamin deficiency was defined when urine MMA levels higher than 4,5 mmol/mol creatinine or tHcy levels higher than 15 µmol/L. There were 108 individuals having high urine MMA levels and 128 individuals having high tHcy levels. The sensitivity and specificity values of serum B12 levels for tissue level deficiency expressed as elevated urine MMA concentrations were 37% and 78% respectively. Those levels for individuals having higher tHcy levels were 34% and 75% respectively. tHcy and urine MMA have to be measured independent from serum vitamin B12 results. If the serum vitamin B12 is excluded from the first step of the assessment of cobalamin deficiency, vitamin B12 levels in 196 of 412 patients (47%) will be further measured. Thus unneccessary measurements of serum vitamin B12 could be decreased by measuring it according to the results of tHcy and urine MMA determinations.

Thursday, 6 September 2007
Platin Hall

OP-09
LIPOPROTEIN (a) AND APOLIPOPROTEIN (a) POLYMORPHISM IN DIABETIC CHILDREN

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It has been proved that atheromatous changes in vessels already appear in young children and adolescences. High plasma Lipoprotein(a) [Lp(a)] levels as well as low molecular weight (LMW) apolipoprotein(a)[apo(a)] isoforms are thought to be an independent risk factor for atherosclerosis and thrombosis.
Thirty children with type 1 diabetes mellitus without microalbuminuria, aged 9 to 17 years, and 100 healthy children as controls were included in the study. Clinical history, physical examination, glycosilated hemoglobin (HbA1C), lipid profile including total cholesterol, HDL-C, LDL -C, triglycerides, ApoA1, ApoB, Lp(a) and apo(a) isoforms were determined. ApoA1, ApoB and Lp(a) were determined by use of nephelometric method. Apo(a) isoforms were separated by 3-15% gradient SDS-PAGE. Lp(a) levels were higher in diabetic subjects (15.19 +/- 11.28 mg/dL) compared to control group (11.95 +/- 5.98 mg/dL , $p<0.05$). HbA1C concentration in diabetic children was 7.49 +/- 4.8 % vs. 4.06 +/- 0.38 % in non-diabetic children. There was no difference in apo(a) isoform distribution between two groups. The most frequent isoforms were S4 from single banded and S4S3 from double banded in both study groups. Higher apo(a) molecular weight isoforms were associated with decreased Lp(a) concentrations in both diabetic and non-diabetic subjects. Levels of Lp(a) and apo(a) isoforms may be predictive of future cardiovascular disease in predisposed children.

OP-10
27 bp INSERTION/DELETION POLYMORPHISM IN INTRON 4 OF eNOS GENE IN TURKISH PATIENTS WITH SYSTEMIC SCLEROSIS

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Systemic sclerosis (SSc) is a connective tissue disease characterized by generalized microangiopathy and culminating in systemic fibrosis. The pathogenesis of SSc is poorly understood, but the vasospastic abnormalities may result from impaired nitric oxide endothelial production. Nitric oxide produced by endothelial nitric oxide synthase (eNOS) physiologically regulates basal vascular tone and vascular function. The aim of our study was to investigate whether the 27 bp insertion/deletion polymorphism in intron 4 of eNOS gene affects the susceptibility to and the clinical course of SSc. Twenty-eight patients with SSc (mean age 49±13 years, 26 famale) and age, sex matched 28 control subjects were studied. 27 bp insertion/deletion polymorphism in intron 4 of eNOS gene was genotyped by polymerase chain reaction-NuSieve agarose gel electrophoresis analysis. Although, presence of 27 bp deletion was increased in controls when compared to SSc patients for intron 4 polymorphism, the difference was not statistically significant, genotype frequency being 42.9% and 35.7%, respectively (odds ratio, 0.74; 95% CI, 0.25 to 2.17; P = 0.59). We present that, if exists, the effect of eNOS on SSc can not be described through the polymorphisms of intron 4 locus.

OP-11
A GENETIC ASSOCIATION BETWEEN MYOCARDIAL INFRACTION (MI) AND INTERLEUKIN-1 B (+ 3953) GENE POLYMORPHISM IN TURKISH POPULATION

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Purpose: Inflammation plays important a role in the initiation and progression of atherosclerosis that can be caused by inflammatory cytokine called Interleukin-1 (IL-1). The purpose of this study was to determine the relationship between IL-1RN or IL-1B (-511, +3953) gene polymorphisms and MI in Turkish population.
Material and Methods: 165 people with MI (< 40 or >40) and 117 healthy people were studied for this research. DNA was isolated and Polymerase Chain Reaction (PCR) was performed for all participants. Genotype of IL-1RN was determined based on PCR product sizes. Genotype of IL-1B (-511 and +3953) was determined based on the size of digested PCR products by Ava I and Taq I respectively.
Results: Neither genotype nor alleles of IL-1RN and IL-1B -511 did not show any relationship with MI. However; the distribution of genotype 2 (T/T) and alle 2 (T) of IL-1B +3953 was found significant between people who had MI before 40 and the control or people who had MI after 40 and the control groups (P=0,000) and (P=0,016) respectively.
Conclusion: These results imply that both genotype 2 (T/T) and allele 2 of IL-1B +3953 may be risk factor for MI in Turkish population.

OP-12
THALASSEMIA MUTATION TYPE OF HATAY-ALTINOZU REGION

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According to the reports of WHO, the frequency of b-thalassemia and abnormal hemoglobin in the world is %5.1. In Turkey, the prevalence of b-thalassemia carriers is reported as %2.1. The incidence of b-thalassemia and Hb S carriers were % 3.5 and % 9.2 respectively in the region Cukurova, % 4.6 and %10.3 respectively in the province of Hatay. Altinozu is a district of Hatay and is a conservative society. In a study consist of 169 persons from Altinozu, between the ages of 13-60 years, blood samples were collected. Complete blood counts were performed by coulter counter; Hb A2 was measured by microcolumn chromatography and Hb F by modified Betke method. Hemoglobin types of all samples were estimated to be Hb AA using with cellulose acetate electrophoresis. Multiplex PCR was used to identify the a- thalassemia mutations for 52 cases, of whom MCV was measured 80 fl and Hb A2 below % 3.5 from the samples obtained by MagnaPure, automatic DNA isolation equipment. As a result of this study, 7 cases were -a3,7/aa, 3 cases –MED I/aa and one was –MEDI/-a3,7 . b-thalassemia mutation was estimated by using microarray techniques as a result two cases were IVS I-110/A and Cd 8/A another case has double heterozigot as IVS I-110/-30.
Keywords: Microarray, mutation, thalassemia

OP-13
PROSTATE SPECIFIC ANTIGEN GENE EXPRESSION AND TELOMERASE IN BREAST CANCER PATIENTS: RELATIONSHIP TO STEROID HORMONE RECEPTORS

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Background and objectives: Breast cancer is the most common disease in women and steroid hormone receptor dependent cancer. The aim of this study was to evaluate relationship between telomerase activity and prostate specific antigen gene expression with steroid hormone receptors in breast cancer patients.
Material and methods: This study consisted of 50 women with breast benign tumors and 50 malignant tumors.Telomerase activity was measured in tumor cytosol of samples by telomeric repeat amplification protocol (TRAP) assay. PSA protein and mRNA expression were carried out using ultra sensitive immunoassay and RT-PCR technique in all tumor tissues respectively. Estrogen and progesterone receptors were stained using immunohistochemistry in tumor tissues.
Results: Presence of the telomerase activity was positive in all of the breast cancer patients. The difference of relative telomerase activity (RTA) values between stages and grades were more statistically significant ($p<0.05$). The PSA mRNA was detected only in benign tumors and stage I and grade I malignant tumor cytosols. Difference of tumor cytosol PSA levels between the cases and control groups and also between all grades and stages of diseases were significant ($p <0.05$). There was an inverse significant correlation between the RTA and PSA protein levels in the case groups. ($r=-0.42$, $p<0.05$). There was a statistically difference between ER and PR positive and PSA negative and telomerase activity ($p<0.05$)
Conclusion: It is speculated that differential expression of PSA and telomerase genes in breast tumors are under control of steroid hormone receptors and could be used as a target for treatment.

OP-14
DECREASED PLASMA APELIN IS POSITIVELY CORRELATED WITH ADIPONECTIN IN PATIENTS WITH TREATMENT NAIVE TYPE 2 DM

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Type 2 diabetes mellitus (T2DM) is as a major risk factor for cardiovascular diseases. Apelin is a recently described adipokine with various effects in different organ systems. It has been shown that regulation of apelin synthesis and secretion by the adipose tissue is closely associated with insulin. Thus, we searched whether blood apelin level is altered in patients with newly diagnosed T2DM.
40 patients with T2DM and 40 age, sex, and body mass index (BMI)-matched healthy controls were enrolled. Blood chemistry, insulin and apelin levels were measured. Insulin resistance was assessed by

HOMA formula.
Age, sex and BMI distributions were similar between the two groups. Plasma apelin levels were significantly lower in the diabetic group compared to controls (p< 0.001). HOMA indexes were significantly higher in patients with T2DM (p=0.001).
We have shown that plasma apelin is reduced in individuals with newly diagnosed and untreated T2DM who had no confounding factors. To what extent dysregulation of apelin is involved in the mechanism of cardiovascular associates in T2DM seem to deserve future research.

OP-15
PLASMA ADIPONECTIN AND RESISTIN AND INSULIN RESISTANCE IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

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Polycystic ovary syndrome (PCOS) is the most common endocrine disorder of reproductive – aged women. It has been well recognized over the last 20 years that the syndrome is associated with insulin resistance predisposing to diabetes mellitus type 2 and atherosclerosis, and that women with PCOS have increased risk of metabolic complications, such as diabetes and cardiovascular disease. Plasma adiponectin and resistin levels are thought to be risk factors for future metabolic and cardiovascular events in women with the PCOS. Currently only a few studies on these parameters in the PCOS have been published. In the present study, our aim is to assess the adiponectin and resistin concentrations and adiponectin/resistin ratio in women with the PCOS and age and weight matched healthy controls and to investigate the relationship between adiponectin, resistin, adiponectin/resistin ratio and insulin resistance. We compared plasma adiponectin, resistin levels and adiponectin/resistin ratio in 20 PCOS women and 20 healthy, age-matched non-PCOS women. The PCOS group was hyperinsulinaemic and displayed an impaired insulin response in a 75 g oral glucose tolerance test and an abnormal homeostasis model insulin resistance index. Plasma resistin levels were similar in PCOS patients and controls; however plasma adiponectin levels were lower in PCOS patients compared to controls. Adiponectin/resistin ratio was also lower in PCOS patients. There was no correlation between HOMA and plasma adiponectin in women with PCOS, while there was a positive correlation between HOMA and plasma resistin. There was a negative correlation between HOMA and adiponectin/resistin ratio. These results suggest that plasma adiponectin level and adiponectin/resistin ratio may be risk factors for future morbidity of PCOS.

OP-16
PARAOXONASE-1 ACTIVITY IN RELATION TO 4-HYDROXYNONENAL AND MALONDIALDEHYDE IN CHRONIC RENAL FAILURE

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The antiatherogenic role of high-density lipoprotein (HDL) has been related to its ability to protect low-density lipoprotein (LDL) against oxidative modification. We investigated HDL associated antioxidant marker paraoxonase-1 (PON1) activity as well as lipids, lipid peroxidation, HDL-cholesterol (HDL-C) and oxidized LDL (oxLDL) levels in serum of patients with chronic renal failure (CRF) having peritoneal dialysis (PD) treatment. Twenty seven CRF patients were treated by PD and as a control group, 25 subjects with normal renal function were included. Lipid peroxidation was evaluated by measurement of thiobarbituric acid-reactive substances (TBARS), malondialdehyde (MDA) as free MDA and 4-hydroxynonenal (HNE). Significant increases in serum concentrations of oxLDL, TBARS, HNE and free MDA were observed in patients with CRF. The level of serum HDL-C and PON1 activity was decreased in CRF patients. Pearson's correlation test demonstrated a positive correlation between PON1 activity and HDL-C level. Both PON1 activity and HDL-C level negatively correlated with the levels of oxLDL, TBARS, HNE and free MDA in the study group. Oxidized LDL level positively correlated with TBARS, HNE and MDA levels. In regression analysis the best discriminative factors were TBARS levels and PON1 activity. Our results indicate an intensification of the oxidative processes caused by the presence of CRF, which is accompanied by a decrease in PON1 activity. The present study has shown that serum TBARS and PON1 activities may be useful markers of oxidative stress during the course of renal dysfunction.

Thursday, 6 September 2007
Gümüş Hall

OP-25
DISCOVERY AND MONITORING OF DYS-LIPIDS SYNDROMS BY HITACHI 912 ANALYZER

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Introduction: Dyslipidemic syndromes are metabolic statuses with qualitative and quantitative modifications of lipoproteins. Hyper-cholesterol isolate status means high concentration of fraction LDL (low density lipoproteins); hyper-triglyceride status means high concentration of VLDL (very low density lipoproteins) and seldom chylo-microns and hyperlipidemic mixed syndromes mean together high LDL and VLDL increased, seldom IDL.
Aim: Evaluation of types of dyslipidemic syndromes in the un-treated patients which presented for routine control of lipid metabolism for checking status by Hitachi 912 Analyzer from Hospital Ambulatory of County Hospital Tg-Jiu.
Materials and Methods: In our study we have analyzed 60 patients registered in Clinical Laboratory by determining on the Hitachi Analyzer the principal biochemical parameters of lipid metabolism: Cholesterol, triglycerides and fractions of cholesterol, HDL and LDL..
From the total of 60 patients 35 were females and 25 males. Mean age for females was 27-45 years and 37-52 years for males.
Results: -The persons with metabolic lipid health, were registered in 23% percent.
-The patients who presented isolated high LDL as an alarm signal of the start of the atherosclerotic process were in 28 % percent in time that isolated low HDL was in 17% percent.
-The cases with atherosclerotic index, Report-LDL/HDL>3.5 for men and 2.5 for women, in 14 % percent.
-The cases with predictive value with coronary risk, Report-CO/HDL>5, in 5 % percent.
-The cases with dyslipidemic syndrome type 2- 4, with high Cholesterol and Triglycerides, in 32% percent.
Conclusion: To prevent atherosclerotic process is need of the controls on fractions of cholesterol, principally LDL-Co, being more sensible as HDL-Co, in first incipient status.
Familial syndromes dis-lipids must be analyzed in young ages, different of apparently health persons with ages past 35 years. Further investigations have to accomplished by lipid electrophoresis.
The discovery of risk of developing coronary diseases have to a signal to address at specialist cardiovascular physician.
The Analyzer Hitachi 912 have proved a very good specificity by running of the lipids kits of twice generation models.

OP-26
THE SYSTEM OF MONONUCLEAR PHAGOCYTES DURING PROLONGED EXPERIMENTAL CRUSH SYNDROME (PECS)

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The mechanical traumas at earthquakes, explosions (terrorism attacks), failures on transport frequently have specific features and the significant part of the injured long time remains under blockages. Decompression of pressed down extremities without rendering assistance frequently results in sharp deterioration of a condition of the injured with fall of blood pressure, loss of consciousness, etc. Such condition has received the name of crush- syndrome, or Prolonged Experimental Crush Syndrome (PECS). The aim of the present research is to investigate histochemical and quantitative changes of macrophages in spleen, liver, lungs and lymph nodes in 1, 7 and 20 days after decompression. The results of the experiments have shown that in liver, lungs, spleen and lymph nodes takes place decrease in number of macrophages, and also in activity of acid phosphatase. In 24 hours after decompression in lungs the number of macrophages decreases 10 times comparable with the first group of animals. In 7 days after decompression the number of macrophages continues falling. In spleen the number of macrophages decreases 3 times, and in lymph nodes it decreases 6 times. The same process takes place in liver. The activity of acid phosphatase in studied organs decreases 4-5 times. On the 20-th day of the experiment the quantity of macrophages and activity of acid phosphatase increase. So, result of our research shows that during PECS damaging factors actively influence on macrophages.

OP-27
THE EFFECT OF ARTEMISIA DRACUNCULUS LEAVES EXTRACT ON PLATELET MORPHOLOGY BY ELECTRON MICROSCOPY

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Under various conditions excessive platelet activation will occur which will result in thrombosis. Artemisia dracunculus (tarragon), used as anticoagulator agent in Iranian folk medicine. The present study was undertaken to investigate the effects of the methanol crude extract of Artemisia dracunculus leaves on morphology of platelet in vitro. Human platelets were prepared and incubated with different concentrations of the test compounds for 1 hour. The treated and untreated platelets were activated with thrombin (0.25 U/ml) and then incubated in poly L-lysine coated plates. Platelet morphology was examined using scanning electron microscopy (SEM). Our study showed that the treated sample formed much less aggregates compared to the control sample (untreated). In control sample, most of the adhered platelets undergone extensive spreading on the coated plates, characterized by formation of large sheetlike pseudopods. However, such as extend of spreading is not observed for cells treated with the crude extract. Thus, the methanol extract is capable of inhibiting the aggregation and spreading of the platelets on poly L-lysine coated surface. These results provide the scientific basis for the traditional use of Artemisia drancunculus in the treatment of cardiovascular diseases.

OP-28
ADMA AND OXIDATIVE STRESS IN CHRONIC RENAL FAILURE PATIENTS: RELATIONSHIP TO CARDIOVASCULAR COMPLICATION

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BACKGROUND: Cardiovascular disease (CVD) is the leading cause of mortality and morbidity in chronic renal failure (CRF) patients.
OBJECTIVE: To investigate the development of oxidative stress (OS) and endothelial dysfunction (ED) in CRF patients; and to test the effect of hemodialysis (HD) on these parameters. We also investigated the modulating effect of L-arginine administration on OS & ED in HD patients
METHODS: 12 healthy volunteers, 15 renal impairment (RI) patients, 18 HD patients free from CVD, and 30 HD patients suffering from CVD (HD+CVD); 15 of them were given oral L-arginine (15g/d) for 1 month are the subjects of the study. Plasma levels of asymmetric dimethylarginine (ADMA), a marker of ED, Myeloperoxidase (MPO) activity and malondialdehyde (MDA) level, markers of OS, were evaluated.
RESULTS: Plasma levels of ADMA and MDA were significantly elevated in RI group. Further increase, along with MPO levels, was observed in HD and HD+CVD patients. This increase was corrected by administration of L-arginine.
CONCLUSION: Markers of OS and ED are significantly elevated in CRF patients. Unfortunately, these markers were not corrected by hemodialysis. Improvement by L-arginine administration was evident. Therefore, we recommend considering OS & ED markers in the management of CRF & HD patients. We also focus the attention to the cardiovascular advantages of L-arginine in these patients. Further clinical trials are needed to confirm these data.

OP-29
RELATIONSHIP BETWEEN SERUM ADMA LEVELS AND RESPIRATUARY FUNCTION TESTS

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Aim: Asymmetric Dimethyl Arginine (ADMA) is an endogenous inhibitor of nitric oxide (NO) synthase and inhibits NO production. Several studies have shown that hypoxia can induce eNOS expression and decrease NO levels. The aim of this study is to investigate whether systemic ADMA levels related with the respiratuary function tests.
Material and Methods: 75 chronic obstructive pulmonary disase (COPD) patients were participated to the study. The patients group was also divided into 3 subgroup; stable, unstable COPD and patients with pulmonary hypertension. All groups serum and ADMA levels were measured by HPLC with fluorescence detector. Respiratuary function tests were determined by using a spirometry.
Results: Increased ADMA levels were negatively correlated with the decrease in respiratuary capacity. Decrased forced expiratuary volume in 1 s (FEV1) were observed in patients with higher ADMA levels (r: - 0.508, p:0,000). Forced vital capacity (FVC) values were also negatively correlated with ADMA levels (r: -0.446, p:0,000). There was a strong negative correlation between serum ADMA levels and FEV1/FVC (r: -0.441, p:0,000).
Conclusion: Higher ADMA levels may be one of the important factor in decreasing NO levels in COPD patients. Increase in ADMA levels in response to hypoxia may also contrubite the proceeding of the disease to the development of pulmonary hypertension.

OP-30
EFFECTS OF THE HYPOBARIC-HYPOXIA UPON BOTH THE URINARY EXCRETION AND THE PERIPHERAL BLOOD CIRCULATION

Simona Berbecar[1], Marian Macri[1], Ilie Capanu[1], Daniela Paiu[1], Anca Grigorescu[1], Simona Berar[1], Raluca Schuster[1], Angelica Raicu[1], Gheorghe Rodan[2], Marilena Ghemulet[2]
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Results corresponding to a three years research project belonging to the “Aerospace Programme“ are presented. Research was targeted on establishing correlations between the changes of peripheral circulatory system and urinary excretion of certain biochemical markers as a response to hypoxic-hypobaric stress. 110 subjects were tested in the hypobaric chamber (pilots, skydivers and persons with no training to hypobaric-hypoxia). Urinary samples were collected at the clinical laboratory, before and after exposure to hypoxic- hypobaric stress, and several biochemical tests were performed such as: Na +, K+, Cl-, calcium, glucose, urea, creatinine, uric acid, alpha amylase, phosphorus, alkaline reserve, proteins, physical examination of urine and microscopic examination of urinary sediment.
Post-exposure results were compared to those obtained before testing at hypoxic-hypobaric stress.
Conclusions:
Hypoxic-hypobaric stress is a factor which: stimulates the electrolytes excretion; induces changes of urine physical exams and decrease the excretion of calcium and of uric acid.
Exposure time of subjects to this factor differentially influences urinary excretion of biochemical markers.
Training to hypoxia conditions influences: urinary excretion of electrolytes, hyaline cylinders elimination, glucose and alkaline urinary reserve excretion and urinary pH.
All these factors influence the correlations between the body peripheral temperature changes and urinary biochemical changes.

OP-31
ARE PRESERVATIVES NECESSARY FOR 24 HOUR URINE MEASUREMENTS?

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Calcium, magnesium, phosphorus and uric acid are frequently requested in 24-h urine samples. Because of different solubilities of these parameters, different urine collection conditions are recommended. There are different approaches about the addition time of acid and alkaline preservatives and heating of the samples. We aimed to test the effect of addition of preservatives and heating of the urine specimen on the results of calcium, magnesium, phosphate and uric acid by comparing them with untreated samples results. Spot (n=20) and 24-h urine (n=50) samples were obtained from the patients for routine urine analysis. A single spot urine sample was divided into five aliquots of 10 mL each: one containing 200µL of HCl, another containing 200 µL of sodium bicarbonate, two others in which the same preservative agents were added 24 h after the collection and one without any preservative. calcium, phosphate, uric acid and magnesium were measured at the time of sampling, 24 h after the sampling and repeated after heating of the samples. 24-h urine samples were collected without preservatives and analytes were measured promptly before and after acidification/alkalinization. There was no statistically significant difference between untreated and treated samples ($p>0.05$). Heating did not show any difference on the results. According to our results, there was between necessity to use preservatives for Ca, P, Mg and uric acid for promptly assayed 24-h urine samples.

OP-32
MICROBIAL AGENTS IDENTIFIED WITH VITEK 2 COMPACT AND THEIR RESISTANCE PHENOTYPES TO ANTIBIOTICS

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VITEK 2 COMPACT is a highly performing automatic system, which can process 60 samples simultaneously, performing both the precise identification of the microbial species and subspecies (gram positive and negative germs; fungi) and the antibiotic susceptibility testing, by establishing MIC.
The analyzer integrates complex programs for analysis, for internal quality control, but also the expert advanced program which allows obtaining precise results, the interpretation of these and also comments and the choice of the best treatment for the patient.
We processed biological samples from 187 patients; identifications of the germs isolated as a pure culture were performed, and for some of them (137) antibiotic susceptibility tests were done with the specific cards for every germ category
We identified 98 gram negative germs which belong to 13 genera.
The isolated gram positive germs were 71 in number and were represented by staphylococci, streptococci, enterococci, Kocuria, Gemella, and Dermacoccus.
We also identified 15 fungi from the genera Candida and Stephanoascus.
We performed 44 tests of the antibiotic resistance for staphylococci, group B streptococci and enterococci, in the same time there was confirmed the presence or the absence of the beta lactamases. We obtained results for 17 antibiotics, in accordance with the CLSI standards.
The intense use of automatic analysers offers many advantages to the laboratory practitioners and it can offer rapid results, in the patient benefit.

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BCLF

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04 - 07 September 2007, Antalya, Turkey

POSTER SESSION PROGRAM

POSTER SESSION I

Date : 5 September 2007
Poster Setup : 09:00-10:00
Poster Display : 10:00-18:00

Posters must be removed by the authors before 18:00. The organisers are not responsible for posters left on display.

PP-001
TOTAL AND LIPID-BOUND SIALIC ACIDS AND ISCHEMIA–MODIFIED ALBUMIN IN ISO-INDUCED MYOCARDIAL INFARCTİON

Selma Suer Gokmen, Cemal Kazezoglu, Sevgi Eskiocak, Ufuk Usta, Erol Cakır

PP-002
IDENTIFICATION OF ALPHA AND BETA CHAIN VARIANTS BY CHROMATOGRAPHIC SEPARATION OF THE GLOBIN CHAINS

F. Moeini Alishah, Sh. Shamsian, L. Mostean, L. Hosseini Gohari

PP-003
THE EFFECT OF CRISTALOID CARDIOPLEGIC FLUID AND ITS CONTENTS ON THE PLASMA OXIDIZABILITY BY COPPER

Sevgi Eskiocak, Turan Ege, Suleyman Bedir Yapar, Sabriye Kaya, Gulben Sayilan

PP-004
RELATIONSHIP BETWEEN DIABETIC DYSPEPSIA, NITRIC OXIDE LEVELS OF GASTRIC JUICE, OXIDATIVE STRESS AND HYPERGLYCEMIC CONTROL IN HELICOBACTER PYLORI INFECTION

Homayun Dolatkhah, Mohammad Rahbani-Nobar, Ebrahim Fattahi, Ahmad Mirza-Aghazadeh, Ashraf Fakhrjo, Manuchehr Nourazarian, Behrooz Purasghari, Majid Tozihi, Ardavan Gazanchaii, Lida Eftekhari

PP-005
THE VALUE OF HIGH SENSITIVE CRP WHEN COMBINED WITH LDL-C/HDL-C RATIO IN DETECTION OF PATIENTS UNDER RISK OF CORONARY HEART DISEASE

Mohammad Rahbani-Nobar, Rezayat Parvizi, Homayun Dolatkhah, Gholamreza Eidari, Manuchehr Nourazarian, Majid Tozihi

PP-006
BUTYRYLCHOLINESTERASE K VARIANTS INCREASE THE RISK OF CORONARY ARTERY DISEASE IN TYPE 2 DIABETIC PATIENTS

Asad Vaisi-Raygani, Zohreh Rahimi, Aliakbar Vaisi-Raygani, Tayebeh Poumotabbed

PP-007
BIOLOGICAL EFFECTS OF CHRONIC COMBINED EXPOSURE TO COPPER IONS AND LOW DOSE IRRADIATION

T. V. Ananieva, E. A. Lykholat

PP-008
TRACE ELEMENTS TOXICITY: INCREASED RISK OF INTOXICATION IN CHILDREN

Elena A. Lykholat, Tamila V. Ananieva

PP-009
THE LIPID METABOLISM IN PATIENTS WITH CHRONIC BRONCHITIS CAUSED BY RADIATION EXPOSURE

Elena B. Pavlenko, Elena A. Lykholat, Tamila V. Ananieva

PP-010
THE IMPORTANCE OF OXIDATIVE STRESS IN CHRONIC KIDNEY FAILURE PATIENTS WITH SECONDARY HYPERPARATHYROIDISM

Gulendam Avcı, **Tevfik Noyan**, M. Ramazan Sekeroglu, Reha Erkoc

PP-011
NANOTECHNOLOGY-BASED DIAGNOSTIC AS AN ENABLING TECHNOLOGY FOR FUTURE MEDICAL APPLICATIONS

Bernard Gouget, SFBC-FESCC representative, FESCC advisory board member

PP-012
BIOCHEMICAL MARKERS AS A TRACER IN FOLLOW-UP OF THERAPY EFFECT ON PATIENTS WITH RHEUMATOID ARTHRIT

Gruev, T., Zografska-Chokrevska N., Bogdanova M., Boncheva M., Spasovski, D., Marina N., Chakalarovski K., Gruev N., Grueva A.

PP-013
INHIBITION OF THE XANTHINE OXIDASE AND LIPID PEROXIDATION BY LIPID FRACTION OF NIGELLA SATIVA CULTIVATED IN ALGERIA

Widad Sobhi, Bachra Khettal, Djebbar Atmani, Mustapha Benboubatre

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CDNA CLONING, SEQUENCE ANALYSIS, EXPRESSION, AFFINITY PURIFICATION AND EPITOPE MAPPING OF MAJOR MEMBERS OF HUMAN HNRNP A/B TYPE OF PROTEINS

Gunter Steiner, Zdeno Cervenak, Karl Skriner and **Erhan Suleymanoglu**

PP-015
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PP-016
DAILY FLUCTUATION OF CORTISOL IN THE SALIVA AND SERUM OF HEALTHY PERSONS

N. Ljubijankic, R. Popovic-Jovanovic, A.Sapcanin, I. Tahirovic, S. Sceta, E. Sofic

PP-017
THE METABOLIC TURNOVER OF BIOGENIC AMINES AND SEROTONIN IN THE BODY FLUIDS OF MAN

E. Sofic, I. Wichart, A. Copra, A. Sapcanin, I. Tahirovic, P. Riederer

PP-018
ANTIOXIDANT CAPACITY DECREASES DURING GROWTH BUT NOT AGING IN MOUSE BRAIN AND SERUM

A. Sapcanin, I. Tahirovic, Z. Rimpapa, E. Sofic, K. Kalcher

PP-019
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J. Toromanovic, E. Kovac-Besovic, I. Tahirovic, A. Sapcanin, Z. Rimpapa, G. Kroyer, E. Sofic

PP-021
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J. Coric, R. Jadric , M. Panjeta

PP-022
COMPARATIVE DETERMINATION OF ACTIVITY OF AST, ALT, CK, LDH ON ALSYON AND FLEXOR ANALYSER
S. Sceta, F. Bilal, E. Kucukalic

PP-023
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T. Gruev, M. Bogdanova, K. Chakalarovski, N. Ivanovski, A. Grueva, M. Boncheva,

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PP-025
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PP-026
SERUM BONE ALKALINE PHOSPHATASE-ELECTROPHORETIC AND LECTIN PRECIPITATION METHOD
Mirjana M. Bogdanova, Saska G. Domazetovska

PP-027
EVALUATION OF FRUCTOSAMINE ASSAY ON THE ARCHITECT C8000 ANALYZER
M. Panjeta, **J. Coric**, R. Jadric

PP-028
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G. T. Sucak, **H. Pasaoglu**, Z. Aki, E. Ofluoglu, C. Demirtas, R. Haznedar

PP-029
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E. Ofluoglu, **C. Demirtas**, H. Pasaoglu, S. Elbeg, A. Pasaoglu

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PP-033
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PP-034
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Nafija Serdarevic

PP-035
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PP-039
BCL-2 MRNA AND GLUTATHIONE LEVELS IN OVARIECTOMIZED RAT BRAINS TREATED BY RALOXIFENE AGAINST KAINIC ACID
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U. Ozel Turkcu, A. Bilgihan, **O. Mertoglu Caglar**, G. Take

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B. Vanizor Kural, **G. Okur**, B. Akcan, N. Kucuk, O. Deger, C. Erem, A. Orem

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N. Turkozkan, **G. Ozan**, B. Balabanli, F. Bircan

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N. Kucuk, B. Vanizor Kural, A. Orem, S. Cengiz, Y. Barlak

PP-049
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F. Demet Arslan Ince, Mehmet Koseoglu, Murat Yesil, Erdal Deveci

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POSTER SESSION ABSTRACTS

PP-001
TOTAL AND LIPID-BOUND SIALIC ACIDS AND ISCHEMIA–MODIFIED ALBUMIN IN ISO-INDUCED MYOCARDIAL INFARCTION

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Serum sialic acid has been indicated to play a role in the pathogenesis of atherosclerosis, but the reason for the elevation in serum sialic acid concentration after myocardial infarction is not clearly known. It is known that overproduction of reactive oxygen species play an important role in the development of cardiovascular diseases. On the other hand, oxidative stress has been reported to lead to cleavage of the sialic acid from oligosaccharides on the cell surface. To investigate a possible role of oxidative stress in the elevation of serum sialic acid in myocardial infarction, we designed a rat model of isoproterenol (ISO)-induced myocardial infarction in which oxidative stress plays a major role. Myocardial infarction was produced in male albino rats of Wistar strain with 150 mg/kg of isoproterenol administered intraperitoneally twice at an interval of 24h. Serum total sialic acid, lipid-bound sialic acid and ischemia-modified albumin were determined using the thiobarbituric acid methods of Warren, Katopodis and Bar-Or, respectively. Myocardial infarction was confirmed by histopathological changes and the elevation of TnI. Our results indicated that serum total and lipid-bound sialic acids and ischemia-modified albumin are elevated in ISO-induced myocardial infarction. Since oxidative stress plays a major role in ISO-induced myocardial infarction, it is obvious that reactive oxygen species generated during myocardial ischemia is strongly responsible for the elevated ischemia-modified albumin levels. On the other hand, it is also obvious that reactive oxygen species which cause the secretion of sialic acid from the cell or cell membrane surface may also be responsible for the elevated sialic acid concentrations. As a result, we can report that one of the possible sources of an increased serum sialic acid concentration in myocardial infarction may be an increase in oxidative stress.

PP-002
IDENTIFICATION OF ALPHA AND BETA CHAIN VARIANTS BY CHROMATOGRAPHIC SEPARATION OF THE GLOBIN CHAINS

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Accurate identification and quantification of normal and abnormal hemoglobin (Hb) variants are clinically important for the diagnosis of hemoglobinopathies. Most of the common hemoglobinopathies can be identified by cellulose acetate electrophoresis in alkaline pH and citrate agar electrophoresis in acidic pH. For uncommon mutations, chromatographic globin chain separation and DNA sequencing are the complementary diagnostic tests. The present report concerns 20 unknown Hb variants among the patients who referred to our center. Cellulose acetate electrophoresis at alkaline pH was performed and all the variants were separated out in HbS region. On agar gel electrophoresis at pH 6.2 all of the Hb variants were separated out between HbS and HbC region. Chromatographic (CM cellulose) separation of the chains in the presence of 8 M urea showed the coexistence of alpha chain variants in 15 specimens, coexistence of beta chain variants in 3 specimens, and the co-existence of both alpha & beta chain variants in the 2 remaining patients. In conclusion, globin chain separation is a helpful guideline for the selection of an appropriate gene for DNA sequencing.

PP-003
THE EFFECT OF CRISTALOID CARDIOPLEGIC FLUID AND ITS CONTENTS ON THE PLASMA OXIDIZABILITY BY COPPER

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Previously we have observed that the susceptibility of plasma to copper-catalyzed lipid peroxidation test were not in agreement with results obtained with other tests, which demonstrated, oxidant stress in sample mixtures with cristaloid cardioplegic fluid (CCF). The aim of this study is to investigate the effect of CCF and its contents on the susceptibility of plasma to copper-catalyzed lipid peroxidation test.
The plasma pool was divided into eight groups. Equal volumes of CCF or one of its contents were added to each group of the plasma pool. The accumulation of conjugated diene (CD) by copper-induced oxidation was monitored at 37°C and at 5 minute intervals for a period of 5 hours. Thiobarbituric acid-reactive substances (TBARS) formed during the incubation of plasma with copper was also measured.
At the CCF group, the lag time was significantly longer than those found in the activation group ($p<0.05$). Maximal absorbance change in the CCF group was significantly lower than those found in the activation group ($p<0.01$). It was found that, the production of CD and TBARS were inhibited and the lag time had increased, at the time when the plasma was mixed with CCF or its contents.On the other hand, the same effects were not observed when the plasma was mixed with sodium bicarbonate.
As a result, we conclude that that the susceptibility of plasma to copper-induced lipid peroxidation is interfered by CCF. The chloride ions, which major content of CCF, may play an important role on this effect.
Note: This investigation was supported by a grant (TUBAP-632) from The Scientific Research Foundation of Trakya University.

PP-004
RELATIONSHIP BETWEEN DIABETIC DYSPEPSIA, NITRIC OXIDE LEVELS OF GASTRIC JUICE, OXIDATIVE STRESS AND HYPERGLYCEMIC CONTROL IN HELICOBACTER PYLORI INFECTION

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Background & Objectives: Recently diabetes mellitus has been known as major factor of gastro-intestinal dysfunction. Helicobacter Pylori (HP) infection also causes dyspepsia. High incidence of HP infection in diabetic patients has been reported. Delay in gastric emptying and reduced function of the anteral part of stomach are important complications of diabetes. In diabetic dyspepsia the role of HP infection is related to hyperglycemia and it may stimulate contamination to HP and or turns the silent infection to overt disease. The aim of present study was to elucidate the relationship between dyspepsia, nitric oxide levels of gastric juice, oxidative stress and control of hyperglycemia in diabetic patients with HP-infection.
Materials & Methods: In this study the individuals referred to the Gastroenterology Clinic of the University 60 diabetic patients with HP-infection (27 males and 33 females) with mean age of 39.52 ± 12.95 years as case group, 60 diabetic patients without HP-infection (28 males and 32 females) with mean age of 34.87 ± 15.33 years as control-2 group and 60 healthy individuals without HP-infection (28 males and 32 females) with mean age 41.27 ± 8.64 year as control-1 group were selected. The HP-infection was detected by rapid urease test and active chronic gastritis was determined by pathological examination of biopsy samples. The levels of nitric oxide in gastric juice were measured by colorimetric method of Greese and the activities of Superoxide Dismutase and Glutathione Peroxidase in the biopsy samples by colorimetric methods using Randox kits and percentage of Glycated Hb was measured by ion exchange chromatography using Biosystem kit.
Results: Comparing with the two control groups significant increase in the percentage of Glycated Hb

(mean) in the case group was noticed (p<0.0001 in the both cases). The mean levels of gastric juice nitric oxide in case group was meaningfully lower than those of the 1 and 2 control groups (p<0.0001 in the both cases). The mean activities of the Superoxide Dismutase and Glutathione Peroxidase in gastric mucosa of the case group was markedly higher than those of other groups (p<0.0001 in all cases).
Conclusion: HP-infection in metabolically uncontrolled diabetic patients is common and the bacteria colonize in antrom of the stomach. After eradication therapy for HP-infection the control of glycemia will be very effective. This is detected by lowering the level of Glycated Hb to the levels observed in HP free group. The treatment improves the synthesis and excretion of the nitric oxide radicals and also helps to reduce symptoms and lesions from acute nitrozative and oxidative stress following reaction between HP-Superoxide radicals and gastric nitric oxide.
Keywords; Diabetes Mellitus, Helicobacter Pylori Infection, Oxidative Stress

PP-005
THE VALUE OF HIGH SENSITIVE CRP WHEN COMBINED WITH LDL-C/HDL-C RATIO IN DETECTION OF PATIENTS UNDER RISK OF CORONARY HEART DISEASE

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Background & Objectives: High sensitive C-reactive protein (hs-CRP) has prognostic utility in patients with acute coronary syndromes and is a strong independent predictor of future coronary events in apparently healthy subjects. CRP is synthesized by hepatocytes and has a molecular weight of approximately 118 KD. In this study the prognostic value of hs-CRP was evaluated in detection of coronary artery events when combined with serum LDL-C/HDL-C ratio.
Materials & Methods: Three hundred male patients (mean age of 55.74±10.5 years) suffering from coronary artery disease referred to Madani Hospital, Tabriz, Iran were selected. Patients were divided into three subgroups according to the number of diseased vessels (66 with one diseased vessel, 87 with two diseased vessels and 110 with three diseased vessels). Control group consisted of 37 males and from apparently healthy individuals (without diseased vessel). Serum levels of hs-CRP were measured by ELISA method and those of lipid parameters by standard methods using Cobas Mira autoanalyzer. The relationship between the measured parameters was determined by statistical analysis (t-test, X2=test, ANOVA, discriminate analysis).
Results: Comparing with the control group, significant elevation in serum levels of hs-CRP were noticed in the patient group (p<0.05 in all cases). Significant correlation between the serum levels of hs-CRP, LDL-C, HDL-C and LDL-C/HDL-C ratio was observed (r=0.938, p=0.001). Significant correlation was also noticed between age (r=0.626), weight (r=0.405), systolic blood pressure (r=0.319) and the levels of hs-CRP (p<0.05 in all cases). Along with increase in the number of diseased vessels elevated levels of hs-CRP was found (r=0.927, p=0.001).
Discussion: The direct correlation between serum levels of hs-CRP and LDL-C/HDL-C ratio, and number of diseased levels suggests that predictive value of hs-CRP in men increases considerably when evaluated jointly with the serum LDL-C/HDL-C ratio. The combined tests can be used as screening test in detection of coronary artery disease in general population.

PP-006
BUTYRYLCHOLINESTERASE K VARIANTS INCREASE THE RISK OF CORONARY ARTERY DISEASE IN TYPE 2 DIABETIC PATIENTS

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Background: The results of several conflicting studies suggest that there is an association between butyrylcholinesterase K variant (BCHE K, G1615A /Ala539Thr) and the risk of developing diabetes and coronary artery disease (CAD) in individuals. The objective of this study was to examine the hypothesis that the presence of BCHE K variant exacerbates the risk of CAD in patients with Type 2 diabetes mellitus (T2DM), from western Iran.
Methods: This case–control study consisted of 152 angiographically documented Type 2 diabetic (T2DM) CAD patients, 147 non-diabetic (ND) individuals with CAD who angiographically had at least 30% stenosis, and 165 unrelated control subjects without diabetes and CAD. BCHE K variant was detected by PCR-RFLP.
Results: The BCHE K allele frequencies in T2DM and ND patients with CAD were significantly higher than in control group (23.3% versus 13%; p<0.005 and 19% versus 13%; p<0.01, respectively). The OR for the BCHE K heterozygous and homozygous in T2DM subjects with CAD were 1.8 (95%CI 1.1-1.9, p=0.019) and 4 (0.94-2.7, p=0.08) and for the ND patients with CAD were 1.54(1.05-1.72,p=0.044) and 3.23(0.94-2.6,p=0.08), respectively. OR of BCHE K allele was found to be 2(1.4-3.5, p=0.001) in T2DM subjects with CAD and 1.58(1.3-3.1, p=0.003) in ND group with CAD. These data suggest that the BCHE K allele increases the risk of CAD in the population in western part of Iran and its presence intensifies the risk of CAD in the T2DM.
Conclusion: The fact that the BCHE K, even in the heterozygous form, exacerbates the risk of CAD in diabetic patients, suggests that a specific therapeutic intervention should be considered for this particular group of patients.

PP-007
BIOLOGICAL EFFECTS OF CHRONIC COMBINED EXPOSURE TO COPPER IONS AND LOW DOSE IRRADIATION

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Significant level of pollution of natural environment, including sources of drinking water, ions of heavy metals, alongside with risk of radiating failures require careful studying chronic combined influence of chemical toxicants and irradiation in small doses on organism. In this connection rats Wistar consumed during 25 day drinking water with the contents of copper ions equaled 20 limiting allowable concentration (LAC) on a background of a daily irradiation in dose 0,01 Gr (1,75 Gr|s). The basic parameters of oxidative protection of blood, head brain, heart, lungs, spleen and liver were investigated. It is established, that long per oral receipt of copper ions strengthens processes of lipid peroxidation (determined on malon dialdehyde accumulation - MDA) and stimulates activity of antioxidative system (tested on activity superoxide dismutase - SOD) in all researched tissues as result of cell adaptive reaction. At the same time the observable decreasing common antioxidising activity of tissues specifies. It leads to imbalance between functioning of prooxidative and antioxidative systems. The similar changes were marked as well at a chronic irradiation of animals in a total dose 0,25 Gr. Combined action of copper ions and small doses of radiation did not result in addition of effects of both factors on activity SOD. However, strengthening lipid peroxidation processes and decreasing common antioxidizing activity of tissues were observed. It is possible to note that the combined effects were caused by primary influence in heart and spleen and influence of small doses of ionizing radiation in head brain and red blood cells. The received data specify an exhaustion of adaptive mechanisms and development of desadaptative processes.

PP-008
TRACE ELEMENTS TOXICITY: INCREASED RISK OF INTOXICATION IN CHILDREN

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Increased concentration of trace elements is especially hazardous for child's population health. One of the critical periods with manifested genetic influence is the early prenatal one. Aim of present work was determination of trace elements content in the brain and lung tissues of the newborns and 26-28-week fetuses whose mothers during their pregnancy had lived in the big industrial sites and to clear up possible negative aftereffects for posterity health. In the autopsy material trace elements presence was measured by atomic absorption method.
In the investigation it has been found that in 50% samples of the brain and lung tissues of the newborns lead accumulation had taken place in the concentration in 10-time higher than normal parameters. The most considerable level of the toxicant was in the lung. It was correct for zinc. In the lung tissue cobalt and nickel concentrations exceeded normal ones in 3-15-time. In studied samples iron and copper levels decreasing was shown. However some tests of the lung tissue contained increased quantity of copper. Thus, in the child's organism microelements imbalance has been shown. The role of the trace elements in normal development and pathogenesis or prenatal pathology of this posterity is emphasized.
Thus, the results indicate on microelements imbalance in organism tissues developing in prenatal period that is negative prognostic health violation factor in the descendants. Multifactor analysis of microelements level violations influence on state parameters of cultural membranes, endocrine, immune systems, a calculation of cumulative properties of heavy metals allow to consider these children by sensitive, hyperactive group in population with raised risk for health in ecologically inauspicious environment conditions.

PP-009
THE LIPID METABOLISM IN PATIENTS WITH CHRONIC BRONCHITIS CAUSED BY RADIATION EXPOSURE

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Out of 137 patients (men, aged 40-49) suffering from chronic bronchitis and variable degrees of respiratory failure, who had participated in the clean up works after Chernobyl accident. Irradiation doses were 0.1-0.3 Gy.Examined patients were separated in 2 groups by degree of respiratory failure. Comparative groups were non-irradiated men with analogous bronchopulmonary pathology and healthy donors. 10 biochemical parameters were analyzed in blood serum to estimate the lipid metabolism, free-radical processes and antioxidant defense in organism. The chronic bronchitis patients in comparison to healthy men showed exhausted content of high density lipoproteins (HDL), triglycerides, and reduced contents of low density lipoproteins (LDL), total cholesterol, total lipids, LDL cholesterol. Levels of HDL cholesterol and extraLDL cholesterol were increased. Radiation influence intensified obviously lipid imbalance in organism. Free-radical processes were activated under bronchopulmonary diseases. It has been stated the level of lipid peroxides accumulation in the blood plasma correlated with both degrees of bronchial obstruction and respiratory failure. The malon dialdehyde level was risen by 40% in average in non-irradiated patients, and by 68% and 100% accordingly separated groups of irradiated ones. Sharp lipid peroxidation would cause inevitable injury of lung superficial active veil and be an important mechanism of the inflammation becoming chronic. Thus, lipid imbalance can be serious risk factor in bronchopulmonary pathology growth.

PP-010
THE IMPORTANCE OF OXIDATIVE STRESS IN CHRONIC KIDNEY FAILURE PATIENTS WITH SECONDARY HYPERPARATHYROIDISM

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Chronic renal failure is a chronic and progressive disease which characterized renal dysfunction dependent on decrease on the glomerular filtration rate. It was reported that there was a correlation between the oxidative stress and progression of chronic renal failure. However, secondary hyperparathyroidism is the most important complication in chronic haemodialysis patients. In the present study, it was aimed to determine how the increased PTH levels affects the oxidant and antioxidant systems in chronic haemodialysis patients who had increased PTH levels. The study included 50 patients who were on haemodialysis treatment and the patients divided in two groups based on PTH levels; > 300 pg/mL (group 1) and < 300 pg/mL (group 2). Twenty five healthy subjects who had normal renal function and PTH levels were included to the study as a control group. While the malondialdehyde (MDA) level of groups 1 and 2 that is indicator of lipid peroxidation was found significantly higher than controls ($p<0.05$), the advanced protein oxidation products (AOPP) level that indicator of protein oxidation was found higher only group 2 ($p<0.05$). The myeloperoxidase activity that is indicator of increased neutrophil activation was found lower in group 1($p<0.05$) as compared to controls. The catalase (CAT) activity and vitamin C levels that had antioxidant effects were found decreased in both group 1 and group 2 as compared to controls ($p<0.05$). Also, CAT activity was found lower in group 1 than group 2 ($p<0.05$). Results of this study indicate that haemodialysis patients had characterized by increased oxidative stress and decreased antioxidant system activity. Also, this study indicates that increased PTH levels did not have any additional effects on the oxidative stress in the haemodialysis patients.
Keywords: Chronic renal failure, oxidative stress, secondary hyperparathyroidism

PP-011
NANOTECHNOLOGY-BASED DIAGNOSTIC AS AN ENABLING TECHNOLOGY FOR FUTURE MEDICAL APPLICATIONS

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The application of nanobiotechnology in medical diagnostic can be divided in two areas, in vitro (biosensors and integrated devices and in–vivo (implantable devices, medical imaging) applications. An in-vitro diagnostic tool can be a single biosensor or an integrated device containing many biosensors. Nanoanalytical tools like scanning probe microscopy or imaging mass spectrometry offer new opportunities for in vitro diagnostics like molecular pathology, or reading out highly integrated ultra sensitive biochips. Diseases like cancers, cardiovascular problems, infectious diseases, diabetes and degenerative diseases are serious challenges can to be dealt with. Higher specificity reduces the invasiveness of the diagnostic tools and simultaneously increases their effectiveness significantly in terms of providing biological information, such as phenotypes, genotypes or proteomes. Several complex preparation and analytical steps can be incorporated into lab-on –a–chip devices that can be used in the early diagnosis of diseases and for monitoring the progress of therapy in a standard clinical environment or as POC devices. Advancement in in-vivo diagnostics will also rely on molecular imaging and on minimally invasive, implantable devices.. Targeted molecular imaging is important for a wide range of diagnosis, such the identification of the locus of inflammation, the visualisation of vascular structures or specific diseases states and the examination of anatomy and the monitoring of disease stages eg in cancer metastasis.. It is also important for the research of control drug release, in assessing the distribution of a drug and for the early detection of unexpected and potentially dangerous drug accumulation.

PP-012
BIOCHEMICAL MARKERS AS A TRACER IN FOLLOW-UP OF THERAPY EFFECT ON PATIENTS WITH RHEUMATOID ARTHRIT

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Background: The biochemical markers (urinary enzymes, albuminuria and serum Cystatin C) was investigated in patients with RA to evaluate the eventually toxicity of non-steroidal anti-inflammatory drugs(NSAIDs)
Methods: Urinary enzyme activity of b-NAG, AAP, g-GT was determined with standardised kinetic methods.Urinary albumin concentration and serum Cystatin C was measured immunoturbidimetric methods using DAKO tests.
Results: Mean +/- SD values of urinary NAG, AAP and g-GT In seropositive (N=56), in seronegative RA(N=32) patients and in normally subjects (N=30)were found to be: b-NAG (2,27+/-0.65,1.26 +/-0.34,0.75+/-0.43 U/mmol creatinine); AAP(2.98+/-0.36,1.30+/-0.74,0.50+/-0.35 U/mmol creatinine), g-GT(3.84+/- 0.30,1.36+/-0.28,1.32+/-0.50 U/mmol creatinine. The mean urinary NAG and g-GT values in RA patients was found to be a significant higher($p< 0.01$) compared to the mean values in seronegative RA patients and normal healthy subjects when analysed by one way ANOVA.In patients who were treated with Methatrexat and Decortin the serum Cystatin C concentration showed significantly elevated values in the therapeutic days(2.85+/- 0.56;v.c.g. 0.70 +/-0.50 mg/L).Urinary albumin concentration increased, but not significantly in the first days of treatment.
Conclusions: Determination of the urinary enzymes b-NAG and g-GT,as well as the serum concentration of Cystatin C me therefore serve a more sensitive test for kidney injury in patients with Rheumatoid arthrit.Early detection of high NAG enzymuria and elevated albumin levels in urine before the initiation of MTX therapy could be helpful in predicting possible MTX toxicity probably related to impaired renal clearence of MTX.

PP-013 – mail atıldı. Bilgi eksik
INHIBITION OF THE XANTHINE OXIDASE AND LIPID PEROXIDATION BY LIPID FRACTION OF NIGELLA SATIVA CULTIVATED IN ALGERIA

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Hexanic extract of Nigella sativa was investigated for its pharmacologic activities. Resulte obteined in this study demonstrate that the Nigella sativa oil exhibited antioxydative activities. it is capable to inhibite the linoleic acide peroxdation, prevention scavenging effects on DPPH radical and causes inhibition of the xanthine oxidoreductases (XOR) more than the other types of extracts of Nigella sativa. This enzyme is a complex molybdoflavoenzyme and is capable of reducing oxygen to generate the reactive oxygene species (ROS), superoxide and hydrogen peroxide. XOR reduce nitrite and produce reactive nitrogen species(RNS).

PP-014
cDNA CLONING, SEQUENCE ANALYSIS, EXPRESSION, AFFINITY PURIFICATION AND EPITOPE MAPPING OF MAJOR MEMBERS OF HUMAN hnRNP A/B TYPE OF PROTEINS

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Human cDNAs libraries were screened by PCR for the presence of sequences belonging to hnRNP A0, A1/A1B, A2/B1. Expression of these cDNAs employing different expression systems resulted in proteins with various molecular weights, whose authoreactivities were investigated by Western blotting, employing more than 300 sera from rheumatic patients. Expression was furter studied by Northern blotting using the cDNAs as probes. The data obtained indicate that expression levels greatly vary between individual tissues. These ribonucleoproteins also showed different RNA-binding preferences. Detailed epitope mapping revealed that hnRNPs possess unique autoreactive domains indicating the existence of complicated and diseases specific conformational epitopes. In conclusion, novel properties of the major members of human hnRNP A/B group of proteins, have been described, which potentially can be used as disease specific markers for prognosis and treatment of human systemic autoimmune pathologies.

PP-015
DETERMINATION BY GC-MS OF ISOQUINOLINE ALKALOIDS CONTENTS IN TWO ALGERIAN SPECIES

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This work describes a fast and efficient procedure to separate and identify indole alkaloids from methalonic extract of two Algerian Fumaria species used in traditional medicine in cases of hepatobiliary disfunction and diarrhoea. Total quinolizidine alkaloid contents were 426mg/100g (F.capreolata) and 521mg/100g (F.bastardi). The isoquinoline alkaloids, Stylopine, Protopine, fumaritine, fumaricine, fumarophycine, fumariline, fumarofine were determined by GC-MS in aerial parts of both Fumaria capreolata and Fumaria bastardi. In the first specie an ester of phtalic acid was identified, and in the second specie we found three others peaks one of them seems to be a benzophenanthridine, probably a dehydrate derivative and another could be identified as dihydrofumariline. The chemotaxonomic significance of the results is discussed.

PP-016
DAILY FLUCTUATION OF CORTISOL IN THE SALIVA AND SERUM OF HEALTHY PERSONS

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Objectives: The objective of this study was to evaluate cortisol in the saliva and serum of healthy persons and its daily fluctuations by using imunochemical method on a autoanalyzer. Methods: Biological samples: Serum from 14 healthy persons and saliva from 18 healthy persons were taken two times at 8 a.m. and at 4 p.m. Imunochemical assay: The princip of this method is the competitive binding of cortisol present in the analyzed sample and cortisol marked with peroxidase on binding parts with specific antibodies. Statistical analysis: Student t-test. Results: Cortisol in saliva in the morning: 21,2 ± 16,2 nmol/l and in the afternoon 12,7 ± 8,1 nmol/l. Cortisol in serum in the morning: 459,6 ± 235,2 nmol/l , and in the afternoon 340,5 ± 207,5 nmol/l.Conclusions: The concentrations of cortisol in saliva are lower than in serum. Cortisol in the serum in the morning are about twenty times higher than cortisol in the saliva at same time. Cortisol in the serum at afternoon are about twentyseven times higher than cortisol in the saliva. A individual variabilities of cortisol in the saliva and serum were found during the day.

PP-017
THE METABOLIC TURNOVER OF BIOGENIC AMINES AND SEROTONIN IN THE BODY FLUIDS OF MAN

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Objectives: Aim of this study was to determine the metabolic turnover of biogenic amines and serotonin in plasma, cerebrospinal fluid (CSF) and urine of 500 healthy individuals.
Methods: The determination of catecholamines, serotonin (5-HT) and the metabolites was done using HPLC-ECD, and HPLC-UV methodology.
Results: Serum or plasma contains on the average norepinephrine (NE) from 100-650 pg / ml, epinephrine (E) from 5-100 pg / ml, dopamine (DA) 5-80 pg / ml, dihydroxyphenylacetic aced (5-DOPAC) 1-4 ng / ml, homovanilic acid (HVA) 2-10 ng / ml, 5-HT 5-35 ng / ml and 5-hydroxyindoleacetic acid (5-HIAA) 4-12 ng / ml. CSF contains NA 30-350 pg / ml, E 5-80 pg / ml, DA 5-110 pg /ml, DOPAC 0.5-3 ng / ml, HVA 15-40 ng / ml, 5-HT 0-2 ng / ml, and 5-HIAA 13-35 ng / ml. Urine contains vanilinmandelic acid 1.5-5.5 mg / 24 h, 3-methoxy-4-hydrophenylglycol 0.1-0.8 mg / 24 h , DOPAC 0.6-2.5 mg / 24 h, 5-HIAA 1-6 mg / 24 h, and HVA 2.5-7 mg / 24 h.
Conclusions: Concentrations of NE and E in the plasma are higher than in the CSF, but HVA and 5-HT are lower than in the CSF. DA and 5-HT turnover can be approximately expressed by an index of HVA/DA and of 5-HIAA/5-HT. HVA/DA ratio and 5-HIAA/5-HT ratio are significantly higher in the CSF than in the plasma. Because reference values are affected by many variables, the range used at our laboratories (Vienna, Wuerzburg, Sarajevo) may not be absolute appropriate for other institutions.

PP-018
ANTIOXIDANT CAPACITY DECREASES DURING GROWTH BUT NOT AGING IN MOUSE BRAIN AND SERUM

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Objectives: The objective of this study was to evaluate the effects of growth and aging on the antioxidant capacities of mouse brain and serum.
Materials and Methods: 3 days-, 3 week-, 6 month- and 14 month-old male and female mouse were used in this study. Brain cortex (N=6) and cerebellum (N=6) were collected and stored at –800 C until analyzed. The antioxidant capacity was determined using the oxygen radical absorbance capacity (ORAC) assay with peroxyl and hydroxyl radical generators.
Results: The protein content in the brain cortex and cerebellum tended to increase with the growth. The antioxidant capacity in the brain cortex and cerebellum decreased significantly during growth. The mouse pups (3 days, 3 week) had higher antioxidant capacity than the adult (6 month) and old (14 month) mouse. No aging effect was observed in the antioxidant capacity of the brain cortex and cerebellum in the adult and old mouse. The antioxidant capacity in mose serum decreased during growth, if the ORAC values were expresed on the basis of serum protein concentrations.

Conclusion: The overal antioxidant defense capacity against peroxyl and hydroxyl radicals in the newborn brain is as much as 3-fold higher than that in the adult and aged mouse organism.

PP-019
BRAIN ANTIOXIDANT CAPACITY IN RAT MODELS OF BETACYTOTOXIC-INDUCED EXPERIMENTAL SPORADIC ALZHEIMER'S DISEASE AND DIABETES MELLITUS

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Objective: It is believed that oxidative stress plays a central role in the pathogenesis of metabolic diseases like diabetes mellitus (DM) and its complications like peripheral neuropathy as well as in sporadic Alzheimer's disease (sAD). Experimental models of these diseases are streptozotocin (STZ)-induced diabetic rats and STZ-intracerebroventricularly (STZ-icv) treated rats, in which antioxidative capacity (AC) was measured in the hippocampus, cerebellum, and brain stem.
Method: It was used Oxygen Radical Absorbance Capacity (ORAC) assay.
Results: In the brain of both STZ-induced diabetic and STZ-icv treated rats decreased AC has been found demonstrating regionally specific distribution. In the diabetic rats these abnormalities were not associated with the development of peripheral diabetic neuropathy. Also, these abnormalities were not prevented by the icv pretreatment of glucose transport inhibitor 5-thio-D-glucose in the STZ-icv treated rats, suggesting different mechanism of STZ-induced central effects from those at the periphery.
Conclusion: Our results point to the decreased AC in the brain of rats with the experimental diabetes mellitus and rats with the cerebral diabetes representing an experimental model of sporadic AD. The latter model offers a possibility for searching for the new antioxidant drugs in the treatment of a neurodegenerative disease such as sporadic AD.

PP-020
ANALYSIS OF HIPPURIC ACID IN URINE OF MAN AFTER INGESTION OF EDIBLE FRUITS

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Objectives: Aim of this study was to evaluate the biotransformation of simple phenol after ingestion of edible fruits and mixed food. It was analyzed hippuric acid in urine as biomarker.
Methods: Measurement of hippuric acid in urine samples of 10 healthy individuals: 5 female and 5 male with a mean age 51.5 years were recruited to participate in this study. Urine samples were collected for 24 hours. The additional meals 300 g of fruits: blueberry, cherry, raspberry, melon, blackberry and mixed food were given immediately before the 24 hr urine sampling. Otherwise, the meals given during 24 hr was a usually food. Biotransformation of phenols in edible fruits, that are together with liver glycins precursors of hippuric acid biosynthesis, was evaluated by Direct spectrophotometric measurement of excreted hippuric acid in urine at 410 nm. Results: It was established that the highest quantity of hippuric acid was after ingestion of 300g of bilberry fruits ($p< 0.003$), and same quantity of cherries ($p< 0.003$). Concentration of excreted hippuric acid was twice higher after ingestion of these fruits in comparison with hippuric acid concentrations in urine after ingestion of ordinary – mixed food.
Conclusion: Quantity of biosynthesised hippuric acid was in direct correlation with the concentrations of its precursors, primarily phenol acids and other simple aromatic acids ingested with food.

PP-021
DETERMINATION OF AMYLASE ISOENZYME IN PATIENTS WITH PANCREATIC PSEUDOCYSTS

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Objectives: Aim of this study was to find accurate electrophoretic method for separation of isoenzymes of amylase in serum of patients with pancreatic pseudocysts. For diagnosis of this disease is very important to determine activity of the pancreatic and salivary amylase izoenzymes.
Methods: In this study the control group comprised 30 normal subjects, ages 20-60 years and 20 patients with pancreatic pseudocysts . The total amylase activity was determined using 4,6 ethylidene-4-nitrophenyl-maltoheptoside as substrate. The amylase isoenzymes were separeted on agarose gel in Beckman Paragon electrophoresis system. Visualization using Cibachrom blue F3A is suitable for densitometric quantifacation. Detection amylase isoenzymes is done with Bio-Rad detector at 600 nm.
Results: In the serum of patients with panreatic pseudocysts were separated isoenzymes of amylase into six distinct form. Distribution of amylase isoenzymes have showed appropriate changes of same isoenzymes. In the presence of a cyst it was found the P4 and P5 pancreatic amylase isoenzyme fractions. We found that pancreatis amylase consisting of about 25% P2, 60% P3 and 15% P4 and P5 pancreatic isoenzymes with a trace of S2 salivary amylase isoenzymes. In healty subjests the contribution of amylase isoenzymes was about 44% P2 pancreatic amylase and 56% S2 salivary amylase.
Conclusion: It was found that P4 and P5 amylase isoenzymes are highly sensitive and specific test in diagnosis of pancreatic pseudocysts.

PP-022
COMPARATIVE DETERMINATION OF ACTIVITY OF AST, ALT, CK, LDH ON ALSYON AND FLEXOR ANALYSER

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Objectives: Goal of this work was to compare enzyme activity of AST, ALT, CK and LDH using two biochemical analysers Alsyon and Flexor, AVL. It has been worked on two different types of analysers with reagens beloning to two different manufacturers: GRAINER- ALSYON and CHRONOLAB – FLEXOR.
Methods: It was analyzed 50 serums of patients with different diseases. All analyses were done under the same working conditions and carried out on the same working temperature at 370C. It was used authorized methods for IFCC.
Results: Preciseness of such measurements was investigated on both analyzers for catalytic activity of AST, ALT, CK, LDH and _-GT enzymes. The results of all measured parameters were favorable. Coefficient of variation was 0,35% to 3,10% on both analyzers. Comparing results of the preciseness between series we find no differences. Correlation coefficient between series for all parameters were between 0,970 and 0,998.
Conclusions: When the enzyme activity determination was conducted in accordance with specific methodology proposed by IFCC, our results showed that both analysers are precise, correct and highly reliable machines. Also, reagents for catalytic activity determination of different enzymes in the biological samples seems to be properly prepared.

PP-023
SERUM CYSTATIN C CONCENTRATION IN TRANSPLANTED PATIENTS TREATED WITH GLUCOCOTICOID IMMUNOSUPRESSION

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Cystatin C has been described as meeting many of the characteristics of an ideal GFR marker and has been reported to be at least as accurate as the commonly used serum creatinine to detect impaired renal function in various patients groups, including renal

transplant patients.
The present study aimed to elucidate the influence of glucorticoid immunosuppression on Cystatin C concentration in serum from renal transplant patients.To evaluate the influence of immunosuppressive regimens, especially glucocorticoids, on serum Cystatin C, 38 clinically stable patients on immunosuppression therapy with low-dose glucocorticoids were matched with 30 clinically stable patients receiving cyclosporin A alone and 18 clinically stable patients receiving cyclosporin A together with azathioprine .
Clinical stability was defined as the absence of acute rejection, febrile infection, and cyclosporin A toxicity, as well as stability of creatinine clearance as estimated by the formula of Cockroft and Gault .The three groups were matched for estimated creatinine clearance (CrCl) and had comparable gender, age, and time since transplantation. To reduce the influence of the known biologic variation of Cystatin C ,all patients had six measurements during subsequent visits that demonstrated stable clinical condition. Means from cystatin C reciprocals, as well as from CrCl estimates and CysCGFR were calculated and used for data analysis. Furthermore, 10 patients receiving a short course of high-dose methylprednisolone (500 mg intravenously per day for 3 days) for deteriorating renal function were analyzed to observe a possible dose-dependent effect of glucocorticoid administration.
The group receiving short-course, high-dose methylprednisolone had results from four time points available: a) before methylprednisolone commencement (median, 15 days); b) the day methylprednisolone was started (before medication); c) after 3 days of methylprednisolone therapy; and d) on a follow-up 9-10 days after last dose.
Serum Cystatin C was measured by a particle-enhanced turbidimetric immunoassay (PETIA; Dako) on a Cobas Mira (Roche). Serum creatinine was measured with a modified kinetic Jaffe method. Creatinine clearance was estimated by the formula of Cockroft and Gault ,and the Cystatin C GFR was measured by the formula of Grubb (CysCGFR=84.69.CysC -1.680). Patients receiving long-term, low-dose glucocorticoid therapy showed higher cystatin C concentrations than controls (2,25;1.9-2.9,P<0.05). High-dose methylprednisolone given intravenously led to significant differences in Cystatin C values at different time points (before administration, after three doses, and 8 days after discontinuation; P <0.001). After three daily doses of 500 mg, cystatin C concentrations increased from 2.13 mg/L (1.72–2.80) to 2.69 mg/L (2.34–3.5; P <0.05). Eight days after discontinuation, cystatin C concentrations significantly decreased to 1.96 mg/L (1.63–2.4; P <0.05. At these time points, neither the CrCl estimate (54 ± 13 mL · min-1 · 1.73 m-2, 51 ± 15 mL · min-1 · 1.73 m-2, and 56 ± 14 mL · min-1 · 1.73 m-2; P = 0.05) The serum creatinine concentrations (165 µmol/L,158 µmol/L, and 162 µmol/L, P = 0.19) underwent significant changes.
This study demonstrates that renal transplant patients receiving glucocorticoid medication have higher cystatin C than two comparable groups with glucocorticoid-free immunosuppression. Because patients receiving 500 mg of methylprednisolone had significantly higher cystatin C values than patients receiving 10 mg of prednisone, a dose-dependent influence of the administered glucocorticoid dose is suggested. Thus, glucocorticoid medication leads to systematic underestimation of GFR in renal transplant patients.
Glucocorticoid medication in adult renal transplant patients is associated in a dose-dependent manner with increased cystatin C, leading to systematic underestimation of GFR. This does not preclude the use of cystatin C in detecting impaired renal function in renal transplant patients with glucocorticoids, because this study and others showed Cystatin C to be significantly more accurate in detecting impaired renal function in this patient group. Moreover, our data illustrate the need for specific reference intervals in patients on glucocorticoid therapy.In clinical routine settings, as well as in future clinical studies, it is important to take glucocorticoid medication into account when interpreting serum cystatin C concentrations in renal transplant patients presumably, in other patient groups.

PP-024
THE PREVALENCE OF CYSTATIN C, NAG-ACTIVITY AND ALBUMINURIA AS CLINICAL PREDICTORS OF DIABETIC NEPHROPATHY

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Background: About 35% of all Insulin dependent Diabetes Mellitus (IDDM) patients developed diabetic nephropathy characterised by partial albuminuria, changes in glomerular filtration speed, blood pressure and tubular dysfunction
Methods: Cystatin C concentration (DAKO) test, NAG activity (standardised kinetically) and albuminuria (DAKO test) was measured in group of patients (N=198) enables the identification of early risk to developed diabetic nephropathy.
Results: We confirmed a significant increase of NAG activity and albuminuria in the group of patients (NIDDM, N= 102), compared to the control group (N=50): NAG x=2.54+/-0.87, v.s. 0.73+/-0.36U/mmol creatinine, albuminuria-x=193+/-36.5,v.s20 mg/L. In this group no correlation has been confirmed between the examined parameters and the protein in urine. Serum CysC showed slowly, no significant increased concentration. In the group of patients dependent of insulin (N=96) we confirmed a very significant increase of NAG-activity-x=4.57+/-1.5U/mmol creatinine, albuminuria-x=385.5+/-98.0. In this group we proved a positive correlation between the NAG-activity, albuminuria and the concentration of urinary proteins.Cystatin C concentration was significantly change - 2.35+/- 0.56;v.c.g. 0.70 +/-0.50 mg/L,p<0.01.
Conclusion: Determination of the NAG activity (tubular dysfunction), albuminuria and Cystatin C concentration (Glomerular dysfunction) me be was a more sensitive test for following of patient with Diabetes mellitus and developed of Diabetic nephropathy

PP-025
PLASMA PROLACTINE AND LEPTIN IN PATIENTS WITH

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Objectives: Aripiprazole is a quinolinone derivative and the first of a new class of atypical antipsychotics. This antipsychotic has partial agonist activity at dopamine D2 and serotonin 5-HT1A receptors, and is also an antagonist at 5-HT2A receptors. Aim of this study was to test effects of aripiprazole on plasma prolactine and leptin levels in shizophrenic patients.
Method: 15 shizophrenic patients were diagnosed with DSM-IV criteria. Plasma prolactine and leptin were determined at baseline and at week 4 and 12 during aripiprazole trial (15-30 mg / day). Data were gathered during 2005.
Results: No changes were observed in plasma prolactine and leptin levels, at week 4 and 12 during trial with aripiprazole.
Conclusions: Aripiprazole has demonstrated efficacy in clinical trials in patients with acute relapse or stable chronic schizophrenia. No changes in plasma prolactine and leptin levels during therapy with aripiprazole were observed. As the biochemical receptor profile of aripiprazole shows agonist activity at the 5-HT1A receptor and low H1 affinity, it might be expected to have a clinically adventageous profile for glucose and lipid metabolism.

PP-026
SERUM BONE ALKALINE PHOSPHATASE-ELECTROPHORETIC AND LECTIN PRECIPITATION METHOD

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Measurement of serum bone alkaline phosphatase (BALP) has a diagnostic value as a marker for osteoblasic activity. The difference in physicochemical properties of the isoenzymes was exploited to develop assays for separation. Two procedures were used for separation of bone and liver forms: electrophoretic separation and precipitation with wheat germ lectin. Serum alkaline phosphatase (ALP) activity is determined according to the IFCC proposed method. ALP is precipitated using lectin (2 g/L in acetate buffer pH 9.5). After centrifugation 10 min at 4000 g, a remaining activity in supernatant is measured. BALP is calculated using total alkaline phosphatase and remaining activity. Electrophoretic separation is performed in buffered 1% agarose gel pH 9.5. The time of diffusion of applied serum samples depend of total ALP activity. After separation at 150 volts 25 min, a specific enzymatic color reaction is used to visualize the forms. They are scanned with densitometer at 600 nm. Reference values are (50 healthy adults) 13-37 U/L BALP (total ALP 30-70 U/L) for lectin precipitation method and for electrophoretic method (66 healthy adults) 15- 35 U/L (total ALP 32-107 U/L). BALP is determined in 31 serum samples (total ALP 35- 851 U/L). The results for BALP obtained with lectin precipitation method are 6- 596 U/L and with electrophoretic separation method are 5- 723 U/L. Correlation between methods is r = 0.97. Lectin precipitation method is simple, fast and specific.

PP-027
EVALUATION OF FRUCTOSAMINE ASSAY ON THE ARCHITECT c8000 ANALYZER

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Objective: Fructosamine is a glycated protein and a time – avaraged indicator of blood glucose levels that is used to assess the glycaemic status of diabetes mellitus. It was evaluated a fructosamine method on Architects c8000 analyzer.
Method: Fructosamine, in its ketoaminic form, reduces in a alkaline medium nitroblue tetrazollium (NBT), to formasan. The reaction rate measured at 550 nm photometrically is directly proportional to the concentration of fructosamine present in the sample.
Results: The sensitivity of the assay was 20 umol/L. The within-run precision (n = 20) was from 1 to 2,3% (CV) for samples with fruktosamine concentrations from 190 to 650 umol/L. The between – day precision (n = 20) was 2,2% for a sample with a mean concentrations of 547 umol/L and 4,7 % for a sample with a mean concentrations of 231 umol/L. The extended measurement range is up 2000 umol/L with automatic dilution. Regression analysis comparing the Abbott assay (y) and Chronolab method (x) yielded the following equation y = 1,10 x – 21,1 and a correlation coefficient (r) of 0,98.
Conclusion: The fructosamine method on Architect c8000 analyzer is accurate and precise.

PP-028
THROMBOPOETIC CYTOKINE LEVELS BEFORE-AFTER AUTOLOGOUS STEM CELL TRANSPLANTATION IN PATIENTS WITH MULTIPLE MYELOMA

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Multipl Myeloma (MM) is a clonal B cell neoplasm characterized by monoclonal protein in the serum and/or urine, lytic bone lesions and plasma cell infiltration in the bone marrow. Autologous stem cell transplantation (ASCT) with high dose chemotherapy has been the standart of care for patients with MM below the age of 70. 31 patients with MM (16 male, 15 female) received high dose melphalan and ASCT between 2003-2007. Cytokines involved in thrombopoesis; Thrombopoeietin (TPO), IL-6, IL-11, and p-selectin were studied before and 30 days after ASCT. The pretransplantation TPO and IL-11 were found to be significantly correlated (p=0.028).There was no significant correlation between other cytokines before transplantation. While IL-6 levels showing a near significant decrease posttransplantation (p=0.08), p-selectin levels showed a significant decrease (p=0.001). TPO and IL-11 levels showed no significant difference in terms of pre and post transplantation levels. Posttransplant TPO–IL-6 levels and p-selectin–IL-6 levels have been found to be positively correlated (p= 0.028 and p=0.08 respectively). In the evaluation of response status to ASCT and cytokine levels; p-selectin levels were shown to be significantly(p= 0.27) decreased in patients remaining in complete remission while p-selectin levels were again shown to be decreased in patients preserving their partial remission status though not reaching statistically significance (p= 0.06). The decrease in post transplant p-selectin levels may reflect a group of patients with relatively better prognosis.

PP-029
EFFECT OF CAFFEINE ON BRAIN L-ARGININE METABOLISM IN RATS

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Caffeine (1,3,7-trimethylxanthine), a purine alkaloid, a central nervous system stimulant, is a key component of many popular drinks, mainly tea and coffee. Caffeine and other methylxanthines are also used as a component of analgesics, appetite suppressants, myorelaxants and stimulant drug formulations. We have studied the influence of caffeine on brain metabolism of L-arginine by measuring arginase activity and the level of total NO(nitrite + nitrate). In our study, effects of caffeine on L-arginine metabolism in 14 days and orally given low dose of caffeine as 30 mg/kg in rat brain were investigated. Brain tissue arginase activity in caffeine group decreased significantly compared by the control group (p=0,014; p<0,05). But brain tissue and serum NO levels increased significantly with caffeine administration (p=0,001, p=0,014 respectively). According to the results of Spearman correlation analysis; tissue arginase activity decreased consequently; tissue and serum NO levels increased. Our study indicates that brain arginase activity decreases with 30 mg/kg dose of caffeine administrations. Arginase activity decreases with caffeine administration and NO levels increase with decreased arginase activity.

PP-030
EFFECT OF HIGH DOSE CAFFEINE ON BRAIN ARGINASE AND NITRIC

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Caffeine, a central nervous system stimulant, is one of the most commonly consumed neurologically-active food components contained in coffee and tea, or soft drinks to which caffeine has been added. The aim of this study was to determine the possible effect of caffeine during short-term consumption on brain arginase and nitric oxide (NO) metabolism. As it is known, both caffeine and arginine have important functions in different physiological and pathological conditions. We have studied the effect of caffeine on brain L-arginine metabolism by measuring tissue arginase activity and both tissue and serum levels of total NO(nitrite+nitrate). In our study, effects of caffeine on brain arginase and NO metabolism in short-term and orally given high but non toxic dose of caffeine as 100 mg/kg in rat brain were investigated. Brain tissue arginase activity in caffeine group decreased significantly compared by the control group (p=0,00). But brain tissue and serum NO levels increased significantly with caffeine administration (p=0,002, p=0,001 respectively). According to the results of Spearman correlation analysis; tissue arginase activity decreased consequently; tissue and serum NO levels increased. Our study indicates that brain arginase activity decreases with 100 mg/kg dose of caffeine administrations. Caffeine increases NO levels by decreasing arginase activity.

PP-031
OXIDATIVE MODIFICATIONS IN HEART AFTER STRESS

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It is known that stress causes disruption of homeostasis and imbalanced antioxidant status in several organs. Since heart is an aerobic organ and has one of the highest mass-specific oxygen consumption rates in the body, it copes with high rates of oxidant formation and stress. The aim of this study was to determine the effects of three stress models on protein oxidation, lipid peroxidation and antioxidant enzyme activities in heart.
Thirty-six male Wistar rats (3 months old, weighing 220 ± 20 g) were randomly divided into four groups of nine rats each as control (C), immobilization stress (IS), cold stress (CS) and immobilization-cold stress (ICS). Corticosterone levels were increased in all stress groups. Protein carbonyl (PC), conjugated dienes (CD) and thiobarbituric acid-reactive substances (TBARS) levels were increased, while reduced glutathione (GSH) levels were decreased in heart of all stress groups. Copper,zinc-superoxide dismutase (Cu,Zn-SOD) activities were decreased in heart of IS and CS groups. Catalase (CAT) and selenium-dependent glutathione peroxidase (Se-GSH-Px) activities were increased in heart of all stress groups. Immobilization-cold stress was found to be most effective stress model when we compared the stress models with respect to the percentages of increased or decreased parameters.

PP-032
THE EFFECTS OF DIAGNOSTIC ULTRASOUND WAVE ON THE RAT KIDNEY TISSUES OXIDANT/ANTIOXIDANT STATUS

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The use of diagnostic ultrasound has an exemplary record of safety, particularly when compared with other medical imaging techniques. There has been growing interested in estimating the degree of temperature caused by the diagnostic ultrasound in clinical and theoretical practice, in recent years. Both theoretical and experimental methods have been suggested for estimating the heating potential or mechanical hazard of diagnostic ultrasound. To investigate the biological effects of ultrasound exposure to the rat foetal kidney tissue, the antioxidant enzyme activities and malondialdehyde (MDA) levels, as a lipid peroxidation end product, were evaluated. Superoxide dismutase (SOD) activity was slightly decrease in B-mode compared control, but in doppler group significantly increased $p<0.05$. CAT activities were significantly increased both B-mode and doppler groups versus control group $p<0.05$, $p<0.005$ respectively. GSH-Px activities were significantly elevated in doppler groups ($p<0.05$), compared to control. MDA levels were significantly increased in doppler group versus control group $p<0.05$. As a result, doppler ultrasound due to heating and/or mechanical effect can produce free radical, which causes hamful effect partiularly of pregnancy in first trimester.
Key Words: Diagnostic ultrasound, Free radical, Enzym

PP-033
RELATION OF ADVANCED GLYCATION TO GLUTATHIONE REDOX RATIO IN PERITONEAL DIALYSIS PATIENTS

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The aim of this study was to investigate the dialysis related oxidative stress with regard to the levels of advanced glycation end products (AGEs), glycated albumin, reduced (GSH) and oxidized (GSSG) glutathione, glutathione redox ratios and thiobarbituric acid-reactive substances (TBARS) of continuous ambulatory peritoneal dialysis (CAPD) patients.
Advanced glycation end products and glycated albumin were measured in plasma, whereas GSH, GSSG and TBARS levels were measured in erythrocytes of both CAPD and control groups.
All parameters were found to be significantly increased, except glutathione redox ratio which was found to be decreased in CAPD patients. Multiple regression analysis showed that there was significant inverse relationship between AGEs and glutathione redox ratio, and albumin has also inverse relationships with AGEs, glycated albumin and TBARS levels. Our results strengthen the truth that oxidative stress and advanced glycation/oxidation protein products constitute important risk factors in CAPD patients. The negative relationship of albumin with AGEs and TBARS suggests that the decrease in albumin may contribute to the increased advanced glycation and lipid peroxidation. The negative relationship between glutathione redox ratio and AGEs suggests that late products of glycation play an important role in the development of oxidative stress in peritoneal dialysis treatment.

PP-034
THE EFFECT OF FRUCTOSAMINE IN DIABETIC PATIENTS CONTROL WITH DIABETES-RELATED DYSLIPIDEMIA

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The measurement of fructosamine is useful to monitor the average concentration of blood glucose for an extended period of time (2-3 weeks) in individuals with diabetes mellitus. The study was to investigate whether the serum lipids in type 2 diabetes mellitus was different between groups of patients classified as good, satisfactory or poor glycemic controls, depending on their serum fructosamine levels. The measurement of fructosamine was done using Hitachi (Boehringer Mannheim) 904 Automatic Analyser at 530 nm wave lenge. The lipids, lipoproteins and glucose was measurement using Dade Behring Dimension Pand plus. One hundered patients were selected according their serum level of fructosamine and divided into 3 groups: 25 patients classified as patients with good glycemic control with fructosamine level < 2.8 mmol/L serum total cholesterol (4.84 +/- 1.35), triglyceride (1.46 +/- 0.60) and very low density lipoprotein cholesterol concentrations (0.71 +/- 0.36) were significantly lower then the other groups. The 37 patients classified as patients with satisfactory glycemic control with fructosamine level 2.8 – 4.0 mmol/L serum total cholesterol (5.54+/-1.20), triglyceride (1.96 +/- 0.90) and very low density lipoprotein cholesterol concentrations (0.92 +/- 0.43) and 38 patients with poor glycemic control with fructosamine level > 4.0 mmol/L serum total cholesterol (6.20 +/- 0.71), triglyceride (2.30 +/- 0.44) and very low density lipoprotein concentrations cholesterol (1.04 +/- 0.23).The high density cholesterol was low in all groups. The coefficient of correlation between fructosamine and glucose was good ($r = 0.72$ for $p < 0.05$). The fructosamine glycated serum protein in control of type 2 diabetes mellitus show significantly diabetic related dyslipidemia and possible reduced risk of artherosclerosis. It is high specific test in monitoring of diabetic patients in regard of antidiabetes terapy and lipds control.

PP-035
CATALASE AND CARBONIC ANHYDRASE ACTIVITY AND SOME BIOCHEMICAL PARAMETERS IN ERYTHROCYTES OF PATIENTS WITH OESOPHAGEAL CANCER

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Background: Oesophagus cancer is the 9th commonest cancer among patients in the world. Even though it is not in the list of ten common cancer in Turkey, it has the highest incidence rate in Van region. It is the most common cancer among women (20.2%) and second common cancer among men (10.7%) in the region.
Purpose: In this study, catalase and carbonic anhydrase activity were investigated in the erythrocytes of patients with oesophageal cancer and some biochemical parameters (albumin, globulin, CRP, ALT, AST, LDH, Uric acid, Glucose, Ferritin, Catalse and carbonic anhdrase) were measured in these patients.
Material and Methods: Erythrocytes and serums were collected from 25 patients with oesophageal cancer and 15 healthy controls. Catalase activity was measured by spectrofotometric method whereas carbonic anhydrase activity was determined by CO_2 –hydratase method. Autoanalyser was used for biochemical parameters (Albumin, Globulin, ALT, AST, LDH, Uric acid, Glucose, Ferritin). Student-t test was used for statistical analysis.
Results and Conclusion: Levels of ALT, ferritin and catalase decreased in patients with oesophagus cancer ($p<0,05$) compared to control group. However, uric acid increased in patients with oesophagus cancer ($p<0,001$). Carbonic anhydrase activity did not show any change in patients with oesophagus cancer. Our results show that antioxidant defence system has gotten weak in esophageal cancer. Decreased levels of ferritin may be indicator iron deficiency anemia during early carcinogenesis.

PP-036
EFFECT OF ALPHA-LIPOIC ACID ON RESTRAINT STRESS-INDUCED OXIDATIVE MODIFICATIONS IN RAT KIDNEY

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The aim of this study was to evaluate the effect of chronic restraint stress and alpha-lipoic acid (LA) administration on lipid peroxidation and antioxidant enzyme activities in rat kidney. Forty male wistar rats, aged 3 months were randomized to one of the following groups: control, restraint stress, LA treated and restraint stress + LA treated. Chronic restraint stress was applied for 21 days (1 h/day) and LA (100 mg/kg/day) was administered intraperitoneally for the same period. Lipid peroxidation, determined by measuring malondialdehyde (MDA) levels, was found to be increased in the kidney of restraint stress treated rats, when compared to controls. Restraint stress-induced lipid peroxidation was significantly decreased via LA treatment. Administration of LA also enhanced GPx and decreased Cu/Zn SOD activity in rat kidney, compared to the control group. The presented data shows that LA is a protective agent against restraint stress—the inducer of lipid peroxidation in the kidney. These findings also suggest that LA-induced changes in antioxidant enzyme activities in rat kidney may contribute to their versatile effects observed in vivo.

PP-037
COMPARATIVE EFFECTS OF FeSOD AND FeMnSOD ON HEAMODYNAMIC PARAMETERS AND OXIDATIVE STATUS IN SH RATS

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Objective
Superoxide dismutase provide protection against oxidative stress in the physiological system. Superoxide anion oxygen species damages cell structures and affect vascular homeostasis and reactivity. We directed our investigations on effects of FeSOD and FeMnSOD on haemodynamic parameters and activity of enzyme of oxidative stress in SH rats.
Design and methods
Experiments were performed in anestetitized (35mg/kg.b.m sodium penhobarbital, i.p) male SH rates, 6 mounths of age, 300g. There were three groups of animals. Control group received saline bolus (0.1ml/100.b.w.). FeSOD group received bolus 0.3ml FeSOD (158.18IU/ml). FeMnSOD group received bolus 0.3ml FeMnSOD (15.18IU/ml). Mean arterial pressure (MAP) was measured before and after bolus infusion in different time points. Activity of several enzymes of oxidative stress were measured before and after bolus infusion.
Results
Bolus FeSOD showed biphasic response in MAP. FeMnSOD group showed no significantly differences in the values of MAP at the same time point. Activity of GR was significantly increased in the FeSOD group while activity of SOD was significantly decreased compared to control group in FeMnSOD group.
Conclusion
FeSOD treatment induced biphasic response of MAP. Comparative studies between activity of FeSOD and FeMnSOD showed that changing of metal center of iron-containing enzyme is responsable for lack of FeMnSOD activity on MAP. Activities of enzyme of oxidative stress were also changed.
keywords: oxidative stress, SH rats, superoxide dismutase

PP-038
QUERCETIN INHIBITS ETHANOL-INDUCED THE PRODUCTION OF TUMOR NECROSIS FACTOR- ALPHA AND INTERFERON-GAMMA IN LIVER

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The aim of the present study is to evaluate whether the quercetin treatment, an exogenous antioxidant flavonoid, could have a protective effect against oxidative stress and inflammation in alcoholic liver injury in rats or not.
For this purpose, twenty five male Sprague-Dawley rats were divided into four groups: 1. Control group (C); received saline, intragastrically (2 ml/day). 2. Alcohol group (EtOH); received EtOH, (1 ml/day, 80% v/v) intragastrically and saline (1 ml/day). 3. Quercetin group (Q); received quercetin (1 ml/day) and saline (1 ml/day). 4. Alcohol+Quercetin group (EtOH+Q): Quercetin (1 ml/day) was introduced 2 h before EtOH administration (1ml 80% v/v). Quercetin was suspended in physiologic saline (3 g/dl). Liver samples were taken after 1 month and stored at -20 °C until the analyses.
Tumor necrosis factor-alpha (TNF-_) and interferon–gamma (IFN-_) levels as an indicator of inflammatory process and protein sulphydril groups (SH) and catalase (CAT) and superoxid dismutase (SOD) activities as an indicator of antioxidant capacity in the homogenates of liver have been estimated.
Tissue TNF-_, IFN-_ and SH levels in EtOH group were significantly higher than those of C group. CAT activities in EtOH group were significantly lower than those of C group. Quercetin treatment reversed these results. But, SOD activities were not significantly different from other groups.
The results shown that quercetin has positive effects on pathogenesis of alcoholic liver disease by decreasing the levels of TNF-_ and IFN-_, increasing the levels of SH and activities of CAT. In addition, we believe that quercetin is of benefit by protecting cells from the harmful effects of alcohol or at least it reduces the damage.
Key words: Ethanol, quercetin, cytokine

PP-039
Bcl-2 mRNA AND GLUTATHIONE LEVELS IN OVARIECTOMIZED RAT BRAINS TREATED BY RALOXIFENE AGAINST KAINIC ACID

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The selective estrogen receptor modulators (SERMs) are compounds that activate the estrogen receptors with different estrogenic and antiestrogenic tissue-specific effects. The similar effects of SERMs to estrogen encourage the efforts in the research of neuroprotective effects of SERMs. Raloxifene is a SERM and used to prevent and to treat osteoporosis.
Kainic acid (KA) is an excitotoxic amino acid and excitatory amino acids cause death of central nervous system (CNS) neurons when administered both in vivo and in vitro. It is known that estrogen protects neurons from kainic acid toxicity by estrogen receptors.
The Bcl-2 family of proteins regulate mitochondrial changes during apoptosis and necrosis. Anti-apoptotic members of the Bcl-2 family inhibit the release of apoptotic factors from the mitochondria. Bcl-2 is a potent inhibitor of apoptosis and also exerts neurotrophic activity in the CNS.
The glutathione (GSH) is crucial for the cellular defence against reactive oxygen species. An imbalance of GSH levels is observed in a wide range of pathologies, including cancer, AIDS and neurodegenerative disorders. It is suggested that the deficiency of GSH leads to mitochondrial damage in brain.
In our study, we investigated the potential neuroprotective effect of raloxifene (LY139481) on the expression levels of Bcl-2 and total GSH in the brain cortex of ovariectomized female rats after KA-induced oxidative stress. Our results demostrate that raloxifene treatment against KA-induced oxidative stress significantly increases the expression of Bcl-2 and the levels of GSH in the brain cortex. As a conclusion, the increased levels of Bcl-2 expression and GSH in the brain cortex may support the notion of raloxifene as a neuroprotective agent.

PP-040
THE HEPATOPROTECTIVE EFFECT OF CARNOSINE ON ETHANOL-INDUCED DAMAGE IN RAT LIVER

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Acute and chronic alcohol intake is associated with a number of changes in liver cell function and the oxidant-antioxidant system. Carnosine (Car) is an endogenously synthesized dipeptide with antioxidant role. The antioxidant mechanism of Car is attributed to its chelating effect against metal ions, superoxide dismutase (SOD)-like activity, membrane protecting activity, ROS and free radicals scavenging. The aim of the present study was to investigate the effects of Car as an antioxidant against EtOH-induced damage in liver. Six-month-old, male Wistar rats (250-300 g) were divided into 4 groups of ten each and maintained for 13 days as follows: Control (0.9% saline, i.p.), EtOH (2g/kg/day, i.p.), Car (1mg/kg/day, orally) and Car+E. On the 14th day, the rats were sacrificed. Lipid peroxidation (malonialdehyde, MDA), and the activity of the antioxidant enzymes, superoxide dismutase

(SOD), glutathione peroxidase (GSH-Px), glutathione reductase (GR) and glutathione S-transferase (GST) were determined in liver. Histopathologic evaluation of the liver tissue was also performed. Data were analyzed by SPSS for windows version 10.0 using Kruskal Wallis Variance Analysis and Mann-Whitney U test. The activities of GPx and levels of MDA in liver were increased significantly after ethanol administration (p<0,005). In groups of EtOH, Car and Car+EtOH, the SOD activities were higher than control group (p<0,005). GST activity in the EtOH group and Car+EtOH group were decreased significantly compared with the control and carnosine groups (p<0,05). GR activity was not changed significantly in all groups. Both biochemical findings and histopathological evidence showed that administration of carnosine reduced the EtOH-induced liver damage.

PP-041
EFFECTS OF ALCOHOL CONSUMPTION ON NITRIC OXIDE AND HOMOCYSTEINE LEVELS OF PATIENTS WITH TYPE II DIABETES MELLITUS

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In diabetic patients, NO levels are reduced due to endothelial disfunction. Homocysteine also effects NO levels by elevating ADMA. Homocysteine and NO levels are decreased in moderate alcohol consumption whereas chronic and excessive alcohol conmsuption increases them.
In order to investigate the effects of alcohol on homocysteine and NO levels of type 2 diabetic patients, we determined plasma homocysteine and NO levels of patients chronically consuming alcohol. Homocysteine levels of diabetic group 9.92±0.39 _mol/l) showed mild, non-siginificant (p>0,05) increase compared to control group (8.87±0.34 _mol/l), whereas homocysteine levels of diabetic group with alcohol addiction (11.85±0.89 _mol/l) were significantly increased (p<0,05) compared to control group. NO levels of diabetic group (50,7±0.9 _mol/l) and alcohol consuming diabetic group (52,2±1.3 _mol/l) were significantly decreased (p<0,05) compared to control group (58±1.4 _mol/l)
Our results indicate that although alcohol consumption caused a mild increase in NO levels of diabetic patients it was not statistically significant . Our study also showed that chronic alcohol consumption increases homocysteine levels in type 2 diabetes. Hyperhomocysteinemia formed by inhbition of methionine synthase activity may cause endothelial disfunction, therefore, chronic alcohol consumption may cause an increase in diabetic complications.

PP-042
PARAOXONASE (PON1) ACTIVITY IN THE METABOLIC SYNDROME

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The metabolic syndrome has been described as a ‘clustering’ of several risk factors for cardiovascular disease, namely obesity, dyslipidemia, insulin resistance and hypertension, and considered as an indication for intensive lifestyle modification. Globally, the incidence of this syndrome is rising at an alarming rate. An oxidation-fighting enzyme called paraoxonase (PON1) is a high-density lipoprotein (HDL)-associated enzyme exhibiting antiatherogenic properties. The goal of this study was to evaluate serum paraoxonase (PON1) activity in patients with metabolic syndrome determined according to Adult Treatment Panel III (ATP III) diagnosed when three or more metabolic criteria (impaired glucose metabolism, elevated blood pressure, hypertriglyceridemia, high density lipoprotein (HDL) cholesterol and central obesity).

305 patients with metabolic syndrome (130 with tree criteria, 138 with four criteria and 37 with five criteria) and 82 healthy subjects were enrolled into the study. PON1 activity was determined using paraoxon as a substrate spectrophotometrically. Significantly decreased PON1 activity was found in metabolic syndrome with respect to healthy subjects ($p < 0.05$). But there was no significant differences observed in metabolic syndrome subgroups according to criteria. Moreover PON1 activity was not correlated with any metabolic syndrome parameters in the patients unless criteria. On the other hand, the activity was correlated significantly with total cholesterol ($r = -0.269$, $p < 0.001$) and low density lipoprotein (LDL) cholesterol ($r = -0.310$, $p < 0.001$) only in metabolic syndrome patients with four criteria.
It was concluded that decreased paraoxonase activity in subjects with metabolic syndrome may play a role for development of atherosclerotic events in this patients.

PP-043
BIBLIOGRAPHICAL RESEARCH OF THE THERAPEUTIC USES OF THE GREEK MASTIC GUM AND ITS ESSENTIAL OIL FROM ANTIQUITY UP TO TODAY

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Introduction: Chios Mastic Gum is the air-dried resinous exudation from Pistacia lentiscus var. chia (family Anacardiaceae), a small evergreen shrub or small tree on the Greek island of Chios.
Purpose: The description of the contemporary Chios gum’s uses and their correlation with ancient and medieval sources.
Results: The Chios mastic gum is well known even from the ancient times for its aroma and freshness as well as for its therapeutic properties. Many prescriptions for curing different illnesses have been written down in different ancient pharmacologies. It was used as poultice mixed with oil for: arthritis due to toxins, children’s diarrhoea, cleaning the teeth, giving freshness to the breath and as cosmetic for cleaning the body and face. It was also used as incense for burning in the temples and in the process of mummification. Dioscourides (1st century A.D.), the so-called father of pharmacology, refered to the mastic many times. Generally from the 1st up to the 7th century A.D. the mastic was used by practitioners mainly for stomach problems. The use of mastic continued in the years of Byzantium (medieval times). In many reports of 16th – 18th centuries is indicated the healing action of the mastic and its essential oil to many disorders of the human organism. Recent researches done on Masticha var. Chia showed that gum mastic has anticancer properties in liver, spleen, stomach. Mastic is useful as dietary supplement, functions as anti-bacterial, fungicidal agent, treatment of duodenal, hepatotoxicity and is a strong antioxidant. Mastic is useful for oral hygiene and possesses dermatological and astringent properties.
Conclusion. From the reports and researches we see that there are therapeutic uses of the mastic, similar from the ancient times up to now .

PP-044
EFFECTS OF L-CARNITINE ON PLASMA AND TISSUE AMINO ACID LEVELS IN BREAST CANCER

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Breast cancer which is the most common malignancy in the world also comprises the main cause of cancer deaths for women. Plasma free amino acid levels show the certain effects of all factors which regulate the body amino acid flux. It has been shown that there is strong relationship between plasma free amino acid profile and the protein metabolism of patients with cancer. In several cancer types, decreasing carnitine levels may suggest the possible role of carnitine in malignant progress and several reports indicate its potential use in cancer treatment. In this study, we investigated plasma and tissue amino acid levels in mice with breast cancer and the effects of L-carnitine on these amino acids. 40 male Balb/c mice were divided into four groups as control, control+carnitine, tumour and tumour+carnitine. After the 15 day treatment period, the plasma and tumour tissue samples of the animals were analysed for free amino acids using a HPLC system. Carnitine which had been shown to may have an anticarcinogenic effect had increased the total plasma free amino acid levels. On the other hand, it decreased tumour tissue plasma free amino acid levels. It will be possible to suggest that carnitine has some positive effects on the breast cancer development as it decreased tryptophan level which was shown to be a cancer marker. However, it is still difficult to suggest the potential use of carnitine as a preventative and/or treatment agent in the cancer according to present findings.

PP-045
HYPERHOMOCYSTEINEMIA IN PATIENTS WITH THYROID DYSFUNCTION

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Hyperhomocysteinemia (HHcy) is one of the risk factors for premature atherothrombosis. The aim of the study was to compare the incidence of HHcy, defined as homocysteinemia above 12 μmol/L and homocysteinemia levels between the patients with thyroid dysfunction and healthy controls. Study included 60 patients with hypothyroidism (9 males and 51 females) and 59 patients with hyperthyroidism. Control group comprised 56 healthy euthyroid persons (29 males and 30 females). Homocysteine was determinated by HPLC method with fluorescent detection. Results were compared by _2 and Mann-Whitney U tests. The comparison of median homocysteine level in the hypothyroid patients with (11.6 _mol/L) and in the the hyperthyroid patients (9.5 _mol/L) revealed statistically significant difference (p=0.008). The control group's homocisteinemia median (10.0 _mol/L) was not significantly different than medians of the groups of hypothyroid and hyperthyroid patients. Significant difference (p=0.002) was observed when the incidence of HHcy in hypothyroid patients (45%) was compared with the incidences in hyperthyroid patients (25%) and controls (25%). Gender-specific differences in homocysteinemia levels in patients were not significant. We conclude that hypothyroid patients have higher incidence of HHcy and higher homocysteinemia levels than hyperthyroid patients and healthy controls. This finding may improve understanding and prevention of atherothrombotic complications in hypothyroid patients.

PP-046
EFFECT OF TAURINE ON THE RELATIONSHIP BETWEEN 3-NITROTYROSINE AND XANTHINE OXIDASE IN ENDOTOXEMIA

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Many of the deterious effects of nitric oxide (NO) are mediated by peroxynitrite (ONOO-). ONOO- is formed in vivo by reaction between NO and superoxide anion (O2-) produced by xanthine oxidase (XO) enzyme. ONOO- is a strong oxidazing and nitrating agent. The formation of 3-nitrotyrosine (3-NT) in vivo has been considered as a stable marker for the action of ONOO-. On the other hand taurine may act as a protective agent able to prevent ONOO---mediated reactions in vitro assays. The purpose of this study was to investigate the effect of taurine on the free radical generating system and the relationship between 3-NT production and XO activity in hepatocytes of guinea pig in endotoxemia before and after taurine administration. All experiments were performed with four groups (control, taurine, endotoxemia, taurine plus endotoxemia) of guinea pigs. The amount of 3-NT was measured by HPLC-ECD and XO enzyme activity determined by spectrophotometry. After endotoxin was administered (4mg/kg), 3-NT level and XO activity were increased ($p<0.05$). When taurine was administered (300mg/kg) 3-NT level and XO activity were decreased compared to the endotoxemia group in both taurine and taurine plus endotoxemia groups ($p<0.05$). It was observed that taurine has considerable anti-inflammatory and anti-oxidant effects in endotoxemia.

PP-047
ONCOGENIC H-RAS ENHANCES PRODUCTION OF S-ADENOSYLHOMOCYSTEINE AND REDUCES THE LEVEL OF S-ADENOSYLMETHIONINE IN PC12 CELLS

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There is some evidence that elevated levels of homocysteine and S-adenosylmethionine (SAM) are causal risk factors for several neurological disorders. However the signalling pathways, which control homocysteine metabolism in neural cells, are not fully understood. Ras is a central molecular switch of intracellular regulation and stress response and through interactions with downstream effector molecules regulates the survival and apoptosis of neural cells. To demonstrate the specificity of Ras-elicited effects on the activity of methyl cycles, wild-type pheochromocytoma PC12, mutant oncogenic rasH gene (MVR) expressing PC12 pheochromocytoma and normal c-rasH stably transfected M-CR3B cells were incubated with the N-nitro-L-arginine methyl ester (L-NAME), and manumycin, (inhibitors of nitric oxide synthase and farnesyltransferase, respectively). We have found that L-NAME significantly changes the SAM/SAH ratio in both MCR and MVR cells. Moreover, these alterations have reciprocal character; in the MCR cells, the SAM/SAH ratio was raised, whereas in the MVR cells this ratio was decreased. We conclude that depletion of endogenous NO with L-NAME increased the production of SAH only in cells with mutated oncogenic RasH, possibly through enhancement of production of reactive oxygen species (ROS). Oxidative stress can increase cystathionine beta-synthase activity that switches methyl cycles from remethylation into transsulfuration pathway to maintain the intracellular glutathione pool (essential for the redox-regulating capacity of cells) via an adaptive process.

PP-048
PROTECTIVE EFFECTS OF KALE EXTRACTS ON VLDL OXIDATION

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Kale (Brassica oleraceae L. var. acephala DC.) is a member of Brassicaceous plants widely consumed in Karadeniz Region in Turkey. It has antioxidant and antiatherogenic effects. Antioxidants such as polyphenols have protective effects against lipoprotein oxidation.

In the present study, various concentrations of metanolic and aqueous extracts were evaluated for their inhibition effects against copper induced oxidation of isolated very low density lipoprotein (VLDL) obtained from 15 healthy volunteers. The levels of malondialdehyde (MDA) as a marker of lipid peroxidation were determined as TBARS, incubated with and without extracts. Moreover total phenolic content and flovanoid level of kale extracts were determined.

Both metanolic and aqueous extracts inhibit lipid peroxidation significantly in VLDL. Metanolic extracts show higher inhibition of lipid peroxidation of lipoprotein. Furthermore, inhibitions increased with increasing concentrations of extracts. The concentration of 25 mg/mL of metanolic extracts was sufficient for inhibition but the concentration of 100 mg/mL of aqueous extracts was seen to need to inhibition. Metanolic extracts had higher concentration of total phenolic content and flovanoid level than aqueous extracts.

It was concluded that metanolic extract with high level of polyphenols had more protective to inhibition of VLDL oxidation.

PP-049

PP-050
DECREASED LDL OXIDATION BY THE EXTRACTS OF KALE

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Kale or black cabbage (Brassica oleraceae L. var. acephala DC.) is one of Brassica species growing usually in Karadeniz Region in Turkey. Brassicaceous plants contain antioxidant properties such as polyphenols, flavonoids and glucosinolates, and so have antioxidant and antiatherogenic effects. In order to inhibited free radical reactions by antioxidants, protect cells against oxidative damage. Oxidation of lipoproteins is a key early stage in the development of common diseases.

In the present study, various concentrations of metanolic and aqueous extracts were evaluated for their inhibition effects against copper induced oxidation of isolated low density lipoprotein (LDL) obtained from 15 healthy volunteers. The levels of malondialdehyde (MDA) as a marker of lipid peroxidation were determined as TBARS, incubated extracts or unattended.

Both metanolic and aqueous extracts inhibit lipid peroxidation significantly in LDL. But Metanolic extracts show higher inhibition of lipid peroxidations of lipoprotein. Furthermore, inhibitions increased with increasing concentrations of extracts.

It was concluded because of high antioxidant capacity and phenolic content of kale; it has protective effect on oxidation of LDL. Further studies need to show kale may play an important role of diseases resulting from imbalance of oxidant and antioxidant status.

Key Words: Kale, antioxidants, LDL oxidation

PP-051
SERUM TOTAL AND LIPID-BOUND SIALIC ACID, TNI AND CK-MB LEVELS IN ISD-INDUCED MYOCARDIAL INFARCTION IN RATS*

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It has been reported that there is an elevation in serum sialic acid levels after myocardial infarction but the reason for the elevation remains obscure. Since acute myocardial infarction generally develops on the basis of atherosclerosis, it is clear that serum sialic acid levels of patients before acute myocardial infarction are not similar to those of healthy subjects. The aim of this study was to investigate the levels of serum total sialic acid (TSA) and lipid-bound sialic acid (LSA) in experimentally induced myocardial infarction and to evaluate the role of the shedding or secreting of sialic acid from the cell or cell membrane surface in the elevation of serum total sialic acid concentration in acute myocardial infarction. For this purpose we assayed and correlated serum TSA, LSA, and specific markers of myocardial cell damage, namely troponin I (TnI) and creatine kinase-MB (CK-MB), at 24h post-infarction in isoproterenol (ISO)-induced myocardial infarction in rats. ISO were injected to Wistar albino rats intraperitoneally at the dose of 150mg/kg once a day for 2 days. For determination of the levels of TSA and LSA, the methods of Warren and Katopodis were used, respectively. TnI and CK-MB were measured with an automatic biochemistry analyzer. Serum TSA, LSA, TnI and CK-MB levels were found to be significantly elevated after myocardial infarction (for all $p<0.01$). There was no significant relationship between serum TnI and CK-MB, the specific markers of myocardial cell damage and sialic acids. Our finding suggesting that serum LSA levels are elevated after ISO-induced myocardial infarction indicates that the shedding or secreting of sialic acid from the cell or cell membrane surface may be responsible for the elevation of serum sialic acid levels in patients with acute myocardial infarction.

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PP-052
HONEY PREVENTS HEPATIC DAMAGE INDUCED BY OBSTRUCTION OF COMMON BILE DUCT

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In this study, it was aimed to examine possible effects of honey supplementation on hepatic damage due to obstruction of common bile duct in an experimental rat model. For this aim, 30 male rats were divided into 3 groups of 10 rats as Sham group, obstructive jaundice group and obstructive jaundice plus honey group. At the end of the study period, the animals were sacrificed, their liver tissues were removed, and nitric oxide (NO) levels and NO synthase (NOS) activities were measured in the liver tissues. Histopathological investigation of the liver tissues was also performed. Blood were obtained from the animals during sacrification, then adenosine deaminase (ADA) and alanine transaminase (ALT) activities were determined in the blood. It has been found that blood ALT and ADA enzymes activities significantly elevated in the jaundice group as compared with those of the Sham group. In the obstructive jaundice plus honey group, blood ALT and ADA activities significantly decreased as compared with those of the jaundice group. In the liver tissues, NO level was found to be significantly higher in the obstructive jaundice plus honey group than those of the Sham group. Additionally, NO level was found to be significantly higher in liver tissues from the animals in the obstructive jaundice plus honey group than those of the jaundice group. According to histopathological findings, honey supplementation led to decreases in the proliferation of bile duct epithelial cells. In conclusion, honey was found to be beneficial in the prevention of the hepatic damage due to obstruction of common bile duct.

PP-053
ALTERATIONS IN GHRELIN LEVELS OF SERUM IN BRUCELLOSIS

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Background: Ghrelin is a growth -hormone releasing lipopeptide that has been discovered in 1999 and was shown to be involved in body weight and regulation of lipid and carbohydrate metabolism and appetite. Brucellosis characterized by fever, headache, night sweats, extreme tiredness, chills, and weight loss, and anorexia (loss of appetite) To determine the relationship between Brucellosis and circulating levels of ghrelin, we evaluated serum concentration of this hormones in patients infected with the Brucella bacteria.

Materials and Methods: 17 Brucellosis patients and 16 healthy subjects with same ages were randomly selected as control group. From each participant 10 ml of fasting blood was collected and after processing, serum levels of acylated ghrelin were evaluated by radio-immunoassay methods.

Results: Our results showed acylated ghrelin was significantly changed in patients with brucellosis (11.3 pg/ml) compared with controls (40.9 pg/ml).

Conlcusion: There is no data showing ghrelin in Brucellosis in literature so far. Our first evaluated results showed that appetite decrease in Brucellosis might be due to circulating level of ghrelin decrement.

PP-054
INHIBITION OF BOVINE LIVER GLUTATHIONE REDUCTASE WITH ZINC IONS

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Glutathione reductase (GR, NADPH: oxidized glutathione oxidoreductase, E.C 1.6.4.2) is a flavoprotein that catalyzes the NADPH-dependent reduction of oxidized glutathione (GSSG) to reduced glutathione (GSH). GSH is a substrate for the glutathione peroxidases and glutathione-S-transferases in the detoxification of organic peroxides and metabolism of xenobiotics. Because of this reason GR is an important housekeeping enzyme for redox homeostasis and may be involved in the development of diseases such as cancer and human immune deficiency. Zinc is known to affect a variety of cellular proteins and toxic doses of Zn2+ inhibit several enzymes. In this study

we are investigated the effects of Zn2+ on bovine liver GR which have been purified by two subsequent chromatography steps using 2' 5' ADP-Sepharose 4B and DEAE-Sepharose fast flow columns. This enzyme has been purified 5456-fold and 38,4 % yields. It is found that Zn2+ inhibition is consistent with non-competitive inhibition pattern when the varied substrate is the GSSG (KiGSSG 0.320 ± 0.018 mM) and the NADPH (KiNADPH 0.761 ± 0.04 mM), respectively.

Key words: Glutathione reductase, inhibition, kinetics, zinc, bovine liver

PP-055
ADVANCED OXIDATION PROTEIN PRODUCTS, FERROUS OXIDATION IN XYLENOL ORANGE AND MALONDIALDEHYDE LEVELS IN THYROID CANCER

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Aims and Background: The oxidation of protein plays an essential role in the pathogenesis of an important number of degenerative and cancer diseases, which is now widely recognized. The aim is to examine advanced oxidation protein products (AOPPs), lipid peroxidation products malondialdehyde (MDA) and ferrous oxidation in xylenol orange (FOX) in blood samples of papillary thyroid cancer patients compared to healthy controls in order to determine the oxidation status and the change after thyroidectomy.
Methods: 35 female thyroid cancer patients who underwent total thyroidectomy and 39 female control subjects were included into this study. Pre and post thyroidectomy, AOPP, FOX and MDA levels were studied.
Results: Prethyroidectomy AOPP, FOX and MDA levels were significantly higher compared to control ($p<0.05$). In post- thyroidectomy AOPP, FOX and MDA levels were significantly decreased compared to prethyroidectomy levels ($p<0.05$). However, post-thyroidectomy levels in the twentieth day were still significantly higher, compared to control subjects ($p<0.05$).
Conclusion: In conclusion, all of AOPP, FOX and MDA levels which are markers of protein oxidation and lipid hyperoxidation may induce thyroid cancer development and begin to decrease after thyroidectomy.

PP-056
SEROTONIN IMPRINTED POLYMERS FOR ESTIMATION OF SEROTONIN IN PLATELETS

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The creation of synthetic tailor-made receptors capable of recognizing desired molecular targets with high affinity and selectivity is a persistent long-term goal for researchers in the fields of bioorganic chemistry and biochemistry research. One way of generating artificial macromolecular receptors is through the molecular imprinting of synthetic polymers. In the process of molecular imprinting, a molecular template (print molecule) is used to direct the arrangement of the functional monomers around the template (covalently or non-covalently), which are then chemically fixed by co-polymerization with a cross-linking monomer. This results in a rigid polymer matrix embedding the template. Removal of the template reveals recognition sites specific to the template and its close analogues. Serotonin is an indolic compound that is synthesized from the essential amino acid tryptophan in enterochromaffin cells (95%) and serotonergic neurons(5%). It's stored in platelets. The serotonin imprinted polymer was synthesized by bulk polymerization technique and was used a solid phase extraction colon material to estimate serotonin in platelets (platelet rich plasma, platelet poor plasma, pellet, whole blood).

PP-057
BCL3 GENE ASSOCIATION ANALYSIS WITH NONSYNDROMIC CLEFT LIP AND/OR CLEFT PALATE IN LATVIA

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Background: Nonsyndromic cleft lip and/or palate (CL+/-CP) is one of the most common congenital malformations with multifactorial trait. The incidence of CL+/-CP is in the range of 1/700 - 1/1000, the disease frequency in Latvia is 1 in 700 newborns. The BCL3 (B-cell leukemia/lymphoma-3) gene has been considered a susceptibility locus for nonsyndromic cleft lip and/or cleft palate, based on association and linkage studies in some populations.
Matherials and methods: Four SNPs (rs10401176, rs7257231, rs8103315 and rs2927456) in the BCL3 gene were analysed with MALDI-TOFF technique for allelic association with the nonsyndromic CF+/-CP in 75 families (proband with both parents) from Latvia. Observed data analysed with transmission disequilibrium test (TDT).
Results: Significant association of BCL3 gene in patients with CL+/-CP had been found with rs10401176 ($P = 0.0001$, df 1) and rs7257231 ($P = 0.0046$, df 1). Borderline association of BCL3 gene in patients with CL+/-CP had been found with rs8103315 ($P = 0.045$, df 1). Association was not found with rs2927456 ($P = 0.317$, df 1).
Conclusion: BCL3 gene plays a role in development of CL+/-CP.

PP-058
RELATION BETWEEN TYPE II DIABETES AND LEPTIN RECEPTOR GENE POLYMORPHISMS

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Leptin receptors are present in the hypothalamus but also in tissues regulating glucose homeostasis, including skeletal muscle, liver, pancreas and adipose tissue. Leptin has been shown to stimulate glucose uptake and fatty acid oxidation in skeletal muscle, to prevent lipid accumulation in nonadipose tissues such as skeletal muscle, liver, and pancreatic b-cells, and to inhibit insulin secretion through leptin receptors on pancreatic b-cells. Mutations in the leptin gene resulting in leptin deficiency cause obesity, insulin resistance, and diabetes. In this study our patient group was consisted of control (without family history), control (family history of diabetes), diabetics (≤5 years) and diabetics (≥10 years). Genotyping of three different leptin receptor gene polymorphisms (Gln223Arg, Lys109Arg, Lys656Asn) were performed by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). According to results; leptin receptor gene polymorphisms along diabetics were associated by body mass index. So for understanding linkage between obesity and type II diabetes leptin receptor polymorphisms can be good marker.

PP-059
VASCULAR ENDOTHELIAL GROWTH FACTOR LEVEL IN SERUM OF DIABETIC PATIENTS WITH RETINOPATHY

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Aim: To determine the serum levels of vascular endothelial growth factor at different stages of diabetic retinopathy before laser photocoagulation.
Patients and methods: We studied 65 diabetic patients with diabetic retinopathy, 31 nonproliferative (group 1) and 34 proliferative retinopathy patients (group 2) in whom photocoagulation was not performed. As a control group 18 healthy people (group 3) were included. Serum vascular endothelial growth factor levels were measured by ELISA.
Results: Vascular endothelial growth factor levels between group 1 and 2 (p: 0.016), group 1 and 3 (p: 0.000), group 2 and 3 (p: 0.000) were significantly different. Vascular endothelial growth factor levels in circulation were increased in group 1 and 2 patients compared with control group. HbA1c levels between group 1 and 2 (p: 0.000) group 1 and 3 (p: 0.000), group 2 and 3 (p: 0.000) were significantly different. There was a significant correlation between serum vascular endothelial growth factor concentration and HbA1c levels (r: 0.493, p: 0.000).
Discussion: It is possible that circulating vascular endothelial growth factor may be involved in the prediction of diabetic retinopathy and this peptide contributes to endothelial damage in diabetes.

PP-060
THE EFFECTS OF RESISTANCE EXERCISE TRAINING PERFORMED AT DIFFERENT INTENSITIES ON OXIDATIVE STRESS

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The aim of this study is to compare the short and long term effects of resistance training performed at different intensities on oxidative stress.
16 volunteer male subjects (aged 20-28), who had not performed the resistance training before, were randomly divided into two groups. Subjects were familiarized 6 resistance exercises (chest press, leg extension, lat pull down, leg curl, shoulder press and biceps curl) and subject's one repetition maximum strength (1RM) was determined. All subjects performed the resistance training three times weekly on nonconsecutive days for 6 weeks. The first group performed 3 sets of 12 repetitions at 70% of 1RM, the second group performed 3 sets of 6 repetitions at 85% of 1RM. The blood samples were obtained just before and after the resistance training at the beginning of the first week, at the end of the fourth and sixth weeks for reduced glutathione (GSH) and malondialdehyde (MDA) measurements. In short term effects of resistance training there were not significant alteration in GSH in both groups, but (except the first group in the first week) MDA decreased significantly in both groups. In long term effects of resistance training GSH increased significantly only in the first group and MDA decreased significantly in both groups. Comparison the percentage of alteration rate, there was no significant difference between groups for GSH and MDA. In conclusion, both training programs have the similar effects in long term and decreases oxidative stress.

PP-061
SURFACE IMPRINTED BEADS FOR THE SPESIFIC REMOVAL OF ALBUMIN FROM HUMAN PLASMA

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Proteomics is one of the most important tools in clinical diagnostics and predictive medicine. Successful biomarker discovery through protein profiling and analysis of complex samples involving plasma, serum, cerebrospinal fluid is frequently influenced by the presence of high abundance proteins such as albumin or immunoglobulin. Removal of albumin from serum samples is problematic because of its extremely high concentration. A high specificity and capacity resin is required. Although commercially available dye-based resins have been optimised for albumin binding, they also bind many abundant plasma proteins suggesting that they still lack significant specificity. Therefore there is a need to improve specific resins with high capacity for the reduction of very abundant proteins from samples prior to analysis.
In this study, albumin imprinted polymer shells are presented which have been synthesised by co-polymerising a functional monomer and a cross-linker around amino-functionalised silica particles with albumin molecules immobilised on their surfaces. In a subsequent step, the silica cores together with the albumin molecules have been dissolved by treatment with ammonium hydrogen difluoride. The recognition and binding capacity of the albumin imprinted beads was tested for both pure HSA and human plasma. Targeted removal of HSA and depletion efficiency was demonstrated by means of two dimensional electrophoresis (2D-PAGE) and protein profiles for crude and depleted plasma samples was compared. The easy preparation protocol of derivatized beads and a good protein recognition properties makes it a valuable sample preparation tool for removal of albumin from human plasma.

PP-062
TUMOR NECROSIS FACTOR-ALPHA (-308) AND INTERLEUKIN-6 (-174) GENE POLYMORPHISMS IN POLYCYSTIC OVARY SYNDROME

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The polycystic ovary syndrome (PCOS) is the most common endocrinopathy in women. PCOS is characterized by oligo-/anovulation and hyperandogenism, and is associated with multiple risk factors for cardiovascular disease, such as insulin resistance, central adiposity, dyslipidemia, and hypertension. There is a relationship between genomic variants of tumor necrosis factor alpha (TNF-alpha) and ınterleukine-6 (IL-6) genes and above mentioned risk factors. Functional single nucleotide polymorphisms in these genes are associated with gene expression and plasma levels of TNF-alpha and IL-6. The aim of this study was to asses whether TNF-alpha and IL-6 gene polymorphisms are related to the risk of PCOS. We determined the allelic frequency of these mutations in a population of women with PCOS (n=90) as compared with healthy controls (n=82) matched for age. Genomic DNA from peripheral blood samples of patients and controls was typed for TNF-alpha (-308 G/A) and for IL-6 (-174 G/C) gene polymorphisms with a PCR-RFLP. For digestion NcoI and Hsp92II restriction enzymees were used. Results were analyzed with a chi-square test. The frequency of the TNF-alpha (-308) A and of IL-6 (-174) G alleles (both associated with increased transcriptional activity) were not increased in PCOS.
We concluded that together with genetic polymorphism there probably are some posttranscriptional factors influencing plasma cytokine levels. However, further studies are necessary to investigate potential genetic causes for PCOS, and relationship of genotype, clinical and biochemical parameters.

PP-063
COMPARING THE FREQUENCY OF HLA B27 POLYMORPHISM IN MALE AND FEMALE PATIENTS WITH ANKYLOSING SPONDYLITIS

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Introduction: Genetic factors provide over 90% of the overall susceptibility to ankylosing spondylitis(AS) , with about half of the genetic contribution attributed to human leukocyte antigen (HLA)-B27 and other histocompatibility complex genes. AS occurs more commonly in men than in women.
The aim of this study was to determine the HLA-B27 polymorphism frequency in AS patients and to compare the frequencies in male and female patients with AS.
Material-Methods:A total of 60 patients with the diagnosis of AS, 39 male and 21 female, were included to our study. HLA-B27 was detected by polymerase chain reaction (PCR) and a subsequent reverse hybridization reaction. The HLA-B27 group-specific probe used in this test system recognizes B2701-B2711, B2714 or HLA-B7301 subtypes if present at one or both of the alleles.
Results: The frequency of HLA-B27 polymorphism was 61.7% in the group. HLA-B27 was observed in 69.2% of the male and 47.6% of the female patients. There was no significant difference between male and female patients ($p>0.05$).
Conclusions : It has been published that HLA-B27 gene is present in about 90% of white patients with AS in central Europe. In our study the percentage was smaller than these results.
When considering the HLA-B27 polymorphism, there was no significant difference between male and female patients in our study. It is known that no single agent or event has been identified as the cause of the disease. More expanded studies are required investigating the polymorphism, pathogenesis of the AS in male and female patient groups.

PP-064
COMPARISON OF STORAGED CORD BLOOD AND DONATED BLOOD: THE FIRST STUDY IN TURKEY

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Background: Nowadays transfusion of umbilical cord blood has been taking an important place in low-birth-weight and preterm infants. However there are few studies comparing the properties and changes occurring during storage in cord blood with red cell concentrates from adults. Aim: Comparing the storage quality of cord blood and banked adult blood and evaluate whether cord blood can be used safely as an autologous blood in the newborn period in Turkish newborns. Materials-Methods: 30 newborn (10 preterm, 20 term) cord blood and 31 adult donated blood units were collected in the same type of blood bag system. Blood units were separated into RBC and plasma. Both RBC concentrates were stored in the same blood bank refrigerator and compared according to pH, K+, 2-3 BPG, ATP, Hb, Htc at 1st, 21st, 35th days of the storage. Results were evaluated with the standards of Association American Blood Banks criteria at1st, 21st, 35th days of the storage. Results: No meaningful differences were detected between cord blood and banked adult blood parameters like as pH, K+, 2-3 BPG, ATP, Hb, Htc. Conclusion: We conclude that cord blood which is prepared and stored in standard conditions can be a safe alternative RBC source for the newborns.

PP-065
EVALUATION OF ENDOTHELIAL DYSFUNCTIN BY CRP, SAA, FIBRONECTIN, VEGF AND TGF-BETA IN POLYCYSTIC OVARY SYNDROME

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Women with polycystic ovary syndrome (PCOS) have an increased risk of atherosclerosis and cardiovascular disease. Measurement of inflammatory markers, such as CRP, SAA and fibronectin; and markers of endothelial dysfunction, such as vascular endothelial growth factor (VEGF) and transforming growth factor-beta (TGF-beta) is useful in assessment of risk for cardiovascular disease. We compared plasma CRP, SAA, fibronectin, VEGF, and TGF-beta levels (as markers of endothelial function) in 40 women with PCOS and 39 healthy control subjects comparable for age and body mass index (BMI). In the total population studied plasma levels of SAA, CRP, VEGF and TGF-beta were higher in the PCOS group compared with those in controls. Fibronectin did not differ statistically among the two groups. These results revealed that in PCOS women chronic inflammation and endothelial dysfunction develop. The presence of weak but significant correlation between SAA and TGF-β levels, suggest the relationship between chronic inflammation and endothelial dysfunction.
On the other hand, when patients with PCOS were grouped as resistant and irresistant to insulin, no significant difference was observed in chronic inflammation and endothelial dysfunction parameters. No correlation was found between HOMA (Homeostasis model assessment) indexes and chronic inflammation or endothelial dysfunction in patients with PCOS. According to these results, increases in chronic inflammation and endothelial dysfunction parameters may be considered as a primary process. However, we suggest that further studies with increased patient numbers would help to develop a more precise knowledge on the subject.

PP-066
HIGH VIROLOGICAL SUSTAINED RESPONSE FOR FORMER YOUNG INJECTION DRUG USERS WITH CHRONIC HEPATITIS C

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Background/Aims: Standard therapy with pegylated interferon-a (PEG-IFN-a) and ribavirin (R) achieves sustained viral response (SVR) of up to about 40% in genotype 1 and about 80% in genotype 2 and 3 infected patients (pts). Age of pts and duration of infection seem to be important predictors of SVR. The aims of the study were to assess virological response at the end-of-treatment (ETR) and 6 months after completion of therapy (SVR) in a group of young, former injection drug users (IDUs) with chronic hepatitis C (CHC) treated by combination therapy.
Methods: Ninety two naive pts, former IDUs (21F, 71M) with average age 27 years (18-41 years) suffering from CHC were received PEG-IFN-a and R in standard treatment regimen.
Results: Stage of fibrosis (F) 0 was assessed in 17 (21%), F 1 in 47 (58%), F 2 in 16 (20%) and F 3 in 1 (1%) of 81 pts, respectively. In 11 subjects the liver biopsy was not done. Genotype 3 was assessed in 56 (61%) and genotype 1 in 36 (39%) of 92 pts. In 56 pts with genotype 3 ETR and SVR had 55 (98%) and 56 (100%), respectively ($p<0.001$). In 36 pts with genotype 1 ETR and SVR had 29 (81%) and 31 (86%), respectively ($p<0.001$). Five pts failed to response to therapy. Overall SVR was attained in 87 (95%) of 92 pts.
Conclusions: Young age, short duration of HCV infection and low stages of liver fibrosis are important predictors of high SVR in former IDUs.
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PP-067
EFFECT OF WHETGRASS (Triticum aestivum L.) ON OXIDANT/ANTIOXIDANT STATUS IN K562 CELL LINE

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In this study, it was aimed to investigate possible effects of aqueous and ethanol extracts of wheatgrass (Triticum aestivum L.) on oxidant/antioxidant status in K562 (human myeloid cell) cell line. For this aim, aqueous extract (200 % w/v) and ethanol extract were added into the cell line media at final concentration 10 %. Beginning, 24th and 48th hours' oxidant (malondialdehyde-MDA level and xanthine oxidase-XO activity) and antioxidant (superoxide dismutase-SOD and catalase-CAT activities) parameters and ADA (Adenosine deaminase) activity were measured in the cell line. It was observed that these extracts caused no change in XO and ADA enzyme activities but increased MDA levels, SOD and CAT activities in the cell line. In conclusion, it has been suggested that the extracts directly causes oxidant stress in K562 cell line owing to its own oxidant ingredients. It seemed that this compensatory change could not prevent the oxidant stress created. We think that the oxidant potential of the extracts might play part in its possible anticancer potential supposed by several investigators previously.

PP-068
TWO DIMENSIONAL ANALYSIS OF PLASMA PROTEIN PATTERNS FOR THE EVALUATION OF THE DEVELOPMENT OF TYPE 2 DIABETES

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More than a hundred million people in the world suffer from diabetes mellitus. It has been predicted that this figure will be doubled within 10 years. Disease itself classified into many groups (general Type 1 and type 2) each depending on several factors which are under investigation for years, such as; nutrition, metabolism, genetic, environmental and etc. Until now, a lot of

work has been reported, however proteome approach hasn't been yet taken into consideration for this disease from the view of diabetes specific proteins in blood (plasma). During last five years, some research institutes and private companies focused on to work with adipose tissue and muscle for the same purpose. In general, proteins can be differentiated(by means of their level, various modifications, disappearance and appearance of new proteins etc) in disease state that identification and structure analysis of these disease specific proteins(biomarkers) is very important for the diagnosis, prognosis of the disease and to discover new drugs for the therapy. Determination of protein differentiation of type 2 diabetics' (early and late) with control group(without family history of diabetes and with family history of diabetes) and their characterization can offer good advantages for easy diagnosis, classification and drug discovery and development at the same time.

In this work, proteome technology was used for profiling the type 2 diabetics' plasma to determine the effective proteins and their structure analysis. For this aim, The patients were classified mainly four groups according to routine biochemical (Glucose tolerance test and HOMA-IR were measured only for group 1 and 2), anthropometric and clinical assessments as; Group 1; controls without family history of diabetes, Group 2; controls with family history of diabetes, Group 3; type 2 diabetics (duration ≤ 5 years), Group 4; type 2 diabetics (duration ≥ 10 years). Plazma samples (crude and albumin depleted) were applied to Two Dimensional Polyacrylamide Gel Electrophoresis (2D-PAGE) which is known as good technique for the separation of complex protein mixtures to investigate the differentiation of proteins control, risk via diseased. After image analysis, amino acid sequence and modifications of the differentiated selected proteins (12 spot) from four groups were analyzed by nano LC-ESI-MS-MS (Proteom Factory, Berlin) and discussed in comparison.

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PP-069
THE EFFECT OF SYNTHETIC ORGANIC FOLATE COMPOUNDS ON THE DIHYDROFOLATE REDUCTASE ACTIVITY

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Dihydrofolate reductase (5,6,7,8 tetrahydrofolate: NADP+oxidoreductase,EC 1.5.1.3;DHFR) is a ubiquitous enzyme necessary for normal cellular metabolism in both eukaryotic and prokaryotic cells. The primary physiological role of DHFR is maintenance of the intracellular levels of tetrahydrofolate, a precursor of cofactors required for the biosynthesis of purines,pyrimidines, and several amino acids. Inhibitors of DHFR,including clinically used therapeutics such as methotrexate, trimethoprim, and pyrimethamine have been successful as anticancer, antibacterial, antifungal and antiparasitic agents. In our study, new MTX-like compounds that maybe potential anticancer agents have been synthesized and their structures were determined by IR, UV, elemental analyses, GC-MS,1H-NMR,13C APT spectra.Their probably inhibitor effects were investigated on the DHFR activity.MTX and some of the MTX-like new synthesized organic compounds were tested according to inhibit force on the DHFR such as N-[4-[[(2-hidroksifenil)metilen]amino]benzoil-β-alanin],N-[4-(2-tiyofenaldiminobenzoil)-β-alanin],N-[4-[[(2-hidroksi-1-naftil)metilen]amino]benzoil glisin] and N-[4-[[(2 hidroksifenil)metilen]amino]benzoil glutamat].N-[4-[[(2-hidroksifenil)metilen]amino]benzoil-β-alanin] and N-[4-(2-tiyofenaldiminobenzoil)-β-alanin] have shown same inhibitor effect compare with MTX , inhibition(%) values of 81.4 80 and 84, respectively.The Km value of the enzyme against L-7,8-Dihydrofolate substrate was found to be 120μM by using Michaelis-Menten and Linewever-Burk equations and graphics.

PP-070
EFFECTS OF STOBADINE ON THE OXIDATIVE STRESS MARKERS AND PARAOXONASE-1 ACTIVITY IN DIABETIC RAT LIVER TISSUES

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Oxidative stress may play an important role in the pathogenesis of early and long term complications of Diabetes Mellitus. Protein glycation and glucose autoxidation can generate free radicals that can cause lipid peroxidation.On the other hand oxidative stress include the reduction of anti-oxidant defencesystems. Paraoxonase-1 (PON-1) is a high-density lipoproteins (HDL) bound enzyme that is considered the major determinant of the antioxidant action of HDL. Human PON-1 inhibits LDL oxidation in vitro.

Stobadine was shown to be able to scavenge hydroxyl, peroxyl and alkoxyl radicals, and to repair oxidized amino acids and to preserve oxidation of SH groups by one-electron donation.Consequently, it was able to diminish lipid peroxidation and protein impairment under oxidative stress.

We aimed to investigate the effects of stobadine on oxidative stres and PON-1 enzyme activity in liver of streptozocine induced diabetic rats.

Wistar rats were divided four groups;controls C (n=12),diabet D (n=12), stobadine STB and diabet+stobadine D+STB (n=12).In all groups levels of TBARS and some enzym activities; xhantine oxidase (XO), nitric oxide syntyhase (NOS), glucose-6-phosphate dehydrogenase (G-6-PD), glutathione-S-transferase (GST) and paraoxonase (PON-1) were measured in liver tissues.

In (D) group, XO, NOS activities and TBARS levels were found significantly higher than group (C) ($p<0.05$), GST, G-6-PD and PON-1 activities were found significantly lower than group (C) ($P<0.05$). In D+STB group, TBARS and NOS activity were found significantly lower than group (D) ($p<0.05$), G-6-PD activity was significantly increased to compare with group (D).($p<0.05$).

In summary, our findings show that diabet trigered of oxidative stres, administration of stobadine to diabetic rats protect the oxidative stress.

PP-071
INTERACTIONARY EFFECT OF INDOMETHACIN AND VEGETABLE OILS ON ACUTE INFLAMMATION IN RATS

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Vegetable oils [olive oil (OO), sunflower oil (SO) and corn oils (CO)] are the main fatty component of the Mediterranean diet. Non Steroidal Anti-inflammatory Drugs (NSAIDs) such as indomethacin (IND) are widely used in the treatment of inflammation, fewer and pain. However, NSAIDs cause gastric damage as a major adverse reaction. The present study was conducted to evaluate the interactive-effect of IND, OO, SO and CO on carrageenan-induced acute inflammation in Dawley rats. While the development of CAR-induced paw edema were significantly reduced by IND, OO, SO, CO, IND+OO, IND+SO, IND+CO and DIC, the highest anti-inflammatory effect was observed for IND+SO with 79.5% inhibition. Therefore, in this study, in vitro antioxidant acting of IND in different pH=2.0, 4.0, 5.5 and 7.0, were also determined using thiocyanate method and compared with trolox, alpha-tocopherol and ascorbic acid. IND acted as a moderate antioxidant in PH=7.0 and 5.5 by inhibiting the peroxidation of linoleic acid with 45.1 and 35.1%, respectively. In particular, in pH=7.0, that is approximately physiological pH of organisms, IND have moderate antioxidant potential. For this reason, the IND plus vegetable oils possess the stronger anti-inflammatory effects against the inflammation caused by CAR. These results suggest that indomethacin do more benefical effect as connected to its antioxidative potent on the inflammation process when they are used together or as the preparations of the vegetable oils.

Key words: Indomethacin; Vegetable Oils; Acute Inflammation

PP-072
GENETIC ANALYSIS OF THE CYSTIC FIBROSIS

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INTRODUCTION: CF is one of the most common life threatening inherited disorders in Caucasians and the frequency of CF in Latvia is 1 in 3000 newborns. CF is a disease affecting a number of organ systems including the lung and upper respiratory tract, the gastrointestinal tract, pancreas, liver, sweat glands, and the genitourinart tract, but lung involvement is the major cause of morbidity and mortality.
AIMS: To perform genetic analysis of CF and to screen for rare mutations in CF pacients.
OBJECTS: 193 individuals (41 patients with symptoms of CF and 152 relatives).
MATERIALS AND METHODS: The DNA was extracted from the whole blood and purified by phenol/chloroform purification method. The methods used for confirmation of diagnosis and for rare mutation screening in CF were polymerase chain reaction (PCR), polyacrylamide gel electrophoresis (PAGE), denaturing gradient gel electrophoresis (DGGE), sequencing and INNO-LiPA.
RESULTS: The genetic testing of CF was performed for 193 individuals. The mutations of CFTR gene were detected in 38 patients and 36 relatives, where 12 patients were homozygous for the mutation delF508/delF508, 2 patient's genotype were delF508/W57R, 2-delF508/394delTT, 2-delF508/R1066H, 1-delF508/W1282X and 1-delF508/N1303K. 45 individuals (12 patients and 33 relatives) proved to be heterozygous for the mutation delF508, 3 individuals - heterozygous for the mutation N1303K, 3 patient's genotype were R553X/N, 2143delT/N, CFTRdele 2,3, respectively, where N - unknown allele.
CONCLUSIONS: The DNA analysis allows to confirm the diagnosis, which is very important in atypical manifestations of CF (e.g., when clinical picture complies with CF diagnosis but the sweat test is borderline).

PP-073
HCV GENOME CORE, HVR1 AND NS5A-ISDR CHANGES DURING INF-a THERAPY

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Hepatitis C virus (HCV) is a human pathogen, which represents a major public health threat. During the last years this problem has become important also in Latvia as approximately 80 000 inhabitants of Latvia are already infected or with HCV are hidden carriers of it.
The main aim of the work was to monitor the changes of HCV core region clawing the course of IFN - _ therapy.
Sera of patients with chronic hepatitis C, which were treated IFN-_, were tested for the presence of HCV RNA using RT –PCR. 113 patients' sera were checked: 53 samples were HCV RNA positive, 60 samples of sera were HCV RNA negative.
Nucleotide sequence of HCV genome core, HVR1 and ISDR regions were analyzed an ABI Prism genetic Analyzer and the sequences as reset HCV in all samples of patient were assigned to genotype 1, 1b subtype.
By calculating genetic distances and comparing, them it was concluded that during the course of IFN – _ therapy changes in HCV core region have occurred.
The genetic distance of patients 1H, 4H, 7H and 10H was fluctuating. However, for patients 3H, 6H and 14H this trend was not observed. Patient's 1H HVR1 sequence genetic distance was fluctuating, but 9H and 14H. HVR1 region hadn't change during therapy.
ISDR genetic distance of patients 10H, 11H and 14H was only between premier sample and follows.
Imunoresponse against HCV core was detected, with a set of peptides covering core protein. HCV antibodies were present in all serum samples. The highest response was against N-terminus of HCV core (1-45 aa). We consider this region as imunodominant.

PP-074
THE SERUM HOMOCYSTEINE CONCENTRATION AT HAEMODIALYSIS PATIENTS

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Homocysteine is sulfur containing amino acid and it is an intermediate form during the metabolism of the essential amino acid methionin, about 70 % of total homocysteine in plasma is protein bound largery to albumine. At present study we measured serum concentration of homocysteine (tHcy), active form of cobalamines (Holo TC), albumine and creatinine in haemodialysis patients (men 25 and woman 27) before dialysis and tHcy after dialysis. The measurement of total L-homocysteine in human serum was done using AxSYM florescence polarisation immunoassay (Abbott). The active form of cobalamines (Holo TC) in human serum was measured using AxSYM microparticle enzyme immunoassay (Abbott). The reference interval for blood tHcy concentration was 3.36-20.44 µmol/L and Holo TC concentration was 19.1-119 pmol/L. The albumine and creatinine were measured using Automatic Analyser Dimension Pand plus (Dade Behring). The mean serum concentration before dialysis was tHcy 28.9 +/- 22.6 µmol/L, albumine 36.5 +/- 4.2 g/L, and creatinine 993 +/- 10 +/- umol/L and after dialisis tHcy 18.1 +/- 14.1 µmol/L. Dialysis induced a significant reduction in tHcy of 35 +/- 10 % ($p<0.05$). Before haemodialysis about 40 patients have hyperhomocysteinemia and after dialysis only 10. The main difference between tHcy before and after dialysis was statistically significant for $p< 0.05$ using t student test with correlation coeficient ($r = 0.98$). We found significant correlation between tHcy and mean serum concentration of Holo TC 64 +/- 26 pmol/L ($r = -0.0937$ $p<0.05$). The elimination of Hcy from plasma is facilitated after hemodialisis such treatment may remove uremic toxins with inhibitory activities one or more enzymes of remethylation (methionine synthase) and/or the transsulphration partway (cystathionine β-synthase).

PP-075
THE ROLE OF ALLOPURINOL ON OXIDATIVE STRESS IN CAUSTIC ESOPHAGEAL BURN

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It is known that during the acute necrotic phase of esophageal burns the production of free oxygen radicals derives from the wounded tissue, where xanthine oxidase (XO) plays an important role. This study was conducted to investigate the effects of allopurinol on oxidative stress and stricture formation after caustic esophageal burn. Caustic burn was induced to the distal esophagus in 60 rats. Allopurinol was administered at 40 mg/kg daily. Changes during both acute and chronic phases were evaluated. Efficacy of the treatment for the acute phase was assessed after 72 hours by measuring tissue malondialdehyde (MDA), nitric oxide (NO) and glutathione (GSH); and for the chronic phase by determining tissue hydroxyproline content and histopathologic damage score. We found an increase in XO, MDA and GSH levels and a decrease in NO levels after caustic burn. Allopurinol reinstated the increase in XO significantly, while MDA, GSH and NO levels were reinstated insignificantly. There was no significant difference in means of tissue hydroxyproline content. Histopathologic damage scores were significantly lower in the allopurinol treated group. This study, which is to our knowledge, the first in the literature investigating the influence of allopurinol on caustic esophageal burns, reveals that allopurinol effects MDA, GSH and NO levels in the acute phase of caustic esophageal burns and decreases fibrosis significantly in the chronic phase.

PP-076
FATTY ACID COMPOSITION OF ERYTHROCYTE MEMBRANE IN YOUNG PEOPLE WITH LIFESTYLE CHANGES

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Membrane functions are influenced by dietary-induced changes in membrane lipid composition and it's an important point for maintaining health and prevention of disease. Dietary habits vary from region to region within individual country and also varying with lifestyle changes (mass catering, fast-food, processed food, etc). The objectives of this study were to investigate the membrane fatty acid status in healthy young subjects who were exposed to a social-environmental alteration in the lifestyle and to evaluate the effects of habitual intake of food sources to the membrane, by the determination of the fatty acids composition of the erythrocyte membrane. Dietary intake of food sources fatty acids was estimated by using a food frequency questionnaire for the previous six-month period, and fatty acid analysis was carried out by capillary gas chromatography. Vegetable oils, which the main source of n6 polyunsaturated fatty acids were consumed daily (71%), and daily fast-food consumption was also notably high (37%). Approximately 60% of the subjects reported that fish was consumed only once a month, which is the main source of n3. Membrane n3:n6 ratio was found at the favorable level (1:3,5) that may be related to study group was very young and a social change of their life was new. Further prospective case-control studies to evaluate the effects of habitual food intake on the membrane fatty acids composition will be helpful.

PP-077
BLACK TEA AND DIFFERENT ANTIOXIDANT EFFECT MECHANISMS

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Our aim in this study was to elucidate the different antioxidant effect mechanisms and the antioxidant / prooxidant paradox in black tea infusions. For this purpose we examined the effect of different tea concentrations on free radical scavenging activity (by Yamaguchi method), hydrogen peroxide scavenging ability (by Ruch method), metal ions chelating activity (by Decker and Welch method), superoxide radical scavenging capacity (by Nishikimi method) and reducing power (by Oyaizu method). It was observed that the free radical scavenging activity, hydrogen peroxide scavenging ability and the metal ions chelating activity were the underlying mechanisms of antioxidant / prooxidant activity in black tea infusions. In addition it was concluded that the superoxide radical scavenging capacity and reducing power were underlying mechanisms of black tea antioxidant activity.

PP-078
SERUM SEROTONIN LEVELS IN NATURAL VERSUS SURGICALLY INDUCED MENOPAUSAL WOMEN

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Menopause is characterized by physiologic changes in women including vasomotor symptoms, bone loss, somatic symptoms, sleep and mood disturbances. Changes in especially neuroendocrine function may predispose menopausal women to depressed mood, anxiety, irritability, fatigue, insomnia and decreased libido. In this study we have studied with pre-menopausal, naturally menopausal and surgically-induced menopausal women in order to investigate the differences in serum serotonin, cortisol, DHEA-S and estradiol levels and the interactions between them. Thirthy pre-menopausal (aged between 35-44years), 30 naturally menopausal (aged between 45-58years) and 30 surgically-induced menopausal (aged between 38-47years) women were included in the study. All serum samples were taken in the morning and approximately 3 months after surgery in the second group. Naturally menopausal women were in menopause for at least 3 years. None of the subjects were using antidepressants and hormone replacement therapy. Cortisol, DHEA-S and estradiol levels were determined by immunochemiluminisence while serotonin levels were determined by HPLC. The prominent result of our study was serum serotonin levels in naturally menopausal women were higher than the other two groups (144.23 + 75.29 µg/L vs 61.35 + 37.72 µg/L in surgically-induced menopausal women ($p< 0.001$) and 98.74 + 50.29 µg/L in premenopausal women ($p< 0.05$)). As a conclusion, although these are the preliminary results, increased sertonin levels in naturally menopausal women may indicate that, this may be a compensatory mechanism to decreased estradiol levels. As it is postulated that there is strong interaction between estradiol and the seratoninergic system.

PP-079
MULTIMARKER RISK STRATIFICATION IN ACUTE CORONARY SYNDROMES

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Background: The aim of this study was to define the utility of the combined measurement of markers of: (1) Cardiomyocyte necrosis – troponin T (TnT); (2) Inflammation – white blood cells, fibrinogen, C-reactive protein (CRP) and (3) Endothelial activation – soluble adhesion molecules VCAM-1 and ICAM-1; in the identification of high-risk patients with non–ST elevation acute coronary syndromes (ACS).
Methods: The study includes 136 patients – 25 healthy controls, 36 patients with stable angina and 75 with acute coronary syndromes. Quantitative detection of serum concentration of soluble VCAM-1 and ICAM-1 was performed using an ELISA technique (BenderMed Systems). hsC-reactive protein was measured with immunonephelometric assay (Cardio Phase hsCRP, Dade Behring), Troponin T - with electrochemiluminescence immunoassay (TroponinT STAT, Roche Diagnostics). The risk for major events (death, nonfatal myocardial infarction or rehospitalization for unstable angina) at 30 day and at six month follow-up of patients with ACS was analyzed.
Results: All soluble ICAM-1, VCAM-1, CRP and TnT significantly discriminated between patients with ACS and age and sex adjusted patients with stable angina ($p=0.014$, 0.05, 0.025 and 0.004 respectively) and control subjects ($p<0.001$, 0.05, 0.048 and 0.016). In a multivariate model adjusting for baseline characteristics and electrocardiographic changes, the biomarkers related to major events at first month and at 6-months were C-reactive protein, soluble VCAM-1 and troponin T. The rate of major events depending on the number (0-3) of elevated biomarkers were at first 30 day: 0%, 8.7%, 21.1%, and 62.5% ($P<0.0001$), and at 6 month: 0%, 13%, 52.6%, and 93.8% ($P<0.0001$). A simple score including the number of elevated biomarkers showed an adjusted risk of major events of 3.14 [1.5-6.38] at 30 day and of 4.11 [2.39-7.05] at six months.
Conclusions: We find out that the measurement of markers of cardiomyocyte necrosis (TnT), inflammation (CRP) and endothelial activation (VCAM-1) and their combined examination with established clinical and instrumental prognostic indicators has additive value and facilitate the risk stratification of the patients with acute coronary syndromes.
The number of elevated biomarkers is an independent risk predictor of major events in patients with non–ST elevation acute coronary syndromes.

PP-080
EVALUATION OF A NEW ELECTROCHEMILUMINESCENCE IMMUNOASSAY METHOD FOR MEASUREMENT OF PLASMA ACTH

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ACTH is formed from the cleavage of pro-opiomelanocortin and secreted from the anterior pituitary in response to corticotrophin-releasing hormone which is secreted from hypothalamus in response to many types of stress.
ACTH measurements are used in the differential diagnosis and treatment of certain disorders of the adrenal glands such as Cushing's syndrome, adrenocortical insufficiency and ectopic ACTH syndrome.
The present study was performed to compare two analytical methods to measure plasma ACTH: the commonly used ELSA –ACTH Immunoradiometric method (IRMA) and the new Electrochemiluminescence Immunoassay (ECLIA) method. Linearity, accuracy, within-run and between-run coefficient variations (CV), and susceptibility to interference by hemolysis, icterus and lipemia were assessed. Between-run and within-run CVs for both assays were calculated using plasma pools
The within-run CVs of normal sample were found to be 6.7% for IRMA and 1.5% for ECLIA method, whereas between-run CVs were 8.4% for IRMA and 2.7% for ECLIA method. The within-run CVs of the abnormal sample were 6.2% for IRMA and 2.3 % for ECLIA, whereas between-run CVs were 7.8% and 3.6% for IRMA and ECLIA methods, respectively. High and low levels of hemolysis, icterus and lipemia did not interfere with the assay performance of ECLIA method.

Based on these findings, it was suggested that ECLIA is a reliable alternative to IRMA method for measurement of plasma ACTH.

PP-081
POSSIBLE PROTECTIVE EFFECT OF CARNITINE IN BREAST CANCER

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Breast cancer remains one of the most common types of cancer. High levels of arginase and ornitine in different carcinomas may indicate their relation to cancer. Nitric oxide (NO) may play a significant role as a chemo-preventative agent in cancer development and therapeutics. Carnitine, which also is related to cancer, is a cofactor required for the transformation of free long-chain fatty acids into acetyl-carnitines, and for their subsequent transport into the mitochondrial matrix, where they undergo b-oxidation. The aim of this research was to investigate carnitine's possible protective effect and its possible effects on the arginase-NO interaction. Twenty adult male mice were divided into two groups; group 1: tumour and group 2: tumour+carnitine. At the end of the 15-day treatment period the animals were anaesthetised and their cancer tissue was removed. Histopatological examination, arginase activity, ornithine and NO levels were determined. Mitotic cells significantly decreased in the treatment group. Tissue arginase activity and ornitine levels decreased significantly with carnitine. On the other hand, NO levels were significantly higher in the treatment group. We suggest that one of the possible mechanisms of carnitine's protective role in tumour progression might be its promotion of the NO level. This mechanism may decrease the production of tumour promoting agents, polyamines and increase the production of NO, which may exert a protective effect on cancer development.

PP-082
DIFFERENCE IN CONTROL RECOVERY IN INTERLABORATORY QUALITY CONTROL SCHEMES FOR IMMUNOASSAYS

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Introduction. Roche diagnostics runs its private quality control scheme named QCS (Quality Control Service). QCS is a combination of internal and external quality control. Both procedures use the same data getting from analyzers of clinical chemistry. In this scheme Roche faced the problem of matrix effect. Matrix effect is the difference between a human sample and the corresponding control sample.
Purpose. The detection of matrix effect and the institution of corrective actions in order to prevent this phenomenon on the future.
Material - Method. As experimental materials were used the QCS's control samples (PCU QCS 10651257/922 and PCTM QCS 10651265/922). These control specimens (PreciControls) were analyzed on the analyzers Roche/Hitachi Elecsys 1010 and 2010. Both analyzers use the technology of chemilluminescense and they measure a variety of hormones and tumour markers. The statistical analysis and storage were done on the computer program QCS Easy 4.
Results. Statistical important differences were found between the results of human and control samples. These findings reveal the following:
Roche determine its analytes on PreciControls as well as on human serum pools. These pools are stored in very low temperature and retain their substances steady for a long time. On the other hand Roche determines the consensus mean of PreciControls before their posting to its customers. Although PreciControls are analyzed in almost six referral laboratories, Roche noticed noteworthy differences when different reagent's lots were used for the determination of the same PreciControl's lot. There is no any similar difference between different reagent's lots and the same human pool.
Discusion. The explanation of these differences is the matrix effect, which seems to be responsible for the denaturation of serum proteins. It seems that the conservatives and the antimicrobial additives which are added in the serum, change the protein structure, especially the antigen chemical affinity.
Conclusion. Due to matrix effect, Roche proposes that the interlaboratory comparisons must refer not only in a certain control serum but in a combination of control serum and reagent lot.

PP-083
RELATIONSHIP BETWEEN NEONATAL HYPERBILIRUBUNEMIA AND UMBLICAL CORD ALPHA FETOPROTEIN LEVELS

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Objective: Neonatal hyperbilirubinemia is one of the most common problems in the newborn period. Neonatal jaundice is seen in 60% of term and 80% of preterm newborns. There are few studies suggesting that alpha-fetoprotein (AFP) levels can predict the maturity of the liver and severity of hyperbilirubinemia.
Design: In this study, the relationship between the concentration of alpha1-fetoprotein (AFP) in cord blood and neonatal jaundice has been examined in 504 term newborn babies. Umbilical cord AFP (UC-AFP) levels were measured at birth. Capillary blood samples for bilirubin level determination were drawn from each newborn along with routine phenylketonuria screening. Results: Mean UC-AFP level and total serum bilirubin (TSB) levels were 49.1 + 44.9 mg/L (1.1 – 396.2 mg/L) and 5.8 + 3.1 mg/dL (1 – 19.4 mg/dL) respectively. A significant, but weak correlation (r=0.187) was found between UC-AFP and TSB levels. There was no significant difference in bilirubin levels between cases with UC-AFP levels < 100 mg/dL and > 100 mg/dL. Conclusions: Although statistically significant correlation between UC-AFP and subsequent TSB levels exists, UC-AFP cannot currently be recommended for use in clinical practice because of its inability to serve as a strong predictor for determination of newborns who were at risk for hyperbilirubinemia.

PP-084
ANTIOXIDANT STATUS IN PATIENTS WITH HYPOTHYROIDISM

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The present study was designed to investigate the relationship between the serum levels of antioxidant system -superoxide dismutase (SOD) and glutathione peroxidase activities (GSHPx)- and thyroid hormone status in hypothyroidism pre and post treatment.
The study group comprised 33 patients with primary hypothyoidism. 18 of these patients were reevaluated after euthyroid state. The patients were compared with 26 normal healthy controls. SOD and GSHPx activities in serum were measured by spectrophotometric methos.
The results of the study were analysed by a two-sided paired sample Student t-test (measurements before and after thyroxine treatment) and an unpaired sample Student t-test (measurements in healthy controls and patients with hypothyroidism pre and post treatment).
SOD activity was not found different in patients before treatment when compared to controls, but SOD activity was significantly higher in after treatment when compared to both pretreatment and control levels.
GSHPx activity was found to be lower in patients pretreatment when compared to both posttreatment hypothyroidism and controls. Posttreatment of hypothyroidism GSHPx activity was not found different when compared to controls.
In conclusion, thyroid hormone replacement therapy has favorable effects on antioxidant defence system in patients with hypothyroidism.

PP-085
PROTEIN S-100 AND NEURON-SPECIFIC ENOLASE IN CRITICALLY ILL PATIENTS WITHOUT APPARENT BRAIN INJURY

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In pathophysiology of multiple organ dysfunction syndrome (MODS) in critical illness pivotal role plays cellular dysoxia: O2 is available but not utilized due to mitochondrial dysfunction. There is a possibility that as consequence, some degree of occult brain injury might occur. Our aim was to determine biochemical markers of cerebral injury in critical illness. We studied 16 critically ill patients (8 survivors and 8 nonsurvivors), treated in the Intensive Care Unit (ICU). The patients were divided into the sepsis group (n=9) and the polytrauma group without evidence of brain trauma (n=7). Blood was sampled immediately after ICU admission. The serum levels of protein S100beta and neuron-specific enolase (NSE) were measured using electrochemiluminiscence immunoassay (Roche Diagnostics, Elecsys 2010). In sepsis group a significantly higher ($p<0.05$) levels of protein S100beta compared to the polytrauma group were detected (0.526±0.557 vs. 0.059±0.031 mg/L). Also, survivors had lower values of protein S100beta (0.123±0.180 mg/L) compared to the nonsurvivors (0.521±0.595 mg/L), but difference was not statistically significant. However, the levels of NSE did not differ significantly between sepsis and polytrauma group (11.18±8.78 vs. 11.46±4.09 mg/L) and between survivors and nonsurvivors (10.88±4.12 vs. 11.73±9.22 mg/L). We concluded that protein S100beta is the better marker than NSE for monitoring the occult diffuse brain injury in critically ill patients with sepsis.

PP-086
HEPATOTOXIC EFFECT OF ORGANIC SOLVENTS IN PEOPLE WHO WORK IN SHOE MANUFACTURING

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Introduction: Shoe manufacturing is one of the main income in Yeşilyuva region of Acıpayam town. The workers are exposed to mixtures of organic solvents which may be harmful to various organs and tissues. In this study we investigated possible hepatotoxic effects of these solvents.
Materials and methods: 291 people, who work in shoe manufacturing (mean age 37.30 ± 10.10 years; 95 females, 196 males); 68 people, who worked same industry in the past (mean age 43.43 ± 12.4 years; 37 females, 31 males); and 73 healthy people (mean age 46.73 ± 14.52 years; 50 females, 23 males) were enrolled in the study. All participants completed a questionnaire designed to identify potential risk factors and the main non-occupational confounding factors for hepatotoxicity. The levels of serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) levels were performed on Synchron LX Systems (Beckman Coulter, Inc, USA). We calculated the ratio of ALT to AST.
Results: The levels of ALT and AST were higher in both present and ex-workers comparing to those of controls. We also observed that, increased ALT levels and the ratio of ALT to AST were positively correlated with the total and weekly time of exposure in both present and past workers. The ratio of ALT to AST was greater than 1. Similarly, people who directly exposed to organic solvents had the same results.
Conclusions: The findings suggest that, organic solvents might possibly cause liver damage in people who work in shoe manufacturing. This damage increases with the direct exposure and total time of exposure to organic solvents.

PP-087
THE EFFECTS OF SULPHITE SUPPLEMENTATION ON VASCULAR RESPONSIVENESS IN SULPHITE OXIDASE DEFICIENT RAT

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Molybdenum has been incorporated widely into biological systems and essential for the function of sulphite oxidase. The clinical features of molybdenum cofactor deficiency are similar to the more common related variant isolated sulphite oxidase deficiency (SOD). The aim of the present study was to explore the effect of dietary sulphite supplementation on vascular responsiveness in sulphite oxidase deficient rats. For this purpose, male albino rats (n=32) were divided into four groups as control (C), sulphite (S) , SO deficient group (D), and SO deficient plus supplementary sulphite group (DS). SO deficiency was has been made by the administration of a low molybdenum (Mo) diet with concurrent addition of 200 ppm tungsten (W) to their drinking water in the form of sodium tungstate (NaWO4). Sulphite suplementation to S and DS groups has been began after 3 weeks for 6 weeks. The vascular responsiveness of the aortic rings obtained from the rats to sodium nitroprusside (SNP), acetylcholine (ACh) and histamine were investigated in isolated organ baths.
There was a significant decrease in ACh-induced relaxation in aortic rings from DS group as compared with the other groups. L-arginine incubation caused a significant improvement in ACh-induced vasorelaxation in this group. cAMP mediated relaxation was not significantly different between the all groups.
The findings of the present study suggested increased L-arginine and NO consumption may play a role in the observed reduction in endothelium-dependent relaxation of aortic rings from sulphite oxidase deficient plus dietary sulphite supplemented rats.

PP-088
EFFECTS OF THYROXINE REPLACEMENT ON LIPID PROFILE AND ENDOTHELIAL FUNCTION AFTER THYROIDECTOMY

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Objective: Hypothyroidism are widely recognized as a risk factor for atherosclerotic cardiovascular disease. We aimed to investigate the effects of L-thyroxine replacement therapy on lipid profile and endothelial function in patients with overt transient non-autoimmune hypothyroidism after thyroidectomy.
Design: Twenty-two patients with non-toxic multinodular goiter treated by total thyroidectomy and 22 healthy individuals matched for age, gender and body mass index. Lipid profile and endothelial function were determined in each patient at the euthyroid phase before thyroidectomy (stage 1), the hypothyroid phase 3 weeks after thyroidectomy (stage 2), the euthyroid phase 3 months (stage 3) and 6 months after the beginning of the thyroxin treatment (stage 4).
Results: The lipid profile and endothelial function deteriorated from stage 1 to 2 and 3. This finding at the stage 4 was similar to the stage 1. Significant positive correlations were found between serum TSH and total cholesterol ($p<0.0001$). A negative correlation was found between serum TSH and flow mediated dilatation ($p<0.0001$).
Conclusions: A 3-week hypothyroid period after thyroidectomy led to a more atherogenic lipid profile and impaired endothelial function compared with baseline which persisted for three month postoperatively despite thyroxine replacement therapy. The short term hypothyroidism after thyroidectomy may be a risk factor for cardiovascular diseases.

PP-089
BUTRYLCHOLINESTERASE (BChE) ACTIVITY IN METABOLIC SYNDROME AND OBESITY

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BChE is an enzyme that may serve as a marker of metabolic syndrome. Serum levels of the enzyme are affected by dietary fat, obesity, hyperlipidemia and diabetes mellitus. The present study examined the correlation between BChE activity and features of the metabolic syndrome and obesity.
Metabolic syndrome was diagnosid using the Adult Treatment Panel III (ATP III) criteria. The insulin sensitivity was measured by HOMA (Homeostasis Model Assessment) score. Height, weight, systolic and diastolic blood pressure and waist-hip circumference were measured, and body mass index (BMI) was calculated. Serum glucose, insulin, c-peptid, triglyceride, ApoA1, ApoB and total, HDL, LDL-cholesterol, levels were determined. BChE activity was measured by spectrophotometric method of Ellman and co-workers. BChE activity was higher in metabolic syndrome and obesity groups in comparison to controls but there was no statistically difference between groups. There was a positive correlation between BChE activity and serum triglyceride ($r = 0,621$ $p < 0,05^*$) in obesity. There was negative relationship between BChE activity and ApoA1($r = -0,493$) in metabolic syndrome. There was no statistically significant correlation among the other parameters in metabolic syndrome, obesity and controls.
BChE may not have a direct pathophysiological role in the development of metabolic syndrome, but it can be considered that there might be an association between BChE activity and the risk factors for the metabolic syndrome.

PP-090
ANALYSIS OF TGF-Î2 AND SMAD FAMILY MEMBERS IN EARLY CHICK EMBRYO DEVELOPMENT

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Members of the TGF-β superfamily regulate a broad range of celluler functions, including proliferation, apoptosis, extracellular matrix secretion and adhesion, terminal differantation and specification of developmental fate. The signals of TGF-β superfamily are transduced intracellulary with Smad family of gene products as a transducers for TGF-β. Regulation of these cellular functions by TGF-β superfamily factors is important throughout embryonic development. We investigated to detect the distribution of TGF-βs members (TGF-β1, TGF-β2, TGF-β3) and Smads (Smad1-2-3, Smad6, Smad7) in chick embryos during early development.
Specific pathogen free (SPF) white Leghorn type chick embryos were used. They were incubated until 24h, 30h, 48h, and 72h of development at 37 º C. The embryos were collected in extraction buffer and centrifuged at 14.0000g for 10 min at 4º C. Supernatant of samples were used both immunoprecipitation and Western Blotting techniques for protein expression of TGF-βs and Smad proteins.
While TGF-β1 was detected only in 24h, 30h and 48h of chick embryos (it was absent in 72 h chick embryos), the rest of the proteins (TGF-β2, TGF-β3, Smad 1-2-3, Smad-6 and Smad-7) were detected in all stage of chick embryos. The protein level of TGF-β1 was detected in 24h of chick embryos and the expression of TGF-β1 was decreased along with development. The protein level of TGF-β3, which was higher than the other protein expressions, was clearly detectable in 24h of chick embryo. The protein expression of TGF-β3 was decreased during development, but, it was still detectable. In contrast to that, the level of Smad 1-2-3 was little in 24h of chick embryos, the protein expression of Smad 1-2-3 was increased along with development. The expressions of TGF-β2, Smad 6 and Smad 7 were detected in all stages of chick development, but, their expressions were not changed.

Our results demonstrated that TGF-βs/Smads signal pathway and imbalance between them play a role during early stage of chick development. Especially the expression TGF-β3, Smads 6 and 7 may trigger and regulate very early stage (24h) of chick embryo development.

PP-091
AUTOANTIBODIES AGAINST OXIDIZED LDLs IN PATIENTS WITH HYPERCHOLESTEROLEMIA AND TYPE II DIABETES

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Atherosclerosis is now widely recognized as a chronic inflammatory disease that involves innate and adaptive immune responses. Recent evidence has revealed that oxidation-specific epitopes are important targets of natural antibodies, suggesting an important function for these antibodies in the host response to consequences of oxidative stress. We investigated MDA-LDL-IgG levels in 70 subjects (25 male, 45 female). Serum total cholesterol, HDL cholesterol, LDL cholesterol, triglyceride, HbA1c levels were assessed. None were taking medication or other agents known to affect lipid metabolism during the last three months' time. All cases were evaluated in four groups: as metabolically poorly controlled DM (HbA1c > 8 %, n=22), well controlled DM (HbA1c ≤ 8 %, n=18), hypercholesterolemic patients (n=15) and control group (n=15). HbA1c was assayed by means of Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). MDA-LDL-IgG was assayed by ELISA (Labor Diagnostika Nord GmbH & Co. KG, Nordhorn, Germany). MDA-LDL-IgG levels were significantly increased in metabolically poorly controlled group in relation to hypercholesterolemic patients ($p<0.05$) and in relation to control group ($p<0.01$). MDA-LDL-IgG as an oxidative parameter is well correlated with metabolic control ($r=0.498$) in whole. Identifying these antibodies and understanding their role in health and disease are likely to yield an understanding of the basic mechanisms that evolved to deal with the consequences of oxidative stress.

PP-092
EFFECTS OF LIPOIC ACID AND VITAMIN C ON STREPTOZOTOCIN INDUCED DIABETIC RAT LIVER CATALASE AND SUPEROXIDE DISMUTASE ACTIVITIES

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Diabetes mellitus is associated with consequences of oxidative stress which augments the free radical production. In this study, effects of ascorbic acid (Vit C), and α-lipoic acid, on diabetic rat liver catalase (CAT) and superoxide dismutase (SOD) activities were studied. To do this, male Sprauge-Dawley rats were given streptozotocin (STZ) to induce diabetes, and groups were separated as control(n=9), diabetic(n=9), diabetic+lipoic acid given(n=8), diabetic+vitamin C given(n=12) and diabetic+Vitamin C+lipoic acid given(n=7). Four weeks after the development of diabetes and administration of antioxidants, rats were decapitated and catalase and superoxide dismutase activities were measured. CAT activities were lowered in diabetic group ($p<0.005$) as compared to controls. Application of lipoic acid were increased the diabetic CAT activities but not up to the control level. Similarly, vitamin C raised the diabetic catalase activities and it was better for the restoration of diabetic CAT activities. Moreover, combination groups' catalase activities were also higher then diabetic activities and this increment was as effective as vitamin C group. Also, it has been found that SOD activities were reduced in diabetic animals around 25 percent. Administration of lipoic acid and vitamin C alone slightly restores this decrement to the control level. However, application of both antioxidants together raises the total SOD activities above the control levels (28% higher).

PP-093
EFFECTS OF DIETS WITH OMEGA-3 POLYUNSATURATED FATTY ACIDS AND

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This study is to evaluate the effect of dietary omega-3 polyunsaturated fatty acid (ω-3 PUFA) and/or calcium supplementation on colon tissue of the carcinogenic n-methyl-n-nitrosurea (NMU) injected Fischer-344 rats and to investigate this effect by the assessment of the oxidative stress. The rats were divided into four groups namely were fed with standard control diet (group I), standard diet supplemented with ω-3 PUFA (group II), standard diet with calcium (group III) and standard diet with the combination of ω-3 PUFA and calcium (group IV) and rats were injected with an intrarectal NMU. After 32 weeks, colon tissue specimens and plasma were taken to histopathologically investigate and analyze tissue superoxide dismutase (SOD) and glutathione peroxidase (GSH-px) activities and erythrocyte MDA levels associated with tumour formation. The tumor incidences in supplemented diet groups II and IV were found significantly lower when compared with those of controls ($p<0.05$). Superoxide dismutase and glutathione peroxidase antioxidative enzyme activities in colorectal tissue were increased in study groups when compared with control rats ($p<0.001$) and MDA levels in red blood cells were significantly lower than controls ($p<0.001$) while the levels in group IV were ratherly decreased than group III ($p=0.011$). These results suggest that the dietary supplementation of PUFA and/or calcium may be useful in the prevention of colorectal tumour formation.

PP-094
RELATION BETWEEN GLYCEMIC CONTROL AND MDA-LDL-IgG IN PATIENTS WITH TYPE II DIABETES

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Macroangiopathy in diabetes consists mainly of an accelerated form of atherosclerosis. HbA1c is generally used as the standard measurement for intervention and treatment, but there is no threshold level of HbA1c above or below which the risk of complications ceased to increase or decrease respectively. Oxidative LDL modifications render them immunogenic, and autoantibodies against oxidized LDL are found in serum and atheromatous tissue. Serum MDA-LDL-IgG levels were assessed in 40 diabetics. None were taking medication or other agents known to affect lipid metabolism during the last three months' time. HbA1c was assayed by means of Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). MDA-LDL-IgG was assayed by ELISA (Labor Diagnostika Nord GmbH & Co. KG, Nordhorn, Germany). There was significant difference in MDA-LDL-IgG levels between metabolically poorly controlled group (n=22) and well-controlled group (n=18) when threshold level of HbA1c was taken as ≤8% (504.22±260.68 U/L versus 342.16±115.59 U/L; p=0.021). But there was no significant difference in MDA-LDL-IgG levels between metabolically poorly controlled group (n=24) and well-controlled group (n=16) when threshold level of HbA1c was taken as ≤7% (487.62±255.37 U/L versus 346.81±122.18 U/L; p> 0.05). Our findings suggested that there is need to develop large-scale studies to understand the role of natural antibodies in atherogenesis in diabetics, including another group of patients with borderline HbA1c (7%-8%).

PP-095
ACUT EFFECTS OF OLIVE OIL AND SUNFLOWER OIL ON THE TOTAL ANTIOXIDANT CAPACITY IN HEALTHY ADULTS

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A key factor in both the development and treatment of certain diseases is the type of fatty acid in the diet. Olive oil and sunflower oil may have different effects on serum total antioxidant capacity (TAC) due to their different fatty acid pattern and antioxidant contents. In this study it was aimed to compare the effects of those two oil on serum TAC.
Ten healthy volunteers (5 male, 5 female, mean age 27 years) were recruited into this study. All volunteers were given 50 ml olive oil and sunflower oil. Fasting venous blood samples were obtained at baseline and 2nd, 4th hour after the administration of olive oil and sunflower oil. Fifteen days were used as washout period between two administration of oils. TAC was measured by a specthoptometric method based on the scavenging of the DPPH free radical.
At 4th h after administration of olive oil TAC levels (12.33±2.82) were found significantly higher than levels (8.55± 2.55) after administration sunflower oil ($p=0.035$). There were no significantly difference between baseline and 2nd hour levels. Serum total antioxidant capacities after the olive oil supplementation at 4th and 2nd hour were not changed according to baseline levels.
These results suggest that diet oils in which have fatty acids at different unsaturation levels modulates total antioxidant capacity of plasma. The effects of olive oil have superiority than sunflower oil effects on TAC.

PP-096
GENDER SPECIFIC EFFECT OF LIPOPROTEIN (A) AND APOLIPOPROTEINS LEVEL IN DIABETIC PATIENTS

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The atherosclerotic process is accelerated in all type 1 diabetics and in half the type 2 diabetics who already have atherosclerotic changes. In the last few years the data on the role of lipoprotein particles in the development of diabetes mellitus have not been completely clarified. We studied the changes in lipoprotein (a) (Lp(a)) and apolipoprotein (apo) AI as well as apoB values in 400 diabetics (200 with type 1, 200 with type 2 diabetes) and compared them with these of 200 healthy controls. Lp(a) and apoAI and B values were adjusted to remove the effect of significant covariates: age, body mass index, cigarette smoking, duration of diabetes mellitus. Diabetics in both groups had significantly higher values of Lp(a) and apoB, and significantly lower values of apoAI in respect to control group ($P<0.05$). However, type 2 diabetics had significantly higher Lp(a) and apoB and lower apoAI levels as compared to type 1 diabetics. It has been established that type 1 diabetic women have significantly lower apoAI/B ratio and higher Lp(a) values compared to men within the same group. Type 2 diabetic women have higher ratio apoAI/B and lower Lp(a) values in respect to men with type 2 diabetes. It may be concluded that there are sex differences in Lp(a) and apolipoprotein levels in patients with type 1 and 2 diabetes. Women with type 2 diabetes are more susceptible to developing atherosclerosis in respect to men with type 1, but also in respect to women with type 2 diabetes.

PP-097
THE INFLUENCE OF ARTEMISIA ABSINTIUM L. EXTRACTS ON STABILITY OF HUMAN ERYTHROCYTES.

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Free radicals are constantly formed in the body during normal metabolic processes, and biological systems have evolved to live with them, control them and even utilize them. However, when their formation is greatly increased, or protective mechanisms compromised, a state of oxidative stress with result. Erythrocytes are a target of such damage, including itself and membrane lipids. The aim of this presented work is investigation of influence drug plant as anti-inflammatory natural antioxidant on level of lipid peroxidation and stability of erythrocytes. As biological target we used a both erythrocyte and lipid suspension obtained from human donor blood. As drug plant we investigated ethanol extracts with different percentages of Artemisia Absintium L. Our obtained results show that 96 per cent extracts of plant very quickly breaking off erythrocyte membranes and had low level antioxidant activity than 30 per cent ethanol extracts. A mathematical simulation of results allows us to solve the complete equations describing the stability erythrocyte membranes. The creation of such a model will be an important addition to the field of membrane lipid oxidation kinetics.

PP-098
EVALUATION OF TNF-ALPHA AND CRP AS INFLAMMATORY MARKERS IN DIABETIC COMPLICATIONS

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We aimed to investigate the levels of tumour necrosis factor alpha (TNF-alpha) and C-reactive protein (CRP) in type 2 DM subjects with end-organ damage. To restrict the influence of variables that could interfere in the interpretation of data, subjects with haemoglobinopathies, recent use of antibiotics, anti-inflammatory drugs, and trauma were excluded. Type 2 DM patients (n = 60; 34 female, 26 male; age 56.9±11.6 years; duration of diabetes: 94±92 months; HbA1c 8.86±2.66 %; Fasting Blood Glucose: 235.2±97.2 mg/dl) had higher levels of TNF-alpha, than control group (n = 17; age: 39.7±14.1 years) ($p<0.01$). But there was no significant difference in terms of CRP levels. When the patients were divided according to diabetic complications [nephropathy (50 %), retinopathy (42 %), ischemic heart disease (27 %), and peripheral artery disease (35 %)], the difference was borderline in CRP levels between diabetics with (n=25) and without (n=35) retinopathy ($p=0.058$). Even with the limited number of patients of the study it is suggested that TNF-alpha seems to be a better marker of inflammation for end-organ damage in diabetics.

PP-99
NITRIC OXIDE PATHWAY ALTERATION DUE TO PSYCHOLOGICAL STRESS IN HANDBALL PLAYERS

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Nitric oxide (NO) pathway may be modified by various factors, one of which is psychological stress. Stress-related periodontal disease has not been widely studied among competitive athletes who are frequently exposed to psychological stress. Thus, the aim of the present study is to determine the possible alterations in salivary arginase and NOS (NO synthase) activities and NO level in handball players in response to psychological stress prior to a derby.
A handball team consisting of 18 male players participated in the study. Saliva samples were obtained from the players both before a noncompetitive training session and just 30 minutes before an important derby. Psychological stress degree was tested by a stress questionnaire for athletes. Activities of NOS and arginase enzymes, NO levels were determined by spectrophotometric methods.
NO level and NOS activity were found to be increased, while arginase activity was found to be decreased in the saliva samples obtained just before the derby though not statistically significant.
It may be suggested that psychological stress induces NOS activity, which leads to an increase in NO production in saliva. Since arginase may compete with

NOS for the common substrate L-arginine, reduction in arginase activity may be due to an increase in NOS activity. Since psychological stress is known to be a risk factor for periodontal disease, altered NO metabolism in saliva may be the indicator or outcome of this pathological situation.

PP-100
PROTECTIVE EFFECT OF MELATONIN ON THE DNA DAMAGE IN AGED RAT BRAINS TREATED BY KAINIC ACID

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Excitoxicity is widely considered to be a contributing factor in neuronal death associated with a number of central nervous system (CNS) insults or disorders, including Alzheimer's disease, stroke epileptiptic seizures. Oxidative stress is a likely molecular mechanism in the neurotoxicity of kainic acid (KA). It is an excitatory neurotoxic substance and stimulates NMDA receptors that results in transmembrane ion imbalance, especially causing calcium influx, which in turn generates reactive oxygen species (ROS) such as H2O2, superoxide anion (.O2-) and the .OH. These ROS attack macromolecules within neurons, resulting in membrane lipid peroxidation, structural and functional changes in protein and DNA strand breaks.
The pineal hormone melatonin is of particular interest as it can prevent neuronal degeneration induced by neurotoxins such as KA. Considering melatonin's antioxidant role and the oxidative stress involved in the excitoxicity of KA, this study aimed to investigate the potential protective effect of melatonin in the aged rat brain cortex against KA treatment by measuring the levels of DNA damage using in vitro and in vivo methods including gel fragmentation analysis and Comet assay.
Our results showed that melatonin treatments (5-20 mg/kg) clearly attenuated rat brain cortex DNA damage triggered by KA. As a conclusion, usage of melatonin may be protective against CNS pathologies where oxidative damage may contribute to neuronal damage.

PP-101
INVESTIGATION OF NITRIC OXIDE AND eNOS GENE POLYMORPHISM IN PATIENTS WITH ESSENTIAL HYPERTENSION

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The study was performed on 119 patients (76 F, 43 M) with essential hypertension aged between 33-78 years and 89 healty controls (49 F, 40 M) aged between 41-73 years living in a central province (Konya) of Turkey.
Nitric oxide (NO) and endothelial nitric oxide synthase (eNOS) gene polymorphism were investigated on an overnight fasting blood samples. Smoking, alcohol drinking, hypertension, Diabetes Mellitus and family history of all cases were recorded.
NO was measured by Griess reaction whereas eNOS gene polymorphism was investigated by PCR-RFLP technique.
NO levels of the patients and the controls were found as 45,82 ± 25,36 and 41,44 ± 25,9 µmol/L respectively. The difference between NO levels of the was statistically significant ($P<0.05$).
We have found a polymorphism in intron 4 VNTR gene of both the patients and the controls but there was no significant difference between the groups. Also, intron 23 gene polymorphism was only GG in both groups.
We concluded that NO levels of the patients with essential hypertension was increased to provide an adaptation to hypertension but intron VNTR 4 or intron 23 gene plymorphysims were not significant in the pathogenesis of essential hypertension in patients living in Konya.

PP-102
CETP MASS DEPLETION AND OX-LDL ELEVATION ARE DETERMINANTS OF CORONARY HEART DISEASE IN PATIENT GROUP FROM TURKISH POPULATION

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There is increasing evidence that oxidative modification of low-density lipoprotein (LDL) plays a central role in atherogenesis and HDL cholesterol levels is negatively related to the risk of coronary artery disease. Previously, it has been shown that CETP is involved in the regulation of plasma HDL cholesterol levels. Although several mutations and polymorphisms in the CETP gene have been identified, the most studied polymorphism was Taq1B polymorphism which is consistently associated with HDL levels.
In the light of these data, we conducted a case control study in a young (<50 years) Turkish population (n=56) who had CAD to address whether there is a relationship between LDL oxidation and CETP mass according to CETP Taq1B polymorphism.
The patient group was evaluated in regard to the number of their risk factors (age, gender, smoking, history of myocardial infarction, hypertension, family history) for CAD. CETP mass levels were determined using a commercially available ELISA kit. Oxidative markers of LDL were determined along with the routine biochemical parameters in all groups. Following DNA extraction from the white cells, CETP Taq1B polymorphism was determined by PCR amplification and restriction enzyme digestion.
There was no statistical significance between B1B1, B1B2, B2B2 genotypes in the patient group in respect of BMI, waist-hip ratio and the biochemical parameters. Even though the HDL-cholesterol levels were higher in B2B2 genotype, there was no significance in comparison to the control group. CETP mass levels showed a statistically significant depletion in patients compared to controls. There was a negative correlation between the CETP mass levels and the number of risk factors (r= - 0.454, p<0.01, Pearson correlation test).
The data from this study demonstrated that the indicators of LDL oxidation and oxidative stress are increased and CETP mass levels, in turn are decreased in patients. We propose that the depletion in CETP mass levels together with an elevation in LDL-TBARS levels might be a determinant of atherosclerosis for young patients who have various risk factors.

PP-103
EVALUATION OF OX-LDL AND PON1 IN REGARD TO PON192 POLYMORPHISM Ä°N YOUNG PATIENTS WITH CORONARY HEART DISEASE

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Since recent data showed that there may not be direct interaction between the Well-known risk factors and the occurrence of coronary heart disease CHD in young patients, many investigations have focused on the various genetic markers such as CETP, PON etc. There is a great deal of conflicting reports on the role of PON1 activity polymorphism on the risk of cardiovascular disease. Recently it has been proposed that there is a relationship between the CHD and PON1-55 L or PON1-192 R alleles. On the other hand recent publications showed that there are major differences in PON1 activity and concentration between the different populations. We aimed to investigate LDL oxidation markers and PON activities (paraoxonase, arylesterase and thiolactonase) in regard to PON192 polymorphism, in order to determine if they might be useful markers for coronary artery disease in especially young with CHD in a Turkish population.
60 consecutive patients (38.1 ± 5.0 years) with CHD and 52 healthy control subjects (32.5 ± 6.1years) were taken into study. Total cholesterol, triglyceride, basal LDL-diene and stimulated LDL-TBARS levels were higher and paraoxonase activities were lower in patients with CAD than the control subjects (p<0.001). While there was no difference in all parameters within control group in regard to polymorphism, stimulated LDL-TBARS levels were higher in patients with RR polymorphism (5,27 ± 2,4 nmol/mg LDLprotein vs. 3,64 ± 1.28 in QR and 4,95 ± 2,8 in QQ). RR polymorphism was more common in patients group than the controls but not statistically significant.
Our data suggest that presence of RR polymorphism might be a useful predictive marker for determination of atherosclerosis in early ages.

PP-104
GENETIC AND PROTEIN PROPERTIES OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE OF HATAY-ALTINOZU REGION BY MICROARRAY TECNIQUES

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Glucose-6-phosphate dehydrogenase (G6PD, EC 1.1.1.49) is an X-linked enzyme that catalyses the first and the rate-limiting step in the pentose phosphate pathway. Over 150 different G6PD variants have been described in the world and it seems that G6PD Mediterranean (563 CÆT) was the commonest deficient variant in the Turk population. In tis study we investigated proteine and genetic properties of the cases with G6PD deficiency in Altınözü-Hatay region. In erytrocytes G6PD protein was isolated and partially purified by using DE-52 anion exchange choromatography. In protein properties was studied as the Km G6P, NADP values, utilization rate of NAD, dNADP, Gal6P, 2dG6P from substrate analogs and pH, heat stability. The genotypes of these cases were determined with using microarray tecniques as a resuls eleven samples were determined to be Gd-Mediterranean type.

PP-105
OXIDATIVE STRESS PARAMETERS OF PREGNANT RATS AND FETUSES IN CADMIUM INTOXICATION: INTERACTIONS OF CUPPER SUPPLEMENTATION

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Objective: Cadmium is an industrial and environmental pollutant that was shown to be involved in the development of some diseases. Oxidative stress has been proposed as the most important mechanism of toxic action of cadmium in many organs of the body including liver, kidney, placenta, heart, spleen. We aimed to determine whether cupper supplementation could have a protective effects against the cadmium intoxication in mother rats and their fetuses in this study.
Methods: Experiments were performed on 27 adult female Wistar albino rats divided into 3 experimental groups with 9 in each. CdCl2 was given daily to the first group, CdCl2 plus CuSO4 in drinking water were given daily to the second study group and only drinking water was given to the control group which their pregnancy status was approved respectively during pregnancy (21 days). We measured cadmium (Cd), malondialdehyde (MDA), reduced glutathione (GSH), myeloperoxidase (MPO), superoxide dismutase (SOD) and catalase (CAT) levels in dams' liver, dams' kidney, fetus liver, fetus kidney, and placenta of rats.
Results: In all tissues of cadmium and cadmium+cupper groups, Cd levels were found to be increased significantly, when compared to control group. The MDA levels, MPO activities significantly increased and GSH levels, activities of SOD and CAT significantly decreased in cadmium groups when compared to control group. While cupper supplementation, significantly reversed the MDA levels and MPO activities back to control levels or below than control levels. Supplementation with cupper significantly increased these cadmium-induced reductions in GSH levels and SOD activities to control levels or higher than control levels. Increasing of CAT activities in cupper supplementation were enough to reach back to the control levels in some tissues.
Conclusion: Our data showed that cupper supplementation can reduce cadmium-induced oxidative stress level of pregnant rats and fetuses.

PP-106
WITHIN THE FRAMEWORK OF ACCREDITATION PRACTICES, DETERMINING THE RATE OF HEMOLYSIS

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The quality of laboratory testing is closely related with the laboratory errors. It is known that a large percentage of laboratory errors occur in the pre-analytical phase. (% 46–68.2). Within the framework of accreditation practices of our laboratory, the aim of this study is to register the hemolyzed samples, which arise as the most frequent sample rejection criteria of the pre-analytical phase, and for quality improvement initiatives to calculate the performance measures based on these registrations as being an objective criteria of

performance evaluation.
During the 3 months period, the hemolyzed samples determined within all blood specimens collected for the routine chemistry analysis are registered daily. Total ratio and proportional ratio of departments, of hemolyses are calculated based on these registers. The total hemolysis ratio determined in 21851 blood specimens was %1.69. It was %0.23 for 16076 blood specimens of outpatients, whereas it was determined %5.75 for 5775 inpatients.
For being accredited and for proving quality assurance, there is a need for better definition of laboratory errors and their causes, through all phases of analysis as pre-analytical, analytical and post-analytical, and to set up a strategic plan for improvement. The data obtained from this study in sigma metrics will be used as basic performance measures for quality improvement initiatives which later will be helpful for evaluating the error reduction.

PP-107
DATA MANAGEMENT IN CLINICAL LABORATORIES

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Clinical laboratories are information centers of health care organizations. Silverstein et al. had declared that 70% of all medical decisions are based on laboratory results. In this context, clinical laboratories produce invaluable data for determination of organizational and national health care policy.
There are studies which utilize the laboratory test results, such as the estimation of reference intervals; the quality control with the patient test results (The Average of Normals Procedure). The data management of clinical laboratory results also gives the statistical information about the quality of health care services including the organizational and national health technology assessment and health policy if it is organized carefully together with the software of laboratory information system.
In this study, we aimed to introduce our new laboratory data management system developed at the Uşak State Hospital in Turkey, and to discuss the usage of this data management software could be used throughout Turkey for collecting laboratory data in order to assessment of health care services.

PP-108
OXIDANT/ANTIOXIDANT STATUS OF PLASMA SAMPLES IN THE VARICELLA INFECTED CHILDREN

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The aim of the study was to investigate plasma oxidant and antioxidant status in Turkish children with varicella infection. The study population consisted of 29 patient with varicella infection (group I) and 20 age-matched children (group II) who were apparently well, with weight-forage >80% of the standards from the same region. After overnight fasting, venous blood samples were drawn and immediately transferred to heparinized tubes. Plasma vitamin A and malondialdehyde levels measured in both groups. The plasma malondialdehyde (MDA) levels were higher in the patients than control group. However, plasma vitamin A values had no significant differences between groups. The present study suggests that oxidant stress is increased due to an impaired antioxidant system in the plasma of infected patients. This oxidant stress causes significant peroxidation. We suggest that antioxidant supplementation may be useful for this patient group during infection period.

PP-109
INVESTIGATION OF Na+/K+ATPase ACTIVITY AND C-PEPTIDE LEVELS IN TYPE 2 DIABETIC PATIENTS

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Na+/K+-ATPase activity is impaired in the cell membrane of many tissues obtained from diabetic inviduals or animals and this defect may play a role in the development of the complication of diabetes. Recently, several investigators have shown that C-peptide administration exercised some beneficial effects in humans or animal affected by insulinopenic diabetes. Among these effects, a stimulation of Na+/K+-ATPase activity in various tissues has been described. Several findings suggest that C-peptide

level is correlated with RBC's Na+/K+-ATPase activity. We measured Na+/K+-ATPase activity and C-peptide levels in type 2 diabetic neuropathy. Na+/K+-ATPase activity was significantly lower in Tip 2 diabetic patients than in the control group (1,13 ± 0,45 vs 2,47 ± 1.30 mmol Pi.mg.protein–1.10 min-1, p=0.000). C-peptide levels were higher in Tip 2 diabetic patients than in the control group (2,11 ± 1,19 vs 1,51 ± 0,44 ng/ml, p= 0,002). There wasn't correlation between enzymatic activity and C-peptide levels.

PP-110
CIRCULATING ADIPONECTIN, ICAM-1 AND VCAM-1 LEVELS IN HAEMODIALYSIS PATIENTS WITH OR WITHOUT TYPE 2 DIABETES MELLITUS

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Adiponectin is a protein secreted by adipose-tissue. Recently, relationship between adiponectin and obesity, insulin resistance, hypertension, metabolic syndrome, inflammation, atherosclerosis and type 2 diabetes was intensively researched. The aim of the present study is to investigate serum adiponectin, ICAM-1, VCAM-1 levels in haemodialysis and type 2 diabetic patients. Sixty cases were included in the study and they were divided into four groups. Group 1: the control group (n=15), group 2: patients with type 2 diabetes (n=15), group 3: patients undergoing haemodialysis (n=15) and group 4: patients with type 2 diabetes and undergoing haemodialysis (n=15). Adiponectin, ICAM-1 and VCAM-1 levels were assessed by ELISA method. We found that adinopectin levels were significantly lower but ICAM-1 levels were significantly higher in the diabetic group than the control group. In the patients with undergoing haemodialysis and undergoing haemodialysis with diabetes, adiponectin, ICAM-1, VCAM-1 levels were significantly higher than the control patients. In addition adiponectin; ICAM-1, VCAM-1 levels were significantly higher in the haemodialysis and diabetic haemodialysis groups than the type 2 diabetic group. In the patients undergoing haemodialysis with type 2 diabetes VCAM-1 levels were significantly higher than the patients only undergoing haemodialysis. As a result, we consider that adiponectin might help prevent atherosclerosis and cardiovascular diseases, the most important complications of type 2 diabetes and haemodialysis. We also consider that, adiponectin can be used in treatment, due to its anti-hyperglycemic, anti-atherogenic and anti-inflammatory features. We suggest that biochemical mechanisms of adiponectin should be further investigated before it can be a candidate as a therapeutic agent.

PP-111
THE EFFECT OF COLCHICINE ON ANTIOXIDANT SYSTEM IN HEPATOCELLULAR CARCINOMA

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Hepatocellular carcinoma (HCC) is representing the third largest cause of cancer related death and the incidence in the world has increased during the past two decades. Colchicine is an ancient drug, widely use in the treatment of many disorders. Increased neutrophil functions and excessive production of reactive oxygen species (ROS) were claimed some of these diseases that colchicine is used for treatment.
In this study we aimed to investigate the effect of colchicine on antioxidant system and malondialdehyde (MDA) in HCC. Thus, we developed an experimental HCC model by using N-nitrosodiethylamine (DEN). We administered colchicine (40µg/bwt) to rats 3 times a week with DEN application and after liver tumor formation.
The enzyme activity of glutathione peroxidase (GSH-Px) and level of reduced glutathione (GSH) were assayed according to Beutler methods. Superoxide dismutase (SOD) enzyme activity and MDA content were assayed according to Mc Cord and thiobarbituric acid methods, respectively. In addition ALT, AST, ALP and total protein were determined. Histopathologic investigations were performed with light microscopy.
The colchicine inhibits formation of HCC but it is not related to the antioxidant defense system. However, colchicine treatment after the formation of HCC increases the mortality rate. Inview of these results, it can be concluded that suppressing effect of colchicine on HCC is affected by some other defense systems apart from antioxidants.

PP-112
EFFECTS OF ALPHA-LIPOIC ACID ON ANTIOXIDANT ENZYMES IN CHRONIC HYPERHOMOCYSTEINEMIA INDUCED RATS

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The increase in plasma homocysteine (Hcy) levels is an important risk factor for cardiovascular diseases through free radical production and several other mechanisms. On the contrary, α-lipoic acid (α-LA) is a strong, therapeutic antioxidant with treatment potential in many diseases especially related with oxidative stress. In this study, the effects of Hcy on oxidant-antioxidant systems in chronic hyperhomocysteinemia (hHcy) induced rats and how α-LA would change these effects were aimed to be investigated.
A total of 45 male Wistar albino rats weighing 200-250 g were used in the study and rats were divided into 3 groups. Group 1 (n=15, control group; 1 ml/kg intraperitoneal saline for 6 weeks); Group 2 (n=15, hHcy group; 1 ml/kg i.p. saline and 1 g/kg/day L-methionine in tap water for 6 weeks); Group 3 (n=15, hHcy+LA group; 1 g/kg/day L-methionine in tap water and 100 mg/kg/day α-LA i.p. for 6 weeks). After 6 weeks, rats were decapitated; blood samples were obtained for measurement of plasma Hcy and Malondialdehyde (MDA) levels and erythrocyte antioxidant enzyme activities (GSH-Px, CAT, SOD).
Plasma Hcy levels were significantly higher in Group 2 (19.35±5.86 mmol/L), compared to Group 1 (6.58 ± 0.84 mmol/L) and Group 3 (8.59±1.41 μmol/L) ($p<0.001$). Plasma MDA levels were also significantly higher in Group 2 compared to Group 1 and Group 3 ($p<0.001$). However the differences in plasma MDA and Hcy levels between Group 1 and Group 3 were not statistically significant ($p>0.05$). Erytrocyte GSH-Px activities were significantly lower in Group 2 compared to Group 1 ($p<0.001$) and Group 3 ($p<0.05$). Erytrocyte CAT activities were also significantly lower in Group 2 compared to Group 1 ($p<0.05$). There was no significant change in erythrocyte SOD activities between groups ($p>0.05$).
In conclusion; a powerful antioxidant α-LA decreased plasma Hcy and MDA levels and increased erythrocyte CAT and GSH-Px enzyme activities in chronic hHcy-induced rats.

PP-113
RELATION OF SERUM VITAMIN D LEVELS IN NEWBORNS WITH ACUTE LOWER RESPIRATORY INFECTION AND THEIR MOTHERS

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AIM: To determine serum 25(OH)D vitamin status in newborns with acute lower respiratory infection (ALRI) and their mothers.
MATERIAL AND METHODS: The study group consisted of 25 newborns with ALRI who admitted to neonatal intensive care unit and their mothers. Controls were healthy newborns at same age with study group and their mothers.A commercial radioimmunoassay kit (Bio SOURCE, Nivelles-Belgiuege) was used to measure 25(OH)D vitamin in serum for assessing vitamin D status in newborn and their mothers.
RESULTS:There was no significant statistical difference between study and control groups in gestational week, birth weight, birth height, head circumference, age, and gender. In both the control and study groups, the mothers attended prenatal clinics fairly low and did not take sufficient vitamin D supplements. The study group newborns in average 8.77 ± 2.66 days were hospitalized.
Mean serum 25(OH)D vitamin levels of newborns were lower in the study group suffering from ALRI than in the control group (9,12±8,88 ng/ml and 16,33±13,42 ng/ml, respectly) (p=0,011). Also mean serum 25(OH)D vitamin levels of mothers were lower in the mothers of the study group than mothers of the control group.(13,38± 16,81 ng/ml and 22,79±16,93 ng/ml respectly) (p=0,012).In 87.5% of all newborns and 67.5% of all mothers serum 25OHD level was lower than 20 ng/ml. The vitamin D level of newborns was highly correlated with mothers' serum D vitamin levels.
CONCLUSION: Our findings suggest that subclinical vitamin D defficiency in newborns is one of the significant risk factors for ALRI. Also, our study shows that high Vitamin D insufficiency in mothers is an important health problem in our country. The strong positive correlation between newborns and mothers vitamin D levels shows that D vitamin supplementation of mothers should be emphasized during pregnancy.

PP-114
EFFECT OF TNF-? GENE POLYMORPHISMS ON SERUM LDL-CHOLESTEROL AMONG KOREAN OVERWEIGHT FEMALE SUBJECTS

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Objective : In this study, we assessed the association of four TNF-α polymorphisms located at promoter region with serum total cholesterol levels and atherogenic indexes among 416 Korean overweight female subjects. Material and method : The subjects in this study were recruited from the Women's Health and Obesity Clinic at the Kirin Oriental Medical Hospital (Seoul, Korea). Average age was 29.72 year and BMI was 28.81. Subjects with diabetes, hypertension and liver/renal function disorders were excluded. Serum biochemical profiles were determined with an autobiochemical analyzer. Genotyping of four single nucleotide polymorphisms (SNPs) in TNF-α, -863C/A, -857C/T, -308G/A, and -238G/A, were performed by SNpshot method. Result: Among four SNPs, -238G>A were significantly associated with increased LDL-cholesterol levels after Bonferroni correction (p=0.015 in dominant model). This SNP was also significantly associated with total cholesterol and Atherogenic index in dominant model (p=0.037 and 0.027, respectively). Other biochemical profile including serum HDL-cholesterol and triglyceride was not associated with any SNPs. Source-of-variation analysis revealed that -238G>A SNP explained 6.00% of the variation in serum HDL-cholesterol levels independent of BMI. Conclusion: Our results may provide clues to the association of TNF-α genes with the risk of atherosclerosis through their effects on LDL-cholesterol.

PP-115
HEMOGLOBIN-? SUBUNIT: A POTENTIAL SERUM BIOMARKER FOR THE DIAGNOSIS OF STROKE

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Objective : The objective of this study was, then, to identify potential diagnostic serological biomarkers for stroke. Material and method : Forty-five sera were obtained from small vessel occlusion (SVO) patients (n = 33) and normal healthy subject (n = 64). Identification of differentially expressed proteins were performed using SELDI protein chip array and the candidate biomarkers were purified by Q-10-Sepharose. Identification of the candidate biomarkers were identified by MALDI-Tof. Level of hemoglobin-α in stroke patient's sera versus normal sera was measured by western blot. Result: Twenty five sera proteins that were found to be significantly differentially expressed ($P < 0.05$) between the sera of ovarian cancer patients and that of normal healthy subjects were selected using the Q-10 array. The most distinctive polypeptide peaks detected in stroke samples were at 15.1 and 15.8 kDa and these two peaks were identified as the hemoglobin-alpha (Hb-α) and –beta (Hb-β) chain, respectively. Western blot indicated that hemoglobin-α was highly expressed in stroke patient's sera compared with normal subjects. Expression level of hemoglobin-α was not increased in sera of subject with obesity, diabetes, hyperlipidimia and hypertension. Conclusion: Hemoglobin-α levels were significantly increased in stroke serum samples and it may be used a biomarker for diagnosis of stroke. Additional studies are required to further validate Hb-α biomarker.

PP-116
RELATIONSHIP BETWEEN MEAN PLASMA GLUCOSE AND HEMOGLOBIN A1C

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INTRODUCTION: The ADA/EASD/IDF Working Group has been studying to explore the mathematical relationship between mean plasma glucose (MPG) and HbA1c. Our aim is to determine relationship between mean plasma glucose (MPG) and HbA1c obtained from our six-month project on the determination of the status of patients with Diabetes Mellitus.
METHOD: We measured plasma glucose levels (both fasting and postprandial) monthly, and HbA1c values (in third and sixth months) of patients with Type 1 diabetes mellitus in six-month period at two different hospital laboratories (n=35 and n=46). Relatonship between MPG and HbA1c was evaluated. The mean plasma glucose levels were calculated by means of regression equations proposed by Diabetes Complication and Controls Trial (DCCT). The calculated mean plasma glucose values were compared with the measured values (paired t-Test).
RESULTS: The relationships between MPG and HbA1c were found as MPGfast+postp(mmoL) = 1,444x(HbA1c “IFCC”)+2,61; n=45; r=0,771 (p=0,0001), and MPGfast+postp(mmoL) = 0,681x(HbA1c “DCCT”)+3,850; n=34; r=0,433 (p=0,009) at two different hospital laboratories. There were not statisticaly significant difference between the MPG calculated according to the equation provided by the DCCT Group and MPG measured in our study.
DISCUSSION: It seems that there is strong relationship between MPG and HbA1c. But further studies and confirmations are needed.
Key Words: Diabetes mellitus, HbA1c, mean blood glucose

PP-117
A HEMORRHAGIC SHOCK RESUSCITATION MODEL FOR STUDY OF DIFFERENT FLUID REGIMENS EFFECTS ON KIDNEY

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Background:Hemorrhagic shock is one of the major causes of preventable death following trauma. Arginine has various metabolic roles as precursor for synthesis of NO, urea, polyamines, proline, glutamate, creatine, agmatine and proteins. Its cleavage to ornithine and urea, has important part in the urea cycle, is catalyzed by arginase. Since urea is excreted via kidney, we studied the effect of different fluid resuscitation on the kidney arginase activity by a splenic injury model of uncontrolled hemorrhagic shock.
Methods:40 rats were divided into 4 groups. In group1; splenic injury was untreated, in group2 was treated with 70 ml/kg/hour Ringer Lactate solution (RL), in groups 3 & 4 with 7.5 ml/kg/hour Hydroxyethyl Starch & Hypertonic Saline respectively between 15 and 30 minutes of injury. In all groups, splenectomy was performed at the 30th min. Hemodynamic monitoring and anesthesia were continued up to 90 min. After 48 hrs of survival, kidney tissue samples were removed.
Results:Different fluid regimens were found to have no effects on hemodynamic parameters at the hemorrhagic shock. RL decreased kidney arginase activity (25.83±8.55 U/mg prot) compared with control group (41.81±10.77 U/mg prot, p<0.02) and other groups. (42.93±12.41, 41.35±9.39 U/mg prot in groups 3 and 4 respectively, p<0.05). Unlike RL, groups had no statistical differences at arginase activities comparing to controls.
Conclusion:Results of the study indicates that RL might resolve the kidney functions.

PP-118
USE OF ANALYTICAL PROCESS SIGMA-METRICS AND THE PATIENT TEST RESULTS FOR TOTAL CLINICAL LABORATORY PERFORMANCE

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Background: The total clinical laboratory performance can be determined by evaluating the sigma levels of analytical processes calculated from internal quality control (IQC); External Quality Assessment (EQA) Scheme and the patient test results. In this context, a method was established for comparison of monthly performances of a Clinical Biochemistry Laboratory. Aim: Determine whether our method is practicable. Methods: The analytical process sigma level of each analyte [Alb, ALP, ALT, AST, Bil (D), Bil (T), BUN, Ca2+, Chol (T), CK, Cl-, Creat , GGT, Glu, K+, LD, Mg, Na+, P (In), Prot (T), TG, UA] was estimated from monthly IQC data and EQA result according to the Six Sigma Methodology. All analytes were categorized according to their analytical process sigma metrics. According to the Average of Normals (AON) approach, the CV% of the population of patients in the 95% central region was estimated (CVpop) for each analyte, and the expected CV was also calculated from equation, CVtot2 = CVpreA2 + CVA2 + CVI2 + CVG2. All analytes were categorized on the basis of their CVpop/CVtot ratios, and were evaluated in the 3x3 box according their sigma-metrics and CVpop/CVtot ratios. Which phases were responsible for errors or defects were determined.
Conclusion: We decided that this approach can be useful for the assessment of total laboratory performance on monthly basis, and predicts the quality of preanalytical process; the reagents and the control materials used for IQC.

PP-119
MEMBRANE CHANGES OF PATIENTS WITH HEMOLYTIC ANEMIA

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The red cell membrane is composed of protein, lipid and carbohydrate and so has a complex structure. The structural defect and the deficiency of protein effects the membrane stability and flexibility cause hemolytic anemias. In this study, we investigated membrane defects of patients with hereditary spherocytosis. The hematological data has been studied by coulter analysis and then osmotic fragility tests have been performed to all cases. The ghosts were prepared from the erythrocytes according to Dodge method and the membrane proteins were separeted by % 8,3 SDS-PAGE and read with Cliniscan dansitometer. We studied the blood sampels of 53 cases with hereditary spherocytosis and their families as a subject group, 42 cases with normal hematologic data as a control group. We found that one membrane protein deficiency of 19 cases and combine membrane protein deficiency of 2 cases on the other hand 32 cases were normal erythrocyte membrane proteins level in subject group.
Key words: Erythrocyte, hereditary spherocytosis, membrane protein

PP-120
REFERENCE INTERVALS FOR TSH, FREE T3, FREE T4 IN A GROUP OF HEALTHY INDIVIDUALS OVER 39 YEARS-OLD

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Background: Reliable reference ranges are important in the interpretation of laboratory data. Serum concentrations of the thyroid hormones show a clear age dependency. The objective of this study was to establish reference intervals for thyroid stimulating hormone (TSH), free thyroxine (FT4), free triiodothyronine(FT4) for the healthy individuals over 39 years old. There are not so much published studies for this healthy age

group in our population.
Methods: Serum samples were obtained from apparently healthy adults mean age 51,7±9,2 (n=240, age range 40-81 years), 120 female and 120 male. We made direct sampling for the individuals from check-up outpatient clinic. Individuals were asked to fill a standardized questionnaire on the day of sample collection. TSH, free T3, free T4 levels were measured by an immunoluminometric assay on a random-access analyzer(Architect i2000; Abbott). During the determination of the reference intervals, parametric and non-parametric methods were applied.
Results: The reference intervals for the group were for TSH 0.31-4.38 uIU/mL, for FT4 0.59-1.43 ng/dL, for FT3 1.98–3.62 pg/mL. FT4 concentrations were similar in females and males(p>0.05). However, FT3 and TSH levels exhibited significant differences between females and males(p<0.05).
Conclusions:The reference intervals determined in this study differ from values found in other countries and the prospectus information of expected values. This may underline the need for population, age, sex specific reference ranges. Our results may be beneficial for the future studies in our population.

PP-121
THE EFFECTS OF ATORVASTATIN AND MELATONIN TREATMENT ON VASCULAR HISTOLOGY IN STREPTOZOTOCIN INDUCED DIABETIC RATS

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Oxidative stress and dyslipidemia play an important role in the development of diabetes-induced vascular complications. The aim of this study was to examine the reversal effects of atorvastatin (AT) and melatonin (MT) on vascular reactivity and structure of aorta, heart and kidney in diabetic rats.
Diabetes was induced by a single injection of streptozotocin (STZ, 55 mg/kg, i.p). Six weeks after STZ induction, rats were treated with AT (8 mg/kg/d) with or without MT (10mg/kg/d) for 14 days. Rats were divided into five groups: control group (CR), STZ-induced diabetic rats group (STZ), STZ+AT group, STZ+MT group and STZ+AT+MT group. Aorta with heart were removed and fixed in formalin for changes in vascular structure which were determined by histology, immunohistochemistry (TGF-beta1, NOS and TUNEL) and morphometry. Microscopic examination of vascular structure of aorta, heart and kidney revealed that normal tissue organization was disrupted in STZ-diabetic rats, and that treatment with AT+MT can protect the morphological integrity of vascular histology against STZ-diabetes. TUNEL confirmed that apoptosis had occurred in the vessels from STZ-diabetic rats. Increase of vascular expressions of TGF-beta1, NOS and TUNEL were reduced AT+MT.
The results suggest that in STZ-induced diabetic rats, the protective action of AT and MT for the vascular integrity might be mediated, at least in part, by their effect on oxidative stress. Synergistic effect of AT and MT may ameliorate diabetes-induced abnormal vasoconstriction and endothelial dysfunction via affecting general and oxidizing metabolism, nitric oxide disability to protect vascular structure of aorta, heart and kidney from oxidative lesion which probably cause of apoptosis.

PP-122
UNCERTAINTY OF MEASUREMENT FOR ETHANOL IN CLINICAL CHEMISTRY

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Introduction: The uncertainty of a measurement is a parameter associated with the result of a measurement, that characterises the dispersion of the values that could reasonably be attributed to the measurand. It also shows how much the result represents the real value. Uncertainty of measurement comprises, in general, many components. The purpose of this study was to estimate a type A and B of uncertainty in the analysis of ethanol using alcohol dehydrogenase method and prove it to be useful in laboratory practice.
Material and Method: Repeatability, uncertainty of reagent, uncertainty of calibration drift and uncertainty of serum stability for ethanol were calculated. After all these standard uncetainty values was estimated, the combined standard uncertainty was founded. Expanded uncertainty was obtained by multiplying the combined standard uncertainty by a coverage factor k. For an approximate level of confidence of 95%, k is 2.
Results: According to the formula of unknown test result (X), uncertainty of measurement for ethanol was founded X±0,056X (%95,k=2). e.g. uncertainty was ±5,6mg/dl for 100 mg/dl etanol concentration.
Discussion: All institutions that have accreditation, must calculate the uncertainty of measurement for every parameter. The uncertainty of a measurement reflects reliability of a result. Every error sourses that can affect the result during preanalitical, anatical ve postanalitical stages must be determined and it must be given as a uncertainty value. Some of these components may be evaluated from the statistical distribution of the results of series of measurements and can be characterised by standard deviations. The other components, which also can be characterised by standard deviations, are evaluated from assumed probability distributions based on experience or other information. According to this study, physicans must evaluate given result on desicion limit taking into account the uncertainty of measurement.

PP-123
ROSIGLITAZONE REDUCES GLUCOSE-INDUCED OXIDATIVE STRESS via AMPK-DEPENDENT MECHANISM

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Objective: Thiazolidinediones, such as rosiglitazone (RSG), are insulin-sensitizing drugs which reducing oxidative stress with mechanisms not completely defined. Aim of our study was therefore to determine the effects of RSG on the production of reactive oxygen species (ROS) induced by high glucose in human umbilical vein endothelial cells (HUVEC) and the relative contribution of peroxisome-proliferator–activated receptor (PPAR-γ and 5'-AMP-activated protein kinase (AMPK) to this effect.
Methods: HUVECs were grown to 5mM or 10mM glucose for 48h with or without RSG (20 μM). Intracellular ROS production was assessed using specific probe, Tempo-9-AC, by fluorescence microscopy. AMPK activation was determined by immunoblotting. Gene silencing of AMPK was performed by specific synthesized siRNA for AMPK.
Results: We found that 10 mM glucose increased significantly ROS production in comparison with 5 mM glucose, and that this effect was completely abolished by RSG. Incubation of cells with RSG increased AMPK phosphorylation by 3 fold in comparison to untreated cells. When the cells grown at 10 mM glucose were incubated with GW9662 (2μM, 48h), a specific PPARγ inhibitor, the inhibitory effect of RSG on glucose-induced ROS production was still observed, while it was abolished in the transfected cells with siAMPK.
Conclusions: This study demonstrates that RSG activates AMPK which prevents the production of ROS induced by high glucose with a PPARγ independent mechanism.
Key words: rosiglitazone, peroxisome-proliferator–activated receptor (PPAR-γ 5'-AMP-activated protein kinase (AMPK)

PP-124
CD154 PLASMA LEVELS IN PATIENTS WITH PRIMARY BILIARY CIRRHOSIS

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CD154, type II membrane glycoprotein, member of the tumor necrosis factor family was originally identified on cells of the immune system (activated CD4+ cells, mast cells, basophils, eosinophils, and natural killer cells). It is also expressed on non-hematopoetic cell types. The original function of CD154 in T-cell dependent humoral immunity involved the activation and differentiation of B lymphocytes, the switching of immunoglobulin classes, and the formation of germinal center and memory cells. It also triggers the expression of the pro-inflammatory mediators, such as cytokines, adhesion molecules and matrix degrading activities. Because primary biliary cirrhosis (PBC) is characterized by targeting of small intrahepatic bile ducts by autoreactive T cells, plasma soluble CD154 (sCD154) levels were determined in 17 patients with PBC (mean age 62) and 17 age-matched healthy controls, using commercially available enzyme-linked immunosorbent assay (ELISA) (Bender MedSystems Vienna, Austria). There was no significant difference in plasma concentrations of sCD154 between patients and controls (p>0.05). No correlation between age and plasma levels of sCD40L could be identified (p>0.05). It can be concluded that PBC patients do not exhibit higher CD154 plasma concentrations than age-matched controls, a finding common to several autoimmune diseases.

PP-125
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ABSTRACT AÇILMIYOR.

PP-126
CONGENIALITY OF A FULL AUTOMATED REVERSED ENZYME ALLEGRO SORBENT TEST WITH SKIN PRICK TEST

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The skin prick test has been used as a standard method in "allergy" diagnosis for several decades in clinics around the world. It is a fast and precise method for revealing IgE-mediated allergen hypersensitivity. The characteristic trait for Type I allergies is the involvement of allergen specific immunoglobulins of class. Hence, the detection of specific IgE is an important tool of recent allergy diagnostics. The development of new assays for determination of allergen-specific IgE should be optimized with respect to analytical sensitivity, precision, automation, and reporting of test results in mass units. In this study the sensitivity and reliability of "specific IgE" test using the Reversed Enzyme Linked Allergo Sorbent Test (REAST) method was compared with the skin prick test.

In 29 atopic subjects, skin-prick testing to 11 common allergens was performed, and specific IgE to the same allergens was assessed by the REAST by Dr.Fooke reagents by full automated ELISA.

Sensitivity (89%) and specificity (98%) of the REAST results as a predictor of skin prick test reactivity towards common allergens were remarkably high in the series of 29 patients's serum samples.

We conclude that the REAST combined with full automated ELISA represents a useful tool for the detection of specific IgE, especially under the conditions where skin tests can not be performed.

PP-127
THE RELATIONSHIPS BETWEEN SEX HORMONE LEVELS AND LIPID PROFILE IN MEN WITH CORONARY ARTERY DISEASE

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The prevalence of coranary artery disease (CAD) is much higher in men than in women and sex hormones might play a role in these differences through their influence on the lipid profile. However, the role of endogenous sex steroids for the relationship between male gender and cardiovascular risk remains unclear. The aim of this study was to evaluate the relationships between serum levels of several sex hormones and lipid profile in the men with CAD.

We determined serum total testosterone (TT), free testosterone (FT), estradiol (E2), SHBG, total cholesterol, triglyceride, HDL- cholesterol (HDL-C), LDL-cholesterol (LDL-C) in 46 male patients with angiographically-defined stable coronary artery disease and in 30 healthy and age -matched controls. Levels TT/E2 ratio and free androgen index (FAI) were calculated.

The patients with CAD presented significantly increased values of total cholesterol, triglyceride, LDL-C levels and SHBG ($p= 0.01$, $p= 0.001$, $p= 0.02$, $p= 0.001$ respectively) and decreased values of HDL-C, FT, TT/E2 ratio and FAI with respect to the control group ($p= 0.03$, $p= 0.009$, $p= 0.03$, $p= 0.001$, respectively). Serum TT levels were also lower in patients group compared with control subjects but the difference was not statistically significant ($p>0.05$). The correlations between hormone levels and metabolic parameters were also calculated. Serum concentration of TT ($p= 0.001$, $r= 0.408$) were associated positively with HDL-C.

The results in the present study suggest that low plasma TT level may be a risk factor for CVD, which may relate to the influence of plasma lipoprotein metabolism.

PP-128
THE EFFECT OF L-NAME APPLICATION ON NO LEVELS AND NA/K ATPASE ACTIVITIES OF DIABETIC RATS TREATED WITH INSULIN

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In the present study, effect of NG-nitro-L-arginine methyl ester (L-NAME) on serum levels of nitric oxide (NO), triglyceride (TG), cholesterol (C), high density lipoprotein (HDL) and erythrocyte membrane Na/K ATPase activity were determined in type 1 diabetic rats treated with insulin. Forty male Wistar rats were divided into five groups: group 1, control (standard diet); group 2, diabetic control (single dose of 65 mg/kg of streptozotocin (STZ), ip); group 3, STZ+Insulin 8 IU/kg/day s.c.; group 4, STZ+L-NAME 5 mg/kg/day orally; group 5, STZ+Insulin+L-NAME. At the end of the 4 weeks serum NO, TG, C and HDL levels and erythrocyte membrane Na/K ATPase activity were measured. Blood glucose, TG and C were elevated and serum HDL, NO levels and erythrocyte membrane Na/K ATPase activity were decreased in diabetic rats compared with control. L-NAME application lowered serum NO and erythrocyte membrane Na/K ATPase activity while it increased serum TG and C values in STZ+L-NAME group compared with control. Serum HDL level was lower in diabetic control and STZ+L-NAME groups. There were no significant differences in serum TG and C levels in STZ+Insulin group compared with control. Our data showed that similar to insulin, its effect on Na/K ATPase activity also restore the impaired serum NO and therefore is effective in ameliorating hyperglycemic condition in diabetic rats.

PP-129
RESISTIN AND ADIPONECTIN LEVELS IN PATIENTS WITH CORONARY ARTERY ECTASIA AND CORONARY ARTERY DISEASE

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Coronary artery ectasia (CAE) is the abnormal enlargement of the coronary artery. The pathophysiology, prognosis and treatment of CAE remains largely unknown, therefore understanding of this entity needs to improve. Recent data have shown that CAE is associated with inflammatory response presented as elevated inflammatory cytokines. The objective of this study was to evaluate inflammatory cytokines in patients with CAE and coronary artery disease (CAD). All patients underwent coronary angiography. We measured serum adiponectin and resistin levels in 24 subjects with CAE and CAD compared to 12 normal control subjects. Subjects with CAE and CAD had decreased levels of adiponectin compared to control subjects ($p<0.05$). There was no significant difference in the levels of resistin in subjects with CAE and CAD compared to controls. The present study suggests adiponectin as an inflammatory marker is associated with CAE and CAD.

PP-130
FREQUENCY OF IRON DEFICIENCY ANEMIA IN CHILDREN SCHEDULED FOR ELECTIVE SURGERY

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Aim: To investigate the frequency of iron deficiency anemia and its association with growth situation in children scheduled for elective surgery.
Materials and Methods: In 118 pediatric patients who were going to have elective surgery, aged between 6 month-15 years, hemoglobin, hematocrit, ferritin, iron, iron binding capacity, transferrin levels, height and weight percentage were evaluated. The patients were divided into four groups according to their ages as follows; 6-23 months (n=15), 2-6 years (n=46), 7-11 years (n=52) and 12-15 years (n=5). In addition, they were also divided according to their operation types; pediatric, otolaryngologic, orthopedic, opthalmic and reconstructive surgery.
Results: Thirty nine of the patients presented iron deficiency anemia. The frequency in 6-23 months group (80%) was found to be higher than the other age groups. The frequency of iron deficiency anemia was 39.1% in 2-6 years group, 17.3% in 7-11 years group. There was a positive correlation between height, weight and serum iron levels while no correlation was detected with ferritin and other parameters.
Conclusion: We found that iron deficiency anemia especially increased in 6-23 months old group of children who are going to have elective surgery. Serum iron levels influence weight and height in childhood. As a conclusion, evaluating the presence of iron deficiency anemia in children who are going to have elective surgery and preoperative treatment may be useful for preventing postoperative complications.

PP-131
EFFECT OF SEVERAL TREATMENT METHODS ON PROTEIN OXIDATION AND LIPID PEROXIDATION IN UREMIC PATIENTS

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Oxidative stress is one of the leading causes of morbidity and mortality in chronic kidney disease. There is increasing evidence about the presence of oxidative stress in chronic renal failure patients. This seems to be due to multiple factors including an increase in the production of agents from oxidative metabolism and a decrease in anti-oxidant defenses. Oxidative damage to proteins is reflected by increased levels of advanced oxidation protein products (AOPP) which therefore serve as a novel marker of oxidative stress. Another oxidative stress parameter is malondialdehyde (MDA), which is one of the end products of lipid peroxidation induced by ROS. In the present study oxidation indicators including MDA and AOPP were analysed to assess oxidative stress status in normal control volunteers, kidney transplant patients and in uremic patients treated with hemodialysis (HD) and peritoneal dialysis (PD). Serum MDA levels and plasma AOPP levels were increased in uremic patients with the highest values observed in the HD group. Serum MDA ($p<0.001$) levels were also higher in the kidney transplant group than the controls. No difference was found in AOPP levels between the transplant group and control group. Our results suggest that CRF particularly hemodialysis and peritoneal dialysis by itself could correct the oxidative status in these patients. The reported data indicate that kidney transplantation seems to restore a nearly normal level of AOPP but unfortunately this remission isn't currency MDA levels.

PP-132
DIAGNOSTIC VALUE OF TWO NOVEL ASSAYS FOR THE MEASUREMENT OF CITRULLINATED PROTEIN ANTIBODIES IN RHEUMATOID ARTHRITIS

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Recent studies indicated that antibodies directed against citrullinated proteins/peptides are among serological markers with the highest specificity for the diagnosis of Rheumatoid arthritis (RA). This study was undertaken to evaluate the diagnostic performance of two newly developed assays for the detection of antibodies against a modified citrullinated vimentin (MCV) and 3rd-generation cyclic citrullinated peptides (CCP3) in comparison with rheumatoid factor (RF) in the diagnosis of RA.
A cohort of 176 patients' sera enrolled in the study, including 93 RA and 83 non-RA cases, were tested for the presence of MCV, CCP3 and RF antibodies according to the manufacturers' instructions.
The diagnostic performances of the 3 assays according to the calculated AUC were 0.868 (95% CI: 0.816-0.919) for CCP3, 0.719 (95% CI: 0.644-0.795) for MCV and 0.813 (95% CI: 0.748-0.877) for RF respectively as analyzed by ROC curves. Considering the cutoff values recommended by the manufacturers, the sensitivity and specificity of the assays were 61.3% and 97.6% for CCP3, 48.4% and 91.6% for MCV and 65.6% and 91.6% for RF respectively.
The CCP3 and RF assays have a comparable sensitivity in the diagnosis of RA in contrast to the MCV assay with the lowest sensitivity. The CCP3 assay detects the presence of RA with the highest specificity among all the other assays. In conclusion, in order to obtain the best diagnostic performance for detecting RA, concomitant measurement of both CCP3 and RF antibodies should be considered.

PP-133
PLASMA MDA LEVELS AND SOD ACTIVITIES IN PERITONEAL DIALYSIS PATIENTS AND HEMODIALYSIS PATIENTS

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The oxidative-antioxidative system is a complex structure dependent on many factors and oxidative stress arises from a misbalance between the production of oxidation-derived products and the organism defense mechanisms to clear them. Oxidative stress is at play in the progression of chronic renal failure (CRF). The aim of this study was to evaluate oxidative stres status at dialysis patients. Plasma malondialdehyde (MDA) levels and superoxide dismutase (SOD) activities were measured in 22 patients undergoing continuous ambulatory peritoneal dialysis (CAPD), 22 patients undergoing hemodialysis and 22 healthy volunteers. Plasma MDA concentrations were significantly higher in dialysis patients compared to controls ($p<0.001$), and were significantly higher in CAPD patients compared to hemodialysis patients ($p<0.001$). Plasma SOD activities were significantly lower in dialysis patients compared to controls ($p<0.001$), and were significantly lower in hemodialysis patients compared to CAPD patients ($p<0.001$).
In dialysis patients there is indirect evidence for increased free radical activity. The results showed MDA and SOD might be used as a - marker for evaluating oxidative stress in patients with end-stage renal disease (ESRD) treated with peritoneal dialysis and hemodialysis .

PP-134
THE EFFECT OF P-CHLOROPHENYLALANINE (P-CPA) ON LEPTIN LEVELS AT SWIMMING EXERCISED RATS

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Aim: The aim of this study was to determine the effect of P-chlorophenylalanine (P-CPA) on serum leptin levels at swimming exercised rats.
Material and Method: In this study we used eightteen mature male Wistar rats. These rats were randomly divided into three groups: grup I: control group (n=6), group II: acute swimming exercised (an endurance exercise process with an about two hours exhausting time) group (n=6) and group III: prior to exercise P-CPA (in a dose of 200 mg/kg intraperitoneally for 2 days) injected group (n=6). Before and after the experiment the blood samples were collected from all groups and serum leptin levels were measured by ELİSA kit.
Results: There was no significance at serum leptin levels between the groups before the experiment (p=0,25). The serum leptin levels decreased significantly after exercise (with p<0,023. Mean values before exercise: 1,56±0,18 ng/ml and after exercise: 1,41±0,15 ng/ml). With P-CPA administration there was an increase at the leptin levels at exercised rats, but this increase was not statistically significant (with p=0,5. Mean values before P-CPA: 1,35±0,15 ng/ml and after P-CPA: 1,53±0,35 ng/ml).
Conclusion: The effect of exercise on serum leptin levels might be formed between the relationship of leptin and pineal gland/melatonin.

PP-135
THE PREVENTIVE EFFECTS OF VITAMIN E IN AGED DIABETIC RATS BLADDER AGAINST OXIDATIVE DAMAGE

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Objective: Reactive oxygen species are synthesized by glucose autooxidation in Diabetes Mellitus (DM). Free radical theory is discussed in aging, also. It was proposed that the balance between oxidant and antioxidant species is important in regarding the aging process and prevention of the diabetic complications. Our aim is to examine the effects of aging and/or DM on oxidative stress and the protective effect of vitamin E in bladder tissue.
Material and Methods: Young and aged rats were randomly allotted into six experimental groups. Group 1: Aged control; group 2: aged diabetic; group 3: aged diabetic and vitamin E treated; group 4: young control; group 5: young diabetic; group 6:young diabetic and vitamin E treated. Each group consisted of 6 animals.Diabetes was induced by streptozotocin in group 2, 3, 5 and 6. Vitamin E was administered in group 3 and 6. MDA and GSH levels were measured in bladder tissues of all rats. Also, histological changes of bladder tissues were examined by electron microscopy .
Results: We found that increased MDA and decreased GSH levels in young and aged diabetic groups compared to related control groups. Elevated MDA and reduced GSH levels were determined in aged control group according to young control group. There weren't significant difference of MDA and GSH levels between young and aged diabetic vitamin E treated groups compared to related control groups. In our study, highest degeneration was detected in aged diabetic group by electron microscoply. The protective effects of vitamin E were seen in young and aged diabetic groups, especially in young diabetics.
Conclusion: Our results suggested that the regular vitamin E supplementation prevents free radical damage in bladder tissue of young and aged diabetic rats.

PP-136
DIAGNOSTIC VALUE OF ISCHAEMIA-MODIFIED ALBUMIN IN ACUTE MESENTERIC ISCHAEMIA

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Ischaemia-modified albumin (IMA) is a sensitive marker of myocardial ischaemia, skeletal muscle ischaemia, pulmonary embolism and stroke. However, there are no studies showing whether IMA increases in mesenteric ischaemia. Our aim in this study was to determine serum IMA levels in acute mesenteric ischaemia. This case-controlled study was performed in an emergency and biochemistry departments of Karadeniz Technical University Hospital. IMA levels in patient serum was determined as the means of 0.264 ± 0.057 ABSU in the thromboembolic occlusion of the superior mesenteric artery (SMA) group and 0.163 ± 0.025 ABSU in the control group. When serum IMA levels in the thromboembolic occlusion of the SMA group were compared with those in the control group, statistically significant increases in IMA were observed in the occlusion group (p=0.003). Findings obtained in this preliminary study indicated that IMA may have a place in the diagnosis of acute mesenteric embolism. Further prospective studies are needed to see if IMA is clinically useful in the early detection of thromboembolic occlusion of the superior mesenteric artery.

PP-137
DIAGNOSTIC VALUE OF NUCLEAR MATRIX PROTEINS (NMP 22)

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The nuclear matrix proteins (NMP) play an important role in the structural framework of the nucleus and in DNA replication and gene expression. Significantly increased concentrations of NMP's have been found with neoplastic transformation and disease progression in carcinomas of the breast, colon and bladder. Soluble NMP's can be detected in the urine from bladder cancers using antibodies directed against select epitopes of NMP (NMP–22).

Current diagnosis and evaluation of bladder cancer is dependent upon use of cystoscopy and assessment of urine cytology. Direct visualization of the bladder mucosa by cystoscopy is the most efficient method for detecting primary and recurrent TCC of the bladder. However, it is invasive and has poor sensitivity in detection of low-grade tumors.
Typically, both cystoscopy and cytology are used together with biopsy, when necessary, to optimize diagnostic sensitivity. Unfortunately, neither test alone nor combined is sufficient for early detection, assessment of recurrence or disease progression of bladder cancer.
More sensitive and non-invasive technologies are of particular interest to clinicians and patients. Methods based on the detection of soluble antigens shed by the tumors and voided in the urine are now commercially available.
The recent introduction of novel molecular markers into clinical urology has created a need to evaluate the efficacy and utility of these potential markers. The ideal assay for bladder cancer should be non-invasive, sensitive, specific, and cost-effective.
We planned comparative evaluation of diagnostic property and predictive value of NMP–22 in primary recurrent bladder cancer according to cystoscopy and pathologic findings
The results were compared to single cytologic results and ultimately to pathologic findings.
A total of 356 patients were included into this study who admitted to urology outpatient clinics with highly suggestive symptoms of bladder cancer (such as hematuria, cystism and prostatism symptoms)
In our study, we used KART test method for determination of NMP–22 values in the urine and the results were evaluated statically for sensitivity and specificity. The correlations, including the values of NMP–22, were not statistically significant (p>0.05).
Our results indicated that, NMP–22 test is not sufficient for diagnosis of bladder cancer and it has been concluded that the test is not more valuable than cystoscopy in diagnosis and follow-up.

PP-138
EFFECTS ON DIFFERENT ABSORBABLE SUTURE MATERIALS ON THE WOUND HEALING AND INFECTION IN SUBCUTANOUS CLOSURE TECHNIQUES

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Hydroxyproline is produced by hydroxylation of the amino acid proline. It is not directly coded by DNA, however, and is hydroxylated after protein synthesis. Hydroxyproline is a major component of the protein collagen. Hydroxyproline and proline play key roles for collagen stability. They permit the sharp twisting of the collagen helix, therefore providing stability to the triple-helical structure of collagen by forming hydrogen bonds. Hydroxyproline is found in few proteins other than collagen. The only other mammalian protein which includes hydroxyproline is elastin. For this reason, hydroxyproline content has been used as an indicator to determine collagen and/or gelatin amount.

This experimental research consists of 5 groups with a total number of 29 rats. All subjects received 2cms vertical dermal and subdermal cuts on their backs under sterile and proper surgical conditions and 20 mg/kg ketamine anesthesia, then the subdermal cuts were closed with different suture materials and dermis was sutured with 6/0 prolene. After 10 days, all rats were again anesthesied and sutured areas were examined for seroma, hematoma and cosmetic outcomes, then the incision areas were took off with 1cm width and the tissue hydroxyproline levels were determined.

No difference in tissue hydroxyproline levels were found between any of the suture materials (which are vicryl, biosyn, prolene and tissue addhesive) used.

In summary, we can state that there is no hydroxyproline level difference for suture materials, so wound healing does not depend on suture material variants.

PP-139
ANTI HCV PREVALENCE IN I.V. DRUG USERS

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Intravenous (i.v.) drug users are one of the risk groups for acquiring blood transmissible infections like HBV, HCV and HIV. The aim of the study was to assess the prevalence of HCV infection in i.v. drug users from two Clinics in Skopje.

87 young students served as the control group. The study group was confounded from the i.v. drug users which are detoxicated at the Clinic of Urgent Internal Medicine and Toxicology-University Clinical Center-Skopje (n= 112). Third group were the patients on so-called dry detoxication from Center for prevention of addiction diseases at the Psychiatric Clinic"Skopje"-Skopje (n=19). Fourth group were patients on methadone treatment from the same Clinic (n= 26). Prevalence of HCV infection was performed by detection of third generation Anti HCV MEIA-ABBOTT.

Following results were obtained: In the control group, AntiHCV positivity was 1.15% while in the second group the prevalence was increased to 44.64%. Prevalence of AntiHCV in the third group was similar 42.10%. The most increased prevalence (88.46%) of these antibodies were founded in the fourth group of patients on methadone treatment The high prevalence of HCV infection in i.v. drug users correlate with data from literature and the way of behavior, like nosocomial and sexual transmission of this infection.

PP-140
EVALUATION OF SERUM LEPTIN LEVELS ON RISK FACTORS FOR ATHEROTHROMBOSIS

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Leptin is one of the newly discovered hormones which is produced mainly by adipose tissue, that has been thought to be related to coronary atherosclerosis.

In this study, we examined the relationship between serum leptin levels and various risk factors for atherothrombosis including total cholesterol, triglyceride, high-density lipoprotein cholesterol, low-density lipoprotein cholesterol, fasting glucose, insulin, uric acid, homocysteine, high- sensitive CRP, free fatty acids, fibrinogen, antithrombin III, von Willebrand factor, factors VIII and IX and body mass index (BMI). For this purpose 63 patients who underwent coronary angiography for clinical indications were included into the study. Statistical analyses were performed by Spearman correlation test.

Statistically significant correlations were found between leptin and plasma cholesterol (r=0,374; p=0,002), triglyceride (r=0,308; p=0,011), uric acid (r=0,299; p=0,016), insulin (r=0,304; p=0,012), factor IX (r=0,248; p=0,041) and BMI (r=0,430; p<0,0001). No association was found between leptin and other variables.

High serum levels of leptin are associated with dyslipidemia, obesity and hyperinsulinemia. This relation suggests the possible role of leptin in the pathogenesis of coronary atherothrombosis

PP-141
CORRELATION OF OXIDATIVE STRESS INDEX AND CERULOPLASMIN IN CHILDREN WITH PROTEIN ENERGY MALNUTRITION

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Protein-energy malnutrition (PEM), which is a pathological condition, occurs as a result of nutrition poor in protein and calorie, seen mostly in infants and young children, and accompanied with infections. Millions of children die due to the complications of malnutrition, at most infections, every year all around the world . The defense mechanisms of the body are activated with the inflammatory events caused by various bacterial and viral infections which also create oxidative stress. We aimed to investigate correlation of oxidative stress index (OSI) with ceruloplazmine which is an acute phase reactant. Thirty children with PEM and thirty-one healthy children with similar age range and sex were included to the study. Total 5 ml blood was drawn and sera were separated. The sera total antioxidant capacity (TAC) and seruloplasmin levels are measured using EREL's method. To calculate OSI total peroxide was divided to TAC. The results were analysed statistically by using a SPSS 11.0 for Windows program. Sera TAC levels were significantly lower in the patients than those in the controls ($p<0.001$). OSIs of patients were significantly higher than those of controls ($p<0.001$). Sera ceruloplasmine levels were significantly lower in the Patients than those in the controls ($p<0.001$). There was a significant correlation between OSI and ceruloplasmine levels ($r=0.31$, $p<0.05$). Our findings suggested that PEM causes oxidative stress in children who try to cope with it using their antioxidants. It may be, therefore, concluded from the study that OSI may reflect oxidative-antioxidative imbalance in children with PEM.. It may be suggested that supplementation with antioxidant vitamins such as vitamins C and E should be considered in the treatment of these children.

PP-142
OXIDANT / ANTIOXIDANT STATUS IN RECURRENT APHTHOUS STOMATITIS

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Recurrent aphthous stomatitis is a common oral mucosal disorder characterized by recurrent, painful oral aphthae, and oxidative stress presumably contributing to its pathogenesis. The study was performed to evaluate the involvement of hydrogen-peroxide and lipid peroxide toxicity in this disorder, including protection provided by endogenous antioxidants. Patients with recurrent aphthous stomatitis (n=26) and age and sex matched healthy subjects (n=20), as control group, were included into this study. Following overnight fast, blood specimens were obtained. Plasma malondialdehyde concentrations and erythrocytes glutathione peroxidase activities were determined. Also, plasma vitamin E and Selenium levels were detected. Student's t-test was performed for statistical evaluation. Oxidative stres was confirmed by the significant elevation in plasma malondialdehyde levels and by the significant decrease in glutathione peroxidase activities, vitamin E and Selenium levels ($p<0.001$). Our results indicated that lipid peroxidation and the inefficacy of defense system seem to play crucial role in the pathogenesis of recurrent aphthous stomatitis.

PP-143
CLINICAL SIGNIFICANCE OF ANGIOTENSIN CONVERTING ENZYME IN PNEUMONIA

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Serum angiotenzin converting enzyme (ACE) levels are elevated in Sarcoidosis and have been used both to diagnose and to assess response to tretment of this disease.The aim of the study was to investigated the role of ACE and the influence of gender on this enzyme activity in patiens with lung disease.
We report significantly ($p<0.005$) elevated ACE levels in patiens with Pneumocystis carinii pneumonia (n=40) (51.3 +/- 23.25 U/L) compared with normal control subjects(19.0+/-7.42 U/L). Serum ACE levels in smoking control subjects(20.0+/-7.42 U/l)were not significantly;diferent nonsmoking control subjects (19.0+/-7.42 U/l) but the levels in PCP patiens who smoked (55.0+/-15.0 U/l) were significantly ($p<0.005$)higher than in those who did not smoke (42.0+/-10.0 U/l) In adition to suggesting a possible clinical use for measuring ACE levels in suspected or confirmed PCP;we speculate that elevations in serum ACE levels may reflect macrofage disfunctions in patients with PCP.Stratification of our study patiens according to smoking history revealed the importance of this variable in predicting serum ACE elevations in PCP.
Serum ACE levels may be more useful in making the initial diagnosis of PCP among patients who smoke than among those who do not smoke.The role of serum ACE levels in diagnosing PCP and foloving response to therapy awaits futher clarification.

PP-144
PREVALENCE OF SOME FOOD ALLERGENS AMONG INDIVIDUALS ADMINISTERED TO FATIH UNIVERSITY HOSPITAL

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Background: A rise in allergic disorders over the last decades was observed. Because there is no cure for food allergy, sensitive individuals must manage their food allergy through avoidance of foods containing the allergen. In Turkey, we have limited number of data based on reliable assays about prevalence of food allergies on our population .The aim of the study is to determine the prevalence of allergies in different age groups to a number of particular foods. Methods: A retrospective investigation was conducted among individuals administered to Fatih University Hospital since 2005. Information was collected from patient files such as, patient characteristics and clinical features. The subjects were classified into 3 groups according to age. Ig-E sensitisation was evaluated by analysis of allergen-specific IgE Ab in serum to a group of selected food allergens by using Pharmacia Unicap System. Cow-milk, egg white, fish, wheat, peanut, soybean and tomatoes were selected. Results:1 boy, 1 girl (1.9%) from goup1 (0-7 years of age), 5 boys (9.8%),3 girls (5.8%)from group2 (8-18 years of age), 3 men (4.6%), 2 females from group3 (>18 years of age) (1.6%) were positive for tomatoes allergen, whereas 34 boys (18.2%), 29 girls (23.2%) from group1, 12 boys (13.8%), 9 girls (11.8%) from group2, 5 men (5.6%), 9 females (4.8%) from group3 were found IgE-sensitised to mixed food allergen (fx5).From these preliminary results, prevalence studies conducted.We observed that most commonly seen food allergens (Fx5) were higher among girls before school age.

PP-145
EFFECTS OF EXERCISE AND CONJUGATED LINOLEIC ACID ON THE INSULIN RESISTANCE OF SEDENTARY YOUNG ADULTS

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Purpose: The effects of conjugated linoleic acid (CLA) supplementation along with exercise on human serum glucose, insulin and insulin resistance were investigated.
Methods: Two groups of previously sedentary volunteers were formed of eight male university students. Each received either standardized exercise with 3g placebo (plc group) or CLA (CLA group) for 30 days. Glucose and insulin levels were analyzed from blood collected both before and after whole regimen. Insulin resistance was calculated according to homeostasis model for insulin resistance.
Results: Although no significant difference was found between two groups on fasting glucose levels (4.26 and 4. 34 mM for plc and CLA, respectively), there was considerable difference in between paired samples in the plc group. CLA effect on insulin levels was not significantly different from the plc; each group displayed statistically significant difference in between paired samples ($p\leq 0.003$). Insulin resistance values also reflected the same tendency in both groups, significance in between paired samples was observed ($p\leq 0.003$).
Conclusion: Exercise with or without CLA supplementation decreased insulin levels and thus increased insulin sensitivity. We conclude that although CLA supplementation and exercise can affect these parameters, it is not much more effective than exercise alone. Hence a prolonged supplementation regime may be more effective.

PP-146
OXIDATIVE DNA DAMAGE AND ANTIOXIDANT DEFENCE IN OVARIAN CANCER

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Oxidative damage to DNA has been implicated in the pathophysiology of a wide variety of human disease such as cancer. In order to estimate the level of oxidative DNA damage and its role in ovarian cancer, 8-hydroxydeoxyguanosine (8-OHdG) which is an indicator of oxidative DNA damage and antioxidant enzyme activities, such as superoxide dismutase (SOD) and glutathione peroxidase (G-Px) have been measured in patients with ovarian cancer. Venous blood samples were taken just before the surgery. Plasma levels of 8-OHdG was determined with ELISA, SOD and G-Px activities in plasma were measured by spectrophotometric kits. Plasma 8-OHdG levels were significantly elevated and activity of G-Px was decreased in patients with ovarian cancer group as compared to control group. No significant differences in plasma SOD activity was found between the groups. There were no significant correlations between plasma 8-OHdG level and both plasma activity of antioxidant enzymes and the tumor markers. There was only a positive correlation between plasma SOD activity and CA-15-3 in ovarian cancer group. Determined increased levels of plasma 8-OHdG in the present study shows an increased systemic level of oxidative DNA damage which may have a potential for identifying ovarian cancer risk.

PP-147
PROPOSAL FOR ALT AND AST UPPER REFERENCE LIMITS FOR NON-ALCOHOLIC FATTY LIVER DISEASE

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Background: Non-alcoholic fatty liver disease (NAFLD) is a growing medical problem with a spectrum ranges from simple steatosis to hepatocellular carcinoma. Although ALT and AST are used for predicting the degree of hepatocyte damage in patients with chronic liver disease, there are lots of asemptomatic individuals with NAFLD having normal ALT and AST levels of which upper reference limit is 40 U/L currently.
Methods: Degree of fatty liver was determined by ultrasonography (USG). Participants with no fat accumulation in liver were accepted as control, and the others patient group. Patients were divided in to four groups as females and males with mean ages 25 years (y), and 52 y. Each of the groups had at least fifty participants. We continue to the study to enlarge the population of each groups.
Results: Mean ALT and AST levels decreased with aging in both gender. While mean ALT was 34 U/L and 32 U/L for males with mean age 25 y and 52 y; 33 U/L and 31 U/L for females with mean age 25 y and 52 y, also mean AST was 30 U/L, 29 U/L, 29 U/L, and 26 U/L respectively. Patients had less than 40 U/L ALT and AST were 73% and 85% of all patients respectively. Areas under the ROC curve were 0.863 and 0.889 for ALT and AST, cut off value was 22 U/L for both of these parameters.
Conclusion: We proposed to determine the new upper reference limits for ALT and AST in patients with NAFLD. Patients with more than 34 U/L ALT or 30 U/L AST should be performed USG to determine the highly probable NAFLD.

PP-148
IMPORTANCE OF LOW SERUM ALKALINE PHOSPHATASE ACTIVITY

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Serum alkaline phosphatase (EC 3.1.3.1; ALP) activity is usually measured to detect increase in its activity. Little attention has been focused on clinical conditions associated with decreased ALP activity. This study was conducted to determine the reasons or the clinical conditions causing low serum ALP (S-ALP) activity in patients. Low S-ALP was defined as S-ALP activity of less than 30 U/L (reference range 30-115 U/L). S-ALP activity has been measured in 19,542 serum samples of patients attending our laboratory between September 2005 and May 2007. Of 19,542 S-ALP measurements, 51 were low (< 30 U/L, 0.26%), representing 24 individual patients. S-ALP activity measurements were performed by using the Abbott-C8000 Autoanalyser (Chicago,IL,USA). All patient charts were reviewed and classified into two groups, those with and without conditions previously reported to be associated with decreased S-ALP activitiy: 46% had conditions associated with low ALP activity, the most frequent being magnesium deficiency (9.8%), malnutrition (3.9%), severe anemia (%3.9), diabetes mellitus (%2.0), and hypothyroidism (2.0%); 54% of patients did not have any previous clinical conditions associated with low ALP activity. In this study, low ALP activity was rare. Clinical conditions that cause hypomagnesemia may be associated with low serum ALP activity.

PP-149
DETERMINING CEA, SCC AND CYFRA 21-1 IN PATIENTS WITH SQUAMOUS CELL CARCINOMA DURING THERAPY

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The aim of the study was to determin the serum concentrations of CEA, SCC and CYFRA 21-1 in patients with advanced stages of squamos cell lung carcinoma.Patients were treated with palliative
irradiation for 5 weeks.The serum concentrations of the TM were determined before and two months after radiotherapy.The group included 31 patient with IIIa and IIIb stage of disease.Patients were divided in two groups:1.patients with good therapy response and

2.patients with poor therapy response The concentrations of SCC and CYFRA21-1 before the treatmant were significantly higher as compared to the control group with benign lung disease (p<0.005 and p<0.0001, respectively).There were no differencences in CEA level. Increased level of SCC was observed in 44.3 % of patients, CYFRA 21-1 in 61.7%. Elevated concentracions of at least one TM occurred in 69.9 %. Two months after radiotherapy first group of patients presented significant decrease in CYFRA21-1 (p<0.02) and tendency towards decreased SCC level.In patinents
with poor therapy response there was a tendency for both markers to increase.While prior to therapy there were no differences in TM levels between the two groups of patients, two months after radiotherapy
CYFRA 21-1 was significantly higher in patients in second then patients in first grop.

PP-150
PREVALENCE OF SELECTED INHALANT ALLERGENS AT FATIH UNIVERSITY HOSPITAL FOR LAST TWO YEARS

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Background: We believe that even though there is an increase at atophy and allergic disorders rates through out the world, we have limited number of data regarding to prevelance of allergens in our country.Considering this point, we aim to evaluate allergy cases among individuals administerated to Fatih University Hospital.
Methods: A retrospective investigation was conducted in subjects who gave blood for allergen-specific and total IgE antibodies.Informations like patient characteristics and clinical features were collected from patient files. Here at first step of our study, we release the prevalence of sensitization to specific inhalant allergens. Selected allergens were phadiatop, grass pollen mix (gx2), house dust mix (hx2), epidermal & animal proteins (ex1) and molds (mx2). Subjects were divided into 3 groups based on ages and possible exposure times to allergens (pre-school, school and post-school years).Allergens were detected at Pharmacia System.
Results: IgE sensitised subject numbers for allergens were found as follows respectively in groups. In group1 (0-7 years); 10 subjects (6.2%) for phadiatop, 6 subjects (3.4%) for gx2, 5 subjects (2.4%) for hx2, 2 subjects for mx2 (1.03%), 2 subjects (1%) for ex1, in group2 (8-18 years); 40 subjects (38.5%) for phadiatop, 31 subjects (32.6%) for gx2, 17 subjects (16.7%) for hx2, 5 subjects for mx2 (5.3%), 13 subjects (9.8%) for ex1,in group3 (>18 years); 86 subjects (18.4%) for phadiatop, 58 subjects (10.6%) for gx2, 84 subjects (14.7%) for hx2, 36 subjects for mx2 (6.6%), 33 subjects (5.3%) for ex1.We continue our study with the possible degree of association of sensetization to patients' characteristics.

PP-151
CHARACTERIZATION OF SOME PREVOTELLA STRAINS ISOLATED IN ELDERLY PATIENTS WITH ORAL AND MAXILLOFACIAL INFECTIONS

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Usually the pyogenic oral diseases are mixed infections, involving aerobic and strictly anaerobic bacteria, which are often beta-lactamase producers. The aims of this study were to identify at species level and investigate the in vitro antibiotic susceptibility of Prevotella strains isolated from pus samples collected by needle aspiration from elderly patients with different oral and maxillofacial infections. Microscopy of Gram-stained smears and cultures on selective/nonselective media incubated aerobically and anaerobically were performed in each pus specimen. The isolates of strictly anaerobic bacilli were identified to the species level by conventional methods of diagnosis and Rapid ID 32 A system (BioMérieux, France). The Prevotella strains were tested against: penicillin G, amoxicillin/clavulanic acid, clindamycin and metronidazole, and the beta-lactamase production was investigated by the nitrocefin disk. The Prevotella isolates were represented by different species and, except for the beta-lactamase producing strains, were susceptible to all tested antibiotics. Conclusions: 1) the most frequently isolated species was P. melaninogenica; 2) when antibiotic therapy is needed in mixed oral infections, an association of a penicillin with a beta-lactamase inhibitor is recommended; 3) clindamycin might be an alternative in patients allergic to penicillin.

PP-152
COMPARISON OF BIOCHEMICAL PARAMETERS IN DIABETIC COMPLICATIONS

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The aim of the study was to investigate the relationship between Fasting Blood Glucose (FBG), HbA1c, insulin and C-peptide levels and complications in patients with type 2 diabetes followed up at our outpatient clinic. General characteristics of 102 patients (32 male; 70 female) were; age 57,78±11,01 years; duration of diabetes 10.71±7.98 years; FBG 213.07±82.06 mg/dL; HbA1c 8.40±1.80 %; BMI 29.19±4.33; insulin 13.38±10.08 mU/mL; C-peptide 2.89±1.35 ng/mL. HbA1c was assayed by means of Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). Biochemical parameters were the mean of all values that were measured of the last four years. There was no difference between patients with complications (n = 34) and without complications (n=68) (p>0.05) with regard to biochemical and demographic parameters; expect duration of diabetes (p=0.045). The subgroup of patients with Hba1c <6.5 % had diabetic complications in a ratio of 4/15 (27 %) and that was not significantly different from the others (ratio: 28/86; 33 %) (p>0.05). On the other hand, there was a significant difference between the macro (17.89±9.36 years) and microvascular complication (10.0±7.19 years) subgroups in terms of duration of diabetes (p=0.023). Since genetic background and glycemic control including FBG and HbA1c are important milestones for macro and microvascular complications of DM as well as duration of diabetes, patients must also be evaluated in the light of these aspects.

PP-153
GLYCEMIC CONTROL AMONG DIABETICS AT OUT-PATIENT CLINICS OF DIABETES AND INTERNAL MEDICINE

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In glucose regulation, values of fasting blood glucose, postprandial blood glucose and HbA1c are used. The goal in treatment is to achieve HbA1c levels, which diminishes the risks of complications on the long term. Thus, continuous medical care is required; patient should manage himself and should be educated. To compare the HbA1c values of patients who go to outpatient policlinics of diabetes and internal diseases. This is a cross sectional study conducted for two months. HbA1c was assayed by means of Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). 511 patients (70 % female) were enrolled in the study through Diabetes Clinics, aged between 24 and 78. Average HbA1c values were found 8.35±2.13 %. In 48 % of the cases the aimed HbA1c levels (<7 %) were achieved. 757 patients (66 % female) enrolled in the study through Internal Medicine Clinics, aged between 37 and 81. Average HbA1c values were 8.15±3.27. Fourteen percent of the patients reached aimed HbA1c levels. There was no statistical relation between the two groups' HbA1c values. A target level of HbA1c was not achieved in both groups of patients. In the monitoring of patients, intense medical monitoring and education are of essential importance. Thus, the patients should be monitored more intensely.

PP-154
ASSESMENT OF SERUM CARBOHYDRATE-DEFICIENT TRANSFERRIN LEVELS AND OXIDATIVE STRESS IN TYPE II DIABETUS MELLITUS

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The aim of our study is to evaluate to Carbohydrate-deficient transferrin (CDT) levels patients with Type II Diabetes Mellitus (DM) For this purpose fifteen patients with Type II DM and fifteen healthy volunteer (under 70 years old; 9 female, 6 male) were recruited. Patients were treatment with metformin (2 g/day) or roziglitazon (8 mg/day).

The blood samples were taken before treatment (group 1) and after third (group 2) and six month (group 3) treatment and controls (group 4). Glucose, HbA1c, malondialdehyde (MDA), nitric oxide (NO) and %CDT levels were measured in all serum samples., Before treatment MDA, NO and HbA1c levels were found to be significantly higher than control group (p<0.001, p<0.001, p<0,001, respectively). These parameters in sixth month during treatment have found to be decreased in control level. % CDT levels in the patients were not different than those in controls.

There were positive correlation between MDA, glucose and NO levels in all groups (r=0,646, p<0,001; r=0,266, p<0,05). In addition, there were positive correlation between glucose and HbA1c (r=0,354, p<0.05).

In conclusion, the study showed that serum % CDT levels in the patients with Type II DM were not different than control and treatments were decrease oxidative stress.

Key words: CDT, Type II DM, oxidative stress.

PP-155
LABORATORY DIAGNOSIS IN PREDIABETES

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The criterion of the prediabetes is Fasting Blood Glucose (FBG) ≥100 mg/dl. We aimed to investigate fasting glycemia, HbA1c and insulin levels in obese nondiabetic patients. Forty patients (7 male, 33 female) were followed up in our outpatient clinic of obesity. Age, duration of obesity, body mass index (BMI), waist-hip ratio (WHR) and FBG, HbA1c, insulin, C-peptide levels were evaluated. HbA1c was assayed by means of Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). Insulin and C-peptide levels were measured by chemiluminesance method (Roche Diagnostics GmbH, Mannheim, Germany). Age (years): 43.5±12.32, duration of obesity (years): 13.03±11.3, BMI: 38.68±6.83, WHR: 0.86±0.08, FBG (mg/dl): 95.95±12.7, HbA1c (%): 5.76±0.56, insulin (µU/ml):17.41±12.67, C-peptide (ng/dl): 3.16±1.04. When patients were divided according to HbA1c levels (< 5.8 and ≥5.8%); in the second group patients were older significantly (38.75±11.84 vs 48.2±11.16, p<0.01), but FBG (94.50±13.77 vs 97.40±11.71, p=0.4), insulin (16.92±15.97 vs 18.03±7.05, p=0.7) and C-peptide levels (2.99±1.33 vs 3.33±0.6, p=0.3) were higher without statistically significance. When patients were divided according to FBG (<100 and ≥ 100 mg/dl); HbA1c (5.73±0.53 vs 5.83±0.67, p=0.6), insulin (14.25±7.1 vs 24.01±18.66, p=0.02) and C-peptide levels (2.87±0.69 vs 3.86±1.42, p=0.08) were higher in the second group. Insulin resistance and HbA1c levels with FBG are important in the diagnosis of prediabetes.

PP-156
PARATHORMONE MEASUREMENTS IN TWO DIFFERENT MATRICES AND TEMPERATURES

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Purpose: To investigate parathormone(PTH) measurements in two types of matrices(serum and plasma) drawn and kept under room temperature and cold conditions.
Material and Methods: Blood was drawn successively into 4 tubes(two with EDTA, two with clot-activator gel)from 50 patients without parathyroid pathology who were admitted to our laboratory. Two of the tubes (one with EDTA and one with gel) were kept in cold and the other two in room temperature for 15 minutes until centrifugation. Then, the tubes kept in cold were centrifuged at 4°C, and the tubes kept in room temperature underwent normal centrifugation to separate the sera and plasma. Parathormone levels were measured in all sample groups on Immulite 2000 immunoassay on the same day of blood collection. Parathormone levels outside the reference limits(16-87 pg/ml) were not included in the study and the samples from the remaining 30 subjects were statistically evaluated. Paired t-test was used for evaluating the statistical difference between the following pairs: normal serum-cold serum, normal plasma-cold-plasma, normal serum-normal plasma, cold serum-cold plasma.
Results: The difference between all pairs were statistically significant(p=0.035, p<0.001, p<0.001, p<0.001, respectively). Parathormone levels were found to be higher in plasma with EDTA than in sera. This was associated with relatively higher results in cold and lower results in room temperature.
Conclusion: If blood is drawn according to cold chain rules for PTH measurements at blood drawing units or plasma with EDTA is used instead of serum, standardization of this process for the blood sent from the clinics can eliminate the disparity in PTH measurements between outpatients and inpatients.
Keywords; parathormone (paratiroid hormon), extracellular matrix (matriks), temperature (ısı)

PP-157
EVALUATION OF THE CUT OFF VALUE FOR CARDIAC MARKERS

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We sought to develop a testing strategy using prospectively collected clinical data including CK-MB levels from 522 patients admitted to a teaching hospital for acute chest pain. Subjects (aged 59.45±13.17 years) were divided into three groups: first group of patients with acute myocardial infarction (AMI), second group of patients with chronic ischemic heart (CIHD) disease, third group of patients without ischemic damage. CK-MB levels were measured on the Dimension Xpand Plus chemistry analyzer (Dade Behring Inc, Newark, USA) by a modified immunoinhibition method. Acute myocardial infarction was diagnosed in 36 (6.9 %) of the 522 study patients. For the level of 16 U/L, diagnostic specificity of CK-MB was 90 % and its diagnostic sensitivity was 50 % for predicting acute myocardial infarction. Area Under the Curve was 0.72 (SE: 0.054, p<0.001). While reporting CK-MB results in our laboratory, we used the cut off value of 16 U/L for CK-MB levels measured on the Dimension Xpand Plus chemistry analyzer. Since electrocardiograms and biochemical markers have different sensitivities, patients could also be evaluated in the light of these aspects in AMI diagnosis.

PP-158
EVALUATION OF CARDIAC MARKERS IN PATIENTS OF CORONARY CARE UNIT

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We sought to develop a testing strategy using retrospectively clinical data for the diagnosis of unstable angina (UA) or AMI in accordance with the results of biomarker assays as cardiac troponins, CK-MB, CK-MB%, or total creatine kinase (CK). Subjects (aged 59.45±13.17 years) interned to Coronary Care Unit were divided into three groups; first group of patients: subjects with acute myocardial infarction (AMI); second group of patients: non-AMI patients; third group of patients: subjects with other disease (chronic heart failure, etc). CK-MB levels were assayed by a modified immunoinhibition method on Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). CK levels were assayed by a enzymatic method on Synchron LX-20 (Beckman Coulter Inc, Fullerton, USA). Troponin T (TnT) was measured by means of Cardiac T Quantitative Rapid Assay (Roche Diagnostics GmbH, Mannheim, Germany). Patients diagnosed AMI were in 36 (6.9 %) of the 265 subjects; non-AMI was diagnosed in 36 (6.9 %). CK-MB, TnT and total CK values are significantly higher in AMI group (p<0.001) when compared to second and third group, but CK-MB% had no diagnostic value. For AMI; Area Under the Curve (AUC) of CK-MB was 0.72 (SE: 0.040, p<0.001); AUC of TnT was 0.73 (SE: 0.037, p<0.001); AUC of CK was 0.70 (SE: 0.052, p<0.001); AUC of CK % was 0.45 (SE: 0.062, p=0.404). ROCs should be studied even for non-AMI in a larger group of subjects.

PP-159
REPORT ON THE KOREAN STANDARD DIFFERENTIATION OF THE SYMPTOMS AND SIGNS FOR THE STROKE-1(KSDSS-1)

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In the past in order to cure stroke, Korean medical doctors classified the symptomatic patterns of stroke patients and treated patients with each therapeutic methods as each patterns. Until now this traditional diagnosing method is used to treat stroke patients. So we need clinical trials to prove this way. We divided the symptoms and signs of stroke into five categories as fire and heat, dampness and phlegm, blood stasis, qi deficiendy, yin deficiency. We make standard operation procedure(SOP) as this classification and collected 136 cases from hospital. We find 86 case(63%) that coincide between the opinion of Korean medical doctors(specialists, residents) and case report form(CRF). In the category of dampness and phlegm, which coincided 37 cases between doctors and CRFs. The significant symptoms are the white-furred tongue(odds ratio 31.304/95% CI 2.065~474.523) and thickly-coated tongue(OR 40.605/95%CI 1.491~ more than 999.999), In the category of qi deficiency, The significant symptoms are severe fatigue(OR 383.164/ 95%CI2.750~more than999.999), difficult to wake up(OR 383.164/ 95%CI2.750~more than999.999), small voice and reluctant to tell(OR 83.272/ 95%CI 1.803~more than999.999), anorexia(OR 0.061/ 95%CI 0.005~more than0.778)
The result is analysized by Multiple regression. We plan to compare this with proteomics.

PP-160
EVALUATION OF THE PARAMETERS OF FIRST-TRIMESTER SCREENING TESTS PERFORMED IN TRABZON REGION

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Down Syndrome (trisomy 21) is the most common chromosome abnormality. In recently years, the combined risk was estimated for first trimester screening test in among 11- 14th weeks by using PAPP-A(pregnancy associated plazma protein-A), free β-hCG(free β human corionic gonadotropin), NT(nuchal translucency) and CRL(crown-rump length) parameters. In this study we aimed to assess of the data used to estimate first trimester screening test in Trabzon region between March 2005-December 2006 years. 172 pregnants were divided three subgroups according to gestational age including 11-12th (n= 45), 12-13th (n=78) and 13-14th (n=49) weeks. Maternal age (year), maternal weight (kg), PAPP-A, free β-hCG, NT and CRL were used to evaluation of first trimester screening test results. While it was found positively correlation between gestational age with PAPP-A or CRL (r= 0.166, and r= 0.909, respectively), there was negatively correlation between maternal weight (kg) and PAPP-A (r = - 0.158). We observed that these findings were similar with literature results.

PP-161
THE IMPORTANCE OF THERAPEUTIC DRUG MONITORING

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Therapeutic drug monitoring (TDM) can be defined as the use of drug or metabolite monitoring in biological fluids as an aid to the management of therapy. TDM has been routinely practiced in clinical laboratories since the 1970s, but the scientific foundations of the subject date back to the 1920s. Due to the dissimilarities among the individuals the main determination of the clinical response for the most of the drugs is not the dosage applied but its concentration on the effective area. Therefore the relation between the drug's blood level and clinical effect is accepted as a more worthwile approach in today's applications. This approach is more important especially in medicines where the effect is not well evaluated with the clinical findings (e.g. anti-epileptics), the medicines which are used in manic treatments) and in the medicines whose toxic effects can not be determined before reaching a non-retrospective level (e.g aminoglycosids). For some drugs with a narrow therapeutic gap, even small differentiations in the blood concentrations may cause ineffective treatments or result in emerging toxic effects (like anticoagulants, aminoglycosides, antineoplastic medicines, cardiac glycosides).

PP-162
EFFECT OF MELATONIN ADMINISTRATION ON SMALL INTESTINE SE, CU, ZN, MN, FE LEVELS IN YOUNG AND OLD RATS

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Melatonin is a well-known potent antioxidant synthesized in the pineal gland. Melatonin supplementation may postpone age-related degeneration by removing free-radical damage. In this study, we investigated the effect of melatonin (MEL) supplementation (10 mg/kg/d, s.c. for 7 days), on the small intestine trace elements levels (Se,Cu,Zn,Mn, Fe) of young and old rats. For this aim, a total of 40 male Wistar Albino rats were divided into 4 groups: Group 1 (3 months old), Group 2 (3 months old +MEL), Group 3 (18 to over months old) and Group 4 (18 to over months old + MEL). Trace elements concentrations (Se,Cu,Zn,Mn, Fe,) were determined in small intestine tissues by ICP-AES. We observed a meaningful increase in Se and Fe levels of MEL applied both young and old rat groups compared to control groups ($p<0.05$). The small intestine Zn and Cu levels in MEL applied young rats were significantly increased compared to young rats ($p <0.05$). But, no observe statistically difference between Zn and Cu tissue levels of control and experiment oldd-rat groups. Small intestine Mn levels of MEL treatment old-rats were higher than old-control group, whereas the statistically difference was no found in young-rat groups. Additionally, Mn levels of old- control rats were lower than young – control rats. Thus, the data in the present investigation indicates that at concentrations at which MEL is known to cause physiological effects, MEL does cause an enhancement of the activity of Se, Cu,Zn,Mn,Fe in small intestine tissue.

PP-163
RESULTS OF FIRST TRIMESTER SCREENING TEST RISKS FOR TRISOMY 18 AND 21

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Down syndrome (trisomy 21),is the most common chromosomal anomaly in live-born infants. First trimester combined screening for down syndrome is based on maternal age, maternal weight, smoking, diabetes, IVF, ethnic origin, serum markers (free beta human chorionic gonadotropin[free b HCG] , pregnancy associated plasma protein A [PAPP-A]) and ultrasound measurement of fetal nuchal translucency (NT) and crown rump lenght (CRL). Major aim is to evaluate the risks of maternal age, biochemical and combined from results of first trimester screening in Trabzon region. Trisomy 18 risk was also assessed. 247 pregnants undergoing first trimester prenatal screening at the Karadeniz Technical University Faculty of Medicine in Trabzon between March 2005-April 2007 were included to assessment. Risk of maternal age was found to be 9.3% for all participants. The risks of biochemical and combined for trisomy 21 were 14.4% and 6.4%, respectively. For trisomy 18, the risks were 6.8% and 2.8%, respectively. Following of postnatal finding may be beneficial to assess of the relationship among first trimester screening , trisomy 21 and 18.

PP-164
EFFECTS OF COMPUTER USING ON OXIDANT/ANTIOXIDANT STATUS IN RAT KIDNEYS

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Aim/Background: The aim of the present study was to investigate possible effects of computer use on oxidant/antioxidant status of kidney tissues from rats and possible protective effects of vitamin C (vit C). Methods: Forty Wistar-albino type female rats of 12 weeks old were used in the study. The rats weighed 165±5 g at the beginning of the study. They were exposed to 8 hours/day computer system for 21 days. Vit C was given orally (250mg/kg) during the study period. In each group (computer, computer+vit C, vit C and control), there were 10 animals. At the end of the study period, the animals were sacrificed, and then their kidney tissues were removed for determination of oxidant status. For this aim, malondialdehyde (MDA) levels were measured by using thiobarbituric acid reactive substances (TBARS) method. In the statistical evaluation of results, one way ANOVA and post-hoc Tukey test were used.
Results: It was observed that MDA level in computer group was significantly higher than that of control group (1.012±0.156 nmol/mg vs. 0.722±0.083 nmol/mg; $p<0.05$). However, there was no significant difference between MDA levels of control and computer+vit C groups.
Conclusion: Our results suggested that exposure to computer system led to oxidative stress in rat kidney tissues and vit C protected the kidney tissues against this oxidant stress.

PP-165
P-GLYCOPROTEIN POLYMORPHISM IN HYPO- AND HYPER-THYROIDISM PATIENTS

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P- glycoprotein is encoded by the multidrug resistance gene (MDR1) in humans and is the product of MDR1. It is expressed in various tissues and is related to drug distribution in intestinal erythrocytes, capillary endotel of brain, proximal tubulus cells of kidneys and liver canalicular cells. Expression of P-glycoprotein is affected by P-glycoprotein polymorphism, and exon 26 C3435T polymorphism is the most common one. It has been thought that expression of P-glycoprotein is high in C-allel subjects and this situation is responsible for the resistance against some drugs and substances. P-glycoprotein may have a role in the distribution of thyroid hormones, drugs used for hypo- and hyperthyroidism and the resistance occurred. For this purpose possible relationship between T and C alleles and frequency of P-glycoprotein polymorphism as well as thyroid hormone distribution in patients with hypo- and hyperthyroidism was investigated. 35 hyperthyroidism patients diagnosed as Graves' disease, 78 hypothyroidism patients diagnosed as Hashimoto's thyroiditis and 100 healthy volunteers were included in the study. According to the results obtained no statistically significant difference was found in P-glycoprotein C3435T polymorphism between hypo- and hyperthyroidism patients. In addition, the serum free T3 levels of hyperthyroidism patients with C alleles was higher than that of those with T alleles. No statistically significant difference in the CC, CT and TT genotype frequencies between the patients and control groups. In conclusion, it seems that P-glycoprotein polymorphism is not a predictor factor for the occurrence of hypo- and hyperthyroidism. There is a significant relationship between P-glycoprotein and the elevated serum free T3 levels of hyperthyroidism patients, and further research will help understand this situation.

PP-166
ARE NUCLEATED RED BLOOD CELLS IN UMBLICAL BLOOD AFFECTED BY GENERAL OR SPINAL ANESTHESIA

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Circulating red blood cells in term infants vary in size and shape and have a shorter survival than that of normal adult red blood cells. Erythropoietin in turn is regulated by the relative availability of oxygen in circulation. The aim of this study is to determine the relationship between nucleated red blood cell (NRBC) count and umblical chord blood gases and the effects of general or spinal anesthesia on nucleated red blood cell count during the elective cesarean section. ASA I-II physical status, aged between 18-38 years, eighty patients were scheduled for elective cesarean section. Patients were randomly divided into two groups. Patients in group I (n=40) received spinal anesthesia. Patients in group II (n=40) received general anesthesia. After delivery of babies, Apgar scores at 1st and 5th minutes were assessed, umbilical chord artery and vein blood gases were analyzed and blood was supplied from the umblical vein for nucleated red blood cell assessment in all groups. NRBC count was determined automatically on a Coulter LH 750 hematology analyzer (Beckman Coulter, CA, USA). NRBC count was expressed as an absolute number and as a percent.

There were no significant differences in nucleated red blood cell rate, and number and Apgar scores between the groups. Both spinal and general anesthesia did not have any effect on nucleated red blood cell counts.

PP-167
THE RELATIONSHIP BETWEEN THE c.553G>T POLYMORPHISM OF APOLIPOPROTEIN A5 GENE AND THE RISK OF ISCHEMIC STROKE IN TURKISH POPULATION

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ApolipoproteinA5 gene (APOA5), which encodes a 369 amino acid protein called ApolipoproteinAV (apoAV), has several single nucleotide polymorphisms (SNPs) found to be associated with altered TG levels. The c.553G>T SNP results in a substitution of a cysteine for a glycine residue at amino acid number 185(G185C). The possible role of APOA5 SNPs in the development of ischemic stroke is still under extensive investigation. The aim of the present study was to determine the relation of c.553G>T polymorphism of APOA5 gene with altered TG levels and with the risk of ischemic stroke.

The study in Turkish population consisted of 104 unrelated ischemic stroke patients and 100 control subjects. There was no difference in mean age of the patient (63.1 ± 14.1) and control groups (63.8 ± 15.2). Total cholesterol, TG and LDL levels were insignificantly higher, while HDL was significantly lower in patients when compared to controls. We found one patient and one control subject with heterozygote genotype (c.553GT). Other subjects were homozygote for the wild type allele (553GG). The frequency of the T allele for the c.553G>T SNP for the patient and control groups were 0.0048 and 0.0050 respectively. Logistic regression analysis revealed hypertension, LDL, HDL and smoking as significant predictors of stroke. These were the preliminary results from a project in which the role of a second polymorphic region of APOA5 gene with stroke will be investigated in a larger population of stroke patients.

PP-168
ENDOTHELIAL DYSFUNCTION AND ISCHEMIA MODIFIED ALBUMIN LEVELS IN PREECLAMPSIA

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We have investigated the significance of oxidative stress markers [superoxide dismutase (SOD), advanced oxidation protein products (AOPP), malondialdehyde (MDA), nitric oxide (NO), and thiol levels] in healthy and preeclamptic pregnant women. We also evaluated the level of endothelin-1 (ET-1) and ischemia modified albumin (IMA) to compare with endothelial dysfunction parameters.

Thirty preeclamptic patients and thirty healty-pregnant women were took in this study. IMA [albumin cobalt binding test (ACB)], NO [Griess reagent], AOPP, MDA and thiol levels were all measured using spectrophotometric methods. SOD and ET-1 levels were assayed by an enzyme-linked immunosorbent assay (ELISA) technique using a commercially available kit. Student's paired t-test was used for the statistical analysis. P values less than 0,05 were considered statistically significant.

The levels of serum MDA, AOPP, IMA and ET-1 were found to be statistically significant and higher in the preeclamptic pregnant women compared to control group ($p<0,05$). The serum SOD, NO and thiol levels were all decreased in preeclamptic pregnant women ($p<0,05$).

Increased levels of oxidative stress markers and decreased capacity of antioxidants in preeclamptic pregnant cause endothelial dysfunction. The high level of IMA in preeclamptic pregnant may belong to placental hypoxia. These results may be important in the pathophysiology of preeclampsia.

PP-169
EFFECTS OF FINASTERIDE ON ENDOTHELIAL DYSFUNCTION IN PATIENTS WITH POLYCYSTIC OVARY SYNDROME

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Women with polycystic ovary syndrome (PCOS) who present with hyperandrogenemia, hyperinsulinemia and insulin resistance appear to be at high risk of cardiovascular disease. The aim of this study was to assess the effects of finasteride on cardiovascular disease risk factors such as endothelial dysfunction and lipid levels in patients with PCOS.

Fifteen patients with PCOS and 17 healthy subjects were included this study. Patients were received finasteride (n = 15) for 6 months.

Nitric oxide (NO.), endothelin-1 (ET-1), malondialdehyde (MDA), Apo A, Apo B, total cholesterol (TC), triglyceride (TG), HDL-C, LDL-C, small-dense LDL (sd LDL) levels and paraoxonase (PON) activity were measured in serum/plasma obtained from study groups. Insulin resistance (by using homeostasis model insulin resistance index (HOMA)) and serum androgen levels were also evaluated.

Significantly decreased NO., HDL-C levels and PON activities, but increased MDA, ET-1, TC, TG, LDL-C and sdLDL values were found in PCOS patients than those of controls. NO.,In finasteride group, ApoA level and PON1 activity increased and MDA, sdLDL levels decreased significantly. Even though the levels were in normal laboratory range, increased HDL-C, decreased TC, TG and LDL-C levels were also observed .

In conclusion, this study confirms that 5a-reduktase inhibitor finasteride is well therapeutic agent that can be used in the treatment of PCOS.

PP-170
EVALUATION OF PON1 ACTIVITY AND ITS GENOTYPE, AND OXLDLAB LEVELS AND THEIR RELATIONSHIPS IN MEN PATIENTS WITH CORONARY ARTERY DISEASE

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Objectives: HDL plays an important anti-atherogenic role by several mechanisms including reverse cholesterol transport and antioxidant properties such as antioxidant enzymes. Human serum paraoxonase (PON1) is one of the antioxidant enzymes located in HDL and it has antiatherogenic effects in atherosclerotic processes. The aim of the present study was to investigate serum paraoxonase1 (PON1) activity and PON1 Q192R gene polymorphism, and also their relationships with serum autoantibody against oxidized low density lipoprotein (oxLDLAb) levels, lipid and lipoprotein parameters in healthy male subjects and male patients with coronary artery disease (CAD).
Design and Methods: 72 male patients with CAD and 85 sex and age matched healthy subjects were studied. PON1 activity, PON1 Q192R genotyping and oxLDLAb, serum lipids lipoproteins and apolipoprotein levels were evaluated..
Results: The mean PON1 activity in patients with CAD was found to be lower than that of control subjects but oxLDLAb level was higher ($P<0.05$, $P<0.001$ respectively). No relationship was found between PON1 activity and oxLDLAb level. Distrubution of PON1 Q192R genotypes was not significantly different between CAD and control group.
Conclusion: It was shown that decreased PON1 activity and increased oxLDLAb levels could be associated with atherosclerotic coronary artery disease

PP-171
SECRETORY PHOSPHOLIPASE A2 (SPLA2) ACTIVITIES IN BREAST CANCER PATIENTS

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PLA2 enzymes are a large enzyme family that mediates the hydrolysis of membrane phospholipids to arachidonic acid. Cyclooxygenases which are produced from arachidonic acid in forward steps are known to be effective in angiogenesis. The most studied enzyme is the sPLA2 in this enzyme family. It plays a direct role in cell proliferation, angiogenesis and apopitosis. And it has an indirect role in breast tumour growth through the free oxygen radicals and lipid peroxidation. Our aim was to investigate the levels of sPLA2 in 20 tumoural tissue (12 invasive, 8 mixt type) and peritumoural tissues. Bloods of the patients and 10 healthy subjects were also included. sPLA2 levels were determined by colorimetric method. There was a significant induction in tumoural tissues when compared with peritumoural ones. Serum sPLA2 levels were significantly higher in patients than the healthy subjects. sPLA2 enzymes are effective in neurotransmission, immun response, digestion and signal transduction. When sPLA2 activities are increased in pathological conditions, the oxidative metabolism of arachidonic acid by the lypooxygenase and cyclooxygenase pathways lead to free radical generation. Impaired organisation of the membrane structure results in the lost of membrane phospholipids, change in membrane permeability and ion exchange deficiencies. These lead to many pathologic processes such as cancer. We suggest that if the studies in cancer research include the inhibition of sPLA2; more information about this enzyme and its role can be understood.

PP-172
HUMAN SERUM ARYLESTERASE AND GLUTATHIONE S-TRANSFERASE ACTIVITIES: RELATION TO ISCHEMIC STROKE

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Oxidative stress plays an important role in the pathogenesis of atherosclerosis and carotid atherosclerosis is a risk factor for stroke. Human serum paraoxonase (PON1) protects LDL from oxidation by the hydrolysis of biologically active lipoperoxides. Oxidized LDL plays an important role in the early stage of atherosclerosis, so PON1 has a protective role against atherosclerosis. Phenylacetate hydrolysis activity of PON1 (arylesterase; ARE) is directly correlated with concentration of PON1 in blood. Glutathione S-transferases (GST) are involved in phase II detoxification reactions of xenobiotics. GSTs detoxify metabolites produced within the cell by oxidative stress. The aim of the present study was to determine the relation of GST and ARE activities with the risk of ischemic stroke.
The study population consisted of 103 ischemic stroke patients and 99 controls. There was no difference in mean age of the patient (62.6±14.6) and control groups (63.4±13.9, P=0.8). Total cholesterol, triglyceride and LDL-cholesterol levels were insignificantly higher, while HDL-cholesterol was significantly lower in patients when compared to controls. Arylesterase activity of the patients (113.6±34.3 U/mL) was lower than that of controls (115.6±34.1 U/mL). GST activity, on the other hand, was higher in the patient group (11.0±4.4 U/L) than in control group (10.3±3.9 U/L). Logistic regression analysis revealed hypertension, smoking, LDL and HDL as significant predictors of stroke.

PP-173
PLASMA LEPTIN IN PATIENTS WITH END STAGE RENAL DISEASE

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Introduction: Leptin, the gene product of ob gene ,is important in the control of appetite in rodents and may have an important role in humans. Elevated serum leptin levels have been reported in patients with end stage renal disease(ESRD). Apart from the decreased glomerular filtration rate(GFR), body composition and inflammation may affect leptin levels in ESRD patients.Given the short half life of leptin in the circulation and the presence of leptin receptor in the kidney,it seems that kidney serves as a site of clearance of leptin from the circulation.If leptin is cleared by the kidney, we would expect to see decreased renal uptake in patients with renal insufficiency and increased levels of circulating leptin in ESRD patients.
Material and Methods: In this study leptin levels were evaluated pre and post dialysis to estimate if leptin is cleared during hemodialysis. Blood samples were collected from 39 ESRD patients undergoing hemodialysis. Leptin levels were determined by ELISA.
Results: As would be predicted by the molecular weight of leptin(14 to 16000 daltons),there was no evidence of clearance across the dialysis membrane with post-dialysis levels greater than pre-dialysis levels(28.16 ± 5.36 vs. 23.75 ± 4.72 ng/ml, respectively, paired t-test, $P>0.05$).
Conclusion: Circulating leptin is not removed by dialysis in ESRD patients due to the pore size of the dialysis membrane. Leptin levels are higher in post dialysis than pre-dialysis .Further studies are required to evaluate the significance of these elevated leptin levels in patients with end stage renal disease.
Keywords:Leptin,End stage renal disease(ESRD)

PP-174
ROLE OF BIOCHEMICAL MARKERS TROPONIN I AND LEPTIN IN DIAGNOSIS OF CORONARY ARTERY DISEASE

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Background: The high prevalence and percentage of patients suffering from cardiovascular disease has an important place in medical Society. Establishment of new and useful methods in diagnosing and assessing the prognosis of these disease is important to the scientists. In recent years troponin I has been a sensitive and specific marker of myocardial cell injury.
Also leptin measurement in cardiovascular disease is important and under exploration. The aim of this study was to observe the role of biochemical markers in diagnosis of cardiovascular patients.
Methods: This has been a case series study on 100 patients suffering from cardiovascular disease. After blood sample collection serum was separated. These were patients of Noor pathobiology laboratory. In their serum , troponin I and leptin was measured.
Results : The results show there is a significant relation bet ween leptin and gender in CAD patients(P<0.05). Also there is a significant relation between leptin and age of CAD patients(P<0.05) but no relation between troponin I and age of these patients. There is a significant correlation between BMI and leptin.
There is a significant relation between troponin I and BMI in CAD patients.
Conclusion : The results show that two markers i.e leptin and troponin I are suitable markers in diagnosis of cardiovascular disease. Time of sample collection is an important criteria in this study. Samples collected from patients admitted in the hospital can give better results. These are patients who have approched Noor laboratory under the guidiance of the CAD specialists, therefore time control has not been precisely performed on these patients.

PP-175
CHANGES OF CIRCULATING LEPTIN LEVELS DURING NORMAL MENSTRUAL CYCLE IN IRANIAN HEALTHY WOMEN

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Leptin, a circulating 16-kd polypeptide consisting of 167 amino acids, appears to be involved in the body weight homeostasis.Morover; leptin plays an important role for the reproductive system, early embryogenesis, and fat metabolism during pregnancy and puberty. Significant correlations have been found between leptin and sexual hormones, which has cytokine and hormonal properties. .
To examine the changes in serum leptin levels during the menstrual cycle, we studied the association between serum leptin and reproductive hormones in young, healthy Iranian women.45 healthy women between 20 and 39 years of age volunteered for the study .They all had regular menstrual cycles, with cycle length varying between 26 and 32 days. None of them used oral contraceptives. All were of normal weight, with body mass index(BMI) < 25 Kg/m2 . . Fasting blood samples were collected during the follicular phase, midcycle and luteal phase of the menstrual cycle. FSH and LH were measured with coated tube immunoradiometric assay. Estrogen and progestrone were measured using antibody –coated tubes. Serum Leptin concentration were measured by Leptin (sandwich) ELISA. In menstruating women, serum leptin increased from 14.9+/-2.9 ng/ml in the early follicular phase to 20.4+/-4.2 ng/ml (P<0.01) at the midluteal phase and returned to the baseline by the subsequent menses. Serum leptin concentrations differ during menstrual cycle in line with changes in gonadotropin steroid concentrations. Also leptin levels were correlated with BMI. .

PP-176
ABSTRACT NO.384; 472 NOLU ABSTRACT'LA AYNI

PP-177
THE EFFECTS OF LIPEMIA ON SERUM LEVELS OF PHENYTOIN ANALYSED BY CLONED ENZYME DONOR IMMUNOASSAY (CEDIA)

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In general lipemia mainly causes three interferences: electrolytic marginalization, the partition of nonpolar analytes and light scattering. We tried to find out whether there is lipemia interference in the phenytoin levels which are measured by means of CEDIA method.
In vivo therapeutic and in vivo toxic phenytoin serum was prepared by using medium (10–20 µg/ml) and high (above 20 µg/ml) serum phenytoin. In vivo therapeutic and in vivo toxic phenytoin serum pools including 15 µg/ml and 30 µg/ml serum phenytoin concentration were prepared. The cholesterol standard was determined by dissolving pure cholesterol in isopropyl alcohol.
It was seen that there was not any meaningful difference between the serum pools including phenytoin at the in vitro therapeutic and toxic level after we reached 5000 mg/dl trigliseride by adding 20 g/L İVELİP® oil emulsion.
After the serums whose trigliseride concentration is 1000 mg/dl and cholesterol concentration is 500 mg/dl were added to in vivo serum pools include phenytoin and the therapeutic and toxic level, there was not a meaningful difference between the groups.

PP-178
THE EFFECTS OF BILIRUBIN ON SERUM LEVELS OF MYCOPHENOLIC ACID (MPA) ANALYSED BY CLONED ENZYME DONOR IMMUNOASSAY (CEDIA)

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The reason why the bilirubin which is an endogeneuos interference is an important factor originates from its spectral features. The spectral interference is associated with the powerful absorbation of the bilirubin (direct or indirect which is) 440 and 540 nm. The other reason is that it reacts against the testing reagents. In order to determine the negative effects of the matters like hemolysis, lipemia and bilirubinemia, the analytical variation is evaluated after the effects are added to the samples. The causes wich will cause the interference are stated in kits by the manufacturer factories. If it has not been explained, the result variation is examined after the matter is added to the sample. The constant error is equal to the amount of the interference that is determined.
In this study, with a new method CEDIA, using autoanalyzer Olympus AU 640, we searched for the interference of bilirubine after we added 300 and 600 mg/dl bilirubine to the pools includşng mycophenolate of in vivo 1.5 and 13; in vitro 1.3 and 13.6 mg/dl.
The in vivo serum pool was prepared from the blood of 40 patients who worked in the same day and who had kidney transplantation by selecting the blood the MPA level of which was normal or high. These serum pools including MPA at the therapeutic (1.5 mg\L) and toxic dose level (13,0 mg\L) were added with 300 and 600 mg/dl bilirubin standard. The last concentration of the serums reached 30 mg\dl ve 60 mg\dl bilirubin by increasing the total amount to 2 ml. Blind study was performed for each experiment and 6 experiments were performed for each group. Each study was repeated three times.
The in vitro serum pool was prepared by adding 300 and 600 mg/dl bilirubin standard after the serum that has been prepared from the blood of 40 were healthy and used no medicine by after the sanrifuge of blood by adding MPA at the therapeutic (1.3 mg\L) and toxic dose level (13.6 mg\L).
There was no differene between the mycophenolate levels of the pools before and after 300 and 600 mg/dl bilirubin were added to serum pools including mycophenolate at in vivo and vitro, therapeutic and toxic level. There was not a meaning a statistical difference between the pools when they were compared

with one another in the group.
Keywords: Mycophenolate, CEDIA, Bilirubinemia

PP-179 – PROGRAMDA DÜZELECEK
THE CLINICAL IMPORTANCE OF SERUM ADENOSINE DEAMINASE LEVELS IN PATIENTS WITH CORONARY ARTERY DISEASE

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It is well known that adenosine deaminase (ADA) is the marker of T-cell activation. Also, when adenosine is catalyzed to inosine by ADA, the inosine is metabolized to hypoxanthine
and hypoxanthine can produce lots of superoxide radicals and exaggerate the ischemic/reperfusion injury. Adenosine can inhibit the PMN adhesion and exudation, thus it can reduce the reperfusion injury. Adenosine can also stimulate the angiogenesis in cultured myocardial vascular smooth muscle cells.
Coronary artery disease (CAD) has been considered as an inflammatory and immunizing disease. . It was reported that ADA had a negative effect on the CAD as assuring CAD was a complement-mediated inflammation and ADA could influence onset and progression of the atherosclerosis.
The aim of this study is determination of the relationship between CAD and serum ADA activity which is accepted as a marker of the T-lymphocytes activation and display the correlation with serum lymphocytes and neutrophilis count, display the correlation with MDA which is the product of lipid peroxidasion and display the correlation with serum levels of triglyceride, cholesterol and HDL-cholesterol which are the significant parameters of CAD.
In experimental procedure, control group of 27, consists of 16 woman and 11 men with normal coronary angiography results, without arhytmia, inflamatuar and immunologic disease. Patient group of 58, consists 16 female with coronery arter disease diagnosed with coroner angiography and 42 male.
Compared to control group, ADA activities and MDA levels of working group with CAD significantly were high statistically ($p<0.05$). There was a high correlation between ADA activities and MDA levels in control group with CAD ($P=0,000, r=0,622$). There was a low negatively correlation between ADA activities and collesterol levels.
As a result, it can considered that high serum ADA activity may influence progression of CAD by causing a reduce in serum adenosine levels and an increase in oxidative stress.

PP-180
THE ANTIOXIDANT EFFECTS OF SEVOFLURAN AND DESFLURAN

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In this study,the antioxidant effects of the anesthesic drugs, sevofluran and desfluran on the lung tissue and plasma have been investigated. For this purpose, the rats were separated into 6 groups according to fasting and 1 and 2 hour drug exposure durations. MDA; SOD and glutathion peroxidase activities from the lung tissue and plasma of decipatated rats were measured. The two hour exposure of sevofluran and desfluran alone did not have significant oxidative effect on lung tissue. However the short expoure of Desfluran resulted in more infiltration in the lung tissue than sevofluran. Conversely, sevofluran produced more oxidative damage on plasma, proportional with the exposure time. As a result, in short procedures sevofluran can be preferred due to its less irritative effect, where as in longer procedures desfluran is the drug of choice compared with sevoflurans oxidative damage potential .

PP-181
CIRCULATING LEVEL OF CYSTATIN C IN B NON-HODGKIN LYMPHOMAS

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Cysteine protease inhibitors, cystatins, are involved in the control mechanisms responsible for intracellular and extracellular protein degradation. Under normal physiological conditions, small amounts of catalytically active proteases, released from lysosomes of infected or dying cells, are effectively blocked by cystatins. A disbalance between proteases and their natural inhibitors lead to development of various pathological

events.
Cystatin C, produced at a constant rate by all nucleated cells, is widely distributed in almost all extracellular fluids, where it inhibits cathepsins. In malignant diseases, like lung and colorectal carcinoma, melanoma and squamous cell carcinoma of the head and neck, serum cystatin C levels are elevated, which is of potential clinical importance.
From this reason, we decided to investigate the cystatin C levels in sera of patients with B non-Hodgkin's lymphomas. The levels of inhibitor were measured by quantitative ELISA.
Our results show that cystatin C levels are significantly increased in sera of patients, compared to healthy controls. Moreover, patients with relapse, have significantly higher cystatin C level compared to patients with no relapse. No correlation has been found between cystatin C level and clinical stage of lymphoma.

PP-182
ERYTHROPOIETIN PROTECTS THE INTESTINE AGAINST ISCHEMIA/REPERFUSION INJURY IN RATS

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Erythropoietin, a hematopoietic cytokine, possesses tissue-protective properties. Recent studies have shown that erythropoietin has protective effects against ischemia/reperfusion (I/R) injury in several tissues. Therefore, the aim of this study was to determine whether recombinant human erythropoietin (rHuEPO) could prevent intestinal tissue injury caused by I/R in rats. Intestinal I/R injury was induced by clamping the superior mesenteric artery for 30-min followed by reperfusion for 60-min with the release of the clamp. rHuEPO (5000
U/kg) was administered intraperitonealy at two different time points: either at 5 min before the onset of ischemia or at the onset of reperfusion. At the end of the reperfusion period, jejunum was taken for examinations. Myeloperoxidase (MPO), malondialdehyde (MDA) and antioxidant defense system were assessed by biochemical analyses. Histological evaluation was performed on hematoxylin and eosin staining according to the Chiu scoring method. Apoptotic cells were determined by TUNEL staining. Erythropoietin improved the tissue
injury, the decreased the number of TUNEL-positive cells and high histological scores and increased catalase levels when given pre-ischemia period, while it was found to have decreased the levels of MDA and MPO, the number of TUNEL-positive cells and high histological scores when given onset of reperfusion. These results demonstrate that erythropoietin protects against intestinal I/R injury in rats by reducing oxidative stress and
apoptosis.

PP-183
PARAOXONASE 1 ACTIVITY IN THE METABOLIC SYNDROME AND ITS RELATIONSHIP WITH CORONARY ARTERY DISEASE

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Paraoxonase 1 (PON1) is a calcium dependent esterase which has gycoprotein structure and associated with the HDL. PON1 is also associated with the triglyceride-rich lipoproteins (chylomicrons and VLDL). Low PON1 activity is related to coronary heart disease (CHD). Low PON1 has been shown in oxidative stress-associated processes such as dyslipidemia. Dyslipidemia is one of four criteria of metabolic syndrome (MS). Aim of our study are to evaluate plasma PON1 activity in the metabolic syndrome and to investigate relationship between PON1 activity and CHD in metabolic syndrome. We investigated the correlations between PON1 activity and HDL-cholesterol (HDL-C), Tryglyceride and malondialdehyde (MDA) levels which is one of biochemical parameters of oxidative stress. PON1 activity was measured by the Eckerson method in 100 patients with MS according to the International Diabetes Foundation and 26 healthy subjects. PON1 activity was significantly lower and MDA levels were significantly higher in subjects with the MS compared with healthy subjects ($p<0.05$). PON1 activity was significantly lower and MDA levels were significantly higher in the MS with CHD com-

pared with the MS without CHD ($p<0.05$). There was no correlation between PON1 activity and HDL-C levels ($p>0.05$, $r=0.15$), TG levels (($p>0.05$, $r=0.14$) in MS. As a result; PON1 activity is associated with MS and it may be used for indicator of CHD in subjects with the MS.

PP-184
RESEARCHING FOR ANTIOKSIDAN SYSTEMS IN CASES WITH POLICYSTIC SYNDROM BEFORE AND AFTER TREATMENT OF METFORMIN AND INHIBIN LEVELS

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In our study, we purpose investigated to antioxidant/oxidant status of women with polycystic ovary syndrome (PCOS). The study population consisted of 17 women with PCOS. The age of the patients ranged from 21 to 34 years (mean±SD: 24.6±3.6). We assessed the levels of MDA levels as an index of lipid peroxidation and inhibin B, which is criteria of ovulation process. Additionally, we also investigate some antioxidant enzyme activities before and after treatment with Metformin (2x850 mg/day) such as SOD, GSH-PX, G6PDH and some hormones/metabolic markers in blood samples.
When compared to after the treatment with Metformin, inhibin B levels were significantly elevated, but G6PDH activities were significantly decreased $p<0.05$ and $p<0.05$ respectively. There were no meaningfull differences between GSH-Px, SOD activities and MDA levels after the treatment with Metformin. On the other hand there were significantly strong and moderate negative intracorrelation between MDA-SOD and MDA-G6PDH enzyme activities (r: - 0.732 and - 0.525 respectively, $p<0.05$). There were no meaningfull correlation among the MDA-GSH-Px, MDA-INH and BMI-INS after the treatment with Metformin and before.
Significantly decreased G6PDH activities, and unchanged GSH-Px, SOD activities and MDA levels summarised the compensatuar mechanism for women with PCOS in treatment with Metformin. This effects possible were due to the decreased insuline concentration, and no need the NADPH.

PP-185
LEVELS OF CYCLOOXYGENASE-2 AND LIPOOXYGENASE ACTIVITIES IN HUMAN BREAST CANCER

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Oxidative metabolism of polyunsaturated fatty acids through cyclooxygenases or lipoxygenases can generate various lipid peroxides and bioactive lipids, and regulate cellular proliferation, apoptosis, differentiation and senescence. The role of the second cyclooxygenase isoform (COX-2) has been demonstrated in a number of studies and is regarded as a promising target for chemoprevention and treatment. The involvement for lipoxygenases in tumor initiation and progression has been implicated in several studies but remains controversial.
In this study, we have determined COX-2 levels and lipoxygenase activities in the 20 tumoural and peritumoral breast tissues and serums which were taken before the operation.
COX-2 levels were determined by ELISA method and the LO activities were done with colorimetric method. Both of these parameters were found significantly higher in the tumoral tissues than peritumoral ones; and so were the patients' serums when compared with the control serums ($p<0,05$). COX-2 levels were significantly higher in invaziv type, high grade and premenaposaul patients. Lipoksigenase activities did not change by the age, menoposaual status, tumor type or grade.
Arachidonic acid metabolysing enzymes have been studied in some types of cancers. Our findings are in accordance with the results of the other studies. More observations will drive us to the possible role of these to enzymes in different types of breast cancer.

PP-186
CHITOTRIOSIDASE ENZYME ACTIVITY IN CRIMEAN-CONGO HAEMORRHAGIC FEVER PATIENTS

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Introduction: Most pathogen cell-wall constituents, such as lipopolysaccharide, glucan, mannans, mannoproteins, and chitin, are recognized as foreign substances by endogenous pathogen recognition systems. Chitinases are ubiquitous chitin fragmenting enzymes, identified in various organisms and involved in several biological processes including defense against chitin containing pathogens, such as virus. Chitotriosidase (ChT) is a member of Chitinase Family. Crimean Congo hemorrhagic fever (CCHF) is a severe viral infection described in parts of Africa, Asia, Eastern Europe, and Middle East. The virus belongs to the genus Nairovirus in the Bunyaviridae family and causes severe diseases in humans, with a reported mortality rate of 15–30%. CCHF is a hemorrhagic syndrome presenting with fever, nausea, vomiting, myalgia, and bleeding from various sites. Consequently, we aimed to investigate ChT enzyme activity in patients with CCHF.
Materials and methods: CCHF patients (n=43) were compared with age and sex matched healthy controls (n=40). ChT enzyme activity was measured according to the method described by Guo et al. The chitotriosidase enzyme activity was expressed as nanomoles of substrate hydrolyzed per milliliter per hour (nmol/ml/h). Statistical analysis was performed by using the SPSS 11.5 Statistical Package Program for Windows (SPSS Inc., Chicago, Illinois, USA). Results were presented as means ± standard deviation and groups were compared by parametric independent samples t test. Differences were considered significant at $p<0.05$.
Results: Plasma ChT enzyme activity levels in patients with CCHF and control subjects were 248±164 and 170±166 nmol/ml/h, respectively and, the difference was statistically significant ($p<0.033$).
Conclusion: It is known that activated macrophages are the main source of ChT. The activating factors are still unknown and are likely to be different in various disorders. For example in Gaucher disease, liver is believed to be the main site of ChT production. Higher levels of ChT enzyme activity, which is thought to have antiviral activity in plasma of patients with CCHF, may be beneficial.

PP-187
Abstract No.409

PP-188
PROTECTIVE EFFECTS OF RESVERATROL AGAINST HYPOXIA REOXYGENATION INJURY IN HUVEC

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Introduction: Ischemia-reperfusion injury is related to vascular dysfunction such as stroke and myocardial infarction. Reactive oxygen species (ROS) generation as a major feature of response to hypoxia-reoxygenation (H/R) is shown in different cells.
Objective: The present study was designed to determine ROS generation in H/R injury in human umbilical vein endothelial cells (HUVEC) and to test the protective effects of resveratrol (RSV).
Study Design: HUVEC was subjected to oxygen glucose deprivation to mimic H/R (6 h hypoxia/24 h reoxygenation). ROS production was measured by hydroxyphenyl fluorescein (HPF) 10 mM concentration. Glutathione peroxidase (GPx), catalase, superoxide dismutase (SOD), nitric oxide (NO) and nitrotyrosine levels were determined. In this model, RSV was used for protection against ROS generation in 0.1, 1.0, 10, 50 and 100 mg/mL doses.
Results: While NO concentration was increased with H/R, GPx, catalase, SOD and nitrotyrosine levels were not changed. 10, 50 and 100 mg/mL RSV reduced ROS generation.
Conclusion: These findings suggest that NO is involved in hypoxia-reoxgenation injury in HUVEC and resveratrol might be useful in protection against ischemia-reperfusion injury related to vascular dysfunction.

PP-189
ASSOCIATION BETWEEN PARAOXONASE ENZYME ACTIVITY AND APOLIPOPROTEIN A AND B LEVELS IN CHRONIC RENAL FAILURE PATIENTS

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Paraoxonase-1 (PON-1) is a calcium-dependent esterase associated with high density lipoprotein and could protect low density lipoprotein against peroxidation. PON-1 gene variants have been identified as risk factors for cardiovascular disease. PON-1 activity has been shown to be low in patients with myocardial infarction, diabetes mellitus or familial hypercholesterolemia. Cardiovascular disease is the main cause of death in chronic renal failure. The aim of this study was to investigate the association of PON-1 activity with serum lipid profile, apolipoprotein A (Apo A) and B (Apo B) levels in chronic renal failure patients.
Serum PON-1 activity was measured spectrophometrically in 62 patients with kidney disease, including 20 patients with hemodialysis, 33 patients with peritoneal dialysis, and 9 renal transplant patients. Patients were compared with control subjects (n= 62). Additionally, we measured creatinine, total lipid profile Apo A and ApoB levels in all patients and control group serum samples.
PON-1 activity was significantly lower ($p<0.05$) in patients with chronic hemodialysis (149.1 ± 50.3 U/L), chronic peritoneal dialysis (155.7 ± 56.9 U/L), and renal transplants (113.8 ± 35.2 U/L) with respect to the control subjects (212.8 ± 76.7 U/L). No significant changes in lipid parameters, Apo A and Apo B were between patients and controls. Creatinine levels were significantly higher in chronic renal failure patients (8.3 ± 4.1 mg/dL) with respect to the control group (0.7 ± 0.1 mg/dL) ($p<0.001$); and a significant correlation was with PON-1 activity ($p<0.05$).
Our results suggest, that decreased PON-1 activity is not associated with Apo A and Apo B levels. Further large-scale studies are nedded to confirm these results.

PP-190
ALZHEIMER'S DISEASE-LINKED MUTATIONS IN PRESENILIN 1: BIOLOGICAL EFFECTS IN PATIENTS LYMPHOBLASTS

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Mutations in presenilin 1 (PS1) gene are the major cause of early-onset familial Alzheimer's disease (FAD). In a study of Zekanowski et al. (Exp Neurol., 2003) two novel and two previously known mutations in PS1 gene were identified in a group of Polish patients. The aim of the current study was to analyze biological effects of these mutations in lymphocytes from these patients and to assess lymphocytes as possible diagnostic material in AD. Immortalized lymphocytes from four patients with distinct mutations in PS1 were compared to control lymphocytes from nine healthy individuals. Cell cycle progression and susceptibility to apoptotic stimuli of lymphocytes were analyzed by flow cytometry. Apoptosis was additionally estimated by Annexin V/PI staining. Lymphocytes from each of the patients with PS mutations showed increased vulnerability to apoptotic stimuli. Alterations of the cell cycle were observed only in lymphocytes of one of the patients. This last result indicates that biological effects of distinct mutations can be different. The susceptibility of lymphocytes to apoptosis could be further studied as a possible FAD diagnostic tool.
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PP-191
HELICOBACTER PYLORI INFECTION AND CORONARY ARTERY DISEASE

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Background: Helicobacter pylori (Hp) infection is a well-established cause of chronic gastritis and peptic ulcer disease. However, there is growing evidence that the chronic inflammatory reaction to this pathogen may also play an important role in coronary artery disease (CAD). Our aim in this study was to investigate the difference of seroprevalence of Hp infection in a control group compared to a group of patients with electrocardiographic evidence of CAD.
Materials and Methods: Our study included 50 apparently healthy control subjects as the control group, and 79 cardiology patients with electrocardiographic evidence of CAD as the patient group. Quantitative measurement of IgG antibodies to Hp in sera from subjects of both groups was performed with an automated commercial EIA method.
Results: Seroprevalence of Hp IgG was significantly higher in the patient group (91.1%) compared to the control group (55.8%), ($P<0.0001$).
Conclusions: Our results suggest that there is an increased seroepidemiological association of Hp infection with CAD.

PP-192
ENDOTHELIAL DYSFUNCTION AND ALTERED CIRCULATING LEVELS OF VASOACTIVE PROTEINS IN EARLY DIABETIC NEPHROPATHY

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Background: Patients with type-2 diabetes mellitus (DM) are well known to have a dramatically elevated risk of cardiovascular disease (CVD). The advent of diabetic nephropathy characterized by proteinuria and impaired renal function, again increases the risk for CVD and an early death. While diabetic nephropathy may indeed only be a reflection of a more generalized vasculopathy in DM, we hypothesized that altered protein metabolism of vasoactive peptides in the kidney during proteinuria may also in itself promote CVD.
Materials and Methods: We enrolled 85 diabetic patients (58 % males, mean age 51±5 yr) with normal renal function along with 38 non-diabetic, non-proteinuric matched controls (53 % males, mean age 48±6 yr) in a cross-sectional study. The patient group was further divided according to minor (total U-protein <500 mg/day; n=45) and severe (≥500 mg/day; n=40) proteinuria. In each of the 3 groups, we recorded basic clinical and anthropometric values and meas-

ured brachial artery endothelium-dependent vasodilatation (FMD), nitroglycerine-mediated dilatation (NMD) and carotid intima-media thicknesses (CIMT) using ultrasonography. Circulating visfatin, adiponectin, α1-Heremans-Schmidts glycoprotein (AHSG), insulin and high sensitivity C-reactive protein (hsCRP) levels were all measured using commercial ELISA.
Results: Plasma visfatin, CIMT, HOMA index, insulin and hsCRP levels were all significantly higher in diabetics than in control subjects, while FMD, plasma adiponectin, serum albumin and serum AHSG levels were significantly lower (all p<0.001). When compared to patients with minor proteinuria, patients with severe proteinuria had significantly higher plasma visfatin, HbA1c, hsCRP, and HOMA index than patients with minor proteinuria. (p<0.001, respectively), while plasma adiponectin, FMD and serum AHSG levels were all significantly lower in this group (all p<0.001). In multivariate analysis, both the amount of urinary protein loss (r2=0.17, p=0.002) and circulating visfatin levels (r2=0.28, p<0.001) were found to be independently related to FMD after adjustment for differences in age, sex, eGFR, hsCRP, HOMA, plasma AHSG, adiponectin, visfatin levels and severity of proteinuria.
Discussion: Proteinuria with normal glomerular filtration rate was independently associated with an impaired endothelial function (FMD), insulin resistance and increased inflammation. A high urinary protein loss also correlated with higher plasma visfatin and hsCRP, and with lower adiponectin and AHSG. We suggest that proteinuria in the presence of normal serum creatinine and urea levels may be an important indicator of altered renal protein handling and not just generalized vasculopathy in patients with DM.

PP-193
THE ETIOLOGY OF PROTEINURIA DETERMINES PLASMA LEVELS OF ADMA AND ENDOTHELIAL DYSFUNCTION

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Background: Asymetric Dimethyl Arginine (ADMA) levels play a role in the increased cardiovascular mortality and morbidity rates of chronic kidney disease (CKD). Patients with proteinuria have high ADMA levels and poor cardiovascular event rates. The clinical outcome is even worse if the etiology of proteinuria is secondary amyloidosis (SA). To search for the cause of the further increase in cardiovascular event risk in SA, we compared the classical risk factors along with the plasma ADMA levels, L-arginine/ADMA ratios and endothelial functions of patients with SA to those of the patients with primary glomerulopathies (PG).
Methods: We enrolled 121 non-diabetic patients with proteinuria (proteinuria with PG, n=41; nephrotic range proteinuria with PG, n=39; nephrotic range proteinuria with SA, n=39) and 50 healthy subjects matched for age, sex and body mass indexes (BMI). Proteinuria, ADMA, symmetric dimethyl arginine (SDMA), L-Arginine, L-Arginine/ADMA ratio, flow mediated dilatation (FMD), high sensitive C reactive protein (hsCRP), insulin and homeostasis model assessment (HOMA) index measurements were performed.
Results: ADMA, SDMA, hsCRP levels, HOMA index and proteinuria of patients were significantly higher (p<0.001 for all) and FMD, L-Arginine and L-Arginine/ADMA ratio were significantly lower than those of controls (p<0.001, p=0.012, p<0.001 and p<0.001 respectively). The severity of proteinuria was significantly correlated to inflammation, HOMA index, ADMA, SDMA, L-arginine/ADMA ratio, albumin or FMD levels (p<0.001 for all). When compared to patients with PG of nephrotic range proteinuria the SA group had similar levels of proteinuria and glomerular functions but higher HOMA indexes, ADMA, SDMA and L-arginine/ADMA ratios and lower FMD levels (p<0.001 for all).
Conclusion: Higher ADMA levels and impaired endothelial functions in SA can account for the increased cardiovascular morbidity and mortality in these patients. This study implies that apart from the severity of proteinuria the etiology is also an important determinant of endothelial dysfunction (ED).

PP-194
NEOPTERIN LEVELS IN CCHF AS A PROGNOSTIC FACTOR

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Introduction: Increased amounts of neopterin are produced by human monocytes/macrophages upon stimulation with the cytokine interferon-y. Neopterin concentrations in serum and in urine increase in parallel to the clinical course of infections with viruses, intracellular bacteria, and parasites. Crimean-Congo haemorrhagic fever (CCHF) is an often fatal viral infection described in about 30 countries. It is caused by the arbovirus Crimean-Congo hemorrhagic fever virus (CCHFV), which is a member of the Nairovirus genus (family Bunyaviridae). In this study we aimed to investigate serum neopterin levels in patients with CCHF as a predictor factor of disease progression.
Materials and methods CCHF patients (n=51) serums are collected for every day and stored at -80 ˚C. Neopterin concentration was measured with a HPLC (Hewlett-Packard 1050, USA) using a fluorometry detector. The results were calculated as nmol/L. First day serum neopterin levels in CCHF patients were compared with healthy controls (n=30). And also we compared first day and last day serums for two group (one group was CCHF patients ex and the others). Statistical analysis was performed by using the SPSS 11.5.
Results: First day neopterin levels in patients with CCHF and control subjects were 73,25 ± 54,85, 4,78 ± 1,26 nmol/L respectively and, the difference was statistically significant (p<0.001). The ex groups first day and last day levels were 153,25 ± 81,3, 173,14 ± 82,6 nmol/L respectively; the other group were 55,99 ± 24,09, 28,53 ± 17,01 nmol/L
Conclusion: Neopterin production provides prognostic information in patients with malignant tumor diseases and in HIV-infected individuals, high levels being associated with poorer survival expectations. Our results suggest that determination of neopterin may be prognostic indicator of CCHF.

PP-195
CIRCULATING LEVELS OF GLUCOSE IN PATIENTS TREATED PROPOFOL AND ISOFLURANE ANESTHESIA

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Aim: to determine pre, intra and postoperative serum glucose conc.in patients under total intravenous anesthesia (TIVA) with propofol, and in those under general anesthesia with isoflurane.
Methods: the prospective study incl.50 patients aged 35 to 60 years, treated with abdominal surgery. They were randomly divided in 2 groups consisting 25 ASA I/II under TIVA, and 25 ASA I/II patients under bal.anesthesia. Glucose blood samples were drawn in 5 points: 30 min before (T0), 30 min after the beginning of the surgery (T1), at the end (T2), 2 hours (T3), and 24 hours after the surgery (T4). Glucose levels were measured with modified hexokinase/glucose-6-phosphate dehydrogenase method.
Results: the average serum conc.of glucose points T1, T2, and T3 were significantly higher regarding its baseline level (T0) in patients under balanced anesthesia (p<0.0001) while there was not significant difference between T4 and T0. Both T2 and T3 were above upper referral value in this group. The average serum levels of glucose in points T1, T2, T3, and T4 in patients under TIVA were significantly higher (p<0.0001 and, 0.001) related to its baseline value, but only T2 was above upper referral value. Serum conc. in T1, T2 and T3 points in patients under TIVA were significantly lower (p<0.03; p<0.001, respectively) than that in patients under bal.anaesthesia.
Conclusions: results suggest that metabolic response to surgery is attenuated and improved in patients under TIVA in comparison with those obtained in patients under bal. anesthesia.

PP-196
BONE TURNOVER MARKERS IN EARLY DETECTION OF BONE METABOLISM AND DISEASES

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Metabolic bone diseases are considered to be the major health problem, particularly in the elderly. In this study the level of osteocalcin and C-terminal propeptide of type I collagen (CICP) in sera (bone formation markers) and parallely deoxypyridinoline (Dpd) (bone resorption markers) in urine are investigated. All biochemical markers were determined by monoclonal competitive enzyzmeimmunoassay (EIA) obtained by Metra Biosystem (Oxford,UK). The obtained mean values in control group (n=45) of healthy postmenopausal women were 16.36±5.85 ng/mL_for osteocalcin, 157±16.83 ng/mL for CICP, 9.01±3.29 nmol Dpd/_mmol creatinine for Dpd. In postmenopausal osteoporosis group the mean values for osteocalcin (= 39.62±13.45 ng/mL), CICP (=231.87±6.76 ng/mL), Dpd (=13.22±3.38 nmol Dpd/mmol creatinine); in hyperthyroidism group for osteocalcin (=24,00±8.1 ng/mL), CICP (=186.15±22.87 ng/mL), Dpd (=10.59±2.79 nmolDpd/mmol creatinine); in hyperparathyroidism group for osteocalcin (=45.20±14.83 ng/mL), CICP (=277.57±89.93 ng/mL), Dpd (=13.11±4.43 nmolDpd/mmol creatinine); in malignancy group for osteocalcin (=23.92±7.55 ng/mL), CICP (=176.64±11.44 ng/mL), Dpd (=9.76±2.65 nmolDpd/mmol creatinine) for p<0.0001 have been determined. The marker analyses are non-invasive and allow a dynamic insight into bone metabolism.

PP-197
ETIOLOGY AND SENSIBILITY OF GERMS IN CHILDREN URINARY TRACT INFECTIONS

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Aim: To analyze the etiology of children urinary tract infections and sensibility to antibiotics of different germs.
Patients and method: All the positive urine cultures from the patients hospitalized in Pediatric Hospital during March 2006-March 2007.
Results: The etiology of the 196 cases of confirmed urinary tract infections was: 156 isolates of Escherichia coli (79,59%), 18 isolates of Klebsiella (pneumoniae and oxytoca, 9,18%), 11 of Bacillus protheus (5,61%), five of Enteroccocus spp. (2,55%), two of Enterobacter (1,02%), one of Citrobacter (0,51%), one of Pseudomonas Aeruginosa (0,51%), one of Acinethobacter Baumani (0,51%) and one of Staphylococcus Aureus (0,51%). The antibiotic susceptibility testing was done according with standardized disk diffusion susceptibility testing (Kirby-Bauer Method), using the reading and interpretation rules based on CLSI/NCCLS 2006. The aspect of antibiograms referred to isolate behavior against betalactamines (decrease of inhibition diameters of third generation of Cephalosporins or Monobactams-Aztreonam), determined us to perform the synergy test between third generation of Cephalosporins and Amoxiciline+Clavulanic Acid, with results that explains in details the presence of ESBL-producing phenotype: 5,76% from Escherichia coli tested isolates and 27,77% from Klebsiella tested isolates were ESBL producer. These results are according with those of other studies.
Conclusion: The resistance due to ESBL producer is frequent in Klebsiella isolates and less frequent in Escherichia coli isolates. If bacteria have one or more enzymes, it will develop a specific betalactamine resistance phenotype. It is important to study this phenotype for the adequate treatment with antibiotics from this family.

PP-198
COMPARISON OF THREE METHODS IN SERUM CARBAMAZEPIN LEVELS

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Carbamazepine is for preventing, controlling and healing all partial, tonic-clonic seizures and trigeminal nevralgine. For the best results its dosage is followed up in every patient. In some cases the adjustment of the dosage is made by determining the drug level in serum. It is known that gaining easy, right and absolute result is only possible through a treatment method that has not toxical and side effects. In this paper, we will compare three methods by decreasing the importance of determining the level of the serum carbamazepin.
We determined the level of serum carbamazepin of 50 patients who use carbamazepin in the same day by means of devices in which chemiluminescent immunoassay (CL), cloned enzyme donor immunoassay (CEDİA) and high performance liquid chromatography (HPLC) are used and we evaluated the results statistically. In the carbamazepin measurement methods we realized the reactive and serum stability, linearity, repeatability, recoverability rates minimum measurement limits, dilution and we compared the methods statistically.
In the linearity study, we determined the appropriateness of all three methods %90 until 10 µg/ml the concentration rate was reached.
In the repeatability study in the day, the CV we determined was 3 for CEDIA, 2,6 for CL and 0,96 for HPLC. The determined random error as1,026 for CEDIA, 0,9 for CL and 0,32 for HPLC. As the random errors of the methods was under the level defined by CLIA 88 error criteria we also accepted it.
In the recovering study, the recovering rate was determined to be 92,45 % for CEDİA, 0,96 % for CL and 97,35 % for HPLC. The percentage systematic error was detected to be 0, 151 % for CEDIA, 0,097 % for CL and 0,053 % for HPLC. As the random errors of the methods was under the level defined by CLIA 88 error criteria we also accepted it.
We have not made this study as the manufacturer company defined the minimum measurement value of CL as 1,25 µg/ml. The minimum measurement value that was determined for CEDİA and HPLC was in conformity with the minimum measurement level that was defined by the manufacturer company.
In the studies we made for dilution, we have determined the appropriateness percentage above 67% for CEDIA, 82 % for HPLC with SF until 1/ 16 dilution. In the study we performed on the serum that did not include carbamazepin the appropriateness rate was determined to be 68,8 % and above for CEDIA, 89,6 % and above for HPLC.
In the HPLC–CEDİA regression analysis we determined the systemic error of y=0,038+1x, r=0.983, Sy/x=0,313 as 0,03; in the HPLC–CL regression analysis we determined the systemic error of y=0.046+1x, r=0.965, Sy/x=0.476 as 0,29; in the CEDIA-CL regression analysis we determined the systemic error of y=0.351+0,913x, r=0.938, Sy/x=0.603 as 0,3. We accepted the systematic error of this method as the systematic error (SE) rate was lower than the defined acceptable limit (Ea= 2).
In our study for comparing the methods for measuring the rate of serum carbamazepin , we have seen that there is not a considerable difference between the mentioned three methods (p>0.05).

PP-199
INFLAMMATORY CYTOKINES AND HSCRP LEVELS IN FEMALE MIGRAINE PATIENTS

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Objectives: Migraine is a common neurologic disorder, characterized by recurrent episodes of headache and associated symptoms. The full pathophysiology of migraine is not completely identified. Current theories suggest that neurogenic inflammation may also play an important role in pathogenesis of the diseaese.
Methods: In order to evaluate the relations between the inflammatory markers and migraine type headache, we investigated serum TNF-alpha, IL-6 and hsCRP levels of 20 female migraine patients aged 20- 50 years and 20 healthy age matched female controls. Serum levels of TNF-alpha and IL-6 were measured by commercially available kits based on ELISA method and hsCRP was analysed by routine methods.
Results: TNF-alpha and IL-6 levels were significantly higher in migraine patients than the healthy subjects (p<0.05), but hsCRP concentrations were not different from the controls.
Conclusions: Our results show that chronic inflammation involves in the pathogenesis of migraine and more research on other inflammatory markers may be helpfull in developing new therapy protocols for the disease.

PP-200
THE EFFECTS OF PERITONEAL DIALYSIS AND HEMODIALYSIS ON CYTOKINES, HSCRP AND HOMOCYSTEINE LEVELS

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Objectives: Cytokines are essential mediators of immune response. Chronic renal failure patients suffer from chronic inflammation which results from factors such as impaired kidney function, accumulation of uremic toxins and bioincompatibility of dialyzer membranes. These patients are also at increased risk of cardiovascular diseases.

Methods: We have investigated markers of inflammatory process and cardiovascular risk factors in hemodialysis (HD) and peritoneal dialysis (PD). For this purpose, we have determined serum TNF-alpha, IL-6, hsCRP and homocysteine levels of chronic renal failure patients treated with HD (n=24) or PD (n=24). TNF-alpha and IL-6 measurements were performed by commercially available kits based on ELISA method. hsCRP levels were determined by routine methods and homocysteine levels were measured by HPLC technique.
Results: Serum TNF-alpha and IL-6 levels of HD patients were significantly higher than those of the PD patients ($p<0.05$). HD group had higher hsCRP concentrations than PD patients but the differrence was not statistically significant. There was no significant difference between homocysteine levels of HD and PD patients.
Conclusion: We concluded that inflammatory process was more obvious in HD patients than in PD patients. Detailed investigations are needed to evaluate the risk of cardiovascular diseases in patients with chronic renal failure patients.

PP-201
XbaI DNA POLYMORPHISM OF THE APOLIPOPROTEIN B GENE IS NOT ASSOCIATED WITH DIABETIC COMPLICATIONS

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Patients with non-insulin-dependent diabetes mellitus (NIDDM) have increased triglyceride levels (TG), decreased HDL-cholesterol (HDL-C) levels and increased small, dense cholesterol depleted LDL (LDL-C) particles, which contain apolipoprotein B. These lipid abnormalities are associated with an increased risk for cardiovascular disease. The XbaI polymorphic region of Apo B gene is caused by a substitution of (A-T) in the threonine codon, and has an association with variations in lipid levels. In this study, we aimed the association of XbaI restriction enzyme polymorphism of ApoB gene with ApoA and ApoB levels. Additionally, diabetic macro- and microvascular complications are also evaluated.
Biochemical analysis of glucose, lipid parameters, ApoA and ApoB levels were determined in serum samples of NIDDM patients (n=199) and control subjects (n=58). DNA was extracted from blood leucocytes. After polymerase chain reaction (PCR) with specific primers for ApoB gene, PCR products were digested, electrophoresed and visualized.
Serum glucose levels were significantly increased ($p<0.01$) in patients with NIDDM (147.7 ± 59.2 mg/dL) with respect to the control group (100.6 ± 29.9 mg/dL). No significant changes in cholesterol, TG, HDL-C, LDL-C, Apo A and ApoB levels were determined between control and NIDDM subjects. The frequencies of XbaI polymorphism in diabetic patients were 45.7% XX, 43.2% Xx and 11.0% xx; and in control subjects 51.4% XX, 40.0% Xx and 8.5% xx; $p>0.05$).
Our results suggest that there was no relation between the polymorphic sites in NIDDM patiens with or without macro-and microvascular complications. Additionally, XbaI polymorphism was not associated with Apo A and Apo B levels in control and NIDDM subjects.

PP-202
THE EFFECT OF DIOSMIN HESPERIDIN IN COLONIC ANASTOMOTIC HEALING

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Diosmin hesperidin is contributed with wound healing by increasing the microcirculatory hemodynamic effects. The proven effect of Diosmin hesperidin as a vascular protector and venotonic agent; it reduces venous distensibility and venous stasis; in the microcirculation, it normalizes capillary permeability and reinforces capillary resistance. In this study the effect of Diosmin hesperidin on colonic anastomotic wound healing was investigated. 24 rats were divided into 4 groups, 6 in each group. Following the colonic anastomosis, anastomotic bursting pressure and the tissue level of hydroxyproline was determined at the postoperative third day in Group 1 and seventh day in Group 3. For groups 2 and 4, peroral Diosmin hesperidin was administrated 60 mg/kg per day for 3 days. After colonic anastomosis, the anastomotic bursting pressure and the tissue hydroxyproline levels were determined at postoperative third day in Group 2 and seventh day in Group 4. When the results of the bursting pressures of anastomotic site evaluated, in the treatment groups the pressure levels were statistically significant higher vs.control groups ($p<0.05$). But no statistically significant difference was determined between the groups for tissue hydroxyproline levels. Increasing colonic bursting pressure in treatment groups may be attributed to Diosmin hesperidin's potential regulatory effects on hemodynamic microenvironment at the anastomotic site.
Key words: Diosmin hesperidin, Colonic anastomosis.

PP-203
CAROTID ATHEROSCLEROSIS AND CARDIOVASCULAR RISK FACTORS IN HEMODIALYSIS AND PERITONEAL DIALYSIS PATIENTS

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Background: Cardiovascular diaseases are important factors in mortality and morbidity of dialysis patients. Cardiovascular risk assessment is important in order to arrange the treatment strategies.
Methods: 22 HD and 54 PD patients were included in the study. Carotid artery intima-media thickness (IMT) and plaque score (PS) were obtained by B-mode ultrasonography for each participant. Uric acid, albumin, bilirubin, lipid profile, apolipoprotein A-I (apo A-I), apolipoprotein B (apo B), lipoprotein(a) [Lp(a)], high-sensitivity CRP (hs-CRP), homocysteine (Hcy), vitamin A, vitamin E, sialic acid (SA) and thiobarbituric acid reactive substances (TBARS) were determined. The differences of the cardiovascular risk factors between the patients according to the treatment modality and the comparison of the risk factors as indicators of IMT and PS were investigated.
Results: There was not a significant difference in IMT and PS between the two groups. SA, TBARS, hs-CRP, total, HDL- and LDL- cholesterol, WBC and ESR levels were significantly higher; Albumin levels were significantly lower in PD group. In multiple regression analysis, only bilirubin for IMT and SA for PS were independent predictors.
Conclusions: This study provides information and opportunity for comparison of relatively new cardiovascular risk markers in hemodialysis and peritoneal dialysis patients using carotid atherosclerosis as an objective assessment criteria.

PP-204
THE EFFECT OF NALOXONE ON OXIDATIVE STRESS DUE TO SPERMATIC VESSEL LIGATION OF RAT TESTES

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Two-stage Fowler-Stephens orchiopexy has been attended by testicular atrophy in some cases, and neither the mechanisms responsible for testicular injury are clear, nor there is an effective agent that might prevent this injury. In this study, we aimed to investigate the long-term effects of naloxone, a morphine antagonist, on oxidative stress after spermatic vessels ligation (SVL) in rats.
Thirty-two prepubertal rats were randomly divided into four equal groups. Group1: control (only bilateral orchiectomies were performed); group 2: sham-operated group; group 3: SVL; and group 4: SVL+naloxone (1mg/kg twice daily for one month). One month postoperatively, bilateral orchiectomies were performed to measurement of malondialdehyde (MDA) and NO metabolites (nitrite + nitrate) levels.
The MDA levels of both testes in group 3 were significantly higher than those in group 1 and 2 ($p<0.05$) and in group 4 was not significantly different from those in group 3 ($p>0.05$). While the ipsilateral testicular NO metabolites levels of group 2 and 3 were significantly lower than of group 1($p<0.05$), the contralateral testicular NO metabolites levels of all these groups were similar. After naloxone therapy, did change neither testicular MDA nor NO metabolites levels.
The SVL led to bilateral testicular injury and oxidative stress may be a reason for this injury. We demonstrated that naloxone did not have an antioxidant effect.
Key words: spermatic vessel ligation, testis, injury, naloxone

PP-205
THE PROTECTIVE EFFECT OF ERDOSTEINE AGAINST CYCLOSPORINE-A INDUCED CARDIOTOXICITY IN RATS

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Cyclosporine A (CsA) is a frequently used immunosuppressive agent in transplant medicine to prevent rejection and in the treatment of autoimmune diseases. However, CsA generates reactive oxygen species, which causes nephrotoxicity, hepatotoxicity and cardiotoxicity. The use of antioxidants reduces the adverse effects of CsA. The aim of this study is to determine the protective effects of erdostein on CsA-induced heart injury through tissue oxidant / antioxidant parameters and light microscopic evaluation in rats. CsA cardiotoxicity was induced by administrating an oral dose of 15 mg/kg CsA daily for 21 days. The rats were divided into four groups: control group (n=4), CsA administrated group (15 mg/kg n=5), CsA + erdostein administrated group (10 mg/kg day orally erdostein, n=4) and only erdostein administrated group (10mg/kg day orally n=5). CsA treated rats showed increase in the number of infiltrated cells and disorganization of myocardial fibers with interstitial fibrosis. The number of infiltrated cells, disorganization of myocardial fibers and interstitial fibrosis was diminished in the hearts of CsA-treated rats given erdostein. The malondialdehyde, the protein carbonyl content and nitric oxide levels were increased in the cyclosporine A group in comparison with the control and CsA plus erdostein groups. The activities of superoxide dismutase, catalase and glutathione peroxidase were higher in CsA plus erdostein group than CsA group. However, the CAT, GSH-Px and SOD activities were significantly lower in CsA group than in control group and erdostein group. These results suggest that erdostein has protective effect against CsA-induced cardiotoxicity.

PP-206
ABSTRACT NO.451

PP-207
PRO-BNP, HOMOCYSTEIN LEVELS AND ECHOCARDIOGRAPHIC PARAMETERS IN MYOCARDIAL INFARCTION PATIENTS

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In this study we compared homocystein, pro-BNP, Troponin I and CK-MB levels of the myocardial infarction patients with and without ST elevation (STEMI and NSTEMI, respectively, and we investigated the relationship between echocardiografic measuremets Left Ventricule Ejection Fraction (LVEF), Wall Movement Scor Index (WMSI)) and homosistein, pro-BNP, Troponin I and CK-MB levels. Pro-BNP (Roche Elecsys 2010), homosistein (DPC-Immulite) and troponin I (Beckman Access) were measured by chemiluminescence immunoassays. Pro-BNP levels of the STEMI patients were higher than that of the NSTEMI patients, but the difference between them were not statistically significant (p>0.05). Homocystein levels of NSTEMI patients were higher than that of the STEMI patients and the difference between groups were statistically significant (p=0,049). In STEMI patients LVEF levels were lower and WMSI levels were higher than that of the NSTEMI patients (p=0,021, and p=0,004, respectively). In NSTEMI patients, we did not find any correlation between homocystein levels and Pro-BNP, troponin I, CK-MB and echocardiografic parameters. In STEMI patients we found that there were positive correlations between troponin I and homocystein (r=0,521) and between troponin I and CK-MB (r=0,570). Pro BNP did not show any correlation between any other parameters measured in this study.
Homocystein and Pro-BNP did not show any correlation with echocardiographic parameters (LVEF, WMSI).

PP-208
EFFECTS OF ALBUMIN AND CATION CONCENTRATIONS ON ISCHEMIA MODIFIED ALBUMIN

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Ischemia modified albumin (IMA) is altered albumin by free radicals generated from ischemic tissues. ACB assay is an indirect colorometric measurement of IMA. In this study we investigated effects of Ca, Mg, Fe, Cu concentrations and albumin levels in the ACB assay.
20, 50 and 100 % increase of cation concentrations by adding concentrated solutions to initial sera were performed. IMA was measured five times at these sera and serial diluted serum pools.
Percent differences in the values of absorbance due to IMA were calculated by basing on the means of initial absorbances.
For Ca, Mg and Cu, respectively, differences were determined 115, 101 and 103 % at 20 % increase; 104, 101 and 125 % at 50 % increase;107, 102 and 107 % at 100 % increase. For Fe, differences were 97, 120, 109, 96 and 94 % at 50, 100, 200, 300 and 400 % increase.
Percent differences of in the 7/8, 6/8, 5/8, 4/8, 3/8, 2/8 and 1/8 dilutions of initial serum pool were found 153, 191, 204, 268, 307, and 300 %, respectively.
In conclusion, ACB assay is not affected by Ca, Mg and Fe concentrations but affected by Cu. Values of IMA changes with albumin levels in the sample. Therefore IMA results should be evaluated by considering albumin concentrations.
Keywords: ischemia modified albumin, albumin cobalt binding, acute coronary syndrome

PP-209
THE RELATIONSHIP OF HOMOCYSTEINE AND HBA1C LEVELS WITH CHRONICAL DIABETES COMPLICATIONS IN DIABETIC PATIENTS

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In this study, we investigated the relationship of diabetic complications such as neuropathy, retinopathy and nephropathy with HbA1c and plasma homosystein levels, in newly diagnosed type 2 diabetic patients who did not receive any treatment (n=25)(group 1), and controlled (n=25)(group 2), and uncontrolled diabetics(n=25)(group 3).
Homosystein measurement were made by chemiluminescent method (DPC-Immulite 2000), HbA1c measurement were made by HPLC boronate affinity method (Primus).
There was a significant correlation between homosystein and urea (p=0.001), triglyceride (p=0.017), and age (p=0.11). Homosystein was significantly higher in men than women (p=0.036). A significant correlation was found between HbA1c and retinopathy (p=0.002).
İn conclusion, we observed that in controlled and uncontrolled patients groups with regard to the newly diagnosed diabetic group, the incidence of complications was higher and the development of retinopathy and neuropathy was higher and earlier than the development of nephropathy. We could not see any significant correlation between these complications and homosystein.
We concluded that this situation was because the levels of HbA1c were not very high and data about the diabetes durations were insufficient in all of our patients, or because of the risk factors other than homosystein in complication development.
Key words: Homosystein, diabetes mellitus, HbA1c.

PP-210
DEVELOPMENT AND SCREENING OF PEPTIDES BOUND TO ANTHRAX PROTECTIVE ANTIGEN BY PHAGE DISPLAY

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Bacillus anthracis is a causative agent of anthrax. Anthrax toxins are composed of a protective antigen (PA), lethal factor (LF), and edema factor (EF), in which the PA is a central mediator for the delivery of the two enzymatic moieties LF and EF. Therefore, the PA has been an attractive target in the prevention and vaccinization for anthrax toxin. Recently, it has been reported that the molecule consisting of multiple copies of PA-binding peptide, covalently linked to a flexible polymer backbone, blocked intoxification of anthrax toxin in an animal model.

In this study, we have screened novel diverse peptides that bind to PA with a high affinity (picomolar range) from an M13 peptide display library and characterized the binding regions of the peptides. Based on the amino acid information deduced by DNA sequence, the phages were categorized into 8 groups according to their amino acid similarity. Most of phages had comparable binding affinities to PA83 in pico (10-12) to nanomolar (10-9) ranges. Especially, phages containing P2 (HKHAHN(Y/T)RLPXS), or P6 (LMPTPHHRLFPM) showed most higher bindings on PA83 in vitro. The binding affinities of each peptide displayed on M13 phages were shown to 4.06 and 25.4 pM, respectively. The phages containing P2, P3, P4, or P6 bound to PA63 and the others (P1, P5, P7, P8, and P9) had a preference to PA20. We will also discuss in terms of polyvalent polymer chain diagnosis probe.

PP-211
GLYCOGEN PHOSPHORYLASE BB IN ACUTE CORONARY SYNDROME

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In clinical laboratories the diagnosis of myocardial damage is based mainly on measurements of cardiac troponins, myoglobin and CK-MB mass concentrations. However, still an early and specific marker for detection of myocardial injury is needed. Glycogen phosphorylase BB isoenzyme (GPBB) is one of the candidate markers. In this study, we evaluated efficacy of GPBB assay for the diagnosis of acute coronary syndrome (ACS) within 4 h of onset of chest pain. A total of 31 patients (20 M, 11 F) with ACS and 22 controls (10 M, 12 F) admitted with chest pain but had not an acute myocardial event according to standard criteria. CK-MB activity, myoglobin, cardiac troponin I, and GPBB concentrations were measured on admission. GPBB plasma concentrations were elevated in 87% of patients within 4 h from the onset of chest pain and significantly different between patients and controls (32.13 ± 6.8 µg/L and 6.75 ± 0.97 µg/L, respectively; P<0.0001). As expected, CK-MB activity and myoglobin concentrations were significantly different between the groups (P<0.05 for both). Myoglobin was elevated in 84% and CK-MB was elevated in 45% of the patients. Troponin I concentrations were not significantly different between the groups (P>0.05). In conclusion, GPBB is a promising marker for the early diagnosis of ACS and could probably act as a marker of myocardial ischemia.

Key words: Acute coronary syndrome, glycogen phosphorylase BB, CK-MB, myoglobin, troponin.

PP-212
Abstract No.461
A NEW METHOD FOR URINE CITRATE DETERMINATION

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PP-213
EFFECT OF LIPEMIA ON HOMOGENEOUS LDL-CHOLESTEROL ASSAY

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Homogeneous LDL-cholesterol (LDL-C) assays have widespread used in clinical laboratories. However, knowledge about effect of lipemia on these assays is limited. The purpose of this study was to evaluate the effect of lipemia on two commercial homogeneous LDL-C assays (Roche Diagnostics and Sentinel). Ivelip %20, an intravenous fat emulsion, was added at six levels to 3 different pooled sera, which had three different levels of cholesterol (3.57 mmol/L, 4.97 mmol/L and 5.9 mmol/L). Ultracentrifugation at 60 000xg and +4 C° for 30 min was used to remove lipemia interference. In order to determine whether LDL-CRoche and LDL-CSentinel were interfered by lipemia, the statistical importance of the differences between original and lipemic sera was evaluated considering ±%10 limits of the means of the original values. Additionally, a similar study was carried out in 21 lipemic sera with a range of triglycerides concentrations of 2.83 - 11.86mmolL. The study showed that when LDL-CRoche assay was affected by lipemia at triglycerides concentrations 13.56 mmol/L, LDL-CSentinel was affected at >27.12 mmol/L. However, both of the methods were not affected by lipemia in natural lipemic sera.

PP-214
THE EFFECTS OF DIFFERENT DOSES OF ZINC ON LIPID PEROXIDATION AND PROTEIN OXIDATION IN RAT LIVER

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Zinc (Zn) is an essential nutrient and known as an important antioxidant molecule in disease conditions. It exerts its antioxidant effects indirectly by maintaining membrane structures, involving in the structure of superoxide dismutase (SOD), increasing the metallothionein concentrations and competing with the redox reactive metals, iron and cuprous, for critical binding sites. Dietary Zn deficiency may cause increased lipid peroxidation while Zn supplementation

inhibits this process. In this study we tried to investigate the effects of different doses of Zn on malondialdehyde (MDA) product as an index of endogenous lipid peroxidation and on advanced oxidation protein products (AOPP), as one of the possible marker of oxidative injury which originates under oxidative and carbonyl stress. We studied these parameters in healthy rat liver. Twenty-nine healthy rats are divided into 3 groups which consist of only ad libitum (AL) diet (n=9, control group), AL diet plus 3mg/kg oral Zn sulfate (n=10, low dose group) and AL diet plus 25 mg/kg oral Zn sulfate (n=10, high dose group) for 13 days. Liver MDA measurements from Zn supplemented groups (both in low and high dose) revealed significant increases compared to control group (p=0.001, p=0.022, respectively). But, MDA levels were found to be significantly lower in high dose group when compared to low dose group (p=0.001). Liver AOPP levels of both Zn supplemented groups show a significant decrease compared to control group (p=0.001). AOPP levels were significantly lower in high dose group compared with low dose group (p=0.041). Our study shows that in heathy rats, Zn supplementation increases lipid peroxidation but protects tissues against protein oxidation.

PP-215
CHITOTRIOSIDASE ACTIVITY IN SEREBROSPINAL FLUID OF PATIENTS WITH ANEURYSMAL SUBARACHNOID HEMORRHAGE

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Background: Chitotriosidase, one of the most quantitative proteins secreted by activated macrophages, is a human chitinase member of family 18 glycosyl hydrolases. Studies provide a relationship between the extent of the brain damage and the plasma levels of macrophage products, namely chitotriosidase (Chito) in a group of neurological diseases. However, no study has been undertaken to demonstrate the levels of this important active macrophage product in patients with aneurysmal SAH. The purpose of this study was to investigate the time course(s) of the cerebrospinal fluid (CSF) in patients with aneurysmal SAH.

Materials and methods: Chito in the CSF was detected within the first 3 days, Day 5 and Day 7 after aneurysmal SAH in 20 patients, and the results were compared to 8 patients with normotensive hydrocephalus. The results were also compared with those of the clinical parameters including the patient's outcome at 6 months. Serum Chito activities were measured by fluorometry.

Results: Mean CSF Chito levels were higher on days 5 and 7 in SAH patients than controls. However, no relationship was found between elevated Chito levels and the clinical parameters including symptomatic vasospasm and outcome at 6th moths.

Conclusion: Our results indicate that Chito, an activated macrophage product, is elevated in the acute stage of SAH but is not a specific marker of SAH severity. These results need to be confirmed by a larger group of patient in the future clinical studies.

PP-216
EFFECTS OF α-LIPOIC ACID AND VITAMIN C ADMINISTRATION ON DIABETIC RAT LIVER TOTAL GST ACTIVITIES

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Diabetes mellitus is associated with consequences of oxidative stress which augments the free radical production. Glutathione S- transferases (GST) are involved in phase II detoxification recations and detoxify metabolites produced within the cell by oxidative stress. Thus, we assessed GST activity in relation with diabetes mellitus and also assessed effects of lipoic acid and ascorbic acid. To do this, male Sprauge-Dawley rats were given streptozotocin(STZ) to induce diabetes, and groups were separated as control(n=9), diabetic(n=9), diabetic+lipoic acid given(n=8), diabetic+vitamin C given(n=12) and diabetic+Vitamin C+lipoic acid given(n=7). Four weeks after the development of diabetes and administration of antioxidants, rats were decapitated and total glutathione S-transferase activities were measured by using CDNB. It is observed that the mean total GST activities were increased in diabetic animals. Also, lipoic acid has no effect on diabetic GST activities and ascorbic acid has increased the diabetic GST activities when administered intraperitonally. Furthermore, when administered together these antioxidants reduced the GST activities below the control values. Effects of diabetes, and antioxidant application alone was not statistically significant, on the other hand, effect of both antioxidant on GST activities were statistically significant (p<0.05).

PP-217
THE PROTECTIVE EFFECT OF NIGELLA SATIVA OIL AGAINST CYCLOSPORINE A-INDUCED CARDIOTOXICITY IN RATS

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Cyclosporine A is the immunosuppressor most frequently used in transplant surgery and in the treatment of autoimmune diseases. However, the major limiting factors for the drug's clinical use are its adverse effects, which include nephrotoxicity, hypertension, hepatotoxicity, and cardiotoxicity. Thus, we investigated these issues in rats for detecting the protective role of nigella sativa and evaluated CsA-induced cardiac damage using oxidative markers (SOD, CAT, GSH-Px, MDA, NO and PC levels), and the morphology of the heart tissue using light microscopy. The rats were randomly allotted into one of the four experimental groups: Control (n=6), N. sativa (n=6), CsA (n=6), CsA plus N. sativa (n=6). N. sativa oil was administered (2 ml/kg orally) since the first day, while CsA treatment was performed for the last 21 day (by oral administration 25 mg/kg b.w.). The results of our study showed that pretreatment with NS reduces the subsequent CsA injury in rat heart, demonstrated by normalized cardiac histopathology (reduced connective tissue among myocardial fibers, mild myocardial disorganization), decrease in lipid peroxidation (reduced MDA), and improvement in antioxidant enzyme status (increased activity of GSH-Px, SOD and CAT). Nigella Sativa oil effectively protected against the induction of cardiotoxicity due to possible oxidative stress as well as the inbalance between the production of reactive oxygen species and endogenous antioxidant defence systems.

PP-218
LEVELS OF HOMOCYSTEIN, S-ADENOSYLMETHIONINE AND ANTIOXIDAN IN HYPER-AND HYPOTHYROIDISIM

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PP-219
PREVALENCE AND TREATMENT OF HEPATITIS C VIRUS INFECTION IN PATIENTS ON HEMODIALYSIS IN INSTITUTE OF NEPHROLOGY STRUGA

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Hepatitis C (HCV) virus infection is the most common in patients on hemodialysis (HD). The purpose of the study is to determine prevalence of HCV infection, preventive measures of transmission and the effects of the therapy with peginterferon alfa–2a.
In the study 106 patients on chronical HD included, of which 62,3% were anti-HCV positive. The detection was performed with micro ELISA and HCV–RNK with the PCR. The group of 8 HCV– RNK positive patients were treated with peginterferon alfa – 2a with a dose of 135 µcg/weekly during a period of 48 weeks.
After the therapy, 6 patients had undetectably HCV–RNK, however 2 of them became again HCV –RNK positive 6 months after therapy. In 2 patients the therapy was discontinuited after 12 weeks due to absence of early virusological answer. Forty two anti–HCV negative patients were separated in HCV negative hemodialysis unit. During the period of 4 years, only in 2 patients occurrence of HCV antibodies were revealed.
Hepatitis C virus infection remains a significant problem in hemodialysis patients.
The therapy with peginterferon alfa- 2a achieved HCV eradication and clinical cure.

PP-220
THE PROTECTIVE EFFECT OF PANAX GINSENG ON CARBON TETRACHLORIDE INDUCED LIVER, HEART AND KIDNEY INJURY IN RATS

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Aim: The protective effects of Panax ginseng on carbon tetrachloride (CCl4)-induced hepatotoxicity and the probable mechanism involved in this protection were investigated in rats. Methods: Wistar rats were treated in separate groups as follows: sedentary control (C); CCl4 toxication for a single dose (CCl4); ginseng (300 mg/kg) injected i.p. for 7 consecutive days prior to CCl4 injection (CCl4 + G) and ginseng (300 mg/kg) injected i.p. for 7 consecutive days (G). The degree of protection was evaluated by determining the effects of panax ginseng on malondialdehyde (MDA), glutathione (GSH), superoxide dismutase (SOD), glutathione peroxidase (GPX) and nitric oxide (NO) were estimated in liver, heart and kidney homogenates to evaluate antioxidant activity, and the liver was histopathologically examined as well Results: Panax ginseng (300 mg/kg) elicited significant heart, kidney and hepatoprotective activity by decreasing the lipid peroxidation (MDA) and elevated the levels of GSH, SOD, GPX and NO. Furthermore, these results of biochemical observations are supplemented by a histopathological examination of the rat livers. Conclusion: The present findings indicate that the heart, kidney and hepatoprotective effects of Panax ginseng against CCl4-induced oxidative damage may be due to its antioxidant and free radical scavenging activity.

PP-221
PAPP- A AND C - REAKTIF PROTEIN LEVELS IN PREECLAMPTIC AND NORMOTANSIVE PREGNANTS AT THIRD TRIMESTER

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Preeclampsia is a placental disease of unknown cause. Pregnancy associated plasma protein A (PAPP-A) is an important pregnancy protein. C- reactive protein (CRP) is a marker of tissue damage and inflammation. The aims of this study were to confirm old reports of increased blood levels of PAPP-A in preeclampsia and how its levels correlate with the levels of CRP that is reported to be elevated in preeclampsia.
67 women with preeclampsia symptoms were matched with 56 normal pregnant controls for gestational age, maternal age and parity. Both of the groups were third trimester. PAPP-A and CRP were measured in serum using chemiluminescence assay and nephelometry, respectively. Maternal serum levels of PAPP-A and CRP were increased in women with preeclampsia compared to controls (mean ± SD, 99.63 ± 64.20 vs. 64.00 ± 39.90 mIU/mL, $p< 0.05$; 34.66 ± 25.70 vs. 10.18 ± 7.37 mg/L, $p< 0.001$ respectively). PAPP-A had no correlation with CRP in patients with preeclampsia and in normotansive pregnants.
Elevated levels of PAPP-A and CRP in preeclampsia confirm earlier reports. However there was no correlation between these parameters. The increase in CRP levels were higher than PAPP-A in preeclampsia and is thus to be a better serum marker for this pathology than PAPP-A.

PP-222
CEREBROSPINAL FLUID S-100 B PROTEIN IN SUBARACHNOID HEMORRHAGE

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PP-223
INFLUENCE OF pH ON IN-VITRO PASSIVE TRANSPORT OF METRONIDAZOLE THROUGH ARTIFICIAL MEMBRANE

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Objectives: In this study in vitro permeability of antibiotic metronidazole was investigated using appropriate in house prepared diffusion cell consisting of two compartments separated by artificial membrane.
Method: Polytetrafluoroethylene filters (pore size 0.45µm), were impregnated with mixture of phosphatidylcholine and cholesterol (22: 78 w/w). Chloroform/ methanol solution (70/ 30 v/ v) was used as a solvent to prepare the solution for impregnation. Metronidazole was dissolved in HCl solution pH 1.2 and phosphate buffer solutions (pH 6.5 and pH 7.4) and placed on one side of the membrane. Blank buffer was placed on the other side. After 20 hours of unstirred permeation, the acceptor compartment was sampled and the content of metronidazole determined. Quantification of metronidazole in solutions was performed by UV/VIS spectrophotometric method at the absorption maximum around 318 nm using calibration curves (coefficient of determination - r2 was in the range of 0.99989 - 0.99995). The precision of method was expressed by relative standard deviation (RSD) from 10 replications of samples with concentrations 0.003 mg/ mL and 0.012 mg/ mL. RSD was in the range of 0.03 %-0.69 %.
Results: According to our results, in the pH range of 1.2 – 7.4, percent of permeated metronidazole rapidly decreased (pH 1.2: P= 0,000764 cm/ min; pH 6.5: P= 0,000421 cm/ min and pH 7.4: P= 0,000314 cm/ min).
Conclusion: pH of the medium reported influence on metronidazole permeation through the artificial membrane.

PP-224
OXIDATIVE STRESS STATUS IN MISSED MISCARRIAGE

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Yer İSİMLERİ YOK

Missed miscarriage is a pregnancy-related disease and lipid peroxidation and alterations in antioxidant levels may be of importance in the pathogenesis of this disorder. The aim of the study was to investigate oxidative stress status, monitored by total antioxidant activity (TAO) and levels of thiobarbituric acid reactive substances (TBARS), as a lipid peroxidation marker, in erythrocytes of women with missed miscarriage (n = 36) during 7-16 weeks of pregnancy. The control group consisted of women (n=34) with uncomplicated pregnancy similary matched for maternal age, parity and gestational age.
We found a statistically significant decrease in erythrocyte TAO levels in cases with missed miscarriage when compared to healthy pregnant group (p<0.01). Additionally, mean TBARS levels were significantly higher in the missed miscarriage group than in the controls (p<0.001). There was a negative correlation between erythrocyte TAO and TBARS.
The obtained results indicate that missed miscarriage may be accompanied by a profound disruption of the prooxidant-antioxidant homeostasis towards oxidative stress.

PP-225
NATIONAL INTERLABORATORY PILOT STUDY FOR HEPATITIS B MARKERS

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Purpose: To establish national interlaboratory comparison (ILC) / external quality assessment (EQA)/ proficiency testing (PT) scheme for HbsAg, the marker of hepatitis B.
Materials and Method: The PT materials were prepared with different HBsAg levels from patients' serum pool free from anti-HBs, anti-HCV and anti-HIV. The laboratories from several organizations (n=21; 10 university hospitals, 6 state hospitals, 5 private labs) were invited. Total number of laboratories accepted to the Pilot PT was 21. The four PT samples for each run were sent to the laboratories three times in four month-period between February and May 2007. The biosafety conditions were maintained in the transportation of the PT samples.
The pilot PT was organized in coordination between the Departments of Microbiology and Clinical Microbiology in PAU and DEU, and Biochemistry of PAU, and sponsored by the EU MEDA "Support to the Quality Infrastructure in Turkey" Project.
Results and Discussion: The 24 results obtained from 21 laboratories were evaluated by using the SPSS, version 10. All positive samples had positive results. The 82-95% of the negative samples had correct results according to the final evaluation of the 3 runs. Since there is no national PT Program currently available for microbiology in Turkey, this pilot PT showed that if a national PT Program is established, it will be helpfull in the evaluation of the status of health care technology used in the area of Medical Microbiology as well as the assessment of the results of laboratories. The financial support is needed for sustainability of this PT Program established and prosecuted successfully according to the feedback of the members of the pilot study.

PP-226
SERUM LIPID PROFILE AND PON ACTIVITY IN HYPEREMESIS GRAVIDARUM

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Hyperemesis gravidarum (HG) is a condition of intractable vomiting, leading to fluid, acid–base imbalance and nutrition deficiency. Serum paraoxonase 1 (PON1), synthesized in the liver, is a high-density lipoprotein (HDL)-associated enzyme that prevents oxidative modification of low-density lipoprotein (LDL). We investigated lipid profile, PON and arylesterase activities and oxidative stress status in serum of HG patients. We also measured serum total antioxidant activity (TAO) and malondialdehyde (MDA).
Thirty-six women with HG and 36 with normal pregnancy were included in the study. While serum total cholesterol, triglyceride, LDL and apoprotein B (apo B) levels were not different among the groups (p>0.05), HDL (p=0.01) and apo A (p=0.07) levels were lower in patients with HG than in normal pregnants. Patients with HG had significantly lower serum PON (p=0.03) and aryl esterase activities (p=0.03) compared with the control subjects. Mean TAO values were lower(p=0.01) and MDA levels were higher (p=0.02) in HG group than in the healthy pregnants. A Significant negative correlation between PON and MDA was found in HG group (r=-0.33, p=0.04). HG may be one of the conditions in which oxidant and antioxidant balance is impaired.

PP-227
OXIDATIF STRESS AND PROTEIN CARBONYL GROUPS IN PREGNANT WITH GESTATIONAL DIABETES MELLITUS(GDM)

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Gestational diabetes mellitus (GDM) is a glucose intolerance of varying severity, with onset or first recognition during pregnancy. Most women with GDM return to normal glucose tolerance after delivery, but have an increased risk of developing diabetes [mainly type 2 diabetes mellitus (DM)] later in life.
As such, GDM is considered a prediabetic state, offering the opportunity to study abnormalities that may appear very early in type 2 DM. The offspring of women with GDM are prone to adverse side-effects such as macrosomia, which is strongly associated with fetal death, prematurity, birth trauma and respiratory distress syndrome, and, more importantly, have a higher risk of developing obesity, impaired glucose tolerance, and type 2 DM.
The oxidative modification of proteins by reactive species is implicated in the etiology or progression of a panoply of disorders and diseases. Oxidation of proteins can lead to nitration of aromatic amino acid residues, oxidation of thiol groups, advanced oxidation protein products formation, and conversion of some amino acid residues to carbonyl derivatives. Oxidation can lead also to cleavage of polypeptide chain and to formation of cross-linked protein aggregates.
A total of 60 pregnant were included into this study. 30 pregnant with GDM and 30 pregnant without GDM. Fasting, 1 h, and 2 h plasma glucose concentrations OGTT were significantly greater (P < 0.05) in women with GDM than those in healthy pregnant women.

Fasting maternal plasma samples were collected from antenatal patients undergoing an oral glucose tolerance test (OGTT) at approximately 28 wk gestation. We performed proteins carbonyl groups to levine at al. we were corrected for total protein and expressed nanograms per milligram of protein.
Proteins carbonyl groups higher in women with GDM than healty pregnant women.(P<0.05)
Pregnancy is susceptible to oxidative stress and antioxidant defenses can be altered in response to elevated levels of oxidative stress. Limited data in gestational diabetes mellitus (GDM) suggest that products of protein oxidation may be increased and antioxidant enzyme activities decreased, although the results have been inconsistent.

PP-228
THE EFFECT OF CAPSAICIN IN HUMAN ERYTHROCYTES WHICH EXPOSED TO HIGH GLUCOSE CONCENTRATION

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In this study, the effect capsaicin on protein glycosylation, NaP+P-KP+ PATPase activity, and lipid peroxidation level in human erythrocytes which exposed to high glucose concentration in vitro is investigated. The blood samples obtained from healty individuals exposed to normal glucose and high glucose concentrations and then incubated with capsaicin at different concentrations. The samples which exposed to glucose only, is used as a control group.
In erythrocyte samples which exposed to high glucose concentration, NaP+P-KP+ PATPase activity are found lower than control group (normal glucose concentration), and the differences between these two groups are statistically significant (p<0.001).
In the group which exposed to capsaicin, the activity of the membrane enzyme is increased statistically due to the increase of capsaicin concentrations.
MDA and HbAB1cB levels are increased more in high glucose group than normal glucose group. And both MDA and HbAB1cB levels are decreased proportionally with the increase of capsaicin concentration.
As a result, capsaicin increased the activity of NaP+P-KP+ PATPase and decreased the level of lipid peroxidation in high glucose concentration in erythrocytes, so do in normal glucose concentrations. It is concluded that the effects of capsaicin to these parametres have a special importance on diabetes mellitus, a disease known commonly all over the world, which is characterized with its high blood glucose level.

PP-229
THE EFFECT OF ACTIVE SMOKING ON NITRIC OXIDE, GLUTATHIONE AND LIPID PEROXIDATION IN SPORTSMEN AND SPORTSWOMEN

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Although cigarette smoking is an important risk factors for several diseases such as cancer, cardiovascular diseases, unfortunately, some people are maintaining their detrimental health habits. Reactive oxygen species have been hypothesized to play a pivotal role in the harmful effects of smoking on health. The purpose of this study was to examine the effect of active smoking on serum nitric oxide (NO), glutathione (GSH) and malondialdehyde (MDA), an end product of lipid peroxidation, levels in sportsmen and -women. For this purpose, smoker (28 male and 16 female) and nonsmoker (29 male and 27 female) students from Physical Education and Sports High School participated in this study. Nonsmoker students were evaluated as a control group. Serum NO and MDA levels were found significantly high in the smoker group when compared with the control subjects ($p < 0.01$ and $p < 0.05$, respectively). However, the student t test has not shown a statistically significant difference between GSH mean values of nonsmoker subjects and smoker sportsmen ($p>0.05$). Consequently, these results indicate that active smoking sportsmen have a significantly higher serum NO and MDA levels than nonsmoking sportsmen. These results may be caused by increased free radicals generation resulting from smoking in smoker sportsmen. As a result, quitting the smoking would be important to protect the health of sportsmen and –women.

PP-230
THE EFFECT OF HIGH-ALTITUDE EXPOSURE ON SERUM LEVELS OF SOME ACUTE PHASE PROTEINS IN MOUNTAINEERS

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High-altitude exposure is often associated with several clinical conditions such as acute mountain sickness, inflammatory and digestive system disorders. The aim of the present study was to examine the effects of high-altitude on serum levels of some acute phase proteins in the mountaineers with a home residence of height 0 to 800 m. This study was carried out in 33 healthy mountaineers (age, 26±8 years; body weight, 70±13 kg; values are means±SD.), who were camping at 2600 m at Palandoken mountain in Erzurum (Eastern Anatolia). Fasting blood samples were collected from an antecubital vein on 1st and 7th days of camping onset. Serum C-reactive protein, ceruloplasmin, transferrin, prealbumin, _1-antitrypsine and lipoprotein (a) levels were measured by the nephelometric method with Beckman reagents, calibrators, and controls. _1-antitrypsine and ceruloplasmin levels were significantly higher ($p<0.001$, for both), and lipoprotein (a) and prealbumin levels were lower ($p<0.001$, for both) in serum samples at 7th day when compared to those of 1st day values. Ceruloplasmin levels were higher in serum at 7th day than onset values, but the increase was not significant ($p>0.05$). Transferrin levels have not shown a statistically significant difference between groups. Our results show that high-altitude exposure is altering serum levels of some acute phase proteins in mountaineers, which may play role in pathophysiological mechanisms underlying some disease associated with high-altitude.

PP-231
EXPRESSSION AND LOCALISATION OF HEPHAESTIN

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Hephaestin is a novel membrane bound homologue of ceruloplasmin, which plays a critical role in intestinal iron absorption, ascribed to its multicopper ferroxidase (Fe 2+ to Fe3+) activity. Knowledge of the synthesis, distribution, activity and regulation of hephaestin will help to understand its role in cellular iron efflux. The aim of this investigation is to study the expression and localisation of hephaestin using GFP-tagged constructs and its interaction with other proteins such as transferrin. The construction of a secretory form of hephaestin tagged with GFP is described, together with its expression and preliminary characterisation. Oxidase activity could be measured, consistent with findings by others (Kuo et al. 2004; Chen et al. 2004). Full-length hephaestin tagged with GFP was also constructed and preliminary expression data are given.

PP-232

PP-233
EVALUATION OF VITAMINE D LEVELS MEASURED IN OUR LABORATORY

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We have evaluated vitamine D levels (25-OH-Vitamin D3) of 1248 cases measured in our laboratory between period of October 27, 2006 and June 14, 2007. Of the cases 332 were men aged 46.43 ± 21. 51 years and 916 were women aged 37.17 ± 23.12 years.
Vitamin D levels were measured by using a commercially available kit (BIO-RAD) applied to HPLC (Thermo Finnigan) system. Vitamin D levels of men and women were found as (X + SEM) 61.92 ± 4.15 and 41.88 ± 1.84 ng/ml respectively. The difference between the groups was statistically significant ($p<0.001$). The reason for this difference was thought to be less exposure of women to sun light. Our findings are discussed in view of literature findings.

PP-234
THE EFFECTS OF EXPERIMENTAL FLUOROSIS ON RABBIT SERA BIOCHEMICAL PROPERTIES, SIALIC ACID AND GLYCOPROTEIN LEVELS

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Fluoride is an essential trace element for all mammalian species and present in varying amount in the air, water, and food; but mean while, its excess is known to be toxic both to both humans and animals. This study describes the effects of experimental fluorosis on the protein and glycoprotein profile of sera and serum concentrations of total protein, albumin, cholesterol, triglyceride, creatinine, alanine transaminase (ALT), aspartate transaminase (AST) and total protein bound sialic acid. For this aim; healthy, 6-month-old, ten New Zaeland rabbits were used. All rabbits were given water containing 40 mg F/L for 70 days. Blood samples were taken each rabbit on days 0 and 70. Albumin, AST, ALT, creatinine, total protein, cholesterol and trigliserid levels were found 3.27g/dl, 22.4 IU/l, 33.2 IU/l, 0.59 mg/dl, 7.15 g/dl, 97.8 mg/dl, 87 mg/dl in day 0 and 2.87 g/dl, 30 IU/l, 63 IU/l, 1.13 mg/dl, 5.09 g/dl, 64.4 mg/dl, 60 mg/dl in day 70, respectively. In SDS-PAGE, the same protein bands were showed in day 0 and 70, but the dansities of bands were decreased in day 70. Also, the level of the glycoprotein components declined significantly in day 70. The sialic acid levels were found 69.22 (+/-2.12) mg/dl in day 0 and 43,36 (+/-0.84) mg/dl in day 70. The results of the study demonstrates that albumin, total protein, cholesterol, trigliserid levels decraesed and AST, ALT, kreatinin levels increased in chronic fluorosis. Also; the dansities of the protein bands and glycoprotein levels were shown as low in chronic fluorosis. It is known that, in mammals, the sialic acid occurs as a terminal sugar of glycoprotein glycans. Because of the decrased glycoproteins, the sialic acid levels were reduced. In conclusion, the results of this study with increased serum fluoride may be used in an early detection of fluorosis.
Key Words: Biochemical properties, experimental fluorosis, glycoprotein, sialic acid.

PP-235
THE EFFECT OF PROPOLIS (5 mg/kg) ON LIVER ARGINASE ACTIVITY IN RAINBOW TROUT'S (ONCORHYCHUS MYKISS) INFECTED WITH YERSINIA RUCKERI (REDMOUTH)

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Yersinia ruckeri is a bacterial pathogen which infect several tissues of rainbow trouts, mainly well vascularized areas, and cause hemmorrhaging. It is also known as Yersiniosis.
Propolis has antimicrobial, antifungal, antiviral, antiprotozoan and antioxidant effects.
Arginase (L-arginine amidinohydrolase, EC 3.5.3.1) catalyses the final step in the urea cycle and is therefore present mainly in the liver.
This study was planned to work wheather the effect of propolis (5mg/kg) on liver arginase activity in rainbow trouts which were injected experimentally with Y. ruckeri. Totally 60 rainbow trouts collected from a local fish producing company in Elazıg province. Average weight of rainbow trouts were 100 gr.
All the fish were divided into six groups ; control group, propolis (5mg/kg) group, LD50 (9.4 x l05 Y.ruckeri) group, LD50 + propolis group(5 mg/kg), LD75 (1.72 x108 Y.ruckeri) group, LD75 + Propolis (5 mg /kg) group.
Y.ruckeri was ınjected intraperitonally. Twenty four hour after bacterial injectıon, propolis was added to the fish food at the dose of 5 mg/kg fish weight/ day. The liver tissue samples of the fish were collected on the 3rd, 4th, 5th, 9th, 15th and 21st days. Then, arginase activity levels were measured and compared with their control groups.
When the propolis group was compared with the control group, liver arginase activity was observed to inceased gradually from 4th day till 21st day.In LD50 group, all the fısh died on 9th ,15th and 21st days; wherease no deaths were observed in the group of LD50 + propolis , but liver arginase activity significantly began to increas on 5th day,when compared with LD50 group.
In LD75 group, all the fısh are also died on the 9th, 15th and 21st days, while the arginase activity levels were found to decrease when compared with LD50 group. In LD75 + propolis group; the liver arginase activity increased on the 3rd, 4th, 5th and 9th days and all the fish died on the 15th and 21st days.
In the conclusion, it may be said that the application of 5 mg/kg propolis with the goal of treating Yersiniosis in fish injected with Y . ruceria, can increase the activity of liver arginase.
The resaults of this study indicated that there may be a correlation between the increase in liver arginase activity levels and the treatment effect of propolis in Yersiniosis.

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