

Welcome to the European Medical Students' Conference 2012 in Debrecen, Hungary

It is a great honor and pleasure for us to present the European Medical Students' Conference (EMESCO) in Debrecen. The idea of organizing this international scientific conference has been seeded in our minds for a long time and now we feel prepared to take on this important project, bringing back a tradition of old times of the Medical Faculty of University of Debrecen.

The Organizing Committee (OC) is based on an epic cooperation of the four student societies of the Medical and Health Science Center: the Hungarian Medical Students' International Relations' Committee, the Council of Students' Research Society, the Sántha Kálmán College for Advanced Studies and the Student Union of the UD MHSC.

In the year of 2012, the University of Debrecen is celebrating the 100th anniversary of its foundation. For this reason the OC have the perfect opportunity to create a meaningful celebration and productive conference. With the theme event and keynote lecture we wish to tribute to the János Szentágothai Memorial Year and neurosciences.

We wanted to create a platform where medical students and students engaged in biomedical research from all around the world can present their own research, share their experiences, interact with other students and enjoy the hospitality of the University of Debrecen Medical and Health Science Center. We hope you will become a part of our celebration and being in the heart of the continent, Hungary may serve as a bridge between the Western and Eastern parts of Europe, and the European medical students and young doctors will make their bonds stronger and take steps in shaping our futures.

We welcome you all to Debrecen, Hungary!

The Organizing Committee of EMESCO 2012

Organizing Committee

- **György Paragh**, President of University of Debrecen Medical and Health Science Center
Patron of EMESCO 2012
- **Edit Posta**, Member of the UD MHSC Council of Students' Research Society
Chairperson of the Organizing Committee
- **Tamás Bakó**, Local President (Debrecen) of the Hungarian Medical Students' International Relations' Committee
- **Zsuzsanna Bereczky**, Secretary of the UD MHSC Council of Students' Research Society
- **Zsuzsanna Gaál**, Student secretary of the UD MHSC Council of Students' Research Society
- **Attila Hamar**, President of the Student Union of University of Debrecen Faculty of Medicine
- **Orsolya Kárász**, President of Sántha Kálmán College for Advanced Studies
- **László Mátyus**, Chairman of the UD MHSC Council of Students' Research Society
- **Gábor Tóth**, President of the Hungarian Medical Students' International Relations' Committee
- **János Vincze**, Student chairman of the UD MHSC Council of Students' Research Society

Scientific programme summary

ORAL SESSION I – NEUROLOGY, NEUROBIOLOGY

Saturday, October 20, 9:00 – 10:45

Chair: Miklós Antal, Department of Anatomy, Histology and Embryology

KAPLAN USMLE STEP 1 COURSE INTRODUCTION Saturday, October 20, 11:00 – 11:15

ORAL SESSION II – PREVENTIVE MEDICINE AND BASIC SCIENCE

Saturday, October 20, 11:15 – 13:00

Chair: Margit Balázs, Department of Biomarker Analysis

ORAL SESSION III – CARDIOVASCULAR MEDICINE, ENDOCRINOLOGY

Sunday, October 21, 9:00 – 10:30

Chair: Endre Nagy, Department of Endocrinology

ORAL SESSION IV – SURGERY, ODONTOLOGY, DERMATOLOGY

Sunday, October 21, 11:00 – 12:30

Chair: András Berta, Department of Ophthalmology

ORAL SESSION V – IMMUNOLOGY, MICROBIOLOGY

Sunday, October 21, 15:00 – 16:45

Chair: Edit Bodolay, Department of Clinical Immunology

ORAL SESSION VI – CELL BIOLOGY, HISTOLOGY, PHARMACEUTICAL SCIENCES

Sunday, October 21, 17:00 – 19:00

Chair: Árpád Tótsaki, Department of Pharmacodynamics

ORAL SESSION VII – HEMATOLOGY, HEMOSTASIS, LABORATORY MEDICINE, ONCOLOGY

Monday, October 22, 9:00 – 10:45

Chair: János Kappelmayer, Department of Laboratory Medicine

ORAL SESSION VIII – MOLECULAR BIOLOGY, GENETICS, GENOMICS

Monday, October 22, 11:00 – 12:45

Chair: Viktor Dombrádi, Department of Medical Chemistry

All oral sessions will be held in the lecture hall of the Theoretical Building.

POSTER SESSION I

Saturday, October 21, 13:30 – 15:00

Chair: János Szöllősi, Department of Biophysics and Cell Biology

POSTER SESSION II

Sunday, October 22, 13:00 – 14:30

Chair: László Virág, Department of Medical Chemistry

All posters will be exhibited on the mezzanine level of the Theoretical Building.

Detailed scientific programme

ORAL SESSION I – NEUROLOGY, NEUROBIOLOGY

Saturday, October 20, 9:00 – 10:45

Chair: Miklós Antal, Department of Anatomy, Histology and Embryology

O-I.1 Masoud Nazeri^{1,2}, Vahid Sheibani², Fatemeh Abareghi¹, Moein Kermani¹

¹Medical Students Research Committee, ²Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran

ROLE OF DORSOMEDIAN NUCLEUS OF HYPOTHALAMUS DISINHIBITION IN THE PATHOGENESIS OF ANXIETY-INDUCED OROFACIAL PAIN

O-I.2 Ilea G. Ciprian, Ivona Anghelache Lupascu

Gr. T. Popa University of Medicine and Pharmacy, Iasi, Romania

CLINICAL AND SPECTRAL ANALYSES OF EEG PATTERNS IN PREECLAMPSIA

O-I.3 Amirhossein Mozaffary, Mojtaba Lotfaliani, Omid Hesami, Mohammad Fakhri

Department of Neurology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

SAFETY AND EFFICACY OF GABAPENTIN IN PATIENTS WITH THALAMIC SYNDROME: RESULTS FROM A MULTICENTER CLINICAL TRIAL

O-I.4 Szilvia Kecskés¹, Áron Kőszeghy², Géza Szücs², Zoltán Rusznák², Klára Matesz¹, András Birinyi¹

¹Department of Anatomy, Histology and Embryology, ²Department of Physiology, University of Debrecen, Debrecen, Hungary

THREE-DIMENSIONAL RECONSTRUCTION AND MORPHOMETRIC ANALYSIS OF THE GIANT AND PYRAMIDAL NEURONS IN THE DORSAL COCHLEAR NUCLEUS OF THE RAT

O-I.5 Marianna I. Dékány

Department of Behavioural Sciences, University of Debrecen, Debrecen, Hungary

THE RELATIONSHIP BETWEEN CREATIVITY AND AFFECTIVE DISORDERS

O-I.6 Istvan Pataki¹, Andrea Nagy¹, Zsuzsa Zele¹, Laszlo Bogнар², Laszlo Novak²

¹Department of Pediatrics, ²Department of Neurosurgery, University of Debrecen, Debrecen, Hungary

VENTRICULOSUBGALEAL SHUNT IN THE TREATMENT OF POSTHEMORRHAGIC AND POSTINFECTIOUS HYDROCEPHALUS OF PREMATURE INFANTS

O-I.7 Botond Gaál, Gábor Halasi, Ádám Deák, Éva Rácz, Klára Matesz

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

EXTRACELLULAR MATRIX OF THE CENTRAL NERVOUS SYSTEM AND ITS ALTERATION DURING REGENERATION

ORAL SESSION II – PREVENTIVE MEDICINE AND BASIC SCIENCE

Saturday, October 20, 11:15 – 13:00

Chair: Margit Balázs, Department of Biomarker Analysis

O-II.1 Erika Nagy, Beáta Nagy

Department of Behavioural Sciences, University of Debrecen, Debrecen, Hungary

INVESTIGATION OF PARENTS WITH A CHILD CONCEIVED BY IN VITRO FERTILIZATION (IVF) FROM HEALTH PSYCHOLOGICAL ASPECTS

O-II.2 Zsuzsa Erdélyi, Róza Ádány, Karolina Kósa

Unit of Health Promotion, Department of Preventive Medicine, University of Debrecen, Debrecen, Hungary

HEALTH BEHAVIOUR OF HIGH SCHOOL STUDENTS IN DEBRECEN COMPARED TO THE NATIONAL AVERAGE

O-II.3 Ágota Korniyicki, Róza Ádány, Karolina Kósa

Faculty of Public Health, University of Debrecen, Debrecen, Hungary

HEALTH STATUS OF PREGNANT WOMEN AND INFANTS IN HUNGARY BETWEEN 1997 AND 2010

O-II.4 Andrea Berkes, Enikő Felszeghy, Éva Nemes, E. Bányász, K. Fenyvesi, Gábor Mogorósy

Institute of Pediatrics, Medical and Health Science Centre, University of Debrecen, Debrecen, Hungary

MEASURING HEALTH-RELATED QUALITY OF LIFE IN CHILDREN WITH CHRONIC CONDITIONS

Detailed scientific programme

**O-II.5 Gábor Áron Fülöp¹, Ibolya Rutkai¹, Ágnes Czikora¹, Andrea Szalai³,
Róbert Pórszász³, István Édes², Zoltán Papp¹, Attila Tóth¹**

¹Department of Clinical Physiology, ²Institute of Cardiology, ³Department of Pharmacology and Pharmacotherapy, University of Debrecen, Debrecen, Hungary

RHO-KINASE ACTIVATION CONTRIBUTES TO THE FORMATION OF HIGH BLOOD PRESSURE IN RAT MODEL

O-II.6 János Vincze, Márta Füzi, Ágnes Jenes, Julianna Cseri, Péter Szentesi, László Csernoch

Department of Physiology, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary

ADVERSE EFFECTS OF IN VIVO AND IN VITRO ADMINISTRATION OF STATINS ON RAT SKELETAL MUSCLE

O-II.7 András Balajthy, Zoltán Dénes Pethő, Sándor Somodi, Péter Hajdú

Department of Biophysics and Cell Biology, University of Debrecen, Debrecen, Hungary

EFFECTS OF HYPERCHOLESTERINAEMIA ON KV1.3 CURRENTS

ORAL SESSION III – CARDIOVASCULAR MEDICINE, ENDOCRINOLOGY

Sunday, October 21, 9:00 – 10:30

Chair: Endre Nagy, Department of Endocrinology

O-III.1 Cristina C. Aldea, Alexandru Durutya, Ioan S. Florian

„Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania
SINGLE STAGE OPERATION FOR MULTIPLE CEREBRAL ANEURYSMS OF THE ANTERIOR CIRCULATION

O-III.2 Stefan Simovic, Goran Davidovic, Violeta Iric-Cupic, Srdjan Milanov

Faculty of Medical Sciences, University of Kragujevac, Serbia
„OBESITY PARADOX” IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

O-III.3 Stefan Simovic, Goran Davidovic, Violeta Iric-Cupic, Srdjan Milanov

Faculty of Medical Sciences, University of Kragujevac, Serbia
HEART RATE – THE IRREPLACEABLE RISK FACTOR FOR MORBIDITY AND MORTALITY IN PATIENTS WITH ANTERIOR STEMI

O-III.4 Andrey Omelyanenko, Elena Golovneva

Chelyabinsk State Medical Academy, Chelyabinsk, Russia

EFFECT OF MEDIUM LASER IRRADIATION ON MORPHOLOGICAL AND FUNCTIONAL CHARACTERISTICS OF MAST CELLS AND FOLLICULAR CELLS OF THE THYROID GLAND IN THE EXPERIMENT

O-III.5 Anna Yanovski, Timo Kallio

Kymenlaakso Central Hospital, Finland

POSTINFARCTION VENTRICULAR SEPTAL DEFECT – INCIDENTAL FINDING ON CHEST COMPUTED TOMOGRAPHY ANGIOGRAPHY

O-III.6 Alexandra Kiss, Edina Nagy-Balo, Marcell Clemens, Reka Katalin Kovacs, Laszlo Csiba, Zoltan Csanadi, Istvan Edes

Institute of Cardiology, University of Debrecen, Debrecen, Hungary

PULMONARY VEIN ISOLATION HAS NO SHORT-TERM EFFECT ON COGNITIVE FUNCTION: A COMPARISON OF 3 DIFFERENT ABLATION TECHNIQUES.

ORAL SESSION IV – SURGERY, ODONTOLOGY, DERMATOLOGY

Sunday, October 21, 11:00 – 12:30

Chair: András Berta, Department of Ophtalmology

O-IV.1 Endre Gáti, Anna Wyszoczky, Ágnes Nemeskéri, László Harsányi

Department of Human Morphology and Developmental Biology, Semmelweis University, Budapest, Hungary

THE ARTERIAL BLOOD SUPPLY OF THE PANCREAS – A SURGICAL ANATOMICAL STUDY

O-IV.2 Petronela Buiga¹, Zenab Sher², Basil Yannakoudakis², Karen Liu²

¹Faculty of Dental Medicine, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania, ²Department of Craniofacial Development and Stem Cell Biology, Dental Institute, King’s College London, United Kingdom
DEVELOPMENTAL ASPECTS OF THE TRACHEA

O-IV.3 Stefan Titu¹, Petronela Buiga², Anca Mesaros^{2,3}

¹Faculty of Medicine, ²Faculty of Dental Medicine, ³Department of Propedeutics, "Iuliu Hatieganu" University of Medicine and Pharmacy, Cluj-Napoca, Romania

STATISTIC STUDY ON THE PREVALENCE OF DENTAL ANOMALIES IN ORTHODONTIC PATIENTS

Detailed scientific programme

O-IV.4 Chang Hwa Ham¹, Tamás Papp^{1, 2}, Szabolcs Felszeghy²

¹Department of Anatomy, Histology and Embryology, ²Department of Oral Anatomy, University of Debrecen, Debrecen, Hungary

“THORNY QUESTIONS” IN DEVELOPMENTAL BIOLOGY: INVESTIGATION OF DIFFERENT
SIGNALLING PATHWAYS REGULATING THE TOOTH DEVELOPMENT

O-IV.5 Annamária Szödényi, Péter Bai, Andrea Szegedi, Eva Remenyik, Borbála Kiss

Department of Dermatology, University of Debrecen, Debrecen, Hungary
PATIENT WITH PROGEROID SYNDROME

O-IV.6 Edit Posta, Eva Remenyik, Daniel Torocsik

Department of Dermatology, University of Debrecen, Debrecen, Hungary
LEPTIN MODULATES INFLAMMATORY CYTOKINE RELEASE AND LIPID DROPLET
FORMATION OF SEBOCYTES

ORAL SESSION V – IMMUNOLOGY, MICROBIOLOGY

Sunday, October 21, 15:00 – 16:45

Chair: Edit Bodolay, Department of Clinical Immunology

O-V.1 Cristiana Trandafir, Alexandru Istrate

University of Medicine and Pharmacy „Iuliu Hatieganu”, Cluj-Napoca, Romania
DETECTION AND ISOLATION OF DENGUE VIRUSES FROM VECTOR MOSQUITOES USING
IMMUNOCYTOCHEMICAL ASSAY WITH THE MONOCLONAL ANTIBODY DSSE10

O-V.2 Ji-Qing Chen, Erika Zilahi, Gábor Papp, Antónia Szántó, Margit Zeher

Division of Clinical Immunology, Institute of Internal Medicine, University of
Debrecen, Debrecen, Hungary

HOW VITAMIN D RECEPTER GENE POLYMORPHISMS RELATED TO SJÖGREN’S
SYNDROME IN HUNGARIAN POPULATION

O-V.3 László Pál, Ervin M. Árnyas, Béla Tóth, Balázs Ádám, Gábor Rácz, Róza Ádány, Martin McKee, Sándor Szűcs

Department of Preventive Medicine, University of Debrecen, Debrecen,
Hungary

ALIPHATIC ALCOHOL CONTAMINANTS OF ILLEGALLY PRODUCED SPIRITS INHIBIT
PHAGOCYTOSIS BY HUMAN GRANULOCYTES

O-V.4 Fatemeh Ebrahimi, Julianna Mózes, Gábor Kardos

Department of Medical Microbiology, University of Debrecen, Debrecen, Hungary

PREVALENCE OF ESBL-PRODUCING ENTEROBACTERIA IN PATIENTS WITH DIARRHOEA

O-V.5 Judit Danis, Marietta M. Budai, László Csernoch, József Tőzsér, Szilvia Benkő

Department of Physiology and Department of Biochemistry and Molecular Biology, University of Debrecen, Debrecen, Hungary

THE ROLE OF THE PURINERGIC P2X7 RECEPTOR IN THE IL-1BETA RELEASE OF DIFFERENT HUMAN MACROPHAGES

O-V.6 Julianna Mózes¹, Fatemeh Ebrahimi¹, Ildikó Szűcs², Mária Szilasi², Orosi Piroška³, Gábor Kardos¹

¹Department of Medical Microbiology, ²Department of Pulmonology,

³Department of Hospitalhygiene and Infection Control, University of Debrecen, Debrecen, Hungary

EXAMINATION OF THE DISTRIBUTION OF VIRULENCE GENES AMONG PSEUDOMONAS ISOLATES

O-V.7 Krisztina Szabó, Gábor Papp, Margit Zeher

Division of Clinical Immunology, Institute of Medicine, University of Debrecen, Debrecen, Hungary

INCREASED PROPORTIONS OF PERIPHERAL FOLLICULAR HELPER T CELLS IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME

ORAL SESSION VI – CELL BIOLOGY, HISTOLOGY, PHARMACEUTICAL SCIENCES

Sunday, October 21, 17:00 – 19:00

Chair: Árpád Tószaki, Department of Pharmacodynamics

O-VI.1 Eszter Róka, Zoltán Ujhelyi, Ferenc Fenyvesi, Ildikó Bácskay, Miklós Vecsernyés

Department of Pharmaceutical Technology, University of Debrecen, Debrecen, Hungary

RELATION OF STRUCTURE AND CITOTOXIC EFFECTS OF A-CYCLODEXTRIN DERIVATIVES

Detailed scientific programme

O-VI.2 Ádám Hadházi, Anikó Borbás, Szilvia Tollas, Pál Herczegh

Department of Pharmaceutical Chemistry, University of Debrecen, Debrecen, Hungary

TOWARD SYNTHESIS OF FULLERENE DERIVATIVES CONTAINING N-ACETYLNEURAMINIC ACID

O-VI.3 Gábor Stánicz

1st Department of Pathology, Semmelweis University, Budapest, Hungary

INFLUENCING THE LIVER'S PROGENITOR CELL REACTION

O-VI.4 Veronika Sebestyén, Éva Nagy, Gábor Mocsár, Ferenc Papp, Péter Hajdú, György Panyi, Katalin Tóth, Andrea Bodnár, Sándor Damjanovich, György Vámosi

Department of Biophysics and Cell Biology, University of Debrecen, Debrecen, Hungary

INVESTIGATION OF THE EFFECT OF MEMBRANE POTENTIAL TO THE MOBILITY OF MHC GLYCOPROTEINS AND IL-2/IL-15 RECEPTORS

O-VI.5 Zsófia Földvári, Csilla Somogyi, Csaba Matta, Éva Katona, Roland Takács, Tamás Juhász, Róza Zákány

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

PRESENCE OF POLYMODAL ION CHANNELS, TRPVs (TRANSIENT RECEPTOR POTENTIAL VANILLOID) IN CHONDRIFYING CHICKEN CELL CULTURES

O-VI.6 Gábor Máté

Institute of Nuclear Medicine, University of Debrecen, Debrecen, Hungary

EXPERIMENTAL INVESTIGATION OF HIGHLY-EFFICIENT ⁶⁸GA-CHELATORS FOR RADIOPHARMACEUTICAL PURPOSES

O-VI.7 Tibor Hajdú

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

MORPHOLOGICAL ANALYSIS OF HYALURONAN-SIGNALING "TOOL-KIT" IN NORMAL AND CUTANEOUS MELANOMA-RELATED HUMAN SAMPLES

O-VI.8 Gábor Tóth, László Simon, János Szöllősi, György Vereb

Department of Biophysics and Cell Biology, University of Debrecen, Debrecen, Hungary

ARE TWO THERAPEUTIC ANTIBODIES BETTER THAN ONE? COMBINATION OF TRASTUZUMAB AND PERTUZUMAB HAS SYNERGISTIC EFFECT MAINLY THROUGH ADCC

ORAL SESSION VII – HEMATOLOGY, HEMOSTASIS, LABORATORY
MEDICINE, ONCOLOGY

Monday, October 22, 9:00 – 10:45

Chair: János Kappelmayer, Department of Laboratory Medicine

O-VII.1 Ekaterina N. Bulycheva, Pavel A. Butylin

Almazov Heart, Blood and Endocrinology Center, Saint-Petersburg, Russia

PLATELET FACTORS CONTRIBUTE TO PATHOGENESIS OF PRIMARY MYELOFIBROSIS BY
AFFECTING MESENCHYMAL STROMAL CELLS

**O-VII.2 Radu Mirica, Alexandra Banica, Francesca Farnetani, Giovanni
Pellacani**

UMF Carol Davila, Bucharest, Romania

GORLIN-GORLZ SYNDROME

O-VII.3 Máté Kiss¹, Zsolt Czimmerer¹, Attila Pap¹, Balázs Dezső², László Nagy¹

¹Department of Biochemistry and Molecular Biology, University of Debrecen,

²Department of Pathology, University of Debrecen, Debrecen, Hungary

ENHANCED SUBCUTANEOUS B16 MELANOMA CELL-DERIVED PRIMARY TUMOR
GROWTH WITH REDUCED INTRATUMORAL ARGINASE ACTIVITY IN STAT6-DEFICIENT
MICE

O-VII.4 Gergely Buglyó, Zsófia Ujj, László Rejtő, Sándor Biró, Miklós Udvardy

Department of Human Genetics and Institute of Internal Medicine, University
of Debrecen, Debrecen, Hungary

THE ROLE OF WT1 AS A PROGNOSTIC MARKER IN NON-HODGKIN LYMPHOMAS AND
ADULT ACUTE LYMPHOBLASTIC LEUKEMIA

O-VII.5 Shaan Pawa, Kim Linton

The Christie Hospital and University of Manchester, Manchester, United
Kingdom

TRANSFORMATION RATE OF FOLLICULAR LYMPHOMA ACCORDING TO TUMOUR
GRADE

O-VII.6 Joel A. Mitchell, Richard Nagymihály

Clinical Research Center, University of Debrecen, University of Debrecen,
Debrecen, Hungary

THROMBIN POTENTIAL; A NEW MEASURE OF HYPO- AND HYPERCOAGULABILITY
STATE. CAN WHOLE BLOOD BE USED RELIABLY?

Detailed scientific programme

O-VII.7 Renata Hudak

Clinical Research Center, University of Debrecen, Debrecen, Hungary

DETECTION OF BCR-ABL FUSION PROTEINS WITH A FAST FLOW CITOMETRIC BEAD ASSAY

ORAL SESSION VIII – MOLECULAR BIOLOGY, GENETICS, GENOMICS

Monday, October 22, 11:00 – 12:45

Chair: Viktor Dombrádi, Department of Medical Chemistry

O-VIII.1 Davide Paolillo

Università di Pisa - Facoltà di Medicina, Pisa, Italy

EFFECT OF ALBUMIN ON P-GLYCOPROTEIN EXPRESSION AND FUNCTION IN CULTURED HUMAN TUBULAR CELLS

O-VIII.2 Zenab A. Sher, Basil Yannakoudakis, Karen Liu

Departement of Craniofacial Development & Stem Cell Biology, Kings College London, London, United Kingdom

TRACHEAL CHONDROGENESIS IN THE FUZ MUTANT MOUSE

O-VIII.3 Zsuzsanna Zita Urbán, Árpád Lányi

Department of Immunology, University of Debrecen, Debrecen, Hungary

HOFI/SH3PXD2B ADAPTOR PROTEIN IS ANTI-PROLIFERATIVE IN A HUMAN MELANOMA CELL LINE

O-VIII.4 Zsuzsanna Bordan, Beata Bozoki, Jozsef Tozser

Department of Biochemistry and Molecular Biology, University of Debrecen, Debrecen, Hungary

MODIFICATION OF RECOMBINANT FUSION PROTEIN SUBSTRATES OF ALPHAVIRUS PROTEASES

O-VIII.5 Tímea Margit Szabó¹, Gabriella P. Szabó¹, Katalin Szakszon¹, Erzsébet Balogh¹, Anikó Ujfalusi¹, Beáta Bessenyei¹, Bálint Bálint², Szilárd Poliska², Éva Oláh¹

¹Centre for Clinical Genetics, Regional Genetical Laboratory, Institute of Pediatrics, ²Centre for Genomics, University of Debrecen, Debrecen, Hungary
GENETIC DIAGNOSIS IN MICRODELETION SYNDROMES

O-VIII.6 Bence Farkas

Faculty of Medicine, University of Debrecen, Debrecen, Hungary

STUDIES ON THE INHIBITION OF A GAMMARETROVIRAL PROTEASE

O-VIII.7 Zsuzsanna Gaál, Andrea Kiss, Dóra Dedinszki, Ferenc Erdődi

Department of Medical Chemistry, University of Debrecen, Debrecen, Hungary

INFLUENCE OF PROTEIN PHOSPHATASE-1 INHIBITORY PROTEINS ON THE

DEPHOSPHORYLATION OF RETINOBLASTOMA PROTEIN

POSTER SESSION I

Saturday, October 21, 13:00 – 14:30

Chair: János Szöllősi, Department of Biophysics and Cell Biology

P-I.1 Srdjan Milanov, Dusica Ognjanovic, Goran Davidovic, Violeta Iric-Cupic

Faculty of Medical Sciences, University of Kragujevac, Serbia

RELATIONSHIP BETWEEN HYPERTENSION AND LOW HDL-CHOLESTEROL LEVELS AS
RISK FACTORS IN PATIENTS WITH STEMI

P-I.2 Éva Bódi, Ferenc Peles, István Fekete, Dávid András, Béla Kovács

Institute of Food Science, Quality Assurance and Microbiology, University of
Debrecen, Debrecen, Hungary

UPTAKE OF SELENITE AND SELENATE DURING GERMINATION OF WHEAT AND PEA AS
WELL AS THE EFFECT OF TREATMENTS IN THEIR MICROBIOLOGICAL STATE

P-I.3 László Kolop

Department of Anatomy, Histology and Embryology, University of Debrecen,
Debrecen, Hungary

EFFECTS OF GLYCINE ON CARTILAGE FORMATION IN HIGH DENSITY CELL CULTURES

P-I.4 Orsolya Kárász, Vencel Katona

UD-HAS "Lendület" Cell Physiology Research Group, Department of
Physiology, University of Debrecen, Debrecen, Hungary

THE ROLE OF THE PROTEIN KINASE C SYSTEM IN THE REGULATION OF TRPC6 IN
PODOCYTES

P-I.5 Stefan Simovic, Goran Davidovic, Violeta Iric-Cupic, Srdjan Milanov

Faculty of Medical Sciences, University of Kragujevac, Serbia

HEMATOCRIT LEVELS AS MORTALITY PREDICTOR IN PATIENTS WITH STEMI AND
HEART RATE GREATER THAN 80BPM

Detailed scientific programme

P-I.6 Attila Somogyi, Ervin Wolf

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

RESPONSES OF CNS NEURONS TO SINUSOIDAL CURRENT INPUTS - A TEST OF THE DISCRIMINATING POWER OF A NEW METHOD TO MAP DENDRITIC ARCHITECTURES

P-I.7 Adrienn Veronika Lakatos, Anita Spanyol

Department of Physiotherapy, University of Debrecen, Debrecen, Hungary
LOCOMOTOR SYSTEM STATUS OF THE PRESCHOOL CHILDREN IN THE LOOK OF THEIR SOCIAL SITUATION

P-I.8 Radu Mirica, Alexandra Banica, Gabriel Ianosi

UMF Carol Davila, Bucharest, Romania
BILIARY ILEUS - TWO-STAGED TREATMENT

P-I.9 Evgenia Gushchina

Northern State Medical University, Arkhangelsk, Russia
CT, MRI AND AG IN DIAGNOSTICS OF BRAIN TUMORS

P-I.10 Seyed Hossein Taravati¹, Mohammad Reza Doroudian¹, Sepideh Beykzadeh¹, Masoud Nazeri², Mohammad Shabani², Fatemeh Abareghi²

¹Department of Anesthesiology, Kerman University of Medical Sciences, Kerman, Iran ²Medical Students Research Committee, Kerman University of Medical Sciences, Kerman, Iran

EFFECTS OF FENTANYL, SUFENTANIL AND ALFENTANIL AS PREMEDICATION ON POSTOPERATIVE NAUSEA AND VOMITING (PONV) IN GYNECOLOGIC LAPAROSCOPY

P-I.11 Mostafa Ghaffari, Mohamad Namvar, Alireza Abdi, Hadi Rezaei, Saeed Raeisi, Mohammad Hassan Sharafi

Occupational Medicine Department and Research Center, School of Medicine, Hemmat Campus, Tehran University of Medical Sciences, Tehran, Iran
ASSOCIATION BETWEEN CIGARETTE SMOKING AND SLEEP DISTURBANCES AMONG INDUSTRIAL WORKERS

P-I.12 Nishant Joshi

Oslo University College, International Public Health Summer School, Oslo, Norway
IDENTIFYING THE CHALLENGES IN PROMOTING SOCIAL CHANGE AND FACILITATING POLICIES TO SUPPORT MATERNAL AND CHILD HEALTH IN EGYPT

P-I.13 Seyyed Mohammad Mahdy Mirhosseini, Masood Ghorbani, Reza Bidaki

Isfahan University of Medical Sciences, Isfahan, Iran

PREVALENCE OF CORACOCARTICOID FORAMEN AND ITS IMPORTANCE IN BRAIN SURGERY

P-I.14 Masoud Nazeri^{1,2}, Fatemeh Abareghi¹, Mohammad Shabani², Leila Golchin²

¹Medical Students Research Committee, Kerman University of Medical Sciences, Kerman, Iran ²Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran

AMYGDAL DYSFUNCTION AS A POSSIBLE NEURAL BASIS FOR STRESS-INDUCED ALTERATIONS IN NOCICEPTION AND COGNITIVE FUNCTIONS: IMPLICATION OF NMDA RECEPTORS

P-I.15 Nishant Joshi

Medical University of Pleven, Pleven, Bulgaria

INDIA HEALTHCARE SYSTEM, STATUS OF MILLENIUM DEVELOPMENT GOALS IN INDIA

P-I.16 Ilia Nadareishvili

David Tvildiani Medical University, Tbilisi, Georgia

LEAD AND HUMAN HEALTH

P-I.17 George Hayek

Department of Ophthalmology, University of Pécs, Pécs, Hungary

EFFECT OF ANTI-VEGF INJECTIONS (LUCENTIS) ON READING SPEED IN WET-AMD PATIENTS

POSTER SESSION II

Sunday, October 22, 13:00 – 14:30

Chair: László Virág, Department of Medical Chemistry

P-II.1 Petronela Buiga, Anca Mesaros

Faculty of Dental Medicine, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

THERAPEUTIC APPROACH OF DENTAL AGENESIS

Detailed scientific programme

P-II.2 Srdjan Milanov, Dusica Ognjanovic, Goran Davidovic, Violeta Iric-Cupic

Faculty of Medical Sciences, University of Kragujevac, Serbia

ATHEROGENIC INDICES AS A PART OF LIPID PROFILE DISORDERS IN PATIENTS WITH STEMI

P-II.3 Anita Spanyol, Adrienn Veronika Lakatos

Department of Physiotherapy, University of Debrecen, Debrecen, Hungary

THE EFFECT OF THE INACTIVE LIFE-STYLE ON THE POSTURE AND COORDINATION OF THE NURSERY SCHOOL-AGED CHILDREN

P-II.4 Srdjan Milanov, Dusica Ognjanovic, Goran Davidovic, Violeta Iric-Cupic

Faculty of Medical Sciences, University of Kragujevac, Serbia

THE FIRST CLINICAL EVIDENCE OF ISOLATED LOW HDL-CHOLESTEROL LEVELS AS THE MOST OFTEN NORMOLIPIDEMIC DYSLIPOPROTEINAEMIA IN PATIENTS WITH STEMI IN KRAGUJEVAC, SERBIA

P-II.5 Stefan Simovic, Goran Davidovic, Violeta Iric-Cupic, Srdjan Milanov

Faculty of Medical Sciences, University of Kragujevac, Serbia

LIPID PROFILE IN PATIENTS WITH STEMI AND HEART RATE GRATER THEN 80BPM

P-II.6 Zoltán Pethő^{1,2}, András Balajthy¹, Christian Bernecker², Margret Ehlers², György Panyi¹, Matthias Schott²

¹Department of Biophysics and Cell Biology, University of Debrecen, Debrecen, Hungary, ²Endocrine Tumor Center, University Hospital Düsseldorf, Düsseldorf, Germany

IMMUNE CELLS PRODUCE THYROGLOBULIN ANTIBODIES IN THYROID CANCER: A TISSUE-SPECIFIC IMMUNE RESPONSE

P-II.7 Masoud Nazeri¹, Mohammad Shabani², Fatemeh Abareghi¹, Moein Kermani¹

¹Medical Students Research Committee, Kerman University of Medical Sciences, Kerman, Iran ²Neuroscience Research Center, Kerman University of Medical Sciences, Kerman, Iran

ASSOCIATION OF HYPERALGESIA AND PASSIVE AVOIDANCE LEARNING IMPAIRMENTS FOLLOWING CHRONIC STRESS: AMYGDALAE IMPAIRMENT IS RESPONSIBLE?

P-II.8 Nisaa' Rahma Wulan

Islamic University of Indonesia, Yogyakarta, Indonesia

THE RELATIONSHIP OF NUTRIENT STATUS WITH DEVELOPMENT OF 0-72 MONTHS AGED CHILD AT KOTARAJA PUBLIC HEALTH CENTER, SIKUR DISTRICT, EAST LOMBOK

P-II.9 Saeed Raeisi, Mir Saeed Attarchi, Majid Golabadi, Mohamad Namvar, Amir Baba, Hadi Rezaei, Mohammad Hassan Sharafi

Occupational Medicine Department and Research Center, School of Medicine, Hemmat Campus, Tehran University of Medical Sciences, Tehran, Iran

THE RELATIONSHIP BETWEEN TYPE OF JOB AND SERVICE AREA WITH MUSCULOSKELETAL DISORDERS AMONG NURSING PERSONNEL

P-II.10 István Fekete¹, Nándor Rakonczás², Dávid András¹, Péter Sipos¹, Bódi Éva¹, Béla Kovács¹

¹Institute of Food Science, Quality Assurance and Microbiology, ²Institute of Horticulture, Centre for Agricultural and Applied Economic Sciences, University of Debrecen, Debrecen, Hungary

ANALYSIS OF POTENTIALLY TOXIC ELEMENTS IN THE DIFFERENT GRAPE JUICES (MUSTS) BY INDUCTIVELY COUPLED PLASMA (ICP) TECHNIQUES

P-II.11 Helga Perényi, Anita Vadász

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

IS THERE A CONNECTION BETWEEN SERUM GLUCOSE CONCENTRATION AND THE AETHIOPATHOGENESIS OF MELANOMA CELLS?

P-II.12 Seyyed Mohammad Mahdy Mirhosseini, Ahmad Mirhosseini, Reza Bidaki, Fatemeh Arab Bani Asad

Isfahan University of Medical Sciences, Isfahan, Iran

COMPARING THE EFFICACY OF UNFRACTIONATED HEPARIN AND CELEXANE IN PREVENTION OF VEIN THROMBOSIS AFTER CRANIOTOMY

P-II.13 Seyyed Mohammad Mahdy Mirhosseini, Mohammad Hossein Antikchi, Abbas Andishmand, Reza Bidaki, Hamid Mirhosseini, Mohammad Hadi Mortazavi, Mohammad Hossein Ahmadie

Isfahan University of Medical Sciences, Isfahan, Iran

RELATIONSHIP BETWEEN LIVER ALANINE AMINOTRANSFERASE AND SEVERITY OF CORONARY ARTERY STENOSIS IN PATIENTS WITH CORONARY ARTERY DISEASE

P-II.14 Małgorzata Jamka-Kasprzyk, Edyta Szpak-Mieszaniec

MJK-Stomatologia, Bilczyce, Poland

BRIDGES IN DENTISTRY-ENGINEERING OR ART?

P-II.15 Matei R. Bratu, B.I.Diaconescu, I.Dogaru, B.V.Martian

University of Medicine and Pharmacy „Carol Davila”, Bucharest, Romania

LAPAROSCOPY AS A FIRST LINE TREATMENT IN STAGE III COLORECTAL MALIGNANCIES-IS IT FEASIBLE?

Detailed scientific programme

P-II.16 Bikramjot Singh, HN Mallick

All India Institute Of Medical Sciences, India

TRPV1 (TRANSIENT RECEPTOR POTENTIAL VANILLOID RECEPTOR 1) CHANNELS IN PREOPTIC AREA(POA) PLAY A ROLE IN SLEEP AND THERMOREGULATION

P-II.17 Mahkameh Abedi, Abdolkhalegh Deezaji, Mahvash Khoda Bandeh, Neda Vaseli Hagh

Department of Basic Sciences, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran

K562 CELLS DIFFERENTIATE TO ERYTHROCYTES WITHOUT DNA FRAGMENTATION

ABSTRACTS

O-I.1 Masoud Nazeri^{1,2}, Vahid Sheibani², Fatemeh Abareghi¹, Moein Kermani¹

¹Medical Students Research Committee, ²Neuroscience Research Center,
Kerman University of Medical Sciences, Kerman, Iran

ROLE OF DORSOMEDIAN NUCLEUS OF HYPOTHALAMUS DISINHIBITION IN THE PATHOGENESIS OF ANXIETY-INDUCED OROFACIAL PAIN

The present study was designed to evaluate the effect of disinhibition of dorsomedian Nucleus of hypothalamus (DMH) on thermal and chemical nociception of freely moving rodents.

male wistar rats were used for these experiments. A guiding cannula was placed in their DMH (coordinates obtained from paxinos-watson atlas), after a one-week period of healing, rats were microinjected with bicuculine (BIC) as a GABAA antagonist (10pg/100nL) or saline (100nL). Their reaction time to thermal stimuli (53.5°C) was recorded with hot-plate test within an hour after injection in 5-min intervals, and their response to chemical stimuli was evaluated by applying 5M NaCl to their cornea and counting the number of eye-wipings in a 30s interval for an hour (eye-wiping test). Animal's heart rate and blood pressure was recorded to verify disinhibition of DMH. Data were analyzed using Repeated measures test, $p < 0.05$ was considered significant.

animals receiving BIC into their DMH showed a robust increase in their blood pressure and heart rate within an hour after injection ($p < 0.05$). Disinhibition of GABAA receptors led to a decrease in reaction time in hot plate test ($p < 0.01$), simultaneous with an increase in eye-wipings number ($p < 0.05$), demonstrating a decreased pain threshold in trigeminal pain pathways along with somatosensory pathways. Administration of Saline to DMH did not alter blood pressure, heart rate or pain thresholds ($p > 0.05$).

This study showed the role of DMH in hypersensitivity to noxious stimuli following an emotional stress. Disinhibition of DMH led to a decreased pain threshold in both trigeminal and somatosensory pathways. These findings suggest an important role for DMH in pain threshold alterations following emotional stress in trigeminal pain pathways, thus exhibiting a possible mechanism for emotional stress- Induced chronic orofacial pain.

O-I.2 Ilea G. Ciprian, Ivona Anghelache Lupascu

Gr. T. Popa University of Medicine and Pharmacy, Iasi, Romania

CLINICAL AND SPECTRAL ANALYSES OF EEG PATTERNS IN PREECLAMPSIA

Background: Preeclampsia is a serious pregnancy-specific disease, a multi-system disorder in which the cerebrovascular changes and neurological complications remain an important cause of maternal mortality.

Objective: This study was undertaken to quantificate the patterns of brain electrical activity in preeclampsia using both classical and spectral electroencephalographic (EEG) analysis.

Methods: We obtained EEG data for twenty-five women with clinical and paraclinical features of preeclampsia, in the third trimester of pregnancy. Visual analysis of EEG traces was followed by the absolute power spectrum evaluations of four different EEG frequency bands (alpha, beta, theta, delta). The results were compared with those of twenty-five healthy (normotensive) pregnant women.

Results: After preliminary visual analysis, our study revealed EEG abnormalities in 15 cases in the preeclamptic group compared to healthy pregnant women, consisting in generalized and focal slowing of the background activity, intermittent slowing/ polymorphic delta activity, spikes and slow-wave complexes. Power spectrum analysis in the preeclamptic group showed a significant decrease of absolute power in the high frequency EEG bands (alpha and beta) and a significant increase of absolute delta power ($p < 0,05$), especially over the posterior cerebral regions. **Conclusion:** Our findings indicate that multichannel EEG analysis can be used as a flexible tool to detect brain dysfunction in preeclampsia before cerebrovascular changes result in irreversible brain dysfunction.

O-I.3 Amirhossein Mozaffary, Mojtaba Lotfaliani, Omid Hesami, Mohammad Fakhri

Department of Neurology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

SAFETY AND EFFICACY OF GABAPENTIN IN PATIENTS WITH THALAMIC SYNDROME: RESULTS FROM A MULTICENTER CLINICAL TRIAL

Introduction: Thalamic syndrome, as one of central post stroke pains, may develop after a hemorrhagic or ischemic stroke and results in impairment of the thalamus. Although the use of gabapentin in treating neuropathic pains has been investigated well, there is very limited experience with gabapentin for the treatment of central pains like central post stroke pain syndromes.

Materials and Methods: In this multi center clinical trial, patients who found to be eligible for treating with gabapentin; received 300 mg of gabapentin; twice-daily. After one month from the initiation of treatment, the intensity of their pain was measured using numeric rating scale. A decrease of 3 points in the mean pain score considered to be clinically significant.

Results: Data of treatment efficacy was performed on the 84 study participants who completed the treatment protocol successfully. A paired-samples t-test showed that there was a significant difference in the mean scores for pre-treatment (mean=5.9, standard deviation=2.51) and post-treatment score (mean=4.7, standard deviation=3.01), $p = 0.002$. Fisher's exact test showed no statistically significant effect of clinical and demographic characteristics of patients on their therapeutic response to gabapentin.

Conclusion: Given the safety, efficacy, well tolerability and lack of interaction with other drugs we suggest gabapentin to be more considered as a first line therapy or as add-on therapy for reducing the pain severity in patients with thalamic syndrome.

O-I.4 Szilvia Kecskés¹, Áron Kőszeghy², Géza Szücs², Zoltán Rusznák², Klára Matesz¹, András Birinyi¹

¹Department of Anatomy, Histology and Embryology, ²Department of Physiology, University of Debrecen, Debrecen, Hungary

THREE-DIMENSIONAL RECONSTRUCTION AND MORPHOMETRIC ANALYSIS OF THE GIANT AND PYRAMIDAL NEURONS IN THE DORSAL COCHLEAR NUCLEUS OF THE RAT

The rat cochlear nucleus (CN) is one of the structures where correlation may be identified between the morphology and function of the various types of neurons. Correct interpretation of functional data obtained from individual cell types of the CN necessitates reliable cell identification procedures.

Our aim was to provide an objective morphological characterization of giant and pyramidal cells of the rat CN, and to identify parameters which are the most appropriate for the adequate classification of these two cell types.

The neurons were labeled with biocytin during patch-clamp measurements, visualized with a fluorescent marker, and three-dimensionally reconstructed from confocal images. Each neuron was characterized by 17 quantitative morphological parameters describing the size and shape of their somata and dendritic trees. The variables were subjected to multivariate discriminant analysis to determine the importance of each variable in the discrimination between giant and pyramidal cells.

The analyses showed that giant and pyramidal neurons may be completely distinguished from each other — and from other, unclassified CN neurons — on the basis of parameters describing the size and shape of their somata and by the length of their dendritic trees. Our results provide evidence that even partial labeling and/or incomplete reconstruction of neurons might be enough for their correct identification if certain parameters describing their cell bodies and the proximal portions of their dendritic trees are utilized. We conclude that a multivariate statistical analysis of quantitative parameters describing the morphology of giant and pyramidal cells can ensure their unambiguous identification — an observation that may have relevance in all studies conducted on the function and/or morphology of CN neurons.

O-I.5 Marianna I. Dékány

Department of Behavioural Sciences, University of Debrecen, Debrecen,
Hungary

THE RELATIONSHIP BETWEEN CREATIVITY AND AFFECTIVE DISORDERS

The most of researchers examine the relationship between creativity and affective disorders by artists; the relationship between two factors by ordinary people is less explored. Therefore, this study explored, that is there relationship between creativity and mood disorders in the normal population or not?

In the study 160 people participated: 80 depressed, 72 healthy control subjects and 8 manic patients. During the research to measure creativity was used the Creative Performance Questionnaire (Carson et al, 2005) and Torrance's Creativity Test (Torrance, 1966); I compared the test performance of examined groups in all respects: subtest and factor. The reliability of the MMPI Test's results was checked using L and F scale (Pressing and Szakács, 1990). The first hypothesis, that the depressive, manic and healthy study groups differ in terms of creativity, in part confirmed. In 5 cases among 13 examined relationships, the depressed patients compared to healthy individuals performed significantly poorer; in 7 cases the leeway was in the nature of tendency. In the healthy and manic study group comparison was received significant results in five of the 13 cases. The expected relationship confirmed in two cases, and in 3 cases was the manic study group not more creative, than the healthy control subjects. The second hypothesis, that there is correlation between visual and verbal creativity, was realized. The verbal and figural subtest scores of Torrance's Creativity Test were correlated, and there was relationship between Creative Performance Questionnaire (2005) and the figural subtest scores of Torrance's Creativity Test as well.

O-I.6 Istvan Pataki¹, Andrea Nagy¹, Zsuzsa Zele¹, Laszlo Bogнар², Laszlo Novak²

¹Department of Pediatrics, ²Department of Neurosurgery, University of Debrecen, Debrecen, Hungary

VENTRICULOSUBGALEAL SHUNT IN THE TREATMENT OF POSTHEMORRHAGIC AND POSTINFECTIOUS HYDROCEPHALUS OF PREMATURE INFANTS

Purpose: The aim of the study was to compare the characteristics of ventriculosubgaleal shunts during the clinical course of posthemorrhagic and postinfectious hydrocephalus in the neonatal period.

Patients and methods: The study comprised 102 premature babies in whom subgaleal shunt was consecutively inserted between 2006 and 2011. Seventy two patients had posthemorrhagic hydrocephalus (mean gestational age 27.3 ± 2.1 weeks, mean birth weight 1036.9 ± 327.7 g, mean age at insertion 51.4 ± 56.2 days) and 30 patients we operated postinfectiously (27.5 ± 2.2 weeks, 1064.7 ± 310.7 g, 115.9 ± 47.8 days).

Results: The mean survival of subgaleal shunts was 87.9 days for the posthemorrhagic group, and 75.6 days for the postinfectious group. Only six infants (8.3%) did not need ventriculoperitoneal shunts later, all posthemorrhagic. There were meaningful differences between two groups with regard to ventriculosubgaleal shunt-related infections (8.3% in posthemorrhagic versus 20,0% in postinfectious), and shunt revision rate (6.9% in posthemorrhagic versus 13.3% in postinfectious), but these were not statistically significant. The need of ventriculoscopic procedures was notably more frequent in postinfectious group (1.4% versus 23.3%).

Conclusion: In premature infants with ventriculomegaly the subgaleal shunt is an effective temporary diversion tool. The complications were less with posthemorrhagic than with postinfectious hydrocephalus. With previous severe infections of prematures the risk for complications regarding infection and obstruction will be 2.75 and 2.06 (odds ratios) times higher and more frequent need of ventriculoscopic procedures should be considered (odds ratio: 21.6).

O-I.7 Botond Gaál, Gábor Halasi, Ádám Deák, Éva Rácz, Klára Matesz

Department of Anatomy, Histology and Embryology, University of Debrecen, Debrecen, Hungary

EXTRACELLULAR MATRIX OF THE CENTRAL NERVOUS SYSTEM AND ITS ALTERATION DURING REGENERATION

Biochemical and histochemical analyses, in the past decades, explored various extracellular matrix (ECM) components in the embryonic and differentiated CNS. In vitro studies suggested that the ECM molecules may have permissive or non-permissive role during the development and regeneration of the nervous system. The differences in the regeneration processes of CNS and PNS, and the species differences may be partially explained by the variation in the composition and complexity of their ECM molecules. Characteristic places of occurrence of ECM is the perineuronal net (PN), which is a condensation of the ECM around the perikaryon, proximal dendrites and axon hillock. Several studies shown that PN plays an important protective role in the maintenance of physiological function of neurons and in the stabilization of synaptic connections. The other site of occurrence of ECM molecules is the transitional zone (TZ) of motor and sensory radices, where they leave or enter the medullospinal neuroaxis. Growing axons can penetrate TZ during development, but later it turns into a barrier against regenerating fibers in the postnatal life. We have performed in vivo studies on the qualitative and quantitative changes in the distribution of various ECM molecules in the vestibular nuclei of the brainstem, after trans-section of the vestibulocochlear nerve. Our results demonstrated in the rat that following unilateral labyrinthectomy the chondroitin sulfate proteoglycans were not detectable ipsilaterally in the PN and neuropil in the vestibular nuclei on the first postoperative day, but reappeared by day seven. This phenomenon corresponded to the amelioration of postural deficits.

This work was supported by OTKA K 67641, MTA-TKI 242 and DE OEC Bridging Fund.

O-II.1 Erika Nagy, Beáta Nagy

Department of Behavioural Sciences, University of Debrecen, Debrecen,
Hungary

INVESTIGATION OF PARENTS WITH A CHILD CONCEIVED BY IN VITRO FERTILIZATION (IVF) FROM HEALTH PSYCHOLOGICAL ASPECTS

Introduction: Infertility has become a world-wide public health problem. At the same time, with the advanced infertility treatments the specialists can help almost every infertile couple to become parents, contributing to a better demographic situation. However, both infertility and infertility treatments impose a serious physical and psychological burden on sterile couples.

Objective: Exploration of coping strategies and parental attitudes of couples who have undergone successful assisted reproduction (specifically in vitro fertilization, IVF), and comparison of these factors to those couples' coping strategies and parental attitudes who conceived their children naturally.

Method: Altogether 168 people took part in our research. The research group consisted of 42 infertile couples treated at the Kaali Institute in Debrecen, while the control group consisted of parents of naturally conceived children (also 42 couples). We applied the Ways of Coping Inventory, the Psychological Immune System Inventory, the Parental Attitude Research Instrument and the demographic data.

Results: Contrary to the control group, couples who were treated successfully with IVF prefer searching emotional balance and social withdrawal as coping strategies to emotionally motivated actions ($p < 0,05$). The IVF couples feel a higher sense of coherence ($p < 0,05$) and self-concept ($p < 0,05$), and they have more democratic parental attitudes ($p < 0,05$) than the members of the control group. Mothers apply support-seeking coping and social withdrawal coping more frequently than fathers in both groups ($p < 0,05$).

Conclusions: Our research and the previous studies confirm the psychological factors' role in the development and treatment of infertility.

O-II Preventive Medicine and Basic Science

O-II.2 Zsuzsa Erdélyi, Róza Ádány, Karolina Kósa

Unit of Health Promotion, Department of Preventive Medicine, University of Debrecen, Debrecen, Hungary

HEALTH BEHAVIOUR OF HIGH SCHOOL STUDENTS IN DEBRECEN COMPARED TO THE NATIONAL AVERAGE

There have been many school health promotion programs since the concept of the school health promotion was created by the World Health Organization in 1995. Based on the holistic model of health, school health promotion targets not only students but also teachers (school workers) and parents implementing complex changes instead of merely health education. An integrated school health promotion programme was developed by one of the best school in Debrecen (Árpád Tóth High School, TÁG) in 2009 and won financing by the New Hungary Development Plan in the school year of 2010/2011.

The program included four elements: improving nutrition, everyday physical education (PE), health education in the curriculum and personality centered education by training teachers. The present study aimed at recording the health status of all students in the school before the intervention and comparing it to the national cohort of the same age. An anonymous online questionnaire with 35 items was used which was modelled after the Hungarian version of the Health Behaviour Survey of School-Aged Children (HBSC) including demographic data, general and mental health, health behaviour and feeling towards the teachers, the classmates and the school. HBSC data from 2010 were used as reference.

According to the demographic data, more students of the TAG live in cities ($p<0.001$), and they have higher educated parents ($p<0.001$) and better financial status ($p<0.001$) compared to the national average. Better subjective health ($p<0.001$) and higher satisfaction with life ($p=0.006$) were detected among students in the TÁG compared to the ones in the HBSC 2010. The prevalence of smoking ($p<0.001$), binge drinking (boys: $p<0.001$; girls: $p=0.015$) and drug use ($p<0.001$) was lower in the target school than in the national cohort. TÁG students like the school more ($p<0.001$), but they are less satisfied with their teachers ($p<0.001$) and classmates ($p<0.001$) than the ones in the HBSC in 2010.

O-II.3 Ágota Kornyicki, Róza Ádány, Karolina Kósa

Faculty of Public Health, University of Debrecen, Debrecen, Hungary

HEALTH STATUS OF PREGNANT WOMEN AND INFANTS IN HUNGARY BETWEEN 1997 AND 2010

Monitoring the health status of populations is essential to good health policy decisions. This is particularly true in maternal and child health where targeted and timely interventions may have long-term consequences. Our objective was to describe changes in the health status of pregnant women and infants at the national and county level during the period of 1997-2010.

Data were extracted from the mandatory annual reports of district nurse responsible for primary maternal and child care. Information on the smoking status of expecting mothers, special care during pregnancy, pregnant women entering into maternity care after 28 weeks of pregnancy, intrauterine retardation were analysed using Excel and Stata 10.

The mean prevalence of smoking was 14% among pregnant women during the investigation period. The ratio of smoking pregnant women was significantly, at least 30% higher ($p<0.000$) in Borsod, Nógrád, Heves, Szabolcs and Somogy counties. The ratio of pregnant women requiring special care was significantly ($p<0.000$), at least 22% higher than the national average in Somogy, Szabolcs, Borsod and Nógrád counties. Almost 20% of the pregnant women were not taken into primary maternity care by health visitors before the 12th week of the pregnancy, and nearly 2% of the pregnant women entered into care only after the 28th week of the pregnancy. The prevalence of premature babies (7.6%) and infants with intrauterine retardation (2.1%) were higher than the EU average. In terms of regional inequalities, the proportion of premature babies was higher in Somogy, Szabolcs, Heves, Borsod and Baranya counties compared to the national average. National data hide significant regional disparities within the country which should be amended by targeted interventions, taking into account the great regional inequalities in the country.

O-II Preventive Medicine and Basic Science

O-II.4 Andrea Berkes, Enikő Felszeghy, Éva Nemes, E. Bányász, K. Fenyvesi, Gábor Mogyorósy

Institute of Pediatrics, Medical and Health Science Centre, University of Debrecen, Debrecen, Hungary

MEASURING HEALTH-RELATED QUALITY OF LIFE IN CHILDREN WITH CHRONIC CONDITIONS

Background: Chronic health conditions have a great influence not only on children's physical state but on their emotional and psychosocial functioning. The growing number of children and adults with chronic conditions and with psychosocial problems explain the importance of quality of life measures in pediatric care.

Objectives: The aim of our study, was to investigate HRQL in children with chronic conditions, such as cardiac diseases, diabetes and gastroenterologic disorders with the Hungarian version of the Pediatric Quality of Life Inventory (PedsQL) Generic Core Scales.

Methods: The PedsQL Generic Core Scales was administered to 254 caregivers of children (aged 2-18) at 195 children (5-18) with cardiac diseases, 100 parents of diabetic children and 96 diabetic children and 107 caregivers of children with gastroenterologic disorders and 78 children with that health conditions. Group-matched sample of the general population, with 525 caregivers and 373 children was conducted with PedsQL Generic Core Scales.

Results: Hungarian children with cardiac diseases report significantly lower physical functioning than the general population. There was no significant difference between HRQL of diabetic children and children with gastroenterologic disorders than that of the general population. HRQL of children of conventional insulin therapy was found to be significantly lower than that of insulin pump therapy.

Lower HRQL indexes were calculated in parents' report in our subgroup.

Conclusion: HRQL of children with chronic conditions can be similar to that of healthy peers. Consistently with the literature our results show that impact of health conditions and health care interventions on children's life is overestimated by parents.

**O-II.5 Gábor Áron Fülöp¹, Ibolya Rutkai¹, Ágnes Czikora¹, Andrea Szalai³,
Róbert Pórszász³, István Édes², Zoltán Papp¹, Attila Tóth¹**

¹Department of Clinical Physiology, ²Institute of Cardiology, ³Department of Pharmacology and Pharmacotherapy, University of Debrecen, Debrecen, Hungary

RHO-KINASE ACTIVATION CONTRIBUTES TO THE FORMATION OF HIGH BLOOD PRESSURE IN RAT MODEL

Our aim was to characterize the spontaneously hypertensive stroke prone (SHRSP), and the normotensive wistar kyoto (WKY) rat strains, to find the possible difference in their blood pressure and cardiac system.

In our experiments, we detected the diameter changes of cannulated muscle arterioles, and the contractile force of the femoral artery. We also measured the body and the heart weight, and also the blood pressure. The body weight of the SHRSP rats (257±2g) was smaller than the weight of the WKY rats (361±10g, $p<0,01$). The heart/body ratio (0,0047), the systolic (210±12 Hgmm) and diastolic (161± 8 Hgmm) blood pressure of the SHRSP was significantly higher than we found in WKY rats (0,0027, 147±9Hgmm, 115±7 Hgmm). The myogenic tone of the muscle arterioles was similar in the two groups. After pretreatment with Rho-kinase inhibitor fasudil (10 uM) the myogenic tone decreased more in the SHRSP group (82,5±6,2%) than in the WKY group (34,4± 9,8 %). Pretreatment with other substances, such as acetylcholine, norepinephrine, serotonin, and U46619 we did not find any difference, not even after adding fasudil to the system.

In the case of the femoral artery, treatment with 10-60 mM KCL resulted in higher contractile force in SHRSP (10,33±1,7mN) than in WKY (6,53±1,3mN). Pretreatment with fasudil resulted in the normalisation of the higher contractile force in the SHRSP group (decreased to 6,3 ±1,8mN), but had no effect on the contractile force of the WKY group (6,3±1,6mN). In case of using serotonin we detected similar reaction. (contraction for SHRSP: 13,7±1,6 mN, which decreased to 9,3±1,5mN in the presence of fasudil, contraction for WKY: 8,7±2mN, which was 8,9±1,8mN after using fasudil.)

According to our results, the Rho-kinase system probably plays an important role in the pathogenesis of high blood pressure, and better understanding of the pathogenesis may lead to new and hopefully more effective drug development.

O-II.6 János Vincze, Márta Füzi, Ágnes Jenes, Julianna Cseri, Péter Szentesi, László Csernoch

Department of Physiology, Medical and Health Science Center, University of Debrecen, Debrecen, Hungary

ADVERSE EFFECTS OF IN VIVO AND IN VITRO ADMINISTRATION OF STATINS ON RAT SKELETAL MUSCLE

Statins are the most widely used drugs in the treatment of hyperlipidaemia. Their side-effects on skeletal muscle, however, have been reported with increasing frequency. Although the pathomechanism of the statin associated myopathy has been studied in detail and several theories do exist, there is still no real consensus.

To the study of the effects of statin on skeletal muscle rats were fed with a special diet to achieve high blood cholesterol levels and fluvastatin was administered to them orally. Fluvastatin and rosuvastatin were also applied on rat primary cell cultures. Morphometric analysis was used to detect effects on cell proliferation and differentiation. Effects on the cytoskeletal structure of muscle cells were visualized using immunofluorescence.

After introducing a high-cholesterol diet to rats, blood cholesterol levels rose more than seven fold (from 1.5 ± 0.1 to 10.7 ± 2.0 mmol/L; $n=15$ and 16) with a dramatic increase in LDL/HDL ratio (from 0.29 ± 0.02 to 1.56 ± 0.17). While the latter was reversed by statin treatment, an elevation in blood creatine kinase level persisted. In the control cell cultures the number of myogenic nuclei increased, as compared to the end of the 1st culturing day, by 58% after 24 hours and by further 54% after an additional day. In contrast, the number of myogenic nuclei in the fluvastatin-treated group rose by only 3% after 24 hours and fell by 18% (decrease not significant) after another 24 hours. Cytoskeletal components of the cells were visibly degraded; most profound effects were seen on the distribution of fibrillar actin.

Our results clearly demonstrate that statins elicit skeletal muscle related adverse effects in rats therefore such an animal model could be used to test their side-effects. The effects of statins on the proliferation, differentiation and structure of developing muscle cells may explain certain adverse effects seen in clinical use.

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EFFECTS OF HYPERCHOLESTERINAEMIA ON Kv1.3 CURRENTS

It is well known that the changing the cholesterol content of the cell membrane may influence the functioning of the ion channels. We reported previously that the increase of the cholesterol content of the cell membrane (in vitro) modified the biophysical parameters of the gating of Kv1.3 K⁺ ion channels in human T-lymphocytes. In our present study we aimed to determine the effect of hypercholesterolemia on the gating of Kv1.3 channels and proliferation of T cells.

T-lymphocytes were isolated from the peripheral blood of patients with cholesterol level considered normal (<5.2 mmol/l, control group) and patients with hypercholesterinaemia. We determined the kinetic characterizing the gating of Kv1.3 channels using the whole-cell configuration of the patch-clamp technique. Lymphocyte proliferation was measured using CFSE staining with and without anti-CD3 and anti-CD28 stimulation.

Our results indicate that the biophysical parameters of Kv1.3 gating are similar in the control group and in the 'hc' samples. The CFSE-based assay showed that hypercholesterolemic T cells had higher spontaneous activation rate compared to control group. However, T cells from high cholesterol level patients challenged by anti-CD3 and anti-CD28 exhibited lower proliferation rate than control cells.

O-III Cardiovascular Medicine, Endocrinology

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SINGLE STAGE OPERATION FOR MULTIPLE CEREBRAL ANEURYSMS OF THE ANTERIOR CIRCULATION

Introduction: If a patient harbors multiple cerebral aneurysms (MCAs), none of them can be considered inoffensive. Literature states that a single stage operation with treatment of all identified aneurysms is beneficial. It spares the patient of sequential craniotomies and anesthesia. However, existing data on the outcome of treating bilateral MCAs with unilateral approach is uncertain. The aim of our study was to clarify this uncertainty for the level of the Neurosurgical Department of the Cluj County Emergency Hospital.

Materials & Methods: A single center single surgeon retrospective study was conducted on a series of 44 patients with a total of 117 aneurysms admitted in the October 1997- February 2012 period. We divided the patients into 2 groups: group 1- unilateral MCAs of the anterior circulation and group 2- bilateral MCAs of the anterior circulation. The patients ASA score and Hunt & Hess scale were recorded on admission. All patients underwent a single stage procedure. Unilateral fronto-pterional approach with attempt of clipping all aneurysms was preferred. We analyzed the postoperative specific and non-specific complications as well as the Glasgow Outcome Scale(GOS) on discharge.

Results: The most frequent combination of aneurysm location was: anterior communicating-posterior communicating arteries and anterior communicating-middle cerebral arteries. Mirror aneurysms were present in 6 patients. Regarding the number of aneurysms 65,9% of cases presented with 2 aneurysms; 18,18 % with 3; 6, 81 % with 5 and 4, 54 % of cases with 4 respectively 6 aneurysms. There are no major differences between the outcomes in the 2 groups. On discharge GOS of 4 or 5 was noted in the majority of cases. The main postoperative complications were hydrocephalus and vasospasm.

Conclusions: Unilateral fronto-pterional approach, if performed by a skilled neurosurgeon, is useful in both unilateral and bilateral MCAs of the anterior circulation.

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„OBESITY PARADOX“ IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

Introduction: Obese people live longer than their normal-weight counterparts. This phenomenon is called the „obesity paradox“. In obese patients there is increased sympathetic activity and is responsible for increasing heart rate. Purpose was to investigate what was the impact of BMI on the final outcome in patients with AMI and elevated heart rate, and whether there is the „obesity paradox“ in these patients or not.

Methods: This study included 140 patients with STEMI, treated in Coronary Unit, Clinical center Kragujevac in the period from January 2001-June 2006. Heart rate was calculated as the mean value of baseline and heart rate in the first 30 minutes after admission. BMI was calculated as the ratio of body weight in kilograms and body height in squared meters, and classified according to WHO. All data were stored in a specially designed database, and statistically analyzed in the SPSS using descriptive and analytical statistics.

Results: In the observed group of patients, 40 (28,57%) patients died and 100 (71,43%) patients survived. In both groups there was more than 75% of obese patients (76% among survivors and 82,5% of patients who died). Compared to the mortality there was no statistically significant difference in the prevalence of obese patients (χ^2 test, $p=0,403$). The subgroup of patients with heart rate greater than 80 bpm also showed that obesity affects mortality rate in patients with acute myocardial infarction. In this subgroup there was 77,8% of obese patients among survivors and 81,1% among patients who died with no statistically significant difference (χ^2 -test; $p=0,689$).

Conclusions: According to the mortality rate in this study there is a possibility that „obesity paradox“ exists in patients with acute myocardial infarction.

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HEART RATE – THE IRREPLACEABLE RISK FACTOR FOR MORBIDITY AND MORTALITY IN PATIENTS WITH ANTERIOR STEMI

Introduction: Heart rate is the most important determinant of myocardial oxygen consumption and metabolic demands of heart. Many studies have shown association between heart rate and increased cardiovascular morbidity and mortality, independently of other risk factors for atherosclerosis. Purpose was to investigate the heart rate in patients with STEMI and to determine the influence of heart rate on mortality.

Methods: This study was partly prospective and partly retrospective, including 140 patients with STEMI that were threatened in Coronary Unit, Clinical center Kragujevac in the period from January 2001-June 2006. Heart rate was calculated as the mean value of baseline and heart rate in 30 minutes after admission. All data were stored in database, and statistically analyzed in the SPSS, using descriptive and analytical statistics.

Results: In the observed group of patients with acute myocardial infarction, 40 (28,57%) patients died and 100 (71,43%) patients survived. Of a total number of patients, 109 (77,85%) had a heart rate levels greater than 80 bpm which was statistically significant (χ^2 -test; $p=0,008$). There was a significant difference in heart rate levels on admission between survivors and patients who died (Mann Whitney U test; $p=0,000$), with a greater levels in patients with fatal outcome ($87,97 \pm 16,7$ – survivors; $102,05 \pm 23,16$ – fatal). There was no significant difference in heart rate levels according to age and gender of patients. Both, univariate [expB (95%CI)-1,040 (1,017-1,063); $p=0,000$] and multivariate regression analysis [expB (95%CI)-1,076 (1,006-1,151); $p=0,033$] singled out heart rate greater than 80 beats per minute as independent mortality predictor in these patients.

Conclusions: Heart rate greater than 80 bpm is a major risk factor for morbidity and mortality in patients with acute myocardial infarction, independent of other risk factors for acute coronary syndrome.

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EFFECT OF MEDIUM LASER IRRADIATION ON MORPHOLOGICAL AND FUNCTIONAL CHARACTERISTICS OF MAST CELLS AND FOLLICULAR CELLS OF THE THYROID GLAND IN THE EXPERIMENT

The application of high power laser can make an effective impact on the deep tissues. During the percutaneous medium power laser irradiation in the neck region the laser energy exposure and the local temperature increase can cause changes in the thyroid gland function and in the endocrine regulation. Mast cells serve as a marker of laser irradiation on biological tissues, due to the cells degranulation after local heating and stress. The experiment was conducted on 35 adult mongrel rats. Irradiation was performed by "IRE-POLUS" laser (Russia) with a 970 nm wavelength, 1.5 W, a single dose. The animals were withdrawn from the experiment in an hour, 1 day, 7 days after exposure. Histologic specimen of tissue stained with toluidine blue and hematoxylin/eosin. The study of thyroid specimens after laser exposure showed the decrease in the total number of mast cells, increased degranulation indices and increase of the III grade degranulation mast cell. The observed dynamics can evidence both the destruction of the mast cell and local tissue edema due to the products of mast cells (histamine). The study of follicular epithelium showed an increase in the diameter of the follicles and an increased index of colloid accumulation, and at the same time the thyrocytes hight did not change significantly. These data are traditionally interpreted as signs of the thyroid gland hyperfunction. It is possible that the effect of laser irradiation on thyrocytes is associated with heat shock proteins, which are locally accumulated in the areas of temperature increase and require further study. Changing the number of mast cells, enhancing their degranulation, increased activity of the thyroid epithelium in the thyroid gland under the influence of medium power laser exposure may cause changes in endocrine function of the organ, so the level of thyroid-stimulating hormone and iodine-containing thyroid hormones before and after laser irradiation must be determined.

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POSTINFARCTION VENTRICULAR SEPTAL DEFECT – INCIDENTAL FINDING ON CHEST COMPUTED TOMOGRAPHY ANGIOGRAPHY

Background: Over the last years increases amount of publications devoted to incidental cardiac and pericardial abnormalities overlooked on non-gated chest computed tomography (CT). Authors encourage radiologist to recognize and report cardiac findings for some reasons: modern CT technology allows reveal cardiac abnormalities even using non-gated chest CT; conditions such as dyspnea, chest pain, elevated pulmonary pressure that request chest CT could be symptoms of heart diseases; and early recognition of cardiac pathology is important for its proper management.

Case presentation: In our institution we have observed rare life-threatening complication of myocardial infarction as incidental finding on chest CT angiography (CTA) that has been overlooked by the primer analysis. 68-years-old woman with history of seropositive rheumatoid arthritis and continuous treatment with oral steroids presented to the emergency department with chest pain, anteroseptal ST-elevation on ECG and elevated cardiac enzymes. Systolic murmur was auscultated and echocardiography revealed tricuspid regurgitation. For logistical reasons patient initially received thrombolytic therapy with good outcome. On the next day performed coronary angiography revealed critical occlusions of RCA-and LDA-arteries and both were successfully revascularised. During following days shortness of breath got worse, follow-up chest x-rays showed increased pulmonary congestion. Echocardiography detected slightly elevated pulmonary pressure. Pulmonary embolism was suspected and performed chest CTA. CTA had no evidence of pulmonary embolism, but close to the apex could be seen rupture of ventricular septum – postinfarction ventricular septal defect (VSD). By the primer analysis of CTA it was not noticed and revealed later by the retrospective review while septal defect was visualized on echocardiography. VSD was urgently repaired and patient is recovering now. To our knowledge postinfarction VSD was not before reported as incidental finding on CTA.

Conclusion: Looking routinely at the heart structures on the non-gated chest CT/CTA allows diagnosing cardiac pathology early and starting adequate treatment in time.

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PULMONARY VEIN ISOLATION HAS NO SHORT-TERM EFFECT ON COGNITIVE FUNCTION: A COMPARISON OF 3 DIFFERENT ABLATION TECHNIQUES.

Background: Clinically silent cerebral ischemia (SCI) on diffusion MRI after pulmonary vein isolation(PVI) has been recently demonstrated by several investigators raising a significant concern regarding the safety of the procedure. The occurrence of these lesions has been shown to correlate with the ablation technology used. Phased RF technique has been associated with the highest while cryoablation with the lowest incidence of SCI. However the clinical relevance of these brain lesions is unknown. Therefore we studied the effect of pulmonary vein isolation on cognitive function using different ablation techniques and anticoagulation strategies.

Methods: 29 consecutive patients (age:54±13 years; female:male 9:20) were included in this prospective study. 23 patients undergoing PVI were randomized to 3 different treatments: 1, cryoballoon ablation and conventional (ACT>250 sec) anticoagulation protocol (Group1; 9 patients), 2, multipolar duty-cycled radiofrequency catheter (phased RF) and conventional anticoagulation protocol (Group 2; 7 patients) and 3, phased RF with an aggressive (ACT>320 sec) anticoagulation regime (Group 3; 7 patients). Six patients with atrial fibrillation who were not assigned to catheter ablation were selected as age-, sex-matched controls. A battery of neuropsychologic tests were performed at baseline and 6 weeks postablation including Rey Auditory Verbal Learning, Halstead-Reitan Trail Making Tests Parts A and B, Wechsler Adult Intelligence Scale, Verbal Fluency Test, Brickenkamp D2 Test of Attention. The ablation groups were similar for all preoperative variables.

Results: Clinical signs of cerebral ischemia did not occur in any of the patients. No statistically significant changes in neuropsychologic tests were found in the 3 ablation groups when compared to control patients.(p=0,8).

Conclusions: Pulmonary vein isolation has no short-term effect on cognitive function regardless the ablation technology used.

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THE ARTERIAL BLOOD SUPPLY OF THE PANCREAS – A SURGICAL ANATOMICAL STUDY

Introduction:For the sophisticated surgical and diagnostic techniques in the pancreatic interventions the knowledge of arterial variations is essential. These variants may alter the tumor resectability and cause complications in arterial embolization. Therefore we aimed to investigate these arterial variations in the Hungarian population.

Materials & Methods:We examined 36 human abdominal organ complexes using corrosion technique. Resin was injected into the abdominal aorta then the parenchyma was corroded. Thereafter we analyzed the casts then digital photographs and 3D CT images were taken.

Results:Pancreatico-duodenal anatomico-surgical segments receive blood from the celiac trunk and superior mesenteric artery (SMA) forming peripancreatic arches. The anterior superior pancreaticoduodenal artery (ASPSDA) arose from the gastroduodenal artery (GaDA) in 94 % (34 casts), in the remaining cases we found atypical origin, from the coeliac trunk (CT) and the proper hepatic artery (PHA) equally. The posterior superior pancreaticoduodenal artery (PSPDA) arose from the common hepatic artery (CHA) in 2 casts, from the PHA in 1 cast. The inferior pancreaticoduodenal artery originated from the SMA with a short common trunk in 11%. 21 casts (58 %) displayed a variation described in the literature as dominant one in which both an upper jejunal artery and the superior mesenteric artery contribute to the formation of inferior pancreaticoduodenal artery. The anterior and posterior inferior pancreaticoduodenal artery arose separately from the SMA in 31 % (11 casts). Dorsal pancreatic artery was absent in 8 casts (22%), this vessel arose from the splenic artery (SA) in 53 % (19 casts), from the CHA in 14 % (5 casts), from the CT in 8 % (3 casts). The body of the pancreas was supplied exclusively by the transverse pancreatic artery in 2 casts and this branch arose from the SMA or GaDA in 9 cases (25%).

Conclusions:We identified a previously not described variation of the GaDA arising from the SA. We described two extremely rare variants of the PSPDA. Our results stress on the importance of the detailed preoperative radiological analysis of the upper abdominal vascular structures.

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DEVELOPMENTAL ASPECTS OF THE TRACHEA

Introduction: The development of the trachea is dependent on the interaction of various signal transduction pathways and their associated ligands. Various genes, such as Fuz, Sox9, Indian hedgehog (Ihh), Sonic hedgehog (Shh), Fibroblast Growth Factor (FGF) are involved in the development of the trachea. These signals are important for cartilage formation and if this does not occurs normally, we may have less flexibility of the trachea which can lead to breathing difficulties or lack of support for the upper airway.

Objectives: The purpose of this study is to provide information about aspects of tracheal development.

Materials and methods: The present paper contains a literature review regarding developmental aspects of the trachea as well as a study on a mouse model. We used a mouse model to observe the steps of tracheal development . Animals were collected for dissection at the E17.5 stage, then they were embedded in wax and sectioned using a microtome. The ribbons of sections were mounted on glass slides and treated with haematoxylin and eosin staining to visualize the tissue.

Results: We have obtained that the trachea is completely developed by this stage. Our data are consistent with the specialized literature.

Conclusions: A mouse is a good model to show tracheal development, in addition it is more convenient for genetic experiments. As future directions, we plan to look at the characteristics of the mutant mouse.

O-IV Surgery, Odontology, Dermatology

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STATISTIC STUDY ON THE PREVALENCE OF DENTAL ANOMALIES IN ORTHODONTIC PATIENTS

Introduction: The prevalence of dental anomalies in orthodontic patients is the subject of this paper which investigates it on a study group of patients.

Materials and Methods: We have performed a statistic study on a group of 375 patients from the Pedodontics Clinic in Cluj-Napoca, Romania. The frequency of the dental anomalies was evaluated on the base of intraoral photographs, panoramic radiographies and dental casts from the patient records.

Results: In our study, we have obtained that 12% of the patients have at least one dental anomaly other than agenesis of the third molar. There are no significant differences between male and female. The most common dental anomaly were macrodontia and microdontia.

Conclusions: The results of our study showed that the prevalence of dental anomalies represents 12%. Other studies from the specialised literature showed similar results.

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“THORNY QUESTIONS” IN DEVELOPMENTAL BIOLOGY: INVESTIGATION OF DIFFERENT SIGNALLING PATHWAYS REGULATING THE TOOTH DEVELOPMENT

During tooth development, the reciprocal interactions between oral epithelium and ectomesenchyme play important functions in the fine tuning of different morphological events. It has been shown earlier, that different members of five major protein family (fibroblast growth factor /FGF/, sonic hedgehog /Shh/, bone morphogenetic proteins /BMPs, Notch and Wingless proteins /Wnt/) play a key role in repeating crosstalk in the regulation of patterning, morphogenesis and differentiation. Continuously growing and erupting teeth, such as mouse incisors, rely on mesenchymal and epithelial stem cells to maintain their regenerative capacity throughout their life span. The stem cell compartments are located in the proximal ends of the teeth, at cervical loop region.

Our aim is to introduce a method that is used in our laboratory, in which we are able to monitor and alter the dental epithelial stem cell's life cycle at the cervical loop region of lower incisor of mouse. This method also allows us to influence the differentiation of ameloblast precursors. Using continuously growing mouse incisor organoid in vitro tissue cultures and different detection methods (BrdU incorporation test, Apoptag Kit, Fluorescence and DAB-based immunohistochemical methods) we monitored the maintenance as well as advancing differentiation of stem cells located at cervical loop region. Grants from the EU FP7 (Marie Curie Reintegration Grant) and from Medical and Health Science Centre is gratefully acknowledged.

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PATIENT WITH PROGEROID SYNDROME

Progeroid syndromes are of great diagnostic and therapeutical challenge. Hereby, we present a case of a patient suffering from a disorder belonging to this rare disease group.

The 35 year-old female patient have developed a progeroid appearance with the retardation in physical development, a significant lack of subcutaneous fat and characteristic facial features since her early childhood. Therefore, a progeroid syndrome have been suspected as a cause of her symptoms. For this reason, she had been assessed by many institutions. Despite the numerous studies carried out in the 80-90s, no definitive diagnosis have been made with the methods available at that time. In 1994, the case has been published as Cockayne's syndrome associated with high levels of intelligence, a so-called Cockayne's syndrome third type. However, the diagnosis could not be confirmed during the past years.

Her disease has continuously progressed since then. Because of the inconsistent symptoms - such as the lack of cataracts, her normal height, high intelligence relatively high survival, and moderate photosensitivity - the diagnosis of Cockayne's syndrome have become questionable, thus, other syndrome of progeroid type is suspected.

The controversy about the clinical presentation of the patient led us to perform a whole exome sequencing of the patient's DNA. Based on its results, other molecular tests are performed with primary fibroblast cultures derived from the patient, the results of which are also presented in this work

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LEPTIN MODULATES INFLAMMATORY CYTOKINE RELEASE AND LIPID DROPLET FORMATION OF SEBOCYTES

Sebaceous glands are crucial, among other, in maintaining the lipid barrier of the skin through the production of sebum. In addition, sebocytes also play an active role in innate immunity and inflammation by secreting inflammatory cytokines IL6 and IL8 through regulation of TLR expression by natural and synthetic ligands or hormonal changes. Leptin is known to affect adipocyte differentiation and to link lipid metabolism and inflammation in various cells such as macrophages and dendritic cells. A role of leptin in sebocytes has not yet been investigated. In this work we report on the expression of leptin receptor on SZ95 sebocytes and their response to leptin. Leptin treatment induced lipid droplet formation in SZ95 sebocytes. Moreover, leptin induced the expression of IL6 and IL8 but did not affect TNF α and IL1 β levels. Upon leptin stimulation STAT3 pathway was found to be activated showing that the signalling pathway responsible for mediation of leptin effectiveness is also active in SZ95 sebocytes. In addition, treatment with arachidonic acid but not with activators of TLR2 and TLR4 led to immediate secretion of leptin by SZ95 sebocytes suggesting that leptin may also have autocrine effects on sebocytes. Leptin receptor and intracellular leptin could be detected in the sebaceous glands of normal skin as well as in acne-, psoriasis- and atopic dermatitis-diseased skin by immunohistological examination putting forward that leptin signalling could have an important (patho)physiological role in sebocyte biology.

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DETECTION AND ISOLATION OF DENGUE VIRUSES FROM VECTOR MOSQUITOES USING IMMUNOCYTOCHEMICAL ASSAY WITH THE MONOCLONAL ANTIBODY DSSE10

Dengue virus infection is one of the most important mosquito - borne human infections of this century in terms of morbidity and mortality. Currently, laboratory diagnosis of Dengue suspected cases is based on virus isolation in mosquito cell cultures by RT- PCR (Reverse Transcriptase- Polymerase Chain Reaction) or immunocytochemical assay.

The main purpose was to determine whether the immunocytochemical assay using the anti-Dengue antibody DSSE10 can detect the viral infection in mosquito head squash. A secondary purpose was to determine mosquito resistance to certain insecticides (temephose and malathion).

For the diagnosis test we used a group of 46 *Aedes aegypti* mosquitoes, infected and non- infected with Dengue. We determined the infected status using RT- PCR as golden standard test and the immunocytochemical assay on mosquito head squash as a second test. For resistance to temephose we used 100 mosquito larvae and bowls with 2ppm temephose solution for the treatment group and bowls with fresh water for the control group. For resistance to malathion we used 5 jars with 25-35 mosquitoes each and malathion with concentrations of 0 µg/ml for the control group and 50, 100, 200 and 400 µg/ml for the therapy groups. Statistical analysis was performed using GraphPad version 3.06.

The prevalence of dengue infection among specimens was 41%. The immunocytochemical assay showed 48% specimens as positive and 52% as negative (kappa = 0.64). Sensitivity was 0,94 (95%CI: 0,74-0,99), specificity 0,85 (95%CI: 0,66-0,95), positive predictive value 0,81 (95%CI: 0.59-0,94), negative predictive value 0,95 (95%CI: 0,78-0,99), Likelihood ratio 6,39 and $p < 0.0001$ (using Fisher exact test). The mortality among larvae exposed to temephose was 95%. The mortality among mosquitoes exposed to malathion was 100%.

The immunocytochemical assay was found to be useful for detection of Dengue virus infection in mosquito head squash even though the reduced number of specimens evaluated hindered us from obtaining more accurate results. Also, the mosquitoes proved to be tolerant to temephose and sensible to malathion insecticides.

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HOW VITAMIN D RECEPTOR GENE POLYMORPHISMS RELATED TO SJÖGREN'S SYNDROME IN HUNGARIAN POPULATION

Introduction: Sjögren's syndrome is a common systemic autoimmune disease that primarily affects the exocrine glands and leads to xerophthalmia and xerostomia. Extraglandular manifestations (EGMs), may also be found in a group of patients. Since vitamin D has several immunomodulatory effects through vitamin D receptor (VDR). Several studies have reported that genetic variations of VDR might be a risk factor for the development of autoimmune diseases. VDR polymorphisms have not been reported in conjunction with Sjögren's syndrome yet.

Aim: The frequencies of Vitamin D receptor polymorphisms (BsmI, TaqI, ApaI and FokI) were investigated in patients with Sjögren's syndrome, and to determine whether these VDR gene polymorphisms are associated with the disease.

Patients and methods: In our study, 79 Sjögren's syndrome patients (27 with glandular symptoms (GS) and 52 with EGMs) and 93 healthy controls were tested for VDR gene polymorphism genotypes. Genomic DNA was isolated from peripheral blood sample. Then, BsmI polymorphism was analysed by real-time PCR using TaqMan probe. The TaqI, ApaI and FokI polymorphisms were identified by the polymerase chain reaction followed by restriction fragment length polymorphism (PCR-RFLP) method.

Results: In all Sjögren's syndrome patients, the frequencies of VDR BsmI genotypes were 38.57% bb, 47.14% Bb, and 14.29% BB; the distribution of FokI genotypes were 34.78% FF, 53.62% Ff, and 11.6% ff; the frequencies of ApaI genotypes were 21.25% for AA, 51.25% for Aa and 27.5% for aa; the frequencies of TaqI genotypes were 32.5 % TT, 52.5% Tt and 15% tt. All four genotypes did not show significant difference compared with healthy controls.

Conclusions: The current findings suggest that VDR polymorphism were not associated with Sjögren's syndrome in Hungarian population.

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ALIPHATIC ALCOHOL CONTAMINANTS OF ILLEGALLY PRODUCED SPIRITS INHIBIT PHAGOCYTOSIS BY HUMAN GRANULOCYTES

Unregulated production of spirits in many countries leads to products containing appreciable levels of aliphatic alcohols and is the main source of human exposure to these substances worldwide. Previous studies have confirmed that alcohol abuse can lead to ethanol-induced immunosuppression and thereby increased susceptibility to infectious diseases. Granulocytes, as professional phagocytic cells, play a crucial role in engulfment and killing of pathogenic microorganisms. Thus, a decrease in their phagocytic activity has been invoked as a factor in the impaired antimicrobial defence observed in alcoholics. However, aliphatic alcohols consumed as contaminants of illicit spirits may also influence phagocytosis, thereby contributing to a further decrease in microbicidal activity but, so far, this has not been studied. Therefore, the aim of this study was to measure granulocyte phagocytosis following treatment of granulocytes with those higher alcohols found in illegal spirits. Granulocytes were isolated from human peripheral blood. Then phagocytosis of opsonized zymosan particles by granulocytes treated with aliphatic alcohols individually and in combination was determined. These alcohols inhibited phagocytosis in a concentration dependent manner and at lower concentrations when combined than when tested individually. Due to their synergistic effects, it is possible that, in combination with ethanol, they may inhibit phagocytosis in a clinically meaningful way in episodic heavy drinkers.

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PREVALENCE OF ESBL-PRODUCING ENTEROBACTERIA IN PATIENTS WITH DIARRHOEA

The purpose of this study is to determine the prevalence of ESBLs in stool samples of patients with diarrhoea and to characterize the isolates producing ESBLs.

A total of 2503 faecal specimens (1977 samples from inpatients, 367 from outpatients and 159 from screening of medical students) were tested for ESBL-producing enterobacteria between October 2010 and December 2011.

Isolates were recovered using eosin methylene blue agar supplemented with 2mg/l cefotaxime and identified using standard microbiological methods; ESBL production was confirmed using double disk synergy test. PCRs were performed to detect the genes blaTEM,, blaSHV, blaCTX-M, blaCTX-M-15, and insertion sequence ISEcp1.

Overall prevalence was 11.2% (280/2503). Occurrence of ESBLs within adult intensive care units (AICUs) and adult non intensive care units (ANICUs) was 21.8% and 16.7% respectively. Of 280 ESBL positives, 153 isolates were studied further.

Species distribution was as follows; *Klebsiella pneumoniae* 51.0% (78/153), *Escherichia coli* 45.8% (70/153), and others 3.2% (5/153). In total, 87.6% (134/153) of the ESBL genes were of CTX-M type. The prevalence of CTX-M producers was as high as 100% in AICUs and 94.8% in ANICUs.

The blaCTX-M-15 gene was detected in the vast majority (95.5%; 128/134) of CTX-M producers, ISEcp1 insertion sequence was included in the genetic environment in 75% (96/128) of CTX-M-15 producers.

This study highlights the high prevalence of faecal carriage of ESBL-producing isolates in both hospitalized patients and outpatients. The most prevalent ESBL genotype was CTX-M-15, as seen in infections caused by ESBL producers, suggesting that these carriers are likely sources of infections.

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THE ROLE OF THE PURINERGIC P2X7 RECEPTOR IN THE IL-1BETA RELEASE OF DIFFERENT HUMAN MACROPHAGES

Interleukin-1beta (IL-1b) release by immunospecific cells is an important part of the defense mechanisms against infectious diseases. IL-1b is produced in an inactive precursor form that is cleaved to active cytokine by caspase-1-containing protein complexes called inflammasomes. One of the most intensively studied complexes is the Nlrp3 inflammasome. The activation of the Nlrp3 inflammasome requires different signals. One proposed activating mechanism involves the activation of membrane bound P2X7 receptors by extracellular ATP. ATP appears at the site of inflammation or tissue damage, released from cells either actively or as a result of cell death. The activation of P2X7 receptors lead to a K⁺ efflux and a Na⁺ and Ca⁺ influx. The changing of the ionic concentrations promotes the activation of the Nlrp3 inflammasomes, leading to the activation of caspase-1 and the cleavage of proIL-1b to the mature form.

Our group found that the inflammatory properties of human macrophages differentiated from monocytes by macrophage colony stimulating factor (MCSF) or granulocyte macrophage colony stimulating factor (GMCSF) differ. Macrophages differentiated by MCSF are mainly anti-inflammatory and promote wound-healing, they produce less IL-1b but more IL-10. Macrophages differentiated in the presence of GMCSF have inflammatory characteristics, they produce high amount of IL-1b and other inflammatory cytokines. We investigated whether P2X7 receptor play role in the observed differences between the two cell types. Freshly obtained monocytes were differentiated into macrophages by either MCSF or GMCSF and then primed with lipopolysaccharide. The expression of P2X7 receptors was investigated by RT-PCR and Western-blot. The production and release of cytokines was investigated by RT-PCR, Western-blot and ELISA.

Our results show that the expression of the P2X7 receptor is different in the two cell types. We found that the release of IL-1b can be inhibited by blocking the P2X7 receptor by Brilliant Blue or by a high extracellular K⁺ concentration. Our data suggest that extracellular ATP and the P2X7 receptor play a crucial role in the production of IL-1b in both macrophage types.

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EXAMINATION OF THE DISTRIBUTION OF VIRULENCE GENES AMONG PSEUDOMONAS ISOLATES

The aim of this study was to investigate the distribution of virulence genes in *Pseudomonas aeruginosa* isolates collected from the Intensive Care Unit of Pulmonology Clinic of the University of Debrecen (2008-2010).

Altogether 125 *P. aeruginosa* isolates (111 from ICU, 14 from other wards of the clinic) were tested for prevalence of genes secreted via the Type III. secretion system (*exoT*, *exoS*, *exoY*, *ExoU*). In addition, seven further virulence-associated genes (*phzI*, *phzII*, *phzS*, *phzM*, *lasB*, *pilA*, *apr*) as well as type I and type III. pyoverdin receptor genes *fpvA-I*, *fpvA-III* were examined. Pulsed-field gel electrophoresis was used to assess genetic relatedness of isolates.

Based on PFGE, three major clusters (A-C) and thirteen unique isolates were distinguished. Cluster A contained 9 isolates, all of them carried *fpvA-I*, *phzI*, *phzII*, *apr*, *exoT*, *exoU* genes, but *pilA*, *lasB*, *phzS*, *phzM*, *exoS*, *exoY* genes were found only in some of them. Cluster B contained 25 isolates; 100 % of the isolates carried *fpv-I*, *phzI*, *phzII*, *apr*, *lasB*, *exoS*, and *exoY* genes, however the *pilA* and the *exoU* genes could never be identified. Cluster C contained 59 isolates; presence of *fpvA-III* gene was demonstrated in all isolates. All virulence-associated genes were detected, but *pilA* and the *exoU* genes only in 5,1 % of isolates. Five of the thirteen unique isolates carried *fpvA-I* gene, another five isolates carried *fpvA-III* gene, the remaining three isolates did not carry either genes. Out of seven virulence genes only two (*phzII*, *apr*) were identified in all strains. The genes that encode effector proteins were found in 84,6 % of the unique isolates.

Our result shows that presence of pyoverdin receptor genes, two operons, three effector proteins encoding genes (*exoT*, *exoS*, *exoY*) as well *apr* gene which encoded a protease may contribute to the maintenance of endemic strains.

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INCREASED PROPORTIONS OF PERIPHERAL FOLLICULAR HELPER T CELLS IN PATIENTS WITH PRIMARY SJÖGREN'S SYNDROME

Introduction: The alteration of humoral immune responses plays an important role in the pathogenesis of primary Sjögren's syndrome (pSS), which manifested in the increased activation of B cells and elevated antibody levels. In recent years, one of the most intensively studied cell type is follicular helper T (TFH) cell, which is extremely important in the proliferation and differentiation of B cells and their direction into memory or plasma cells. In our study, we investigated the role of TFH cells in the pathogenesis of pSS, particularly in the context of extraglandular manifestations (EGM) by analyzing a wide spectrum of immune-competent cells and serological markers.

Methods: We enrolled 50 patients suffering from pSS (25 with EGMs and 25 without EGMs) and 16 healthy individuals in the study. Peripheral lymphocyte subpopulations were determined by flow cytometry, circulating cytokines and autoantibodies were quantified by ELISA technique. Statistical analysis was performed using GraphPad Prism 5 software and SPSS version 16.0.

Results: Patients with pSS showed elevated ratio of peripheral TFH cells. However, when we divided patients into two groups defined by the presence or absence of EGMs, only patients with EGMs had significant differences, while values of patients without EGMs were similar to healthy controls. We found significant positive correlation between activated T and TFH cells as well as between the Tr1 and TFH cells. Significant negative correlations were observed between the IgM memory B and TFH cells and between the IgG memory B and TFH cells. Elevated TFH percentages were observed in the anti-SSA positive patients, compared to autoantibody negative patients and healthy controls. Moreover, the percentages of TFH cells were significantly elevated in patients with higher IL-12 and IL-21 levels.

Conclusions: Our results suggest that the increased TFH cell proportions in patients with pSS were correlates with the percentages of B cells and autoantibody titers, which underlines the importance of TFH cells in the pathogenesis of the disease.

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RELATION OF STRUCTURE AND CITOTOXIC EFFECTS OF α -CYCLODEXTRIN DERIVATIVES

Poor water solubility of drugs is an emerging problem in today's pharmacotherapy. Enhancing bioavailability can be achieved by increasing water solubility and other pharmaceutical technological methods. Formulation with complex-forming molecules, such as cyclodextrines (CDs), is the most common method after decreasing surface tension with detergents. CDs are widely used materials and still in the focus of drug development. α -CDs are cyclic (α - 1,4-linked) oligosaccharides built up from 6 α -D-glucopyranose units. They contain a relatively hydrophobic outer and lipophilic inner surface. The amount of the excipients are always in higher concentration in the products than it stoichiometrically required. Studying the effects of α -CDs on living organism are indispensable because of their excess amount.

The aim of our study was to investigate the cytotoxic properties of various α -CD derivatives. α -CDs were obtained from Cyclodextrin Research & Development Laboratory (Cyclolab, Budapest, Hungary). MTT cell viability assays and haemolysis test were performed. MTT assays were done on Caco-2 human colon adenocarcinoma cell system, and the haemolysis test on red blood cells isolated from human blood. Caco-2 cells have been shown to be appropriate in vitro models of the intestinal mucosa. α -CD derivatives were used in 8 different concentrations (0,01; 0,1; 1; 10; 25; 50; 100; 200 mmol/l). The α -CD derivatives showed concentration dependent cytotoxicity and haemolytic activity. Correlation has been found between the lipophilicity caused by the chemical structure and the cytotoxic effects of α -CD derivatives. Nevertheless, cytotoxicity data alone are not necessarily predictive of in vivo issues, but complemented with results of paracellular permeability the in vivo toxicity data may be estimated (Konsoula et al. 2005.). For this reason we also studied the effects of α -CD derivatives on the permeability of Lucifer Yellow.

It has been concluded that our results with α -CD derivatives can facilitate the investigation of better tolerated medicines with better bioavailability.

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TOWARD SYNTHESIS OF FULLERENE DERIVATIVES CONTAINING N-ACETYLNEURAMINIC ACID

Influenza hemagglutinin(HA) is a type of hemagglutinin found on the surface of the influenza viruses. It is an antigenic glycoprotein which is responsible for binding the virus to the host cell that is being infected. HA proteins bind to cells with sialic acid on the membranes, such as cells in the upper respiratory tract or erythrocytes. Neuraminidase is also a protein of the influenza virus and is able to recognize and then remove sialic acid from the surface of the infected host cells. In organisms, including humans, N-acetylneuraminic acid is always found attached to a D-galactose molecule by O-interglycosilic bond.

Our aim is the synthesis of multivalent ligands that can be effective against influenza viruses as they are expected to be resistant to neuraminidase enzyme and are able to attach to the hemagglutinin of the virus.

Self-assembled, multivalent ligands can be obtained by attaching a bioactive molecule to an amphiphilic one. Due to its ability to form aggregates and the fact that many of its derivatives are proved to display antibacterial and antiviral activity we chose the extremely lipophilic fullerene molecule as a carrier of one of the terminal sialogalactoses of influenza virus-binding cell glycoproteins.

According to our previous results [1], we would like to carry out the preparation of four target molecules in three steps. Firstly, we will attempt to synthesize two different sialyl-galactosides - bearing an azido-TEG spacer at C-1 - by thiol-ene coupling. Secondly, we have already produced two fullerene derivatives via Prato- [2] and Bingel [3] reactions. And finally, applying the Cu(I) catalyzed azide-alkyne 1,3-dipolar cycloaddition, the azide group-containing thiodisaccharide molecules can be combinatorially attached to the alkyne group-containing fullerene-derivatives resulting in the four target molecules.

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INFLUENCING THE LIVER'S PROGENITOR CELL REACTION

Background&Aims: The hepatic progenitor cells are active participants of liver regeneration if the hepatocytes are compromised. This cell compartment also seems to play an important role in the pathomechanism of various liver diseases e.g. cirrhosis and carcinogenesis. Therefore, major attention is paid to understand their growth regulation better.

Methods: The progenitor cell compartment was activated by choline deficient, ethionine supplemented (CDE) diet in wild type and transgenic male C57Bl mice. The transgenic mice produced activated TGF β by their hepatocytes. A portion of the animals were also treated with Glivec, a commercially available drug, which inhibits the tyrosine kinase activity of Stem cell factor and Platelet derived growth factor receptors.

We divided the animals into four groups: I. Wild type, II. Wild type receiving Glivec, III. TGF β transgenic mice, IV. TGF β mice receiving Glivec. Following 6 weeks of treatment the mice were sacrificed and the hepatic progenitor cells were marked by cytokeratin 19 immunofluorescent staining. The images were captured by confocal microscope and analysed by morphometry.

Results: The area occupied by the progenitor cells was reduced by Glivec treatment as well as in the presence of increased TGF β concentration. The Glivec administration of the TGF β transgenic mice further reduced the extent of progenitor cell reaction but groups of small hepatocytes appeared in the liver of these animals, suggesting hepatocytic differentiation of the progenitor cells.

Conclusion: TGF β and Glivec both efficiently suppress the CDE induced progenitor cell activation in mice. However, this inhibition may be related to the induction of hepatocytic differentiation of this reserve cell compartment. Further experiments are required to analyse this regenerative reaction in greater detail.

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INVESTIGATION OF THE EFFECT OF MEMBRANE POTENTIAL TO THE MOBILITY OF MHC GLYCOPROTEINS AND IL-2/IL-15 RECEPTORS

Interleukin-2 and -15 receptors play a central role in the activation, survival and death of T lymphocytes. They form supramolecular clusters with MHC I and II glycoproteins in T cells. In damaged or inflamed tissues the extracellular K^+ concentration increases, which can depolarize the membrane. The common signaling beta and gamma chains of IL-2/15R are phosphorylated upon cytokine binding and get a permanent dipole moment, thus their conformation, interactions, mobility and activity may be sensitive to the membrane potential. We induced depolarization on FT 7.10 T lymphoma cells by increasing the ec. K^+ level or by blocking Kv 1.3 voltage gated K^+ channels with margatoxin. FCS measurements showed that the lateral mobility of Fab-labeled IL-2/15R and MHC I and II decreased upon depolarization, while that of GPI-linked CD48 did not change. FRET efficiency measured between some elements of the IL-receptor/MHC cluster increased, which may reflect an increase of cluster size. IL-2-induced receptor activity, as monitored by measuring STAT5-phosphorylation, increased upon depolarization, whereas IL-15 induced phosphorylation did not change. Our results may reveal a novel regulatory mechanism of receptor function by the membrane potential.

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PRESENCE OF POLYMODAL ION CHANNELS, TRPVs (TRANSIENT RECEPTOR POTENTIAL VANILLOID) IN CHONDRIFYING CHICKEN CELL CULTURES

Differentiation of chondrogenic cells is affected by various external stimuli during embryonic and fetal life. Members of the TRPV (Transient Receptor Potential Vanilloid) family are polymodal, non selective cation channels representing important sensors of environmental changes, such as temperature, ion concentration or mechanical load. TRPV4 ion channel has a significant role in cartilage formation, as gain of function mutation of TRPV4 causes severe chondrogenic failure. However, little is known about the possible role of other TRPVs in chondrogenesis. Our goal was to detect TRPVs at an mRNA level and to study TRPV1 ion channel during chondrogenesis.

Chondrifying high density cultures (HDCs) were established from cells isolated from the limb buds of four-day-old chicken embryos. The mRNA expression of TRPV ion channels was monitored with RT-PCR in HDCs and in certain avian tissues. As TRPV1 agonists; capsaicin and resiniferatoxin were added to the culture medium of HDC. According to the literature, avian sensory neurons showed reduced sensitivity to pharmacological agonists, therefore we also used a 30-minute long thermal stimulus as a natural activator on the third culturing day. For assessing the effect of treatments on cartilage differentiation metachromatic stainings were applied on the sixth day of culturing. The viability of the cells was tested with MTT assay while the proliferation rate was measured with tritiated thymidine incorporation after treatments.

At the level of mRNA expression TRPV 1, 2, 3 and 4 channels were detected in HDC. None of the pharmacological agonists of TRPV1 caused consequent and significant change in any of the examined parameters. However, 41oC heat stimulus had a positive effect on cell viability and cell proliferation and also elevated the amount of the extracellular matrix. Application of 45oC reduced chondrogenesis and proliferation, without affecting cellular viability. Heat stimulus caused elevation of intracellular Ca²⁺-concentration in cells of HDC. Our results imply the presence of functioning TRPV1 receptors on chondrogenic cells indicating a possible role of TRPV1 in cartilage differentiation.

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**EXPERIMENTAL INVESTIGATION OF HIGHLY-EFFICIENT ⁶⁸Ga-CHELATORS FOR
RADIOPHARMACEUTICAL PURPOSES**

Introduction: Radionuclide ⁶⁸Ga and its related chemistry have been in the focus of several nuclear medical research projects in the past years. Although ¹¹C- and ¹⁸F-labelled radiopharmaceuticals are used most widely in almost any indications, which require PET as a diagnostic tool, they lack a very important advantage the ⁶⁸Ga possesses: it can be obtained as a product of a ⁶⁸Ge/⁶⁸Ga-generator. Since the synthesis of ⁶⁸Ga-labelled molecules does not presume nearby cyclotron installed close to the PET-camera, it can facilitate the development of kit-based PET radiopharmaceutical production.

The labelling reactions involving ⁶⁸Ga are usually achieved via complex formation between the metal ion and a chelator. Ideally, these reactions can be performed quickly and easily, although they make it essential that a highly efficient chelator-moiety is conjugated to the target molecule. As a new generation of heterocyclic chelators containing phosphinic group (TRAP-chelators) have been developed especially for ⁶⁸Ga recently, the aim of our research project is the investigation of the effect of phosphinic groups on the gallium-binding properties of heterocyclic chelators.

Methods: Chelators involved in our studies were synthesized and purified by our co-operators at TUM, Munich, Germany (except the commercially available NOTA chelator). ⁶⁸Ga activity was eluted from a ⁶⁸Ge/⁶⁸Ga-generator by UP-HCl solution. All reactions were performed in ultrapure solvents using standard circumstances. Efficiency of ⁶⁸Ga-labelling was analysed by TLC.

Results: NOTA, TRAPH and TRAP-Pr chelators were used as a standard, because their binding abilities have been published in the literature. By examining structurally similar, alternative chelators, a correlation can be identified between the number of phosphinic groups and their binding efficiency. Additionally, an almost 100% radiochemical purity can be achieved at the very short reaction time of 5 min. Further studies are still in progress.

Conclusion: Our examinations support the assumption that the new generation of TRAP-chelators might be the best known tools for the synthesis of innovative ⁶⁸Ga-labelled radiopharmaceuticals.

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MORPHOLOGICAL ANALYSIS OF HYALURONAN-SIGNALING "TOOL-KIT" IN NORMAL AND CUTANEOUS MELANOMA-RELATED HUMAN SAMPLES

Malignant melanoma of the skin is a malignant lesion developing from pigment producing epidermal melanocytes and in case of metastasis formation it has very poor curability. Production of hyaluronan (HA) or other components of the extracellular matrix changes as a result of the malignant transformation. Therefore we aimed to demonstrate HA, synthases of HA (HAS2 and HAS3) and one of its receptor molecules, RHAMM (receptor for hyaluronan mediated motility) in normal human skin slides and tissue samples of melanoma metastases, as well as in normal human epidermal melanocyte cell line (NHEM).

We applied RT-PCR and Western blot techniques on NHEM to verify the presence of the investigated molecules. HAS2, HAS3 and RHAMM were expressed at mRNA level, but only the expression of HAS3 protein was well detectable in Western blots. HA production of NHEM cells was undetectable with the applied chemical affinity test (HA-probe).

HA-probe did not reveal visible amount of HA in normal skin, liver and mesenterial lymph node slides, but HA significantly accumulated in metastatic liver and lymph node samples. HAS2, HAS3 and RHAMM immunohistochemistry showed different tendencies in expression. HAS2 and RHAMM were not seen in normal tissues, while immunopositive signals of both proteins were detected in the metastases. In contrary, HAS3 appeared in normal skin and lymph node, and also in the tumorous samples, but was not detectable in normal liver. As HAS2 and HAS3 enzymes produce distinct amounts and variant molecular weight HA, the HAS expressing differences of normal epidermal melanocytes and melanoma cells probably refer to different functions of the variant molecular weight HA in normal and malignant pigment cells. This may have role in the intense motility, which seems to be confirmed by the strong RHAMM positivity in the metastases.

Our results may imply, that application of HA in plastic surgery practice requires attention, as 'HA loads' may promote propagation of malignant melanoma.

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ARE TWO THERAPEUTIC ANTIBODIES BETTER THAN ONE? COMBINATION OF TRASTUZUMAB AND PERTUZUMAB HAS SYNERGISTIC EFFECT MAINLY THROUGH ADCC

Trastuzumab, a humanized anti-ErbB2 antibody is a specific targeted therapy against ErbB2+ tumor. Another humanized antibody, pertuzumab inhibits ErbB2 heterodimerization. According to animal experiments, combined application of the two antibodies may improve treatment outcomes by either enhancement at the molecular level or offering sterically complementary docking sites for NK cells implementing ADCC. Distinction between these routes can be ascertained by also testing the F(ab)2 fragments of these antibodies.

We have generated these fragments and compared them in vitro. F(ab)2-s from IgG-s were produced with pepsin-agarose and separated with gel filtration. Affinity and lack of Fc fragment on F(ab)2 was tested with immunofluorescence in flow cytometry. In vitro EC50 was assessed with an MTT based assay. ADCC in the presence of the whole antibodies and absence thereof with F(ab)2 was tested in a real time adherence assay. The effect of the antibodies and their combination on the growth of subcutaneous xenograft breast cancer tumors in SCID mice were tested.

Chromatography was used to produce proper F(ab)2 variants with intact antigen binding but no Fc region taggable with polyclonal anti-Fc. The effect on proliferation of in vitro sensitive and resistant cell lines BT-474 and JIMT-1 was not affected by removing Fc region. Slightly enhanced dimerization inhibition by the smaller pertuzumab F(ab)2 as opposed to its intact parent antibody was measured. Based on the isobol curves of the in vitro proliferation inhibition, the combination of both the two whole and F(ab)2 antibodies seemed to be additive. Intact antibodies mediated ADCC-based killing of both tested cell lines, while F(ab)2 fragments did not. The F(ab)2 fragments did not decrease the growth of the JIMT-1 tumors in vivo. The whole antibodies introduced alone were same effective, though, and the combination of them showed strong synergism.

The results so far confirm that despite the lack of in vitro synergism, combination of trastuzumab and pertuzumab enhances ADCC in a synergistic way and this could serve as base for clinical combination therapies even in case of tumors that show resistance in vitro.

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PLATELET FACTORS CONTRIBUTE TO PATHOGENESIS OF PRIMARY MYELOFIBROSIS BY AFFECTING MESENCHYMAL STROMAL CELLS

Primary myelofibrosis (PMF) is a chronic myeloproliferative disease, which is characterized by early and profound intramedullary fibrosis. This phenomenon is traditionally attributed to the megacaryocyte dysfunction. Here we study influence of various platelet factors on mesenchymal stromal cells (MSC).

Materials and methods. Human platelet lysate (HPL) was produced from pooled platelet concentrate. MSC were isolated from bone marrow of healthy donors and cultivated for 7-10 days in presence of varying concentrations of HPL (5-20%) or 10% FBS as negative control. Proliferation of MSC was quantified using MTT assay. Quantitative analysis of extracellular matrix proteins was done using BCA Protein Assay. Osteogenic and adipogenic differentiation of MSC were measured using standard protocols. Concentration of platelet factors (VEGF, bFGF) was determined in HPL from 11 patients with PMF using specific ELISA kits.

Results. The highest proliferative effect was reached in the culture condition with high HPL concentration (15-20%). Amount of extracellular matrix, synthesized by MSC, was highest, when we used 15% HPL. MSC did not lose their osteogenic differentiation capacity when using HPL, but there was a tendency to decrease in differentiation into adipogenic lineage (average amount of adipocytes per visual field was 37, 33, 37 and 56, when 5%, 10%, 20% HPL and 10% FBS were used, respectively; $p < 0.01$). We observed a significant increase in VEGF and bFGF concentration (2,5 and 2,4 fold, respectively, compared to the age-matched healthy controls; $p < 0.01$) in HPL from patients with myelofibrosis.

Conclusions. Our data demonstrate that increase in HPL concentration leads to higher proliferative activity and extracellular protein synthesis by MSC. While the capacity for osteogenic differentiation of MSCs was retained, we show that differentiation into adipocytes was reduced. These observations indicate that platelet factors are able to direct specific developmental pathways of MSCs. Together, our results provide insights into development of intramedullary fibrosis in chronic myeloproliferative disease and identify potential therapeutic targets in patients with PMF.

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GORLIN-GORLZ SYNDROME

Gorlin-Gorlz Syndrome, also known as nevoid basal cell carcinoma (NBCCS) is a rare autosomal dominant transmitted disease characterized by multiple skin impairment that have a high degree of malignancy. The estimated prevalence varies from 1/57.000 to 1/ 256.000, with a male-to-female ratio of 1:1. The most common phenotypic expressions of this syndrome are: multiple basal cell carcinoma (skin tumor derived from basal cells of epidermis and its annexes), multiple skin lesions on the head, neck and trunk simultaneously occurring especially in areas less exposed to solar radiation. Is frequently associated with bone cysts, skeletal abnormalities, ectopic intracranial calcifications and palmar and plantar hyperkeratosis, facial dimorphism (macrocephaly, cheilopalatoskizis), deaver eye abnormalities, cardiovascular and genitourinary anomalies. NBCCS is caused by mutation in the PTCH 1 gene and is transmitted as an autosomal dominant trait with complete penetrance and variable expressivity and therefore mutation gene analysis may confirm the diagnosis. Otherwise the diagnosis is established based on the major criteria or one major criteria and two minor criteria. Management of this disease is interdisciplinary (dermatologist, surgeon and neurologist) because life expectancy is not altered and morbidity not grow substantially. Treatment varies with gravity, extension and associated diseases from surgical excision (when basal cell carcinomas are limited), to laser ablation, PUV-A (UV-A photodynamic therapy) and topical treatment. In this paper present a series of cases of Gorlin-Gorlz syndrome seen in dermatology department, that illustrate both the primary syndrome manifestations and their complications. So once again we highlight the importance of accurate and early diagnosis of Gorlin syndrome.

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ENHANCED SUBCUTANEOUS B16 MELANOMA CELL-DERIVED PRIMARY TUMOR GROWTH WITH REDUCED INTRATUMORAL ARGINASE ACTIVITY IN STAT6-DEFICIENT MICE

Introduction: Tumor tissue contains different immune cells which can generate an anti-tumor immune response. Paradoxically, developing tumors can often induce a pro-tumoral immune-microenvironment leading to tumor progression and metastasis. The STAT6 transcription factor is a central regulator of gene expression mediated by IL-4 and IL-13 during the differentiation of Th2-type T cells and M2 macrophages. Th2 type cytokines can be produced by tumor-infiltrating immune cells and, in some cases, also by tumor cells during tumor development. Th2 cells and M2 macrophages are known to inhibit anti-tumor immunity and promote tumor progression.

Aim: The main goal of our work was to determine the role of STAT6 transcription factor in primary tumor development using subcutaneous B16 mouse melanoma tumor model in STAT6 knock-out and wild type mice.

Methods: Subcutaneous tumors were removed 14 days after inoculation and individual tumor weights were measured. We also examined the basic structure and macrophage content of tumors using immunohistochemistry as well as the tumors' immunological status by the measurement of different immune cell markers at RNA level. We also measured the arginase activity of primary tumor lysates.

Results: Our results show a significantly increased subcutaneous tumor growth in STAT6-deficient mice compared to the wild type animals. The histological structure of the tumor tissues were similar in both groups, but peripheral tumor cell infiltration into the neighboring tissues was enhanced in STAT6 KO mice. Gene expression analysis revealed a significant down-regulation of M2 macrophage marker arginase 1. Furthermore, in accordance with the gene expression levels, arginase activity of whole tumor lysates was also reduced in case of STAT6-deficient mice-derived tumors.

Conclusion: These results raise the question about the possible anti-tumor role of STAT6-induced arginase 1 expression/activity in the regulation of primary tumor growth.

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THE ROLE OF WT1 AS A PROGNOSTIC MARKER IN NON-HODGKIN LYMPHOMAS AND ADULT ACUTE LYMPHOBLASTIC LEUKEMIA

The WT1 gene has a complex role as a transcriptional regulator, acting either as tumor suppressor or oncogene in different malignancies. Its expression level as measured from blood samples is a useful marker in monitoring minimal residual disease after treatment in case of acute myeloid leukemia, and possibly acute lymphoid leukemia as well. However, no relevant data exist in the literature for lymphomas.

Here we present a study demonstrating the correlation of WT1 expression and survival in various non-Hodgkin lymphomas. We also studied the gene's previously reported possible prognostic significance in the long-term survival of acute lymphoblastic leukemia patients. In our sample of 53 patients – 25 with diffuse large B-cell lymphoma (DLBCL), 8 with mantle cell lymphoma (MCL), 9 with peripheral T-cell lymphoma (PTCL), 2 with Burkitt's lymphoma, 2 with mucosa-associated lymphoid tissue (MALT) lymphoma, and 7 with B-cell ALL –, we detected WT1 mRNA from blood samples by qRT-PCR, and divided the patients into subgroups based on the level of expression. Kaplan-Meier survival curves were drawn and compared by the logrank test.

We found a significant difference in overall and disease-free survival ($p=0,0475$ and $p=0,0004$, respectively) between WT1-positive and negative subgroups in DLBCL. Similar results were obtained for disease-free survival in MCL and ALL, though not statistically significant in the latter disease due to a smaller sample size. In PTCL, though WT1-positivity was detected in 4 out of 9 cases, it did not seem to affect survival. Cases of MALT and Burkitt's lymphoma were all found to be WT1-negative.

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TRANSFORMATION RATE OF FOLLICULAR LYMPHOMA ACCORDING TO TUMOUR GRADE

Background: Histological Transformation (HT) is a well-known phenomenon among follicular lymphoma (FL) and is associated with a progressive clinical course and poor prognosis. The aim of this audit is to identify any patient characteristics or risk factors for HT among those diagnosed with FL at The Christie compared to that in published literature. The British Committee of Standards in Haematology (BCSH) September 2011 guidelines will serve as the standards for evaluating the investigation and management of transformed FL.

Patients and Methods: Patients were identified by the pathology database at The Christie as having a diagnosis of FL with a biopsy between September 2008 and May 2012. Their notes were accessed electronically and a total of 209 patients (median age: 59, 110 M: 99 F) met the inclusion criteria.

Results: 49 of the 209 patients underwent HT, a rate of 23.4% with an average follow-up time of 4.04 years. Histological grade was found to have an association with HT; 13.4% and 42.6% of low-grade and high-grade tumours transformed, respectively. There was also a relationship between FLIPI score and LDH and HT. As per BCSH guidelines, 46 of 49 HT patients received rituximab and 80% were treated with an anthracycline-containing regimen.

Conclusion and Recommendations: Grade, LDH and FLIPI scores were the main risk factors identified for HT; patients should have these monitored regularly. Both FLIPI and FLIPI2 scores should be recorded at the time of diagnosis. Rituximab and an anthracycline-containing regimen should be offered to all patients after HT unless contraindicated.

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THROMBIN POTENTIAL; A NEW MEASURE OF HYPO- AND HYPERCOAGULABILITY
STATE. CAN WHOLE BLOOD BE USED RELIABLY?

Background: Fluorogenic substrate ZGGR-7-amido-4-methylcoumarin (ZGGR-AMC) is a synthetic peptide compound specific for thrombin with low binding affinity and slow conversion. Cleavage of this substrate releases the fluorophore AMC allowing real time measurement of thrombin. Measurement of thrombin activity allows one's thrombin potential to be calculated from the generation of thrombin in a given time. The use of this substrate to determine thrombin potential in whole blood is currently under debate. Objective: The aim of the work was to contribute to the exploration of problems associated with whole blood thrombin potential determination using fluorogenic substrate compared to platelet-poor plasma and platelet-rich plasma, which are already widely used as a research tool. Method: The new approach involved spiking whole blood, platelet-rich plasma, platelet-poor plasma and buffer with thrombin and measuring the recovery using fluorogenic substrate by quantifying the light detected at 460 nm, post 360 nm excitation in these matrices. Results: The affect of exogenous thrombin concentration on the rate of light detection was best characterised in the time interval by a linear response. The parameters of these lines demonstrated the slope for buffer was greatest (1.600 ± 0.05223) and reduced for platelet-rich plasma (1.342 ± 0.1617), platelet-poor plasma (1.027 ± 0.1246) and whole blood (0.4396 ± 0.02607); being 82, 71, and 28% of buffer, all showing significant difference; $P=0.0424$, $P=0.0004571$ and $P<0.0001$ respectively. Platelet-rich plasma had the greatest intercept value followed by platelet-poor plasma, buffer and then whole blood, the latter two were close to zero. Interpretation and conclusion: The low rate of light detection in the presence of erythrocytes can be explained by the absorptive characteristics of haemoglobin and clarifies why high variation has been observed previously by others. Both the excitation and emission wavelengths of fluorogenic substrate ZGGR-AMC fall within haemoglobin's absorption range. The presence of haemoglobin therefore prevents the use of this substrate for the determination of thrombin potential in whole blood.

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DETECTION OF BCR-ABL FUSION PROTEINS WITH A FAST FLOW CITOMETRIC BEAD ASSAY

Background: A new flow cytometric (FC) BCR-ABL immunobead assay has been developed recently. Here we present the laboratory evaluation of the commercially available kit.

Methods: Mononuclear cells were isolated, lysed and processed according to the instructions of the manufacturer. Anti-BCR antibodies adsorbed to capture beads bind the BCR-ABL fusion proteins of the lysed cells, a phycoerythrin (PE)-conjugated anti-ABL antibody is the detector reagent and mean fluorescence intensity (MFI) signals were recorded by flow cytometry. Detection of t(9;22)(q34;q11) translocation was carried out with a quantitative PCR assay.

Results: MFI results of 20 normal peripheral blood samples were 88 ± 8 (mean $\pm$ SD), CV 9%. K562 cells were used as positive control. Cut-off was chosen at MFI 112, where both sensitivity and specificity were 100%. Altogether 17 CML and 16 acute leukemia samples were analyzed. All PCR positive samples (n=14) were positive with the FC method and negative results were also concordant (n=15). Frozen cell lysates can be stored up to four weeks without significant decrease of MFI signal.

Conclusions: The FC BCR-ABL assay is a fast, reproducible and reliable method that may be incorporated into standard flow cytometric protocols to help clinical decision making.

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EFFECT OF ALBUMIN ON P-GLYCOPROTEIN EXPRESSION AND FUNCTION IN CULTURED HUMAN TUBULAR CELLS

Introduction: Massive proteinuria is a mechanism that can lead to eventual kidney failure via tubular interstitial injury. In tubular cells exposed to albumin, the expression of genes coding for membrane transporters can be upregulated or downregulated.

The P-glycoprotein (PgP) is an efflux pump which transports a wide range of compounds outside the cell. In the kidney PgP is located mainly on the luminal side of proximal tubular cells.

The aim of this study was to assess whether the overload of albumin influences the expression and function of PgP in HK-2 cells.

Methods: The tubular cells were cultured in the presence of albumin (20 mg/ml) for 24 and 72 hours. The expression of PgP was evaluated by Western blot. The expression of the gene ABCB1 was assessed by RT-PCR. The PgP mediated transport was measured by the test of rhodamine-123.

Results: the expression of Pgp was decreased by 7% after 24 hours and 65% after 72 hours, as detected on Western blot. The expression of the gene ABCB1 was found to be 66% compared with controls after 72 hours. The fluorescence of HK-2 cells was 2.4 times higher than in controls. TNF-alpha was able to restore the expression and function of PgP.

Conclusions: In tubular cells exposed to albumin protein and gene expression of PgP are reduced, with deficiency of the transport function. The overexposure of tubular cells to toxic substrates, due to the deficiency of PgP transport, represents an original mechanism of tubular damage by proteinuria.

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TRACHEAL CHONDROGENESIS IN THE FUZ MUTANT MOUSE

Introduction: In craniosynostosis syndromes such as Apert's, Crouzon and Pfeiffer's disease, the upper airway is often under-developed. The spectrum of pathology ranges from complete agenesis of the trachea to overproduction of cartilage, resulting in tracheal stenosis. The mouse model that we use to study tracheal defects also has premature calvarial fusion, therefore encompassing some features of the craniosynostosis syndromes. Loss of function of the Fuz gene results in several severe phenotypes, some features of which resemble Apert's syndrome. We aimed to analyse the role of the Fuz gene in tracheal development by comparing mutant mouse trachea with normal wild-type controls. Fuz has been shown to regulate ciliogenesis which in turn is required for different signaling pathways.

Methods: Gross morphology was analysed using dissected samples of normal and mutant trachea for the pathology of cartilage. The Fuz mutant mice were compared with wild type littermate controls. Paraffin-embedded sections of the mouse airway were stained with alcian blue to visualise cartilage. Whole mount in-situ hybridisation was carried out using an RNA Fuz probe in order to to characterise Fuz expression throughout the respiratory system.

Results: The Fuz mutant lungs are small and less developed compared to normal controls of the same age. Stained sections showed that the Fuz mutant trachea lacks segmented patterning of cartilage, instead regular chondrocytes fail to form and discrete cartilaginous patterning is not observed along the length of the trachea. Whole mount in-situ hybridisation reveals that the Fuz gene is expressed throughout the cartilaginous domains of the developing trachea.

Discussion: Fuz may be directing early stages of chondrogenesis in the trachea, such as the formation of initial mesenchymal condensations. In future studies we will identify which signalling pathways are responsible for the tracheal phenotype. Clinically, the Fuz mutant phenotype may be used to study the aetiology of cartilage defects in craniosynostosis syndromes, with potential for the development of curative therapy.

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HOFI/SH3PXD2B ADAPTOR PROTEIN IS ANTI-PROLIFERATIVE IN A HUMAN MELANOMA CELL LINE

HOFI/SH3PXD2B (Homologue of FISH) is a membrane associated adaptor containing an N-terminal phox-homology(PX)-domain and four tandem SH3 domains. We and others have shown that HOFI is required for the development of various actin-based structures including lamellipodia, podosomes and invadopodia suggesting its involvement in the regulation of migration, and/or metastasis in transformed cells. The *in vivo* importance of HOFI is supported by two independent animal models. HOFI-deficient mice show abnormal development of the skeleton and white adipose tissue, they also develop glaucoma and a profound hearing loss.

Previously we found high level of HOFI expression in multiple transformed cell lines. In this study we examined the role of HOFI in the regulation of cell proliferation. We used the YDFR human melanoma cell line that had been put through 3 cycles of metastasis and readily formed metastases in the brains of nude mice (YDFR B3 cell line).

HOFI expression in the YDFR B3 cell line was silenced using a plasmid expressing specific shRNA (siSTRIKE system Promega). Cells expressing an altered form of the specific shRNA were used as controls. Individual cell clones or polyclonal populations of HOFI-negative or control cells were serum starved and induced to proliferate under low, normal or high serum conditions (1.0%, 5% or 10% FBS, respectively). Cell numbers at various time points were determined by manual counting or by a standard MTT assay. The number of cells present in various phases of the cell cycle was determined by flow cytometry.

Unexpectedly, in the absence of HOFI proliferation rates were higher compared to controls. This effect was apparent at all serum conditions. In the absence of HOFI fewer cells were found in the G0/G1 phase compared to controls, while the number of cells in the S and the G2/M phases were increased.

Our data suggest that HOFI has an anti-proliferative effect in this melanoma cell line. Further experiments are required to uncover the molecular events responsible for this anti-proliferative effect and to assess HOFI's role in the development of metastases.

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**MODIFICATION OF RECOMBINANT FUSION PROTEIN SUBSTRATES OF ALPHAVIRUS
PROTEASES**

Alphaviruses are enveloped, mRNA viruses of the *Togaviridae* family. They are distributed worldwide and pose a potential threat to livestock and humans causing encephalitis- and arthritis-like syndromes. Their replication require the non-structural protein 2 (nsP2) which possesses proteolytic activity. Previous studies from our laboratory have characterized the activity of three nsP2 proteases on oligopeptide substrates designed based on the sequences of native alphaviral cleavage sites, as part of a study to demonstrate whether nsP2 proteases are suitable for processing recombinant fusion proteins. It was concluded that nsP2 proteases in this present form do not provide significant advantages over the already successfully utilized proteases. In order to improve the efficiency of proteolysis by nsP2 proteases, we planned to optimize the substrate sequences. For this purpose recombinant substrates were modified by random mutagenesis in their P1' position. The fusion protein substrate was designed to be suitable for the expression and the modification of the substrates. In this construction, oligopeptides are fused to hexahistidine (His6) tag followed by maltose binding protein (MBP) on their N terminal end to ease purification and improve solubility, and to monomeric yellow fluorescence protein (mYFP) on the C terminal side to facilitate detection. The expression plasmid due to its size (> 8Kb) is not suitable for mutagenesis as such, therefore we designed a 'restriction cassette' which allows us to cut the mutagenized substrate sequences from the mutagenized plasmid and insert it to the expression clone. We will present the system designed for substrate optimization and will provide data to verify the suitability of the system for producing modified alphaviral nsP2 substrates.

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GENETIC DIAGNOSIS IN MICRODELETION SYNDROMES

Many dysmorphic syndromes, caused by small deletions or duplications, can hardly be seen with conventional cytogenetic methods. These lesions affect less than 3-5 Mb regions of the DNA, and result in unbalanced genetical states called segmental aneusomias. Microdeletions, continuous gene deletion syndromes and microduplications belong here. In continuous gene deletion syndromes, there is a haploinsufficiency of adjoining genes in a certain region. One proportion of the deletions result in well recognizable clinical signs. Within the Typically Deleted Region (TDR), we can differentiate the Shortest Region of Deletion Overlap (SRDO), which causes the characteristic phenotype.

Actual breakpoint determines the clinical outcome. Most of the cases are de novo, but sometimes the reason is parental submicroscopic translocation or vertical transmission of the microdeletion. Therefore, exact breakpoint identification and examination of both the patient and parents, are diagnostically and prognostically important, enabling us genotype-phenotype analysis. These can be rarely recognized with conventional G-banding analysis. Detection is only possible by high resolution cytogenetic techniques, such as Fluorescence In Situ Hybridization (FISH) using loci-specific probes or array Comparative Genomic Hybridization (aCGH).

We examined 37 patients, at whom the possibility of continuous gene deletion syndrome had come up. After physical examination and conventional chromosome analysis, we performed FISH using probes suitable to the presumed diagnosis. If microdeletion could not be verified, we examined the methylation pattern and the presence of uniparental disomy (UPD). FISH showed deletion in 22 patients, UPD was found in 4 cases. In 3 patients, there were changes in the methylation pattern. We performed aCGH to identify the exact breakpoints and to make sure that there are really no deletions in the remaining cases.

Based on the function of the implicated genes, we can predict the future symptoms, which is crucial for the early and appropriate treatment. These data may also lead to the recognition of centromeric and telomeric breakpoint clusters susceptible to deletion.

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STUDIES ON THE INHIBITION OF A GAMMARETROVIRAL PROTEASE

Introduction: Xenotropic murine leukemia virus-related virus (XMRV) is a newly identified gammaretrovirus which has a possible role in the pathogenesis of prostate cancer (PC) and chronic fatigue syndrome (CFS). Certain studies showed the presence of XMRV in 50-67% of CFS patients whilst the prevalence in healthy controls was approx. 3.7%, although many other studies failed to detect XMRV in these patients. Therefore further research need to ascertain if XMRV is an etiological factor of CFS or PC. However, it is proved that XMRV is able to act as an “helper virus” of the widely used MLV-based vectors therefore there is a potential hazard of releasing a gene therapy vector from host cells and that vector can infect other cells or in extreme cases can enter into the human population. Hence, exploring the potential therapeutic targets of XMRV is reasonable. Like all retroviruses, viral protease (PR), which cleaves precursor viral proteins into functional parts, plays an important role in the lifecycle of XMRV.

Materials and methods: Our object is to assess the effect of some inhibitors developed against HIV-1 PR on XMRV PR. These drugs are: Amprenavir, Atazanavir, Pepstatin A, and TL-3. We received the examined enzyme in purified form from our collaborator partner in the USA. During our experiments we used MLV Gag fragment peptide containing the natural cleavage site and a synthetic oligopeptide as substrates. We used HPLC-based method to separate the synthetic substrate and cleavage products, quantification, and to determine the kinetic parameters of the enzyme.

Results: Our kinetic results showed that Amprenavir and Atazanavir inhibited the XMRV PR activity much more effectively than TL-3 or Pepstatin A. The Amprenavir was the most potent and Pepstatin A was the weakest inhibitor. These results were also supported by our MLV Gag fragment substrate cleavage essays using SDS-PAGE method.

Conclusion: The Amprenavir and Atazanavir were proved to be suitable for efficient inhibition of XMRV protease in the presence of low and high salt concentration using two different substrates.

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INFLUENCE OF PROTEIN PHOSPHATASE-1 INHIBITORY PROTEINS ON THE DEPHOSPHORYLATION OF RETINOBLASTOMA PROTEIN

The phosphorylation level of retinoblastoma protein (pRb) plays an important role in the regulation of cell cycle, and therefore has a major impact on the survival of malignant cells. Protein phosphatase-1 (PP1) has been considered as one of the pRb phosphatases, however its direct role in the dephosphorylation has not been fully established. The goal of our study was to investigate the role of PP1 and possible PP1 inhibitory proteins in pRb-dephosphorylation.

The catalytic subunit of PP1 (PP1c) was silenced by transfection of siRNA in HeLa cells. Vectors coding Flag-tagged KEPI (kinase enhanced phosphatase inhibitor) and LIMK-2 (LIM-kinase-2) were transfected into MCF-7 and HeLa cells, respectively. The efficacy of the transfections was checked via Western blot analysis and immunofluorescence. The viability of cells was assessed by MTT assay.

The silencing of PP1c resulted in increased phosphorylation level of pRb. Both KEPI and LIMK-2 include a phosphorylatable peptide sequence that is necessary for the potent inhibition of PP1. Expression of KEPI in MCF-7 cells led to its phosphorylation by endogenous kinases and inhibition of PP1 reflected in enhanced pRb-phosphorylation. Similarly, expression of LIMK-2 in HeLa cells decreased protein phosphatase activity leading to increased pRb-phosphorylation.

Our results indicate the essential role of PP1c in determining the phosphorylation level of pRb, which is also regulated by PP1 inhibitory proteins. Thereby PP1, LIMK-2 and KEPI could be considered as potential drug targets with therapeutic means in different kinds of malignancies.

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RELATIONSHIP BETWEEN HYPERTENSION AND LOW HDL-CHOLESTEROL LEVELS AS RISK FACTORS IN PATIENTS WITH STEMI

Introduction: HDL is the smallest lipoprotein with cardioprotective effect. Up to 80% of patients with acute myocardial infarction have low HDL. In a numerous studies high blood pressure has been conclusively linked to heart attack. Arterial blood pressure is often increased in patients with STEMI especially during the first hours of pain when the sympathetic response dominates. Purpose was to investigate the incidence of hypertension and low HDL levels separately, as independent risk factors, as well as their link in patients with STEMI.

Methods: This retrospective, population-type study, included patients with STEMI treated in Coronary Unit, Clinical center Kragujevac from December 2009-December 2010. HDL-cholesterol was measured on admission and clasified according to NCEP recomendations. Total cholesterol, LDL and tryglicerides levels were measured, atherogenic indices were calculated. Blood pressure levels were measured and classified according to the VII JNC recommendations. All data were stored in a specially designed database, and statistically analyzed in the SPSS for Windows.

Results: In the observed group of 200 patients with STEMI, hypertension was present in 140(70%) patients (χ^2 -test; $p=0,000$). Among the total number 133(66,5%) patients had low HDL-cholesterol (χ^2 -test; $p=0,000$). In hypertensive patients low HDL-cholesterol was dominant lipid disorder in 92(69,2%) patients. Both, total number and subgroup of hypertensive patients had LDL, total cholesterol and tryglicerides levels mostly desirable or normal, with statistically significance of normal tryglicerides (128-64% patients- χ^2 -test; $p=0,000$) and elevated LDL/HDL ratio (124-62% patients- χ^2 -test; $p=0,000$). Low HDL and hypertension were more frequent in males than in females but with no statistically significant difference.

Conclusions: Low HDL and hypertension are both major and independent risk factors with a high incidence in patients with STEMI. There is a strong link between these two risk factors with isolated low HDL-cholesterol levels as a dominant lipid profile disorder,especialy in hypertensive patients.

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UPTAKE OF SELENITE AND SELENATE DURING GERMINATION OF WHEAT AND PEA AS WELL AS THE EFFECT OF TREATMENTS IN THEIR MICROBIOLOGICAL STATE

Sprouting is commonly practiced to add nutritional value to different seed types. When germination takes place, different types of nutritive factors, for example bioavailability of trace elements and vitamin concentration are noticed. To illustrate, it was investigated that the enrichment of selenium during wheat germination and also that of pea sprout known as *Triticum aestivum* and *Pisum sativum* respectively so as to add the maximum nutritive value of sprouts with bioavailable source of this element because Se is a necessary nutrient for humans, likewise forms the active centre of Se-containing enzymes, such as glutathione-peroxidase, thioredoxin-reductas.

In three different concentrations of sodium-selenite and sodium-selenate (0.1; 1 and 10 mg dm⁻³) solutions, seeds were sprouted in distilled water. In order to establish the ideal conditions for highest enrichment, the concentration and time-dependent uptake was investigated. Furthermore, we needed to know the microbiological status of sprout was affected with the increased of concentration of selenium treatment, so we determined the total plate count and the coliform bacteria count by pour plate technique.

As we conclude our experiment, we can say that we measured increased selenium concentrations in sprout at selenate treatment concentrations, in case of wheat sprout and pea sprout, too which is known to be in collaboration with the selenite and selenate uptake is different. The plants uptake selenate actively during sulfur metabolism and accumulate selenite passively.

The results of the microbiological analysis show that although there is some fluctuation in the coliform and total plate count (in case of wheat and pea sprouts), but we could not detect significant increase or decrease compared to the control.

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EFFECTS OF GLYCINE ON CARTILAGE FORMATION IN HIGH DENSITY CELL CULTURES

It is known that N-methyl-D-aspartate (NMDA)-type of ionotropic glutamate receptors functioning as cationic channels are present on cells of mature skeletal tissues. NMDARs are heterotetramers, consisting of two NR1 and two NR2 or NR3 subunits and require glycine as coagonist. Our laboratory previously proved that NR1, NR2B subunits of NMDA receptors can be detected in the plasmamembrane of differentiating chondrocytes. Glycine is a potent agonist of NR1 and NR3 subunits, but it also acts on strychnine-sensitive chlorid-channels, also known as glycine-receptors (GLRs). In our experiments, conventional pharmacological modulators of NMDA receptor did not influence significantly chondrogenesis, but glycine elevated the metachromatic matrix production of chondrogenic cells.

Therefore, we investigated the expression of glycine-sensitive NR3A and NR3B subunits of the NMDAR with Western blot and RT-PCR in primary chondrogenic high density cell cultures (HDC) established from limb buds of chicken embryos. Both mRNA and protein expressions of these subunits have been shown on various days of culturing. On 2 and 3 days of culturing, days of final commitment of chondrogenic cells, NR3B subunit showed an expression peak in the plasma membrane fraction. In addition, we were also able to detect expression of specific glycine receptors GLRA1, GLRA3, GLRA4 and GLRB with RT-PCR. By the end of culturing period glycine treatment increased, while the administration of strychnine decreased the amount of metachromatic cartilage nodules. During the combined treatment, glycine compensated the negative effects of strychnine. Application of the pharmacons did not affect viability, but decreased proliferation rate of chondrogenic cells. As the result of glycine treatment, mRNA expression of collagen type II, aggrecan and Sox9 increased. Furthermore, glycine also elevated protein expression of Sox9 and compensated the negative effect of strychnine on Sox9 protein expression.

Our results suggest that glycine signalling may play role in the regulation of chondrogenesis and exerts its effects via influencing activity either NMDAR or GLR.

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THE ROLE OF THE PROTEIN KINASE C SYSTEM IN THE REGULATION OF TRPC6 IN PODOCYTES

Transient receptor potential canonical-6 (TRPC6) is a mainly calcium-permeable, non-specific cation channel. It has been shown that both its gain-of-function mutations and its acquired overactivity may lead to podocytopathy and nephrosis syndrome. Since we possess relatively few data about the regulation of TRPC6 activity in podocytes, in the current study, we aimed at investigating the role of the protein kinase C (PKC) system in the regulation of its functions.

We found that treatment of podocytes with different substances (arachidonic acid, ATP and phorbol-12-miristate-13-acetate [PMA]) that are known to activate PKC isoforms, suppressed the elevation of the $[Ca^{2+}]_i$ (Fluo-4 AM Ca^{2+} -measurement) evoked by the TRPC6-specific agonist 1-oleoyl-2-acetyl-sn-glycerol (OAG). Moreover, we confirmed that several PKC isoenzymes were expressed in podocytes (Western blot, Q-PCR). Among them the „classical” alpha, the „novel” delta and the „atypical” zeta isoforms showed the highest expression.

We have also shown that the above effect of PMA (activator of the “classical” and “novel” isoforms) could be prevented by GF109203X (general PKC inhibitor), by Gö6976 (inhibitor of the “classical” isoforms) and also by the delta-specific inhibitor Rottlerin. These data suggested that both PKC alpha and delta may be involved in the development of the effects of PMA.

Since, when applied alone, all inhibitors significantly increased the amplitude of the OAG-induced Ca^{2+} -signal, taken together, our results suggest that the PKC system exerts a tonic inhibition on TRPC6, protecting the podocytes from cell damage caused by the overactivation of the channel.

Our findings suggest that the PKC system plays a major role in the regulation of TRPC6 in podocytes; thus its further investigation could lead us to better understand the pathomechanism of different podocytopathies, and might also reveal novel therapeutic opportunities.

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HEMATOCRIT LEVELS AS MORTALITY PREDICTOR IN PATIENTS WITH STEMI AND HEART RATE GREATER THAN 80BMP

Introduction: Acute myocardial infarction occurs during coronary artery occlusion. Studies and clinical observations have shown that there is an increased risk of overall and cardiovascular mortality when heart rate exceeds 80 bpm. Recent analysis in cardiovascular epidemiologic studies showed that increased heart rate is frequently associated with elevated hematocrit. A higher hematocrit causes an increase in blood viscosity, which, in turn, favors coronary thrombosis. Purpose was to investigate the influence of hematocrit levels on the final outcome in patients with STEMI and heart rate greater than 80 bpm.

Methods: This population-type study, included 140 patients with anterior wall STEMI treated in Coronary Unit, Clinical center Kragujevac in the period from January 2001-June 2006. Heart rate was calculated as the mean value of baseline and heart rate in the first 30 minutes after admission. For determination of hematocrit levels were used reference values of Clinical Center Kragujevac's laboratory (0,415 to 0,530 L/L). All data were stored in database, and statistically analyzed in the SPSS, using descriptive and analytical statistics.

Results: Hematocrit values were significantly different between patients with a fatal outcome and survivors in the group of patients with anterior wall STEMI and heart rate greater than 80 bpm (t-test, $p=0,026$) with higher values of this parameter in patients who survived ($0,437 \pm 0,084$). Univariate regression analysis singled out hematocrit as independent mortality predictor in the group with increased heart rate [expB (95%CI) - , 0,003 (0,000-0,560); $p=0,029$];

Conclusion: In the observed group of patients with anterior wall AMI and heart rate greater than 80 bpm, hematocrit was independent predictor of mortality.

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RESPONSES OF CNS NEURONS TO SINUSOIDAL CURRENT INPUTS - A TEST OF THE DISCRIMINATING POWER OF A NEW METHOD TO MAP DENDRITIC ARCHITECTURES

The spatial reconstructions of cerebellar Purkinje cells and hippocampal pyramidal neurons of mice and spinal motoneurons of frogs ($n=5-5$ neurons) were used to create passive segmental cable models of these cells by the NEURON simulator (Duke University, USA). Sinusoidal ($f=50$ Hz) and steady-state current inputs were modelled at thousands of dendritic sites per neuron to map the whole dendritic surface, and log attenuations of somatopetally propagating PSPs were computed between dendritic points and the soma in response to the different current inputs. Neurons were modelled both with homogeneous and inhomogeneous soma-dendritic membranes, where somatic and dendritic specific membrane resistances were equal ($R_{ms}=R_{md}$, homogeneous model) or different (R_{ms} is lower than R_{md} , inhomogeneous model with a step increase in R_m at the soma-dendritic junction). Log attenuations of PSPs and path distances of dendritic input sites from the soma were normalized in each neuron and percentages of dendritic surface areas with the same distance and log attenuation ranges were summed up. These data were visualized as colour coded morphoelectrotonic matrices (MEM) and similarities between these matrices of neurons were measured by the sums of absolute differences between corresponding pairs of matrix elements. Finally, cluster analysis of four sets of MEMs of neurons (matrices computed in the homogeneous and inhomogeneous membrane models with steady-state and sinusoidal current inputs) was performed based on the above definition of similarity.

Cluster analyses of MEMs grouped all matrices correctly by neuron types if MEMs were computed in homogeneous soma-dendrite models with steady-state current inputs. In all other cases (inhomogeneous models with both steady-state and sinusoidal current inputs and homogeneous models with sinusoidal current inputs) 14 out of 15 neurons were correctly classified based on their MEMs.

We conclude that morphoelectrotonic matrices are sensitive tools to map the architecture of the whole dendritic surface and they can discriminate between different neurons with high confidence.

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LOCOMOTOR SYSTEM STATUS OF THE PRESCHOOL CHILDREN IN THE LOOK OF THEIR SOCIAL SITUATION

The children having low socio-economical status as background have less opportunity to take part in special occupations in contrast to the socially advantaged contemporaries, although these programmes play a major role in the physical and mental development. Civilized societies provide a wide range of activity to the growing children for the healthy adulthood as early as possible.

Purpose of our study was to perform a survey among pre-schoolers, who are considered soci-economically disadvantaged. We looked for objective data about some health drawbacks of these children compared to the contemporaries. We elaborated physiotherapy exercises directed to the strengthening of the muscles which are responsible for posture as well as coordination. These exercises can be conducted by kindergarten teachers.

Investigations were carried out in a kindergarten in Debrecen among children who were born prior to 31. 12. 2006. In the investigations parents and kindergarten teachers filled in the questionnaire aimed to measure the children's social status, physical condition and the disorders of the locomotor system. The posture and physical capacity of the children were also checked with physical examination. An intervention programme was organised and its effectiveness was checked by objective measurements. Additionally, we also collected data showing that how the kindergarten teachers are prepared to improve the physical status of children and to prepare them to avoid the disadvantages of sedentary life-style. 28% of respondents raise his/her child alone and in 51% of the sample one or both parents are unemployed. The 30% of children attend to do sports beside the kindergarten programmes. According to the parents the one fifth of children complains for spinal or foot pain many times a month and the kindergarten teachers also have similar experiences. 93% of the kindergarten teachers answered that there were no movement improving knowledge in their basic qualification and only 20% take part in such post gradual courses.

Our results confirm the hypothesis that the health improvement according to the physical status is worth to start in the early childhood.

P-I.8 Radu Mirica, Alexandra Banica, Gabriel Ianosi

UMF Carol Davila, Bucharest, Romania

BILIARY ILEUS - TWO-STAGED TREATMENT

Biliary ileus represents interruption of bowel through an obstacle represented by a bile stone that stops a narrow area of the bowel (most commonly in the ileocecal valve). It is a rare complication of gallstones and occurs as a result of a bile stone that migrated from biliary system, usually the gallbladder. Most of the passings from the biliary system to the intestinal tract is achieved through a fistula (colecisto-duodenal, rarely colecisto-colic and rarely coledoco-duodenal, colecisto- gastric or hepatico-duodenal fistula), but there are times when a migrated bile stone or one that is product in the main bile tract goes through normal anatomical ways and generate these diseases.

This paper presents a two-staged intervention in such cases. In the first stage operation will be limited to resolving occlusion by enterolitotomie, radical treatment is indicated only in the context of persistent or recurrent symptoms, and in the second phase will address the inflammatory process given by the lithiasic passage.

P-I.9 Evgenia Gushchina

Northern State Medical University, Arkhangelsk, Russia

CT, MRI AND AG IN DIAGNOSTICS OF BRAIN TUMORS

Introduction: When we analyze a potential brain tumor, there are many questions that need to be answered. Since different tumors occur in different age groups we first of all need to know the age of the patient.

Next we need to know where the lesion is located - is it intra- or extra-axial and in what anatomical compartment does it lie?

Is it located in the sellar or pontocerebellar region for example?

Is it a solitary mass or is there multi-focal disease?

On CT and MR we look for tissue characteristics like calcifications, fat, cystic components, contrast enhancement and signal intensity on T1WI, T2WI and DWI.

Most brain tumors are of low signal intensity on T1WI and high on T2WI.

Therefore high signal intensity on T1WI or low signal on T2WI can be an important clue to the diagnosis.

Finally we have to consider the possibility that we are dealing with a lesion that simulates a tumor - like an abscess, MS-plaque, vascular malformation, aneurysm or an infarct with luxury perfusion.

Let consider how radiology help us in the diagnosis of brain tumors.

P-I Poster session I

P-I.10 Seyed Hossein Taravati¹, Mohammad Reza Doroudian¹, Sepideh Beykzadeh¹, Masoud Nazeri², Mohammad Shabani², Fatemeh Abareghi²

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EFFECTS OF FENTANYL, SUFENTANIL AND ALFENTANIL AS PREMEDICATION ON POSTOPERATIVE NAUSEA AND VOMITING (PONV) IN GYNECOLOGIC LAPAROSCOPY

Introduction: Nausea & Vomiting in the postoperative period (PONV) are reported as the second most common complaints. PONV can be such an unpleasant experience that patients often rate it worse than post operative pain. Reduction of post operative nausea and vomiting accelerates discharge of patients and reduces healthcare costs, hospital re-admission and duration of hospitalization, and increases satisfaction of patients. In this study the effects of three opioids that are used routinely in general anesthesia (alfentanil, sufentanil and fentanyl) on incidence of PONV have been assessed.

Materials and Methods: In this double blinded clinical trial study, one hundred eighty patients (ASA I and II), aged 18-35 year, were randomly allocated into three groups. The three groups received 1mg midazolam 2 minutes before induction of anesthesia and then received 2cc of one of opioid drugs: Alfentanil, fentanyl and sufentanil. The general anesthesia method was similar in three groups. Post operative nausea and vomiting were assessed 2- hrs and 2-24 hrs in post operative period in these three groups. Data were analyzed using chi-square and multivariate logistic regression, $p < 0.05$ was considered statistically significant.

Results: Incidence of postoperative nausea in the first 24- hrs of postoperative period in alfentanil, fentanyl and sufentanil was respectively 13.33 %, 35% and 41.6%. Incidence of nausea was significantly lower in alfentanil group in the first 2 hrs ($p < 0.001$) and 0-24 hrs ($p < 0.01$) in postoperative period. There was no significant difference among three opioid drugs in incidence of vomiting in 24- hrs of postoperative period.

Conclusion: In the 24 hours after surgery, none of the three opioids could significantly reduce the incidence of vomiting compared to the other two drugs, although alfentanil can be considered more pleasant for the patients, since it could reduce nausea compared to the other two drugs.

P-I.11 Mostafa Ghaffari, Mohamad Namvar, Alireza Abdi, Hadi Rezaei, Saeed Raeisi, Mohammad Hassan Sharafi

Occupational Medicine Department and Research Center, School of Medicine, Hemmat Campus, Tehran University of Medical Sciences, Tehran, Iran

ASSOCIATION BETWEEN CIGARETTE SMOKING AND SLEEP DISTURBANCES AMONG INDUSTRIAL WORKERS

Introduction: Today cigarette smoking is one of the preventable leading causes of death all around the world. Although there are firm evidences about the carcinogenicity and some other adverse health outcomes of nicotine, but the association between smoking and sleep disorders is not known accurately. This study aimed to investigate sleep disturbances related to smoking among industrial workers.

Method: In this cross-sectional study 765 questionnaires were distributed among workers of a car seat manufacturing factory in Tehran 2012. Designed questionnaire contained demographic information added to some questions derived from SMII (Sleep Med Insomnia Index) and ESS (Epworth Sleepiness Scale) questionnaires. These questions were about sleep pattern and related disturbances like Difficulty in Initiating Sleep (DIS), Difficulty in Maintaining Sleep (DMS), Difficulty in Morning Awakening (DMA), Sleepiness during the Work (SDW) and etc. Also there was a question about smoking habit categorizing participants into four groups: Never, previously smoker, current smoker (sometimes) and current smoker (regularly). Collected data from 708 returned questionnaires were analyzed using SPSS software.

Results: According to gathered information, regular smokers were more affected in terms of prevalence of DIS, DMA and DMS compared to the other groups and this difference were statistically significant ($P < 0.05$) in two fields: DIS and DMA. Even after adjusting for confounders using Logistic Regression analysis, regular smoking were associated with two above mentioned disturbances (Odds Ratios for DIS and DMA were 1.3 and 1.5 respectively).

Discussion: This study suggests that cigarette smoking may be associated with sleep disturbances (Especially with difficulty in initiating sleep and difficulty in morning awakening). Although more studies are needed to confirm this theory, But it is worth noting that the evidences for the adverse health outcomes of smoking are increasing daily. So it is necessary to inform people all over the world of the adverse effects of smoking on sleep pattern. It may help the current smokers to quit smoking and may prevent adolescents from starting.

P-I Poster session I

P-I.12 Nishant Joshi

Oslo University College, International Public Health Summer School, Oslo, Norway

IDENTIFYING THE CHALLENGES IN PROMOTING SOCIAL CHANGE AND FACILITATING POLICIES TO SUPPORT MATERNAL AND CHILD HEALTH IN EGYPT

Aim: to identify the challenges in promoting maternal healthcare in a non-democratic country. Egypt was selected as it was under a non-democratic rule until the ouster of President Mubarak in Jan 2011. facts: population 83 million (2009), age demographics: 31 % of population aged 10-24 years. average births per women = 3.2 Issues in maternal care: high maternal mortality, female genital mutilation is still a cultural practice, cause hemorrhage, pain, perineal trauma during childbirth, psychological trauma. Issues in child care: limited reproductive and sexual health education. OUTCOMES: Initiatives: MN-PI: maternal and neonatal program effort index. Ranked Egypt as a relatively strong national policy on safe motherhood in urban areas, but lacking access in rural areas. areas of improvement include: sexual health, family planning services in rural areas, improve planning and resource allocation. increase access to high quality ante natal care, access to skilled delivery care. child initiatives: POLICY project- Put forth by ministry of youth. Activities include: 1. youth advocacy even: national conference on youth and population 2. Establishment of the national youth task force: to set priorities for reproductive health issues, includes multisectoral representation from NGO communities, key ministries, young people. 3. Improving advocacy skills: Updating knowledge bases concerning population situation in Egypt, communication messages to various advocacy audiences.

P-I.13 Seyyed Mohammad Mahdy Mirhosseini, Masood Ghorbani, Reza Bidaki

Isfahan University of Medical Sciences, Isfahan, Iran

PREVALENCE OF CORACOCARTICOID FORAMEN AND ITS IMPORTANCE IN BRAIN SURGERY

Introduction:

The anterior , middle and posterior clinoid processes are united by a bony bridge, which converts the distal end of the carotid sulcus into an ostium called the carotico-clinoid foramen (CCF). Through the CCF passes the internal carotid artery (ICA). The CCF is the result of ossification either of the carotico-clinoid ligament (CCL) or of a dural fold extending between the anterior and middle clinoid processes and occasionally posterior process of sphenoid bone. The presence of the bony CCF makes the removal of the anterior clinoid process more difficult and increases the risks of ischemic and neurological disorders.

Thus a goal of this study survey rate of CCF prevalence and significant of CCF in brain surgery.

Material and Methods:

Fifteen dry skulls in anatomy department of Isfahan university, medical sciences of Iran with removed calvaria via routine dissection were studied. The dimensions of the CCF , length of CCL and type of CCF were measured using a calliper. The data obtained were statistically analyzed using Mann-Whitney U-test.

Result:

According to our study rate of incomplete CCF were highest. Two bi-side complete and four trace CCF observed also.

Conclusion:

Considering the latest finding, it can be concluded that the ossification of CCL is high and the neurosurgeons should be provided with a comprehensive data bank of the prevalence of significant complication.

P-I.14 Masoud Nazeri^{1,2}, Fatemeh Abareghi¹, Mohammad Shabani², Leila Golchin²

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AMYGDAL DYSFUNCTION AS A POSSIBLE NEURAL BASIS FOR STRESS-INDUCED ALTERATIONS IN NOCICEPTION AND COGNITIVE FUNCTIONS: IMPLICATION OF NMDA RECEPTORS

Chronic stress is considered as one of the contributors to chronic pain. Effect of chronic swim stress on nociception and passive avoidance task (PA) was evaluated in this study. Role of NMDA receptors was evaluated by administering Ketamine (NMDAR antagonist) before each swimming session.

Methods: male wistar rats were used for this study. Baseline measurements were recorded for nociception. Nociception was evaluated using hot-plate(53.5°C) and tail flick test, PA was evaluated using Shuttle-box instrument. Ketamine (5mg/kg, i.p.) or saline were administered to rats before each swimming session. Rats were exposed to swimming stress in 50cm height of water in a 20min session for 3 consecutive days. Nociception and PA were evaluated in the day 4. Data was analyzed using paired t-test and student t-test. $P<0.05$ was considered statistically significant.

Results: rats in FS group showed a decreased reaction time in hot-pate and tail-flick test ($p<0.01$), besides an impaired learning and memory in PA (a decreased Step-Through Latency(STL)) ($p<0.05$). Administration of ketamine (5mg/kg, i.p.) reversed this decrease in pain threshold , and memory impairments were also reversed by ketamine, while learning impairment was not changed by ketamine. Rats recieing saline prior to each simming session did not show any difference in nociception and PA.

Conclusion: this study showed that PA, simultaneous with nociception, is impaired after chronic swim stress, implicating a role for amygdale dysfunction. Antagonism of NMDAR reversed this effect of chronic stress, demonstrating an implication for Glutamergic neurotransmission in hyperalgesia and memory implications following chronic swim stress. These findings suggest a novel mechanism for stress-induced hyperalgesia and psychophysical stress-induced amnesia, and amygdale seems to be a crucial brain region in these phenomenon.

P-I.15 Nishant Joshi

Medical University of Pleven, Pleven, Bulgaria

INDIA HEALTHCARE SYSTEM, STATUS OF MILLENNIUM DEVELOPMENT GOALS IN INDIA

India, being a nation of 1.2 billion people faces great challenges in the provision of healthcare to its citizens. The sheer number of citizen is the major hindrance to quality provision of healthcare, combined with inefficient resource allocation. On one hand, India boasts as a strong medical tourism destination, conducting highly specialized surgeries, operative procedures on patients from richer countries all over the world, on another hand we lack basic healthcare including vaccination to a large proportion of the population. the major problems faced are poverty, tropical diseases like malaria, tuberculosis. And also being a developing economy we face the double burden of diseases (increased prevalence of smoking, alcoholism, western diet, and continuing incidences of diseases of poverty). Also of mention is the success towards the success of health related Millennium Development Goals in India. The statistics show great achievements, but still lags on the official target, and is unlikely to be met by the year 2015. Apart from the western system of medicine, We have parallel systems of healthcare, Ayurveda, unani, homeopathic, and various traditional healers, keeping in mind the wide variety of ethnicity in India. This abstract aims to outline the diversity existing in India regarding to healthcare allocation of resources, and outline the wide gap between the available and requirement of resources, including financial and human resources.

P-I.16 Ilia Nadareishvili

David Tvildiani Medical University, Tbilisi, Georgia

LEAD AND HUMAN HEALTH

Lead – a heavy metal, which due to its physical features is used in a lot of spheres of human activity. It has been known to cause different pathologies (primarily those of the nervous, cardiovascular, musculoskeletal, gastrointestinal and genitourinary systems) since antique times, but the problem has never been as actual as our days. It is important to know where exactly is the metal used, how it can reach potentially dangerous concentrations, how it reaches the living organism, which pathologies it causes and how it does do so. Lead is included in the list of priority contaminating agents by a number of international organizations

The current topic analysis utilizes the most up to date data available in different databases, such as the one of Academy of Ecology of Georgia, different NGOs and research institutes. The data is analyzed and an ultimate problem overview is presented.

The present work illustrates the importance of immediate action taking in order to stabilize the ecological catastrophic processes caused by lead contamination of soil, water, air and living organisms. The main accent is given to the situation in the republic of Georgia and particularly the biggest city and capital – Tbilisi, where the situation is close to catastrophic. The analysis is supported by the ecologic monitoring data, as well as the results of population screening for lead concentration in blood. The work further explains the pathologic basis of lead caused diseases, their symptoms, signs, and diagnostic methods, main strategies of treatment, complications and prognosis. Novel methods of treatment are discussed. Recommendations for prevention of environmental pollution are given, as well as detailed prevention methods of human acute and chronic lead exposure and poisoning.

P-I.17 George Hayek

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EFFECT OF ANTI-VEGF INJECTIONS (LUCENTIS) ON READING SPEED IN WET-AMD PATIENTS

Background: Patients suffering from Age-related Macular Degeneration (AMD) are losing their reading capability. The objective of this study is to investigate the effectiveness of a new method, measuring the reading speed in wet-AMD patients treated with anti-VEGF injections.

Patients and method: Routinely, anti-VEGF treated wet-AMD patients are evaluated by measuring the best corrected distant visual acuity (BCVA) via ETDRS chart and macular thickness via Optical Coherence Tomography (OCT). In addition to a full ophthalmological examination we measured the reading speed via Radner chart on 30 patients before and 3 months after treatment. The collected data were analyzed using a Paired T-test.

Results: After the anti-VEGF treatment, BCVA increased from 59 to 67 letters, retinal thickness decreased from 362 μm to 225 μm . The reading speed (sentences/sec) improved from 16 seconds to 10 seconds per sentence, and the amount of words read per minute increased from 65 words/min to 101 w/min. The results were statistically significant ($p < 0.01$).

Conclusions: Significant improvement of reading speed was observed after Lucentis treatment in wet-AMD patients. Radner reading chart is an effective tool to follow the evolution, and the treatment-effect of wet-AMD patients.

P-II Poster session II

P-II.1 Petronela Buiga, Anca Mesaros

Faculty of Dental Medicine, „Iuliu Hatieganu” University of Medicine and Pharmacy, Cluj-Napoca, Romania

THERAPEUTIC APPROACH OF DENTAL AGENESIS

Introduction: Dental agenesis is one of the dental anomalies, that requires different treatment options.

The most common tooth agenesis occurs by the third molar, maxillary lateral incisor, mandibular first premolar and maxillary canine.

Objectives: The purpose of this study was to determine which type of treatment is used by dental practitioners in case of dental agenesis.

Materials and methods: We performed a statistic study on a group of 15 dentists.

The data were collected on the base of standardised questionnaire.

Results: We obtained that the most used treatment is the orthodontic closing of spaces followed by multidisciplinary treatment.

Conclusion: The prevalence of dental agenesis shows great variations between populations and treatment options, too.

P-II.2 Srdjan Milanov, Dusica Ognjanovic, Goran Davidovic, Violeta Iric-Cupic

Faculty of Medical Sciences, University of Kragujevac, Serbia

ATHEROGENIC INDICES AS A PART OF LIPID PROFILE DISORDERS IN PATIENTS WITH STEMI

Introduction: Acute myocardial infarction occurs during coronary artery occlusion and is characterized by permanent damage or loss of cardiac tissue. Numerous studies have shown higher incidence of lipid profile disorders including the elevated values of atherogenic indices (non-HDL cholesterol, LDL/HDL ratio, total cholesterol/HDL ratio and tryglicerides/HDL ratio) in patients with STEMI. Purpose was to investigate the incidence of elevated atherogenic indices and their role as risk factors in patients with STEMI.

Methods: This largely prospective and partly retrospective, population-type study, included patients with STEMI treated in Coronary Unit, Clinical center Kragujevac from January-June 2011. Total cholesterol, tryglicerides and HDL-cholesterol levels were measured and clasified according to NCEP and LDL levels according to AHA, NIH and NCEP consensus recomendations. Atherogenic indices were calculated based on results obtained from laboratory analysis of the lipid profile. All data were stored in a specially designed database, and statistically analyzed in the SPSS for Windows.

Results: Patients with STEMI included in the study had higher incidence of elevated atherogenic indices: 131 (78,4%) patient had non-HDL cholesterol levels greater than 3.4 (χ^2 -test; $p=0,000$); 134 (80,2%) patients had LDL/HDL ratio greater than 3 (χ^2 -test; $p=0,000$); and 135 (80,8%) patients had total cholesterol/HDL ratio greater than 4.5 (χ^2 -test; $p=0,000$). There was no statistically significance in the incidence of high tryglicerides/HDL ratio, greater than 1.8 (χ^2 -test; $p=0,037$). In these patients, LDL, total cholesterol and tryglicerides levels were mostly desirable or normal, only HDL cholesterol levels were disrupted in terms of the existence of isolated low HDL levels (134–80,2% patients).

Conclusions: Elevated atherogenic indices (non-HDL cholesterol, LDL/HDL ratio, total cholesterol/HDL ratio) as a part of lipid profile were singled out as independent risk factors in the observed group of patients with STEMI. They were associated with isolated low HDL as a dominant lipid profile disorder in these patients.

P-II.3 Anita Spanyol, Adrienn Veronika Lakatos

Department of Physiotherapy, University of Debrecen, Debrecen, Hungary

THE EFFECT OF THE INACTIVE LIFE-STYLE ON THE POSTURE AND COORDINATION OF THE NURSERY SCHOOL-AGED CHILDREN

The appropriate and regular physical activity in the childhood improves the school efficiency, protects against the illnesses. According to screenings, 40–70% of the infants suffer from some initial organic abnormalities of the locomotor system. The postural disorders develop already in childhood. The treatment of these disorders demands intervention of specialists, but the parents and the educators have big responsibility in the children's health education. We need programmes in the nursery schools, which give a chance to all children to get ready mentally and physically for challenges of this age.

The objective of our examination was to study the five-six years old children's motion development and their health behaviour. After evaluation of the results, we help them to evolve the correct posture. An additional aim was to teach to the nursery school educators the fundamental physiotherapy exercises for improving the children's physical condition, in order to prepare them for the introduction of children to the healthy life-style.

We surveyed the motion activity of the children by using a self-service charger questionnaire filled in by the parents and the nursery school educators, and collected information about their habits relating the life-style. We monitored the posture of children and their physical condition with physical examination. We initiated a special movement training programme implementing the practices of the "spine school". The examinations were carried out in a nursery school in Debrecen among the children who were born before the 31. 12. 2006.

Our results showed that 15% of the children have postural disorder according to the opinion of parents. 68% of the parents said that the fitness of their child is good or very good. In the nursery school motion programmes almost one third of the children were not fairly active. Besides, 24% of the children spend 4-6 hours daily in front of the monitor during the weekends.

The situation discovered shows the necessity of a planned movement programme for children and the preparation of adults for the health education as early as possible.

P-II.4 Srdjan Milanov, Dusica Ognjanovic, Goran Davidovic, Violeta Iric-Cupic

Faculty of Medical Sciences, University of Kragujevac, Serbia

THE FIRST CLINICAL EVIDENCE OF ISOLATED LOW HDL-CHOLESTEROL LEVELS AS THE MOST OFTEN NORMOLIPIDEMIC DYSLIPOPROTEINAEMIA IN PATIENTS WITH STEMI IN KRAGUJEVAC, SERBIA

Introduction: STEMI is a clinical form of coronary heart disease characterized by permanent damage or loss of cardiac tissue. HDL is the smallest lipoprotein with cardioprotective effect wherein the low levels are considered to be one of the major risk factors for acute coronary events. Up to 80% of patients with STEMI have low HDL. Isolated low HDL is the most common form of normolipidemic dyslipoproteinemia. Purpose was to investigate the incidence of low HDL levels as independent risk factor and the presence of isolated low HDL in patients with STEMI.

Methods: This retrospective, population-type study, included 200 patients with STEMI treated in Coronary Unit, Clinical Center Kragujevac from December 2009.-December 2010. HDL-cholesterol was measured on admission and classified according to NCEP recommendations. Total cholesterol, LDL and triglycerides levels were also measured, atherogenic indices were calculated. All data were stored in a specially designed database, and statistically analyzed in the SPSS for Windows.

Results: In the observed group of 200 patients with STEMI 170(85%) patients survived and 30(15%) patients died. Among the total number, 133(66,5%) patients had low HDL cholesterol (χ^2 -test; $p=0,000$) of whom 76,5% were males, 23,5% were females; 112 among survivors and 21 patient with fatal outcome. LDL-cholesterol, total cholesterol and triglycerides levels were desirable or normal. Comparative analysis has shown high statistical significance (t-test; $p=0,000$) of low HDL associated with: high-risk levels of LDL/HDL ratio; desirable LDL levels; desirable total cholesterol levels; and high levels of total cholesterol/HDL ratio. According to gender, low HDL is more frequent in males than in females but with no statistically significant difference.

Conclusions: Low HDL is common in patients with STEMI as strong and independent risk factor in both males and females, somewhat more common in male patients. There is evidence for existence of isolated low HDL-cholesterol as a form of normolipidemic dyslipoproteinemia and the most common lipid profile disorder in patients with STEMI in Kragujevac.

P-II.5 Stefan Simovic, Goran Davidovic, Violeta Iric-Cupic, Srdjan Milanov

Faculty of Medical Sciences, University of Kragujevac, Serbia

LIPID PROFILE IN PATIENTS WITH STEMI AND HEART RATE GRATER THEN 80BPM

Background: Heart rate is important determinant of myocardial oxygen demand and cardiac workload. Studies have shown that elevated heart rate is associated with lipid profile disorders including high cholesterol, tryglicerides, LDL cholesterol, non-HDL cholesterol, index of atherosclerosis and low HDL cholesterol increases mortality in patients with AMI. Purpose was to investigate correlation between heart rate greater than 80 bpm and lipid profile disorders in patients with STEMI.

Methods: Study included 140 patients with anterior STEMI treated in Coronary Unit, Clinical center Kragujevac in the period from January 2001-June 2006. Heart rate was calculated as the mean value of baseline and heart rate in the first 30 minutes after admission. Total cholesterol, tryglicerides and HDL-cholesterol levels were clasified according to NCEP and LDL levels according to AHA, NIH and NCEP consensus. All data were stored in database and statistically analyzed in the SPSS using descriptive and analytical statistics.

Results: In the observed group of patients heart rate greater than 80 bpm was associated with: low HDL cholesterol (t-test; $p=0,011$) with significantly lower levels in patients who died (χ^2 -test; $p=0,106$); index of atherosclerosis (Mann Whitney U test; $p=0,003$) with greater levels in patients who died ($4,38 \pm 2,23$); and non-HDL cholesterol (Mann Whitney U test; $p=0,008$) with higher values in patients who died ($5,63 \pm 3,27$). Univariate regression analysis singled out low HDL-cholesterol, non-HDL cholesterol and index of atherosclerosis levels as independent mortality predictors in the observed group of patients.

Conclusion: Low HDL-cholesterol, non-HDL cholesterol and index of atherosclerosis are predictors of mortality in patients with AMI and heart rate greater than 80 bpm.

P-II.6 Zoltán Pethő^{1,2}, András Balajthy¹, Christian Bernecker², Margret Ehlers², György Panyi¹, Matthias Schott²

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IMMUNE CELLS PRODUCE THYROGLOBULIN ANTIBODIES IN THYROID CANCER: A TISSUE-SPECIFIC IMMUNE RESPONSE

Anti-thyroglobulin-antibodies (Tg-Ab) frequently occur in the follow-up of patients with differentiated thyroid cancer (DTC), but the reason for this is still unknown. Recent research data show that DTC patients showing lymphocytic tumor infiltrates have a better outcome compared to those without. The same is also true for DTC patients showing Tg-Ab positivity. The purpose of this ongoing study is hence to investigate epitope-specific antitumor immunity in DTC patients.

Until now, we included 18 thyroid cancer patients in this study (14 HLA-A2 positive and 4 HLA-A2 negative DTC patients). We performed tetramer analyses specific for Tg- and thyreoperoxidase (TPO)-epitopes in order to detect tumor specific T lymphocytes. We selected three epitopes for Tg and TPO as well, based on the mathematical epitope prediction program SYFPEITHI.

Our preliminary data suggests that HLA-A2 pos. DTC patients have a significantly increased number of Tg- and TPO-specific T cells ($0.42 \pm 0.36\%$ and $0.34 \pm 0.30\%$) in their peripheral blood compared to HLA-A2 neg. DTC patients ($0.10 \pm 0.06\%$, $p < 0.0001$ and $0.13 \pm 0.05\%$, $p = 0.03$), as well as normal controls ($0.03 \pm 0.05\%$, $p < 0.0001$ and $0.06 \pm 0.14\%$, $p = 0.01$). Comparing the antibody level (Tg) to the frequency of epitope-specific T cells revealed no correlation. We also compared the number of tetramer positive T cells in patients with higher tumor burden (morphological tumor detection, $n = 5$) compared to those without metastases ($n = 7$). Here we detected a slightly, but statistically not significantly higher amount of tetramer pos. T cells in patients with detectable tumor burden ($0.49 \pm 0.45\%$ and $0.41 \pm 0.30\%$ for Tg; $0.43 \pm 0.41\%$ and $0.30 \pm 0.19\%$ for TPO). In summary, this is the first study showing an epitope-specific antitumor immunity in DTC patients directed not only against Tg but also against TPO. The Tg-Ab occurrence in these patients may be caused by specific cellular immunity in DTC patients. This is crucial as until now, no data is available regarding the antitumor immunity in DTC.

P-II Poster session II

P-II.7 Masoud Nazeri¹, Mohammad Shabani², Fatemeh Abareghi¹, Moein Kermani¹

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ASSOCIATION OF HYPERALGESIA AND PASSIVE AVOIDANCE LEARNING IMPAIRMENTS FOLLOWING CHRONIC STRESS: AMYGDALAE IMPAIRMENT IS RESPONSIBLE?

Background: Chronic stress can cause an increased response to noxious stimuli under specific circumstances, a phenomenon which is called Stress-Induced Hyperalgesia (SIH).

We hypothesized that the fear of being drown in the model of SIH causes excessive Glutamate release from Amygdala, and endogenous opioid released during swimming sessions are present at spinal sites, thus, co-incidence between release of excessive glutamate and endogenous opioids leads to the sensitization of opioid receptors which causes a long-lasting hyperalgesia.

To test our hypothesis, we evaluated cognitive function of rats simultaneous with their nociception. Shuttle box test was used to evaluate the function of amygdala, hot-plate and tail flick tests were used to assess nociception; open-field test was used to measure anxiety and locomotion in rats.

Materials and Methods: Baseline measurement for nociception was measured in the day 0, then for 3 days, rats were exposed to 50cm or 5cm height of water for the Forced Swim(FS) or Sham Swim(SS), respectively. Nociception was assessed in the day 4,8 and 12. Parallel to evaluation of nociception, Fear-conditioned memory was assessed in days 4 and 5 using shuttle box. Open field was used to evaluate anxiety, fear and locomotion in both FS and SS groups. Data were analyzed using SPSS v.16. ANOVA, Repeated measure and t-test were used to analyze data. $P<0.05$ was considered significant.

Findings: Rats in the FS group showed significant decrease in hot-plate reaction time, while no changes was observed in tail-flick test, SS group did not show any changes in response to thermal stimuli in both tests. FS rats were more fearful by spending more time in the center of open-field, more obsessive by showing more grooming, and more motile by moving more than twice of the SS group. Shuttle box test revealed significant alterations in amygdala function, FS rats showed impairments in learning and memory, indicating a role for amygdala dysfunction in SIH.

Conclusion: Our study showed that SIH is associated with amygdala impairments, this points to a novel mechanism which involves amygdala. more research is needed to clarify the exact mechanism.

P-II.8 Nisaa' Rahma Wulan

Islamic University of Indonesia, Yogyakarta, Indonesia

THE RELATIONSHIP OF NUTRIENT STATUS WITH DEVELOPMENT OF 0-72 MONTHS AGED CHILD AT KOTARAJA PUBLIC HEALTH CENTER, SIKUR DISTRICT, EAST LOMBOK

Background : Healthy Indonesia 2010 is the national development vision that want to achieve through the development of health. The successful development of a nation is closely related to the quality of human resources is good. Establishment of quality human resources optimally, both physically and psychologically healthy depend on the growth and development process of children at an early age. Children are next generation of a nation, in which if the children healthy then the nation will be strong and prosperous. A child who is normal and healthy will grow according to the genetic potential of the possessed. But this growth will be influenced by nutrient intake is consumed. Nutrient influent on the development of the child.

Objective : To obtain the relationship between nutrient with development of 0-72 months aged child.

Research Method : A descriptive comparative research using Kolomogorov-Smirnov's Test. This research conducted at Kotaraja public health center, Sikur District, East Lombok.

Results : The results of this research is from 87 children analyzed, found 11(12.6%) normal children, had malnutrition. A total of 0(0.0%) children are now less + + nutrient status, 0(0.0%) children are now less + nutrient status, 64(73.6%) children has normal nutrient status, 0(0.0%) children to now less nutrient status. A total of 9(6.9%) children are now more nutrient status, had less. To high, normal nutrient status as much as 0(0.0%). While 1(1.1%) children are obese nutrient status. And as much as 5(5.7%) children nutrient status are now more, not obese. Whereas to the developments, found as much as 68(78.2%) children in accordance with its development stage, as much as 19(21.8%) children are doubting its developments and obtained 0(0.0%) children there may be deviation.

Conclusion : The conclusion of this research is that there is a relationship between nutrient status with the development of 0-72 months aged child at Kotaraja Public Health Center Sikur District East Lombok. From the research, suggests that the correlation between nutrient status with the development of the child there is a significant correlation.

P-II Poster session II

P-II.9 Saeed Raeisi, Mir Saeed Attarchi, Majid Golabadi, Mohamad Namvar, Amir Baba, Hadi Rezaei, Mohammad Hassan Sharafi

Occupational Medicine Department and Research Center, School of Medicine, Hemmat Campus, Tehran University of Medical Sciences, Tehran, Iran

THE RELATIONSHIP BETWEEN TYPE OF JOB AND SERVICE AREA WITH MUSCULOSKELETAL DISORDERS AMONG NURSING PERSONNEL

Introduction: Health level of nursing personnel is an important factor in the quality of their performance in patient care. Musculoskeletal disorders (MSDs) are considered as the most leading causes of sickness absence and dysfunction of personnel in work environments. This study was designed to evaluate the association between type of job and service area with musculoskeletal disorders among nursing personnel.

Methods: The subjects were consisted of 477 health care workers including nurses, nurses' aides and nurse technicians of two hospitals in Iran. The Nordic musculoskeletal Questionnaire was used to consider MSDs. The incidences of MSDs were compared between groups in terms of type of job and service area. SPSS software was used to analyses gathered data.

Results: Low back disorder with the prevalence of 56.8% was the most prevalent disorder among subjects. Logistic regression analysis showed that employees of pediatrics ward were in higher risks to be affected by low back and knee disorders (odds ratios were 3.4 and 2.9 respectively) and no significant relationship was found in terms of other disorders and jobs.

Conclusion: The results of this study indicate that some groups of nursing personnel (pediatrics ward employees) are more prone to be affected by MSDs compared to the others. To reduce such disorders in nursing personnel, appropriate planning and paying attention to high risk groups is recommended. However more studies are needed in this field.

P-II.10 István Fekete¹, Nándor Rakonczás², Dávid András¹, Péter Sipos¹, Bódi Éva¹, Béla Kovács¹

¹Institute of Food Science, Quality Assurance and Microbiology, ²Institute of Horticulture, Centre for Agricultural and Applied Economic Sciences, University of Debrecen, Debrecen, Hungary

ANALYSIS OF POTENTIALLY TOXIC ELEMENTS IN THE DIFFERENT GRAPE JUICES (MUSTS) BY INDUCTIVELY COUPLED PLASMA (ICP) TECHNIQUES

The research results of the last decades clarified that the industrial and the inadequate agricultural activity may increase abnormally the concentrations of potentially toxic elements in soils. Owing to the acidification of soils the different potentially toxic elements are mobilized in soil. The grape can absorb the potentially toxic elements (e.g. As, Cd, Cu, Pb and Zn) from soil, and they could enter the food chain and so they may spell serious danger to the human.

The contents of As, Cd, Cu, Pb and Zn of the grape juices of Cserszegi Fűszeres grafted into different grape rootstocks were compared. The aim of our research was to determine how the As, Cd, Cu, Pb and Zn content of the grape juices changes in case of the different grape rootstocks. The above potentially toxic elements in the grape juices were analysed by inductively coupled plasma techniques (ICP-MS and ICP-OES).

The following results were obtained in the musts of different rootstocks: the As, Cd, Cu Pb and Zn concentrations changed between 2.67 µg/L-4.41 µg/L, 0.26 µg/L-0.88 µg/L, 0.12- 0.54 mg/L, 8.93 µg/L-16.7 µg/L and 0.11-0.47 mg/L respectively. These results justify, that the selection of the grape rootstocks influence the As, Cd, Cu Pb and Zn contents of the grape juices therefore, the selection of rootstock is an important factor to increase the food-safety in the wine product chain. On the basis of our results the Vitis Berlandieri is an advantageous rootstock, as the smallest arsenic and lead concentrations were found in its grape juice. Advantageous rootstocks were the Berlandieri x Riparia K 125 AA because of the lowest measured Cd content and the Riparia Selecta due to the lowest measured Cu content. Our measurement indicate that the Aramon x Riparia 143B M. et de G. is an advantageous rootstock, as the smallest zinc was found in its grape juice.

Acknowledgements: The work/publication is supported by the TÁMOP-4.2.2/B-10/1-2010-0024 and TÁMOP-4.2.1./B-09/1/KONV-2010-0007 projects. The projects are co-financed by the European Union and the European Social Fund.

P-II.11 Helga Perényi, Anita Vadász

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IS THERE A CONNECTION BETWEEN SERUM GLUCOSE CONCENTRATION AND THE AETHIOPATHOGENESIS OF MELANOMA CELLS?

It is well known, that energy metabolism of malignantly transformed cells, including their glucose utilization, is deeply altered. Special glucose transporters (GLUT), found in the basal membrane of the cells, are responsible for the regulation of glucose uptake and their elevated expression have influence on the lifecycle of malignant cells.

On the basis of the observation of our laboratory that cells of WM35 melanoma cell line in the normal RPMI were not able to survive without extra glucose, we raised the interesting question if the serum glucose concentration of patients having malignant melanoma is higher comparing with patients without malignant illness. In order to obtain data on this parameter, we screened about 2200 melanoma patients' documents in Med Sol data base of the Department of Dermatology at our university. We screened whether serum glucose concentration was followed during the treatment or not. We also tried to compare 10 years of data of melanoma grade and progression with actual glucose concentration of patients.. We can summarize that glucose concentration changes in melanoma patients are not followed consequently, and that our data base is not enough for getting statistically useful analysis.

Besides the statistical analysis, we also performed experiments to prove if there is any difference between expression pattern of GLUT in different human melanoma cell lines. Our laboratory research results show that mRNA expression of GLUT in melanoma cell lines of different malignancy stage is variable. Using Normal Human Epidermal Melanocyte cell line as a control we can conclude that GLUT1 seems to be a general transporter, while the mRNA expression of GLUT4 is elevated in malignant melanoma cell lines. On the contrary, we detected a lower mRNA expression of GLUT5 in these malignantly transformed cells.

Our results suggest that monitoring of glucose concentration of patients diagnosed with melanoma could serve important data on metabolic changes during progression of this malignancy. We also suggest to test whether a low carbohydrate-low glucose diet during the treatment could decrease the progression of this malignant tumor.

P-II.12 Seyyed Mohammad Mahdy Mirhosseini, Ahmad Mirhosseini, Reza Bidaki, Fatemeh Arab Bani Asad

Isfahan University of Medical Sciences, Isfahan, Iran

COMPARING THE EFFICACY OF UNFRACTIONATED HEPARIN AND CELEXANE IN PREVENTION OF VEIN THROMBOSIS AFTER CRANIOTOMY

Introduction: Craniotomy is a risk factor for the venous thrombosis. Prophylactic strategies are divided into mechanical and pharmacological while their efficacies are under controversy. The aim of the present study was to compare the effect of unfractionated heparin with low-molecular-weight heparin (Clexane®) in order to prevent venous thrombosis in patients undergoing elective craniotomy. **Methods:** All patients who were candidates for elective craniotomy surgery due to brain tumor were enrolled in this randomized clinical trial and two-sided blind study. The patients with bleeding into the primary lesion, history of thrombotic events in the past six months, and recent anticoagulation use were excluded. 48 hours after the surgery, patients were randomly assigned to receive subcutaneous Clexane (40 mg/d) or unfractionated heparin (5000 U/12h). The intervention was continued until the patient started to move. In patients with symptoms of venous thrombosis, including swelling and pain in lower limbs, diagnosis was confirmed by Doppler sonography. Information analyzed by X2 and Fisher's exact test which was taken by SPSS software resulted in values under 0.05 were significant.

Results: During the study, 50 patients (50% male) were included with no difference between the two groups in age, sex, or underlying diseases ($p > 0.05$). During the study, one case (4%) of subclinical venous thrombosis was observed in unfractionated heparin group, but no case in Clexane group ($p = 0.25$). None of the patients encountered intracranial hemorrhage at follow-up.

Conclusion: Both unfractionated heparin and Clexane are effective and safe in prophylaxis for venous thrombosis in patients. Risk of intracranial hemorrhage is not increasing as a reduction of thrombosis risk. More studies are needed to evaluate necessary dose and duration of prophylactic treatment and also to compare combination of these methods by mechanical prophylactic methods.

P-II.13 Seyyed Mohammad Mahdy Mirhosseini, Mohammad Hossein Antikchi, Abbas Andishmand, Reza Bidaki, Hamid Mirhosseini, Mohammad Hadi Mortazavi, Mohammad Hossein Ahmadi

Isfahan University of Medical Sciences, Isfahan, Iran

RELATIONSHIP BETWEEN LIVER ALANINE AMINOTRANSFERASE AND SEVERITY OF CORONARY ARTERY STENOSIS IN PATIENTS WITH CORONARY ARTERY DISEASE

Background: Despite the recognition of risk factors for cardiovascular disease, the incidence of these diseases is rising. The debate that has recently been raised is about the role of liver enzymes in the atherosclerosis of arteries. Therefore, this study was performed to determine the relationship between liver alanine aminotransferase and coronary artery stenosis.

METHODS: This is an analytical study. 263 patients candidate for coronary angiography admitted to Yazd Afshar hospital were participated. Height, weight, history of diabetes, metabolic syndrome criteria, ALT levels and serum CRP, were recorded separately for each patient in a checklist. Statistical analysis was performed by SPSS ver17 software. $P < 0.05$ was considered significant.

Results: Serum ALT levels with sex, BMI, and history of diabetes was not related to coronary artery stenosis. $ALT \geq 60$ U/L in conjunction with metabolic syndrome, significantly increases the risk of severe coronary stenosis ($P = 0.041$). High CRP level also increased atherosclerosis in combination with metabolic syndrome ($P = 0.044$).

Conclusion: Serum ALT alone has no effect in coronary artery disease, such as CRP, in conjunction with metabolic syndrome, can aggravate coronary atherosclerosis.

P-II.14 Małgorzata Jamka-Kasprzyk, Edyta Szpak-Mieszaniec

MJK-Stomatologia, Bilczyce, Poland

BRIDGES IN DENTISTRY-ENGINEERING OR ART?

Bridges are used in dental prosthetics for hundreds of years.

The essence of the bridge is to supplement the missing teeth. Until the implants and bridges were the only and remain, an alternative to prosthetic restorations (movable prosthesis).

In our work we try to compare the design and construction of bridges on the foundation of classic porcelain metal and glass fiber bridges.

We want to present our own cases and trying to find the golden mean, the best solution, the best supplement taking into account the available knowledge, materials and their own experience.

P-II.15 Matei R. Bratu, B.I.Diaconescu, I.Dogaru, B.V.Martian

University of Medicine and Pharmacy „Carol Davila”, Bucharest, Romania

LAPAROSCOPY AS A FIRST LINE TREATMENT IN STAGE III COLORECTAL MALIGNANCIES-IS IT FEASIBLE?

Background: According to recent studies, the role of laparoscopic procedures in colorectal surgery is constantly growing being gold standard in STAGE I and STAGE II neoplastic tumors, but there are still questions to answer if this is the best option for STAGE III tumors.

Methods: A retrospective study of 72 patients who underwent open (OCR group) or laparoscopic (LCR group) surgery for STAGE III colorectal malignancies, between 2008 and 2011, was performed using SPSS v19. The operations were executed by the same surgical team and using “no-touch” oncological principle. We analyzed demographic data, BMI, operation type (OP), blood loss (BL), lymph node harvested (LN), postoperative complications (PC), hospital stay (HS), bowel ileus (BI) and days of total parenteral nutrition (TPN). A p-value smaller than 0.05 was considered statistically significant.

Results: From 72 patients, 45 underwent OCR and 27 LCR. There were no statistical differences between the mean age (LCR=67 OCR=69) and gender status (female=35 male=37). Also there were no discrepancies when the mean BMI was compared (LCR=31.52 OCR=30.47 $p=0.29$). The most frequent OP was abdominoperineal resection with a total of 21 procedures for both groups (OCR=12 LCR=9). We observed a smaller mean BL in LCR group (OCR=611.11 ml LCR=261.11 ml $p=0.001$). During both types of operation there were harvested approximately equally amounts of LN (LCR=6.68 OCR=7.02 $p=0.67$). In postoperative period, the LCR patients recovered faster with a smaller BI period (LCR=1.87days, OCR=2.69days, $p=0.01$) and fewer TPN days (LCR=1.19 OCR=2.78 $p=0.02$). We also found a significant shorter HS in the LCR group (6.67 days) compared to OCR group (10.69 days) with $p=0.02$. After laparoscopic procedures we had 2 cases of thrombocytopenia while after open colectomies we encountered 2 fistula, 1 evisceration and 1 anastomosis dehiscence.

Conclusions: Laparoscopy has strong advantages over open surgery in perioperative and postoperative period while there were no differences in the oncological standards. According to our study laparoscopy is feasible, safe and can be used as a first-line treatment for STAGE III colorectal malignancies.

P-II.16 Bikramjot Singh, HN Mallick

All India Institute Of Medical Sciences, India

TRPV1 (TRANSIENT RECEPTOR POTENTIAL VANILLOID RECEPTOR 1) CHANNELS IN PREOPTIC AREA(POA) PLAY A ROLE IN SLEEP AND THERMOREGULATION

Aim: TRPV1 (Transient Receptor Potential Vanilloid Receptor 1) channels in preoptic area(POA) play a role in sleep and thermoregulation.

Background: Several studies have suggested role of POA in hypnogenesis and thermoregulation , and that the TRPV1 channel on Warm Sensitive neurons (WSN) might be mediating these responses .TRPV1 channel is a nonselective cation channel, found mainly in the nociceptive neurons of the peripheral nervous system but also in the CNS . Measuring local temperature POA will reflect the physiological working of WSN.

Methods: Adult male Wistar rats were chronically implanted with electrooculogram, electroencephalogram and electromyogram electrodes for sleep-wakefulness assessment, and a bilateral guide cannula for microinjection of capsaicin (2µg on either side),saline at POA . Local brain temperature at hypothalamus was recorded using thermocouple. With a recovery of a week, recordings were taken by a polygraph from 10:00 to 18:00hrs , with injection at 12:00.

Results: The mean brain temperature of rat was 36.82°C and total sleep duration was 216 min for 6 hr from 12:00 to 18:00 . After injection an immediate dip in temperature occurred from 36.8° to 36.0°C for 15 mins, then temperature rose to 37.5°C,attaining a plateau phase for 5 hours.. Rat showed hyperactivity in hypothermic state and in plateau phase sleep period was increased to 263 min in 12:00 to 18:00hrs mainly SWS (slow wave sleep) from 56%(control) to 70% in 16:00-18:00 .

Discussion: Capsaicin binds to TRPV1 channels on WSN in POA and causes hypothermia probably by triggering heat dissipation mechanisms .Capsaicin mimics burning property and thus excites sympathetic nervous system leading to non shivering thermogenesis; Henceforth excessive heat production leads to rise in brain temperature of rat. This continues till basal tone of sympathetic system reaches baseline and norepinephrine levels fall in blood in 4-5 hours. During this hyperthermic phase SWS increase to protect damage to body cells especially brain cells. Central Processor in POA influence the sleep-wake neurons in CNS, leading to increase in SWS in this case when brain temperature was high.

P-II.17 Mahkameh Abedi, Abdolkhalegh Deezaji, Mahvash Khoda Bandeh, Neda Vaseli Hagh

Department of Basic Sciences, National Institute of Genetic Engineering and Biotechnology, Tehran, Iran

K562 CELLS DIFFERENTIATE TO ERYTHROCYTES WITHOUT DNA FRAGMENTATION

The commitment, proliferation, and differentiation of hematopoietic progenitor cells in the erythroid lineage are called erythropoiesis. In the final stage of mammalian erythropoiesis, erythroblasts expel their nuclei and become reticulocytes. Little is known about the molecular and cellular mechanisms involved in the erythroid differentiation that lead to the enucleation and maturation of erythrocytes.

The aim of this study was investigation into the DNA fragmentation along erythroid differentiation. For this reason, we employed a commonly used model human K562 erythroleukemia cells. The K562 cells were induced to differentiate into erythrocytes by 1 mM sodium butyrate. Hemoglobin formation was monitored in sodium butyrate-treated cells by benzidine staining and compared with the control. The expression of γ -globin mRNA was examined using reverse transcriptase polymerase chain reaction (RT-PCR) after 24, 48, 72, and 96 h. Here we report the application of the alkaline comet assay for assessing DNA fragmentation during erythroid differentiation of K562 cells. For measuring the tail length and DNA content, we used computer image analysis. To further explore DNA was isolated from control and sodium butyrate-treated cells in a period of 14 days.

Our results indicate that the percentage of benzidine positive cells increased with time in sodium butyrate-treated cells. The γ -globin mRNA expression was up-regulated after exposure of the cells to sodium butyrate. Benzidine staining and RT-PCR analysis verified that sodium butyrate induced the erythroid differentiation of the cells used in this study. No significant difference was observed between the level of DNA fragmentation in control and sodium butyrate-treated cells and we did not observe any DNA laddering in control and treated cells during 14 days.

In conclusion, this study demonstrates that DNA fragmentation does not occur during erythroid differentiation of K562 cells.

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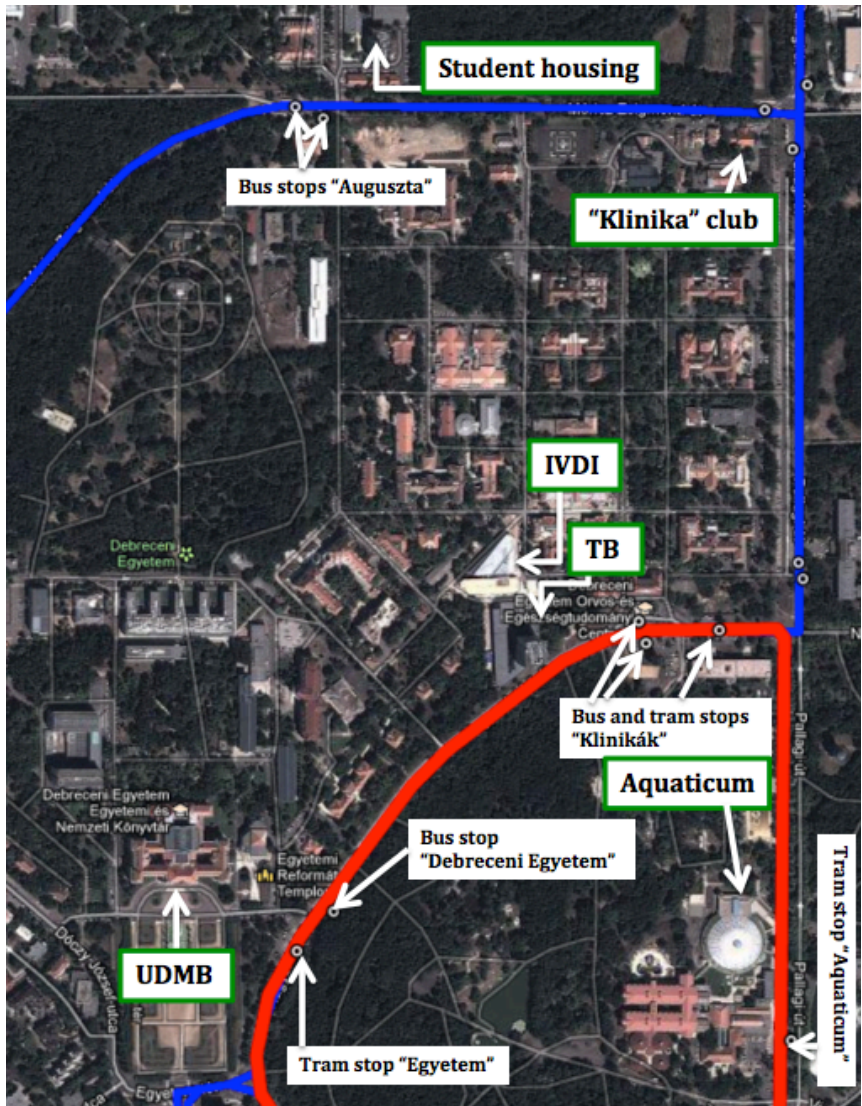
Notes

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TB (Theoretical Building): registration and all scientific programme

IVDI (In Vitro Diagnostics Building): closing ceremony

UDMB (University of Debrecen main building): gala dinner on the indoor court

Arrows point to the building entrances.

All the venues are within walking distance from each other.

Programme outline

	Friday 19 October 2012	Saturday 20 October 2012	Sunday 21 October 2012	Monday 22 October 2012	Tuesday 23 October 2012					
7:30		Breakfast	Breakfast	Breakfast	Breakfast	7:30				
8:00						8:00				
8:30						8:30				
9:00		Oral session I	Registration (TB)	Oral session III	Oral session VII	Bus transfer Debrecen - Tállya	Postcongress tour (separate registration)	9:00		
9:30								9:30		
10:00								10:00		
10:30								10:30		
11:00				Kaplan USMLE course	Oral session IV	Oral session VIII		Wine tasting and Hungarian lunch Tállya	11:00	
11:30				Oral session II					11:30	
12:00									12:00	
12:30									12:30	
13:00				Poster session I	Snack lunch	Closing ceremony		Reception	Wine tasting and Hungarian lunch Tállya	13:00
13:30										13:30
14:00		14:00								
14:30		14:30								
15:00		Registration (TB)	Oral session V	Bus transfer Tállya - Debrecen		Train to Budapest	15:00			
15:30							15:30			
16:00							16:00			
16:30							16:30			
17:00	Opening ceremony						City sightseeing	Oral session VI	17:00	
17:30									17:30	
18:00		18:00								
18:30		18:30								
19:00	Transfer	Dinner		Exclusive party ("Klinika" University Student Club)	19:00					
19:30	Informal dinner				19:30					
20:00					20:00					
20:30					20:30					
21:00		21:00								
21:30		Aquaticum indoor aquapark	Gala Dinner (UDMB)		21:30					
22:00					22:00					
22:30	Transfer				22:30					
23:00								23:00		
	19 October 2012 Friday	20 October 2012 Saturday	21 October 2012 Sunday	22 October 2012 Monday	23 October 2012 Tuesday					