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Days of the University of Medicine and Pharmacy of Tîrgu Mureş

Scientific Session of University Educational Staff

December 11th-15th 2017

The 10th Conference of PhD Students and Young Doctors

December 13th 2017

VOLUME OF ABSTRACTS

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BOOK OF ABSTRACTS

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ANESTHESIOLOGY AND INTENSIVE CARE MEDICINE

CORRELATIONS BETWEEN HAEMODYNAMIC PARAMETERS AND INTRA-ABDOMINAL PRESSURE IN MECHANICALLY VENTILATED CRITICALLY ILL PATIENTS

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Background: The aim of the study was to demonstrate the relationship between cardiac output and intra-abdominal pressure in mechanically ventilated critically ill patients. **Material and methods:** We enrolled 30 mechanically ventilated patients (76.19% males, mean age 67.3 +/- 11.9, 95% CI 62.9-71.8) admitted in the intensive care unit between January 2016 and April 2016. Clinical, biological and haemodynamic parameters were compared in twenty-one patients with normal values of intraabdominal pressure (IAP 12 mmHg, group 2). In all patients, clinical, laboratory and haemodynamic data were collected and analyzed with PICCO PLUS. In 23 patients who survived at least 3 days post inclusion, the variation of CO and IAP between baseline and day 3 were calculated, in order to assess the variation of IAP following haemodynamic improvement. **Results:** Intraabdominal pressure was 8.52 +/- 1.59 in group 1 and 19.88 +/- 8.05 in group 2 ($p<0.0001$). There were no statistically significant differences between the groups in respect to haemodynamic parameters expressing global volemic status ($p=0.07$ for GEDV, 0.3 for EVLWI and 0.1 for SVV). However, mean values of CO were significantly higher in the group with normal values of IAP than in the group with IAH: 6.96 +/- 2.07 (95% CI 6.01 - 7.9) in group 1 and 4.57 +/- 1.23 (95% CI 3.62 - 5.52) in group 2 ($p=0.003$). Furthermore, linear regression demonstrated an inverse correlation between cardiac output and IAP ($r=0.48$, $p=0.007$). Serial measurements of cardiac output proved that each significant decrease in the IAP was associated with an increase in the cardiac output (from day 1 to day 2 and from day 2 to day 3) ($p=0.02$). **Conclusions:** Cardiac output is highly correlated with intra-abdominal pressure, increasing inthe intra-abdominal pressure may lead to a drop in cardiac output in mechanically ventilated patients.

Keywords: cardiac output, intra-abdominal pressure, critically ill patient, mechanical ventilation

BIOCHEMISTRY

EVALUATION OF LABORATORY FINDINGS, COMORBIDITIES AND RISK FOR COMPLICATIONS IN AMBULANT AND HOSPITALIZED DIABETIC PATIENTS

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Background: Diabetes is a frequent metabolic disorder, comorbidities are important for evolution. The complexity of evaluation can be different in ambulant and hospitalized subjects. **Material and methods:** The aim was to evaluate metabolic and endocrine status of diabetic in- and outpatients between January-June 2017, and their risk for complications. We studied 195 subjects, 49.2% from the Procardia outpatient unit, the rest from the Emergency Clinical County Hospital in Tîrgu Mureş, admitted to the Diabetology and Nutritional Diseases Clinic. Main parameters were glycaemia, HbA1c (glycated hemoglobin), urine analysis, lipid profile, minerals, evaluation of thyroid and kidney function. Konelab20XTi was used for biochemical analyses in ambulant subjects and Cobas 6000 for hospitalized patients. TSH, FT4, ATPO were determined by ELISA (Stat Fax) for the ambulant subjects and by chemiluminescence (Immulite One) for inpatients. BMI (body mass index) was calculated, and DCSI (Diabetes Complication Severity Index) score was determined. Statistics were made with GraphPad InStat. **Results:** Mean age of the patients was 62years+/-13(SD), 46% being males. Ambulant patients showed significantly better metabolic balance (average HbA1c: 6.7%+/-1SD) compared to inpatients (8.9%+/-2SD) ($p<0.0001$). Similar results were obtained by comparing glycosuria ($p<0.0001$) and glycaemia: average 133.3mg/dl+/-35.6(SD) in outpatients and 170.5mg/dl+/-62.1(SD) in the hospitalized group ($p<0.0001$). Serum urea was significantly higher in inpatients ($p=0.042$). Hyperpotassemia occured in 35% of the subjects. BMI of inpatients was significantly higher compared to the outpatients ($p<0.0001$), over 47% were obese. Thyroid pathology was most frequent in the ambulant group ($p=0.014$), incidence of ischemic heart disease was significantly higher in the inpatients ($p=0.002$). DCSI score was 209 in the hospitalized group compared to 96 in the outpatients (96). **Conclusions:** We can conclude that the metabolic balance of hospitalized patients was significantly worse and their DCSI scoring significantly higher compared to the ambulant subjects. It would be appropriate to increase the complexity of evaluation in diabetic in- and outpatients.

Keywords: laboratory parameters, diabetes mellitus, metabolic balance, scoring system, complications

RELATIONSHIP BETWEEN RETINAL DRUSEN DEPOSITS, ZINC AND LIPID HOMEOSTASIS IN DIABETIC HYPERTENSIVE PATIENTS

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Background: Hypertension and diabetes are chronic diseases which affect the macro- and microvascular area. Presence of drusen deposits is a frequent cause of blindness in diabetic subjects. Dyslipidemia and mineral imbalance can be related to the formation of these deposits. **Material and methods:** We proposed to study the possible relationship of dyslipidemia and zinc dyshomeostasis to formation of retinal drusen deposits in a group of hypertensive outpatients diagnosed with type 2 diabetes. Blood samples were collected at the Procardia medical unit in Tîrgu Mureş during 2016-2017. Serum cholesterol and zinc concentration were measured by the Konelab20Xti. Body mass index (BMI) of the patients was calculated. At the Ophtalmology Clinic in Tîrgu Mureş 42 fundus photographs were made for the selected patients using Zeiss Visucam500 camera to reveal drusen deposits and other pathological changes of the retina. Statistical processing of data was made using Mann-Whitney test. **Results:** Mean age of the subjects was 63years+/-10(SD), 43% were females. Fundus photographs revealed presence of drusen deposits in 48% of the

patients, most frequently in those having zinc concentration exceeding 11µmol/l. Those which had no drusen deposits had significantly (p=0.03) lower serum zinc concentration (average: 9.4µmol/l) compared to those presenting such deposits (mean: 11.9µmol/l). No significant difference (p=0.3) could be observed between serum cholesterol concentrations of these groups, the subjects having no drusen deposits showed slightly higher values (average: 201mg/dl) compared to the other group (mean: 177mg/dl). Only 20% presented normal weight (BMI<25 kg/m2), the rest being obese (38%) or having overweight. **Conclusions:** We can conclude that high serum zinc concentration in diabetic hypertensive patients can predispose to formation of drusen deposits. No relationship was found between serum cholesterol and occurrence of these deposits. More complex investigation of these patients would be appropriate to reveal risk factors for complications. Aknowledgements: Financial support was provided by Hungarian Academy of Science, contract nr.3272/9/2017.

Keywords: hypertension, diabetes mellitus, drusen deposits, zinc concentration, dyslipidemia

CCAMF

STREPTOZOTOCIN-INDUCED DIABETES MELLITUS IN RATS. CHARACTERIZATION OF A WIDELY USED EXPERIMENTAL MODEL

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Background: Experimental models of diabetes mellitus are invaluable scientific tools. Such models contribute to our understanding regarding the pathophysiology of the disease and often represent the starting point for new therapeutic approaches. We aimed to perform an exhaustive characterization of the streptozotocin (STZ)-induced diabetes mellitus (DM) model in rats. **Material and methods:** Adult male Wistar rats were randomized into control or DM (induced by STZ, 60 mg/kg, i.p.) groups. After 28 weeks, blood parameters (plasma glucose, lipid profile, kidney function, complete blood count, and platelet aggregation) were evaluated. Aortic rings were harvested and vascular contractility, endothelium-dependent and -independent vasodilation were assessed. **Results:** Plasma glucose ($p<0.001$), total ($p<0.001$) and low-density lipoprotein cholesterol ($p=0.02$), and triglycerides ($p<0.001$) were significantly higher, whereas creatinine clearance ($p<0.001$) was significantly lower in the DM rats. Platelet count ($p=0.001$) and plateletcrit ($p<0.001$) were significantly lower, and mean platelet volume ($p<0.01$) was significantly higher in the DM group. Interestingly, ADP- ($p=0.04$) and arachidonic acid ($p<0.01$)-induced platelet aggregation were significantly lower in the DM compared to the control rats. Phenylephrine- and KCl-induced vascular contractility, as well as acetylcholine- and nitroprusside-induced vasodilation were all significantly lower in the DM rats (all $p\leq0.03$). **Conclusions:** The STZ-induced DM model faithfully reproduces the hyperglycemia, dyslipidemia, and kidney dysfunction commonly seen in diabetic patients. Long-term DM was associated with dysfunction of not only the vascular endothelium, but also of the vascular musculature. Furthermore, STZ-induced DM appeared to be associated with a paradox of high intrinsic platelet reactivity, as reflected by the high mean platelet volume combined with the low platelet count, and low in vitro platelet aggregation. Funding: This work was supported by the University of Medicine and Pharmacy of Tîrgu Mureş Research Grant number 16/11.12.2013.

Keywords: streptozotocin, diabetes mellitus, experimental model

INFLAMMATION IN ATHEROSCLEROTIC PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING

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Background: Inflammation is central for the initiation and further progression of atherosclerosis. Moreover, coronary artery bypass grafting (CABG) is associated with a systemic inflammatory response, mainly due to cytokine release caused by extracorporeal circulation and myocardial ischemia. We aimed to characterise inflammatory biomarkers levels at baseline and their evolution in atherosclerotic patients undergoing CABG. **Material and methods:** Thirty patients, candidates to elective surgical myocardial revascularisation following European Society of Cardiology guidelines, were enrolled between January 2016 and July 2017. For each patient, clinical and laboratory data were gathered, including preoperative, early (second day), and late (fifth day) postoperative inflammatory biomarkers levels. **Results:** Complete blood count was found normal at baseline and it significantly increased after CABG for white blood cells, neutrophils, monocytes (all $p<0.00001$), and platelets ($p<0.001$), while lymphocytes significantly decreased in the post-operative period ($p<0.01$). High-sensitivity C-reactive protein (hsCRP) levels were found high at baseline (3.2 ± 3.16 mg/l) and significantly increased post-CABG in day 2 (178.4 ± 76.1mg/l) and day 5 (76.5 ± 48.1mg/l) ($p<0.00001$). Interleukine 6 (IL6) levels significantly increased after surgery ($p<0.00001$), together with interleukine 8 (IL8), transforming growth factor beta (TGF b), and vascular endothelial growth factor A (VEGF A) (all $p<0.05$). **Conclusions:** High levels of baseline hsCRP were found in atherosclerotic patients undergoing elective CABG, exposing them to an increased risk of complications, as hsCRP is known to be an independent predictor of cardiovascular events in patients with or without

cardiovascular disease. Among the other cytokines, an increased release of IL6, IL8, TGF b and VEGF A was noted after CABG, confirming the systemic inflammatory response. Funding: This research was supported by the University of Medicine and Pharmacy of Tîrgu Mureş research grant number 17800/1/22.12.2015.

Keywords: inflammation, atherosclerosis, coronary artery bypass grafting, cytokines, hsCRP

A RAT MODEL OF ACUTE FOCAL CEREBRAL ISCHEMIA-UNILATERAL TRANSIENT MIDDLE CEREBRAL ARTERY OCCLUSION

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Background: The aim of the study was to validate the method for middle cerebral artery occlusion (MCAO) and to evaluate the magnitude of the ischemic lesion using a magnetic resonance investigation (MRI) technique and 3D reconstruction of the ischemic region. Additionally, morphological changes were used for data confirmation. **Material and methods:** 15 Wistar male adult rats randomly divided into sham (n=5) and ischemic group (n=10) underwent transient MCAO using a silicon rubber-coated monofilament occluder. After isoflurane-induced anesthesia and local pain relief medication, the occluder was inserted into the external carotid artery throughout the common carotid artery bifurcation, up to the internal carotid artery where was kept for 90 min. After occlusion time, animals were reanesthetized and the endoluminal occluder was removed. Successful of the procedure was verified using a five-point scale test for the neurological deficit, MRI investigation for ischemic volume evaluation and histological analysis for the characterization of the cerebral tissue lesions. **Results:** The surgical procedure was performed with minimum invasive procedures; from the ischemic group 2 rats died and 1 did not show a neurological deficit. The size of the ischemic region was evaluated with MRI procedures and 3 D reconstruction of the ischemic region. H&E staining and immunohistochemistry offer the possibility to investigate the morphological changes and to characterize the inflammatory infiltrate. **Conclusions:** tMCAO with silicon monofilament occluder is an easy and reproducible technique to induce the ischemic stroke in rats; MRI and 3 D reconstruction allow to evaluate and measure the exact extent of the lesion. This work was supported by an internal research grant from the University of Medicine and Pharmacy Tîrgu-Mureş (Project nr. 17803/1/22.12.2015).

Keywords: focal ischemia, MCAO, experimental stroke model

QUANTITATIVE DETERMINATION BY DUPLEX REAL-TIME PCR OF TWO LACTOBACILLUS SPECIES: ASSAY DEVELOPMENT, VALIDATION AND OPTIMIZATION

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Background: The purpose is the quantitative detection of two Lactobacillus species (L. acidophilus and L. rhamnosus) by specific DNA identification using real-time gene amplification methods. **Material and methods:** As the PCR specificity is given by the primers and probes involved in the reaction, they were designed in-silico in a way to not cross-react with human DNA and to produce amplicons of different sizes (82 bp for L. acidophilus, 152 bp for L. rhamnosus), so they can be used both in endpoint and real-time PCR. The probes were dual-labeled with FAM, respectively VIC at 5 and NFQ quencher at 3. The two bacterial strains were first isolated from a probiotic drug and identified at species level. Genomic DNA was extracted in bacterial lysis buffer and purified by spin column centrifugation. In the first step, end-point PCR was performed for primary validation of the primers. The calibration curves for qPCR were created using the PCR amplification products of the two Lactobacillus species, which were purified by GeneJET Gel Extraction and DNA Cleanup Micro Kit and diluted ten-folds, from 10^10 to 1 DNA copy/µl. Further validation of primers and probes was performed by qPCR using the same primers and the dual-labeled probes. The calibration curves, Ct and primer efficiency values were followed. **Results:** The electrophoresis bands corresponded to the expected sizes of 82bp and 152bp, with no cross-reactions. Good amplification was observed in the matched primer-probe-DNA samples, while no amplification was observed in non-matched ones and in no-template-control. The primer efficiency was between 85-90%. Further

optimization by adjusting the primer concentrations and annealing temperature are required to achieve better efficiency. **Conclusions:** The current protocol is very promising and after further optimization it can be used in the detection and quantification of L. acidophilus and L. rhamnosus from biological samples (eg. vaginal secretion).

Keywords: Lactobacillus, duplex-PCR, qPCR, primer design, method validation

DEVELOPMENT OF A HIGH-THROUGHPUT LC-MS/MS METHOD FOR THE DETECTION OF TESTOSTERONE IN MALE RAT PLASMA WITHOUT DERIVATISATION

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Background: Liquid chromatography tandem mass spectrometry (LC-MS/MS) is a widely applied technique for quantification of testosterone in different biological matrices. The main advantages of LC-MS/MS methods are high selectivity, sensitivity, sample throughput and short analysis run-times. The aim of the study was to design a high-throughput, sensitive and selective liquid chromatography-mass spectrometry analytical method for the determination of male rat plasma testosterone levels. **Material and methods:** A LC/MS system consisting of a Perkin Elmer Flexar-10 UHPLC chromatograph coupled with an AB Sciex 4600 series Q-TOF mass spectrometer was used. The separation was perfomed on a Gemini-NX chromatographic column with a mobile phase composed of 60% ammonium formate 1mM and 40% acetonitrile delivered in isocratic flow. Plasma samples were processed by using protein precipitation with 6% perchloric acid in acetonitrile. MS/MS mode analysis with positive ESI ionization was used for the detection of testosterone (m/z 97.06 and 109.06 from m/z 289.22) and isotopically labelled testosterone as internal standard (m/z 100.06 and 112.06 from m/z 292.20). **Results:** The detection parameteres were optimized for testosterone and internal standard. The chromatographic column was selected in order to achieve optimal peak separation of the analyte and internal standard. Mobile phase composition was optimized to obtain good retention of analyte and internal standard, and optimal ionization. The method was linear over a calibration range of 50-1000 pg/ml plasma. The lower level of quantification was 50 pg/ml plasma. Accuracy and precision of the method were tested and were satisfactory. **Conclusions:** A simple, rapid, sensitive, high-throughput LC-MS/MS method was developed for the determination of testosterone in male rat plasma samples. The sample preparation is simple, fast and inexpensive. Due to high-performance mass spectrometer used high sensitivity, selectivity and accuracy were achieved. The method can be used in routine analysis.

Keywords: LC-MS/MS, testosterone, plasma

BIOCHIP ARRAY TECHNOLOGY IN MULTIPLEX ANALYSIS OF FAMILIAL HYPERCHOLESTEROLEMIA – PERFORMANCE OF RANDOX FH BIOCHIPS IN RELATIONSHIP WITH DLCN SCORE

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Background: Familial hypercholesterolemia (FH) is the most common lipid disorder associated with coronary heart disease in young patients. Mutations in three genes: LDL-R, ApoB and PCSK9 are responsible for the occurrence of FH. **Material and methods:** In this still ongoing study we enrolled 82 patients with myocardial infarction before the age of 55 and LDL levels above 155mg/dl, without diabetes, chronic renal and/or liver failure, or thyroid disorders. Patients were first evaluated clinically and paraclinically according to the Dutch Lipid Clinic Network Score (DLCNS) for FH and then genetically tested with the Familial Hypercholesterolemia Arrays I&II (Randox Laboratories). **Results:** In line with the DLCNS<3, 29.27% of our patients were "Unlikely FH", but we found 5 (6.10%) to be positive for gene mutations. In the "Possible FH" (DLCNS 3-5) subgroup, which represented 50%, 10 (12.20%) were found positive when assessed with the FH ArraysI&II. Only 1 (1.22%) patient was diagnosed from the "Probable FH" subgroup (DLCNS 6-8) which accounted for 9.75% of the total patients, while in the "Definite FH", DLCNS>8 (10.98% from total patients), 4 (4.88%) were confirmed to have gene mutations. **Conclusions:** Our results indicate

that young coronary heart disease patients considered unlikely to suffer from FH according to the DLCNS might still have gene mutations related to FH occurrence.Familial Hypercholesterolemia Arrays I&II (validated on the Irish population) may represent a first intention diagnosis tool for the Romanian population, but negative patients falling into the Probable or Definite FH DLCNS categories have to be further investigated from a genetic point of view.

Keywords: coronary heart disease, Dutch Lipid Clinic Network Score – DLCN, Familial Hypercholesterolemia Arrays I&II
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INVESTIGATION OF NPM1 TYPE A MUTATION BY HRM, CASTPCR AND ALLELE SPECIFIC RT-PCR METHODS IN ACUTE MYELOID LEUKEMIA

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Background: NPM1 (Nucleophosmin1) gene mutation are the most frequent abnormality (20-30%) observed in patients diagosed with acute myeloid leukemia (AML), especially in those with normal karyotype. The most common mutation in NPM1 gene involve duplication of TCTG and is known as type A mutation. It was reported that NPM1 mutations are mutually exclusive with partial tandem duplication in MLL gene, with RUNX1, CEBPA and TP53 gene mutations also with some recurrent chromosomal aberrations such as MYH11-CBFB, PML-RARA, etc. According to World Health Organization (WHO) mutations in NPM1 represent a distinct leukemic entity and commonly indicate a better risk prognosis in the case of absence of FLT3 gene mutation and AML patients with NPM1 mutation have a better prognosis with longer event-free and overall survival. Also, AML patients with NPM1mutation without FLT3 mutations did not need allogeneic stem cell transplant. **Material and methods:** We developed a high resolution melting (HRM) assay to detect NPM1 type A mutation from DNA samples. TaqMan Mutation Detection Assays for analyses of NPM1 c.863_864insTCTG somatic mutations (known as NPM1-mutA) by competitive allele-specific TaqMan PCR (CastPCR) technology was used. An allele-specific RT-PCR (ASO RT PCR) method was performed for analyses of NPM1 mutation from cDNA samples. **Results:** We have similar results between the all method used in our pilot study. **Conclusions:** Our results indicate concordance between CastPCR, HRM and ASO RT PCR methods. HRM method proved to be a fast, rapid and inexpensive technique. Acknowledgement: This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI-UEFISCDI, project number PN-III-P2-2.1-PED-2016-1076 within PNCDI III, contract no.147 PED/2017.

Keywords: CastPCR, NPM1 gene, HRM method

UTILITY OF MULTIPLEX LIGATION-DEPENDENT PROBE AMPLIFICATION TECHNIQUE IN PATIENTS WITH ACUTE MYELOID LEUKEMIA

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Background: Multiplex Ligation-dependent Probe Amplification (MLPA) is a multiplex PCRtechnique which detect the abnormal copy numbers of up to 50 different genomic DNA or RNAsequences and is able to distinguish sequences differing in only one nucleotide. The aim of ourstudy was to evaluate the clinical significance of SALSA MLPA P377 HematologicMalignancies probemix in patients with acute myeloid leukemia (AML). **Material and methods:** A number of 124 DNA samples from AML patients were investigated. The protocol applied was the one recommended by the manufacturer. The Applied Biosystems™3500 instrument was the genetic analyzer used. **Results:** In 27 AML patients the copy number variations were detected, as follows: deletion of2p24.3, 5q32-34, 7p12.2, 7q21.2-36.3, 8q24.21, 9p13.2-21.3 and duplication of 8q24.21, 9p13.2,13q14.2 regions. A number of 3 patients presented large standard deviation and the investigationshould be repeated while the remaining of 94 AML cases had normal results. **Conclusions:** Conclusion: Based on our results, we may consider that SALSA MLPA P377 Hematologic Malignancies probemix kit has a clinical significance and represent an attractive method which can be included in the AML patient s management in addition to karyotype at the time of diagnosis. Acknowledgement: This work was supported by a grant of the

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Keywords: deletion, duplication, MLPA P377, acute myeloid leukemia, CNVs

OPTIMIZATION OF A DENSITY GRADIENT CENTRIFUGATION METHOD FOR SEPARATION OF PERIPHERAL BLOOD MONONUCLEAR CELLS

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Background: Peripheral blood mononuclear cells (PBMC) are extremely important in the body s immune response. Their isolation represents a major step in most immunology experiments.In this two phase study, our aim was to establish an optimum protocol for PBMC separation by density gradient centrifugation, which is a reliable worldwide accepted technique. **Material and methods:** During the first phase, we compared two commercially available PBMC separation protocols, *Stemcell Technologies* (*ST*) and *Miltenyi Biotec* (*MB*), in terms of PBMC extraction and purity. Twelve blood samples were assigned to each protocol. Each sample was divided in three different subsamples of 1ml, 2ml and 3ml in order to assess the influence of blood volume on PBMC separation. During the second phase, we established a hybrid protocol and tested it in a similar manner, processing six blood samples. Additionally, we performed a flow cytometric analysis using a predetermined viability staining protocol - *Annexin V Apoptosis Detection Kit I*. **Results:** The first phase results showed that, for all three subsample volumes, ST protocol had a superior PBMC extraction rate (mean values of 55%, 80% and 86% respectively) compared to MB protocol (mean values of 38%, 54% and 42% respectively).Regarding granulocyte contamination, both protocols yielded high purity PBMC (mean value of 96.5%), with no significant difference between protocols. However, MB protocol had a significantly lower platelet contamination, with an average of 5.5x less platelets compared to ST. The second phase results contradicted our expectations regarding a higher efficiency of the hybrid protocol, while viability had an average value of 82.5%. **Conclusions:** We conclude that, in our study, the most efficient protocol for PBMC separation in terms of extraction, purity and the ratio between these two is *Stemcell Technologies*, while blood volumes of 2ml and 3ml show similar performances, both superior to 1ml blood volume.

Keywords: PBMC separation, density gradient centrifugation, * The first two authors are equally credited.

THE CURRENT METHOD FOR THE ISOLATION OF HUMAN MESENCHYMAL STEM CELLS FROM BONE TISSUE AND TECHNICAL APPLICATIONS IN CCAMF CELL IMMUNOLOGY DEPARTMENT

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Background: In vitro studies commonly use human bone marrow- derived mesenchymal stem cells to analyze the biocompatibility of certain replacement biomaterials used in implantology. Osteomorphogenesis is dependent on the cells attachment, anchorage, adhesion and spreading on a biomaterial substrate which must be non-toxic and favorable for cell viability and functioning. **Material and methods:** The isolation of human mesenchymal stem cells was performed using residual bone tissue, collected during total hip arthroplasty. After the primary cell culture setup, the subculturing conditions had to provide a sufficient amount of cells, 5-6 x10^6 cells from each individual patient, in order to characterize cells viability and proliferation on different substrates. The morphology of the isolated cells was studied in terms of the size, area and shape, according to their density on the substrate with a Leica DMi8 inverted microscope. The evaluation of biocompatibility of certains magnesium based bone implant materials was done with Live/Dead Cell Double Staining Kit (Sigma cat.no. 04511-1KT-F) followed by image acquisition in Leica TCS SP8 confocal system. The data analysis regarding cellular morphology and alloy biocompatibility was performed using the ImageJ

software. **Results:** The initial number of mesenchymal stem cells number in culture influence the comunication between cells and as a consequence their morphology, the developing surface and homogeneous spreading. The biocompatibility evaluation of magnesium based alloys can be performed by comparing the cell density in different culture conditions. **Conclusions:** The immediat interest is the setup of the techniques for the evaluation of cell viability on magnesium based bone implant materials, with the known advantages regarding the mechanical properties and the biodegradability of this alloys in the bioenvironment and the challenges regarding the rapid corrosion of magnesium alloys.

Keywords: mesenchymal stem cells, cell culture, magnesium based alloys, biocompatibility
Acknowledgement: Work supported by CNCS/CCCDI-UEFISCDI, project number PN-III-P2-2.1-PTE-2016-0115 within PNCDI III, contract no.14 PTE/2016

IMPLEMENTATION OF A NOVEL MYOCARDIAL INFARCTION MODEL IN MICE

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Background: Murine models of myocardial infarction (MI) are the golden standard for testing new therapies, due to increased availability and reduced costs. The classic model is labor-intensive and time-consuming, as it requires intubation and mechanical ventilation of the mice, and a large intercostal thoracotomy. We aim to implement a highly-improved murine MI model at the Research Facility of the University of Medicine and Pharmacy (UMF) of Targu Mures. **Material and methods:** The mice will be anesthetized using continuous isofluorane inhalation. Through a minimal intercostal opening, we will lift the heart out of the thorax and ligate the left coronary artery at approximately 3 millimeters from the origin. Successful ligation induces immediate discoloration of the myocardium in the affected territory. The heart is re-inserted into the thorax and the pneumothorax evacuated. The mouse is disconnected from the inhalator and receives parenteral analgesia and fluid therapy. **Results:** This model has recently emerged as a more efficient approach that reduces intra-operative time and improves animal survival rate. Heart function and chamber remodeling will be followed-up by transthoracic echocardiography. The size of the infarction will be measured by Evans Blue delineation of the ischemic area at risk, followed by a triphenyl tetrazolium chloride (TTC) assay to distinguish viable versus non-viable tissue. We will use flow-cytometry to characterize cellular populations in the circulation and in the myocardium. Changes in tissue composition will be determined by biochemical and immunohistochemical staining of immune cells, myocytes, myofibroblasts, endothelial cells and fibrous tissue. **Conclusions:** We will implement this novel MI model and the associated techniques, as important tools to investigate the local and systemic pathogenic mechanisms triggered by MI, and the influence of different therapies on these processes. This will open new opportunities for the experimental study of MI and of the associated pathologies at UMF Targu Mures.

Keywords: myocardial infarction, murine model, cardiac function, immunity, remodeling

PROCESS FLOW CHART AND PROCESS MAP – HIGH LEVEL MEASUREMENT PROCESSES

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Background: The clinical laboratory must adopt a risk analysis methodology, root cause analysis and quality improvement - preparing the flow chart is an essential step. **Material and methods:** For the clinical laboratory, the testing process must be diagrammed into pre-examination, examination and post-examination process, thus identification of the source of errors and the possible opportunities of control are facilitated. the testing process begins with the receiving of the test order, and it finishes with the report of the test results. This is the manner in which the physicians perceive the baboratory - a black box with an imput for test requisitions and an output for test results - their attention being span over the pre-pre-examination and post-post-examination step. The components of the measuring system (the examination process) include: the specimen (interity and presentation), the operator (inadequate training, incompetency, staffing), the reagent/calibrator (improper shipping or storage conditions), the laboratory environment (temperature, humidity, water quality), the measuring system (instrument failure). The process map is a sequence of activities that take place in a certain time and offer an overview of the process, followed by a detailed description of these activities. The activities are registered in a cronological order and need a follow up analyse to identify the errors and the possible opportunities

of control, that will be written in The Quality Control Plan. In the end, the flow chart is prepared and describes the decisions taken. **Results:** The examination process map describes the preparation steps of the analyser and the evaluation of the functioning state, the specimen receiving steps and their acceptability check, and shows the mechanisms of solving those errors with the patient specimens and the analyser performance. **Conclusions:** This study focuses on the examination process of the patient testing process and the identification of errors that lead to delayed test results and delayed patient diagnosis/treatment.

Keywords: examination process, flow chart, process map

CARDIOLOGY

SCREENING FOR DEPRESSION AND COGNITIVE IMPAIRMENT IN HYPERTENSIVE PATIENTS FROM A CARDIOVASCULAR REHABILITATION CLINIC

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Background: Cardiovascular rehabilitation team has to be aware of the admitted patient s depressive status and cognitive impairment. Study objective was to present our experience of screening for depression and cognitive impairment among hypertensive patients . **Material and methods:** All hypertensive patients admitted to the Cardiovascular Rehabilitation Clinic from Tg Mureş between November 2016 and october 2017 were screened for depression and cognitive impairment. The short 13 item form of the Beck depression inventory was used for depression screening. Two cognitive tests were used to identify cognitive impairment and dementia the Montreal Cognitive Asessement (MOCA) questionnaire, and the Minimental test. Mild cognitive impairment was defined as a score under 26 points according to the MOCA and a score above 24 points by Minimental test. Dementia was defined according to Minimental scores as mild 15-23 points, moderate 10-14 points, or severe under 10 points. 312 patients were screened, average age was 68.1 years. **Results:** Depression was detected in 57.2% of the patients, mild depression 32.1%, moderate 9.6%, severe depression 15.5%. Patients screened with severe depression were referred to psychiatric evaluation. Minimental test score under 24 points were detected in 63 patients (20.2%), from these 60 patients (19.2%) had mild dementia, and 3 patients (1%) moderate dementia. Mild cognitive impairment was present in 160 patients (51.2%). Beck depression score and MOCA score were inversely correlated ($r=-0.36$, $p<0.0001$). MOCA score was correlated with estimated glomerular filtration rate ($r=0.24$. $p<0.0001$), total cholesterol ($r=0.19$, $p=0.002$) LDL cholesterol ($r=0.52$, $p=0.014$), sedimentation rate ($r=0.15$, $p=0.02$). **Conclusions:** More than half of our patients had some degree of depression, and every fifth patient had dementia. Mild cognitive impairment was present in more than half of the patients. Patients admitted to a cardiovascular rehabilitation center should be routinely screened for depression and cognitive impairment even in centers where rehabilitation team does not include a psychologist as ours.

Keywords: hypertension, screening, cognitive impairment, depression, cardiovascular rehabilitation

DENTAL MEDICINE

THE EFFECTIVENESS OF PIT AND FISSURE SEALANTS FOR CARIES PREVENTION IN YOUNG PERMANENT TEETH

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Background: Dental caries still represents a significant health problem in both primary and permanent dentition. As preventive measures, dental sealants have been considered of outmost importance, as they provide a physical barrier against cariogenic bacteria and nutrients from the oral cavity. The purpose of our study was to evaluate the retention of pit-and-fissure sealants in young permanent molars, in order to assess the contribution of these material to occlusal caries prevention. **Material and methods:** After dental examination based on predefined criteria, 58 molars from 8 children aged between 6-7 years and 8 children aged between 12-13 years were included in our study and received pit-and-fissure sealants. Fissurit FX and FujiIX , fluor releasing sealants, were used on the upper and lower right and left molars respectively. The follow-up evaluations were made during a 12 months period. For statistical analyzes the Chi-square test was used and a value of $p < 0.05$ was considered significant. **Results:** According to age, after 6 months more sealants were lost from upper molars in the 7-8 years of age children compared to 12-13 years old group (12% to 5% respectively) which was statistically significat ($p<0.05$)) but at 12 months there was almost no difference between age groups (14% and 17%). The evaluation at 6 and 12 months showed a better retention of sealants on lower molars in both age groups. **Conclusions:** Both materials demonstrated a high retention rate, with better results in time for Fissurit X compared to Fuji IX. In upper molars more restorations were lost, due probably to indirect view and more difficult sealer penetration.

Keywords: fissure caries, fissure sealants, retention of sealants

THE IMMEDIATE EFFECT OF DENTAL ADHESIVES ON THE OCCLUSION TIME IN COMPLETE DENTURE WEARERS

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Background: Since the introduction of the T-Scan computerized analysis system, some new parameters are now available for occlusal assessment, such as the center of force, the occlusion time and the disclusion time. The system has applications in fixed as well as in removable prosthodontics. Using the T-Scan III system, this study evaluates the immediate effectiveness of a denture adhesive application on the complete denture retention and stability by measuring the occlusion time. **Material and methods:** We examined 17 edentulous patients (9M and 8 F) at the final stage of the prosthetic treatment. For each of them, we performed a T-Scan record at the delivery of the completed dentures, without checking for occlusion errors. Then, after the application of a denture adhesive, we proceeded for a new T-Scan record. The collected data were statistically analyzed to assess the differences in occlusion time duration between the two conditions. **Results:** The occlusion time duration after the denture adhesive application was not significantly different than before the use of a such of materials ($p= 0.1314$). **Conclusions:** The immediate use of a dental adhesive at the stage of the prostheses delivery does not improve the function with dentures regarding the occlusal performance. To reduce the movements that dentures undergo while in contact with basal tissues, the occlusal refinement is essential.

Keywords: occlusion time, dental adhesives, T-Scan II

IN VITRO MICROSCOPIC EVALUATION OF ENAMEL PREPARATION NEED PRIOR TO FIXED ORTHODONTIC TREATMENT

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Background: Direct bonding technique implies enamel preparation before bracket or tube placement. As fixed orthodontic treatment means an average of 1.5-2 years wearing of these attachments, enamel preparation has to assure a prolonged adhesion of them. Even if enamel remineralization is possible due to saliva, these preparations should affect superficial enamel only in order to allow the healing of etched surfaces after debonding.The aim of this study was to compare different preparation technique and by analyzing the microscopical changes of these etching procedures to offer to clinicians the best way to use. **Material and methods:** Forty extracted premolars were selected by rigorous inclusion criteria and were divided into four groups: G1 - etching with 37% phosphoric acid for 15 sec; G2 - etching with 37% phosphoric acid for 45 sec; G3 - etching with self-etching primer; G4 - no etching control group. All selected specimens were prepared for SEM analysis, 5000 x photomicrographs were compared. **Results:** When 15 seconds etching was performed, sponge-like demineralization pattern was observed, while prolonged etching of 45 seconds affected both intra- and interprismatic areas, producing an irreversible alteration of subsurface enamel structures. When self-etching primer was used, less aggressive demineralization pattern, scratches, enamel crystallites and primer masking of the treated enamel surface was observed. **Conclusions:** Our study exemplifies that 15 seconds acid conditioning affect mainly the interprismatic zones. When etching time was prolonged, demineralization of prism cores appeared. As an alternative to acid treatment, etching with a self-etching primer causes a moderate demineralization of the enamel surface.

Keywords: dental enamel, etching pattern, phosphoric acid, self-etching primer, orthodontic

CLINICAL AND MICROBIOLOGICAL EVALUATION OF PERIODONTAL RESPONSE TO FIXED ORTHODONTIC TREATMENT

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Background: Our clinical experience showed that the most common gingival response to direct bonding of orthodontic attachments on the labial surface of teeth is the inflammation of marginal periodontium. This reaction appears in the early phases of treatment, it is related to difficult plaque removal due to the closeness of the brackets to the gingiva. Our aim was to evaluate the background of early gingival inflammation in fixed orthodontic treatment and to offer the best options to decrease their severity **Material and methods:** Thirty patients referred to orthodontic treatment were selected by rigorous criteria. Clinical and microbiological examination was performed before bracket placement (T0) and six months after bonding (T1). Periodontal indices (plaque index, gingival index, papillae bleeding index and clinical probing depth)and subgingival plaque composition (DNA-strip PCR method) were compared between the two examination times. **Results:** A slight increase of plaque retention and moderate increase of gingival index values were found comparing T0 and T1 findings. Induced bleeding was present in each case and clinical probing depth increased after six months of bracket wearing. Statistically significant difference ($p=0.035$) was obtained comparing the presence of sites positive of putative periodontopathogens between the two examination times. **Conclusions:** The accumulation of plaque increases considerably during the first month of treatment with fixed appliances. Gingival inflammations occur in the first six months of orthodontic treatment and overall frequency of periodontopathogens significantly increased in subgingival microbiota in the first phase of fixed appliance therapy.

Keywords: fixed orthodontic treatment, periodontium, gingival inflammation, periodontopathogens, PCR

SIDE EFFECTS OF ORTHODONTIC THERAPY: POSSIBILITIES FOR PREVENTION

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Background: Orthodontic treatment is complex, which also addresses etiopathogenic factors clinical and morphological and functional disorders. Treatment success and stability results over time are subject to physiotherapy, occlusal equilibration, correcting disorders ATM and periodontal disease at a young age with various types of orthodontic appliances. Authors have proposed to present some of the adverse effects of orthodontic treatment with an emphasis on oral mucosa lesions and root damage. **Material and methods:** The study is longitudinal, retrospective, realized in a number of 135 children, ages 7-14 years, were presented in Clinical Orthodontics, Pedodontics, Faculty of Dentistry, UMF Tg. Mures. Patients were divided into three study groups, by age groups: group 43 children aged 7-9 years, 45 children aged 9-11 years and 47 children aged 11 to 14 years being evaluated types orthodontic appliances used during these teething and iatrogenic factors that can lead to root resorption and lesions of the oral mucosa. **Results:** A small percentage of patients 7%, in mostly female subjects, developed recessions periodontal lesions discrete oral mucosa, and a percentage of 11% of the patients showed at the end of orthodontic treatment signs of root resorption, particularly in posterior teeth intrusion. **Conclusions:** Collaboration between periodontist, prosthetic, surgeon and the use of light forces, avoiding jiggling movement is the prevention of risk factors fixed orthodontic therapy. Correct evaluation of periodontal status and alveolar bone during orthodontic therapy is mandatory especially in cases with thin gingival biotype and various endocrine disorders in history.

Keywords: orthodontic treatment, oral mucosa, gingival recession, root resorption

INFLUENCE OF ROOT CANAL MORPHOLOGY ON THE ENDODONTIC TREATMENTS

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Background: Appropriate knowledge regarding the morphology of teeth is of primary importance in dental practice. The success of an endodontic therapy is based on the knowledge of the shape, length and number of root canals. The study was aimed to evaluate the endodontic treatments related to root canal morphology. **Material and methods:** This retrospective study was based on the analysis of 112 patient s orthopantomograms and dental records. Included in the study were all teeth which suffered a root canal therapy. Descriptive statistics were used for data analysis. **Results:** Significantly more endodontic treatments were observed in premolar and molar teeth ($p<0,05$). Of the 301 investigated teeth 59 (19,6%) presented periapical disease due to the poor root canal fillings. **Conclusions:** The unsuccessful endodontic treatments could indicate that root canal variations were not identified prior to the therapy. The results revealed that root canal morphology may influence the outcome of endodontic treatments.

Keywords: tooth morphology, root canal, endodontic treatment, retrospective study

STUDY OF SOME PATHOLOGICAL PROGNOSTIC FACTORS IN CARCINOMAS OF ORO-FARINGEAL REGION

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Background: Pathological exam plays an important role in establishing positive diagnose and therapeutic protocol and, also, in prognosis in of oro-pharyngeal region carcinomas. To analyze the relationship between the degree of malignancy of the carcinomas and a few pathological parameters such as: stromal desmoplastic reaction, intravascular invasion and peritumoral lymphocytic inflammatory infiltrate. **Material and methods:** The retrospective study was conducted in the Oral and Maxillo-Facial Surgery Clinic of Targu-Mures. Data were collected over a 5 years (01.06.2013-30.06.2017) and the study included 154 patients with positive patological diagnosis of squamous cell carcinoma of oro-pharyngeal region. **Results:** There were 153 patients with positive

diagnosis squamous carcinoma of oropharyngeal region: 21 (13.72%) grade G1 malignancy (well differentiated); 68 (44,44%) grade G2 malignancy (moderately differentiated) and 64 (41,83%) grade G3 malignancy (poorly differentiated). There was no statistically significant correlation between the degree of malignancy and the intensity of stromal desmoplasia (p = 0.37) and the presence of lymphocyte infiltrate (p = 0.75). Grade 3 malignancy correlated with the presence of lymphatic invasion (p = 0.0001). The presence of lymph node metastases was more common in case of intense desmoplasia (p = 0.0001), perineural invasion (p = 0.0001), intravascular invasion (p = 0.024), and less frequently if the lymphocyte infiltrate was intense (p = 0, 0001). **Conclusions:** Results obtained are consistent with the recent literature. Intense desmoplasia, the presence of lymphatic and venous expansion are risk factors for the occurrence of lymphatic metastases, while the intense lymphocytic infiltration has a protective role.

Keywords: carcinoma, desmoplasia, lymphocytic infiltration

PAROTID GLAND TUMORS IN MAXILLOFACIAL REGION: A IMMUNOHISTOCHEMICAL STUDY OF THE CASES OPERATED IN MAXILLOFACIAL SURGERY CLINIC IN TARGU MURES

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Background: Tumors of the parotid glands are a non-frequent but extremely important pathology in OMF surgery. The incidence of salivary tumor pathology is 1-3 cases per 100.000 in European population. In malignant parotid gland tumors, immunohistochemistry is commonly used to show aggressive characters, neoplasm development, and to modulate the therapeutic indication. The purpose of this paper is to present multiple features regarding PGTs, in order to provide further insights on this pathology. **Material and methods:** The study was performed in OMF Surgery Clinic in Targu Mures between 2010-2017. Using GraphPad and databases done in Excel by binary index algorithm, we have made multiple correlations between the analyzed elements in the observation sheets and the histopathological bulletins. **Results:** There are 23 cases of malign parotid tumors, the most common are Acinar Cell Carcinomas (21.73%), Mucoepidermoid Carcinomas (17.39%) and Squamous Cell Carcinoma (17.39%). Of all the correlations we made, a statistically significant correlation proved to be between age and malignancy (p = 0.0004). Regarding the immunohistochemical study, statistically significant correlations regarding the risk of malignancy were found in the case of 7 markers of the total of 12 analyzed: Cytokeratin 7 (p <0.0001), Ki67 (p = 0.0482), p63 (p <0.0001), Pancitokeratin (p = 0.0115), CTK AE1.AE3 (p <0.0369). The correlation between immunohistochemical marker and malignancy is not statistically significant in the case of: Mammaglobin, CD 117, Vimentin, SMA and CTK. **Conclusions:** Of the 12 markers studied, 7 of them have a very high risk of being highlighted with great accuracy in malignant tumors. The highest risk of malignancy exists in tumors with overexpression of CTK 5/6 and Pancitokeratin. The lowest risk of malignancy is shown in salivary gland neoplasms which highlights Mammaglobina and SMA. The most expressive marker is p63, Ki-67 and SMA, but according to statistical analysis, only the first 2 presents a clear risk of malignancy.

Keywords: parotid gland tumors, immunohistochemistry, histology

STATISTICAL STUDY OF MALOCCLUSION WITH AESTHETIC IMPACT IN A POPULATION OF CENTRAL ROMANIAN REGION

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Background: The aim of this study was to evaluate the prevalence of malocclusions with aesthetic impact in a population who asked for orthodontic treatment in Mureş, Covasna and Harghita counties. **Material and methods:** We did a retrospective study, analyzing the files and dental cast of 417 patients aged between 12 and 29, between 2010 and 2013. Inclusion criteria: clinically healthy patient, without orthodontic treatment in antecedents.A number of 349 patients, male and female were included in this study.We analysed the presence of malocclusions with aesthetic impact and the distribution of these according to sex and origin. **Results:** Out of 295 patients with malocclusion, 17,29% have class I Angle with crowding; 7,80% have class I Angle with spacing,

38,64% class II div.1; 27,12% class II div 2; 9.15% class III. We have a greater frequency of class I and II malocclusion for females in comparison with males: class I with crowding: 11,53% females, 5,76% males; class I Angle with spacing: 5.08% females,2,71%males; class II div.1: 25,76% females, 12,88% males; class II div 2: 18,98% females, 8,14% males. Class III malocclusion were more frequent for males: 55.56%. 78.31% of the cases from urban areas presented one of the three dental classes. From the statistical calculations (p=0,1911295), we did not found a significant connection statistically speaking between the type of malocclusions and the sex of the patients. We found that all three types of malocclusions had a higher frequency at females coming from urban areas. **Conclusions:** There is a greater frequency of malocclusions, except class III at females, although statistically insignificant.There are no significant differences statistically speaking between the area of origin and the type of malocclusion, and between the type of malocclusion at females or males and their area of origin.

Keywords: orthodontics, pediatric dentistry, malocclusion, angle classification, prevalence

ENT (OTORHINOLARYNGOLOGY)

MANAGEMENTON CI COMPLICATIONS

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Background: The cochlear implant is the most modern method of treating severe, and profound congenital and post-lingual neurosensorial hearing loss. Preoperative imaging evaluation of patients is essential for establishing therapeutic behavior and surgical approach for the prevention in advance of surgical complications . The literature shows that there are several complications of this type of surgery **Material and methods:** In ENT Department ,during the period 2014-2017 were made 38 cochlear implants. Implanted patients were between 10 months and 45 years of age. The cochlear implant indication was given for congenital and post-lingual hearing loss. The preoperative evaluation involved imaging, audiometry and auditory evoked potentials. **Results:** Of the total of surgical interventions performed in 3 patients, postoperative complications were also evaluated, as described the specialized literature: Gusher Syndrome associated with inner ear malformations, peripheral facial paresis, occurred late, 1 month postoperatively due to exposure in the patient's cold and extrusion of the implant at 2 years and 6 months after implantation as a result of trauma to the implanted region. **Conclusions:** The cochlear implant, with great benefits for the social integration of the patients with hearing loss, is a surgery that can also present postoperative complications. Evaluating and informing patients is the duty of the attending physician. The benefit-risk ratio, makes the indication of this type of surgery also for patients with anatomical cochlear malformations, where the risk of intraoperative and postoperative complications is higher.

Keywords: cochlear implant, Gusher Syndrome, profound hearing loss, implant extrusion, cochlea malformation

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QUALITY OF LIFE - ESSENTIAL FACTOR IN ESTABLISHING THE COST-BENEFIT RATIO TO COCHLEAR IMPLANT PATIENTS

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Background: The treatment of severe and profound neurosensorial hearing loss by cochlear implant is currently the most modern, routinely used method in the world. Introduced in 1986 in Australia, the cochlear implant dipped a great deal in the last time around the world, but especially in Romania. The high costs of medical devices have made the implantation criteria extremely strict, both in adults and especially in children. The aim of the study is to observe the postoperative benefit of the cochlear implant. **Material and methods:** In ENT Department were made 38 cochlear implants, both unilateral and bilateral, in adults and children. In order to evaluate the benefit of the cochlear implant, a questionnaire was used that looked at the quality of life, solitary integration, family integration, the degree of satisfaction and enjoyment of the implanted patients, and the perceptual mode of the surgery by the family. The study is a prospective postoperative assessment at 1 year or more of implantation. **Results:** The statistical evaluation of self-confidence, social integration, happiness and satisfaction in adults and children after unilateral and bilateral implantation reveals the following: communication, functioning, well-being, education, much improved after cochlear implant. **Conclusions:** The high cost of the cochlear implant justifies the need for careful documentation of implanted patients as well as the exact setting of the surgical indication in order to obtain the highest benefits after implantation.

Keywords: cochlear implant, happiness, family integration, social integration, quality of life

EPIDEMIOLOGY

POTENTIAL HUMAN HEALTH EFFECTS IN EXPOSURE TO NANOMATERIALS: ELEMENTS OF A SCREENING STRATEGY

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Background: Nanoparticles have extensive commercial and industrial applications with direct human contact, such as TiO2 nanoparticles in paints, food and cosmetic dyes, or indirectly by the use of nanoparticulate materials in the environment.**The main purpose.** Comparative evaluation of HNE (4-hydroxy-trans-nonenale) and MDA (malondialdehyde) as markers of oxidative stress in workers exposed to nanoparticles versus control to target the biological response of nanoparticles. **Material and methods:** The research was based on a cross-sectional study, which included three groups: group 1 - consisting of 20 high exposed workers, control group 2 -consisting of 20 persons working at the same factory but with a moderate exposure (personnel who work at the offices) and the control group 3, consisting of 18 selected office workers outside the factory. For all subjects we performed the occupational history based on a specific questionnaire, smoker status and alcohol consumption. Blood tests were performed to determine the level of MDA and HNE as biomarkers of the oxidative stress. **Results:** The comparative evaluation of HNE on the three lots revealed a statistically significant (p-0.01) greater than the control group 3 (14.19 ng/ml) in the 1st group (20.92 ng/ml) . We did not identify differences between the 1st group and control group 2. For the MDA parameter, the values were statistically significantly (p-0.01) higher for group 1 (median = 199.5 ng/ml) than control group 2 (median = 71.06 ng/ml). **Conclusions:** HNE and MDA can be used as biomarkers of exposure to nanoparticles. HNE and MDA are not associated with significant clinical parameters, but they are clearly influenced by the exposure itself. **Acknowledgements:** Internal research grant, project no.235/06.01.2016, beneficiar: Universitatea de Medicină şi Farmacie, Tîrgu Mureş/financed by Asociația Centrul Mediconsult Tîrgu Mureş

Keywords: nanoparticle, nanotoxicity, workplace exposure, MDA, HNE

HEMATOLOGY

MYELODISPLASTIC/MYELOPROLIFERATIVE NEOPLASMS- PRESENTATION OF 3 CASES

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Background: Myelodysplastic/myeloproliferative neoplasms (MDS/MPN) are a group of myeloid neoplasms with clinical, laboratory and morphologic overlapping, hybrid, myelodysplastic and myeloproliferative features. They lack entirely unique molecular markers, patogenesis is still unclear and no prognostic scores or specific therapeutic strategies have been found. **Material and methods:** We are presenting three cases with very similar aspects at the first presentation, mimicking chronic myeloid leukemia(CML). After the laboratory, morfo-pathologic, cytogenetic and molecular evaluation, the final diagnoses were MDS/MPN subtypes: atypical CML (aCML), unclassifiable MDS/MPN (uMDS/MPN) and chronic myelomonocytic leukemia (CMML) respectively. **Results:** Case A:42 years old male, known with Down syndrome, presents with severe anemia, bone pain, and splenomegaly. Laboratory: mild leucocytosis, severe normochromic-normocytic anemia, low platelets count, left shift, circulating immature myeloid cells, basophilia 3%, blasts 4%, no leukemic hiatus. Bone marrow biopsy: suggesting chronic myeloid leukemia(CML), bilinear myelodysplastic(MDS) features, reticulin fibrosis. Both bcr/abl1 rearrangement and other chronic myeloproliferative neoplasms(MPN)-associated mutations (cMPL, CALR, JAK2) were lacking. First diagnostic suspicion: CML, final diagnosis: MDS/MPD-aCML. Case B:72 years old male, presents with severe anemia and splenomegaly. Laboratory: leucocytosis, severe normochromic-normocytic anemia, mild thrombocytopenia, left shift, circulating immature myeloid cells, basophils 4%, no leukemic hiatus, blasts 3%, bone marrow: hypercellular, aspects suggesting CML, blasts 10%, bilinear myelodysplastic features; bcr/abl1 and MPN-associated mutations not detectable. First diagnostic suspicion: CML or MDS, final diagnostic: uMDS/MPN. **Case C**: 78 years old male presenting also with splenomegaly, severe anemia, leucocytosis, left shift, basophilia 3%, monocytosis 20%(4410/mm3), blasts 3%, no leukemic hiatus. Bone marrow: hypercellular, bilinear myelodysplasia and red cell line hypoplasia, blasts 4%, bcr/abl1 and MPN-associated mutations undetectable. Final diagnosis: CMML1 with red cell lineage hypoplasia. For all three cases, treatment consisted mainly of substitution, cytoreduction (hydroxycarbamide or low-dose cytosin-arabinoside) and complications/comorbidities management. **Conclusions:** Both diagnosis and treatment of MDS/MPN entities are challenging. Close monitoring, proper substitution and cytoreduction are mandatory.

Keywords: unclassificable myelodisplastic/mieloproliferativ, atypical chronic myeloid leukemia, chronic myelomonocytic leukemia

CHRONIC MYELOID LEUKEMIA IN VERY EARLY LYMPHOBLASTIC BLASTIC CRISIS OR DE NOVO PH1 POSITIVE ACUTE LYMPHOBLASTIC LEUKEMIA- CASE REPORT

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Background: Blastic phase (blastic crisis-BC) of chronic myeloid leukemia (CML) usually develops after years of evolution and is in today era of tyrosine kinase inhibitors-TKI treatment very rare. BC is mostly myeloid or monocytic but around 30% may be lymphoblastic to. Occasionally BC of CML is a sudden onset and very few cases are in BC at the time of diagnosis. There are some opinions that Philadelphia chromosome-positive acute lymphoblastic leukemia (Ph1+ ALL) represents a truly d`emblee BC of a CML rather than a de novo one. **Material and methods:** We present a patient with chronic myeloid leukemia in very early lymphoblastic blastic crisis or de novo Ph1 positive acute lymphoblastic leukemia. **Results:** 72 years male patient first presents (July 2017) with anemia and splenomegaly. Laboratory: leucocytosis (86680/mm3), left shift without leukemic hiatus, immature myeloid precursors, basophilia 2%, low blast count (1% peripheral blood-PB and 4% bone marrow-BM), mild anemia and thrombocytopenia, low alkaline leucocytic phosphatase score (18), bcr/abl transcript positive (59%). Positive diagnostic: CML; TKI therapy (dasatinib) was started. After just 3 weeks of treatment, the patient presents with severe thrombocytopenia and

bruising; reevaluation: pancytopenia, low blast count in PB and BM. TKI was first stopped and then per protocol restarted. October 2017: patient still in good condition but with splenomegaly, significant leucocytosis - over 200.000/mm3, left shift, no basophilia, high PB and BM blast count (immunophenotype pre B-ALL), mild anemia and thrombocytopenia. Bcr/abl transcript still positive but just 46%; tyrosine kinase mutations analysis is pending. Induction ALL therapy was started and is ongoing. **Conclusions:** Questions: There was a very early lymphoblastic CML-BC or a misdiagnosed Ph1-ALL from the beginning? Are there two different neoplastic clones, the more aggressive one selected by TKI treatment? Did the clone develop a/some acquired mutations that induced resistance to TKI therapy?

Keywords: chronic myeloid leukemia, lymphoblastic blast crisis, Ph1 positive acute lymphocytic leukemia

ESSENTIAL FEATURES IN CLINICAL EVOLUTION IN PATIENTS WITH MYELOMA

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Background: Myeloma comprises 10-15% of all hematological neoplasms. There are many complications in clinical evolution and the quality of life of these patients is deeply affected. **Material and methods:** We analized the patients admitted in Internal Medicine 1 Clinic between 1 January 2015 and 30 October 2017. We used the WHO diagnostic criteria. **Results:** We identified 98 patients. All patients were simptomatic at diagnosis, with 18 patients having plasmocitomas, 27 were with renal insufficiency at diagnosis and 73 had anemia. It was very unusual, only in 4 cases, that the patients were diagnosed after periodic laboratory examinations or recommended for another disease. In our cohort it was only one case of plasma cell leukemia. Several patients had in the course of their disease plasmocitomas of the bone or the soft tisuues. The patients were treated with bortezomib based regimens, mostly bortezomib-dexametazon, with or without cyclophosphamide, bortezomib-melphalan-prednison, VAD (vincristin-farmarubicin-dexametazon) or only with the association of melphalan with metylprednisolon. The response to treament was variable, with 5% complete remissions, 58% partial remsissions, 24% stable disease and 13 refractory disease. **Conclusions:** Morbidity is increased in these patients, mostly due to renal failure. The new agents should be incoporated in new treatment strategies. Cytogenetic risk evaluation and an increased number of patients reaching the autotransplant will increase the overall survival in myeloma patients.

Keywords: myeloma, new agents, cytogentic risk

HYGIENE

THE PERSONAL HYGIENE OF MEDICAL STUDENTS IN SOME HOSPITAL UNITS

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Background: The aim of staff's hygiene in the hospital is to provide quality care to patients and adequate security for those who work there, by reducing and halting the spread of infections. Hospital clothing protects against presumably infected, pathogenic contaminants both amongst the medical staff and the patients. Due to pathogenic agents on the skin surface, in the spread of infection the most common mediator is the hand. Therefore it is extremely important to keep a proper hand hygiene. Our goal in this study was to assess whether students respect the rules of hospital dressing, and to study how often are washing their hands before and after contact with their patients. **Material and methods:** The compliance of hospital clothing regulations and hand hygiene were observed for several weeks among the medical students in various departments of the emergency hospital in Târgu Mureş. We observed the hand washing "habits" of students in three situations: before and after the examination of patients, respectively after the contact with the patient s surrounding (bedding, pijamas). The collected data were introduced into Excel table and proper statistical analyses were made. **Results:** 204 students were surveyed, 40.1% boys and 59.9% girls. 98.5% of them respected the hospital clothing regulations. Before examination 42 (20.58%) students washed their hands with water, soup and hand disinfectant. After examination 82 students washed their hands. Out of 82 students 10 (4.9%) washed their hands only with water, 72 (35.29%) used soup and disifectant. The most of the students (94 persons, 46.07%) washed their hands after having contact with the patient s surrounding. **Conclusions:** Based on the collected data, we conclude that students wear appropriate clothing in the hospital, but they are neglecting hand wash in a high proportion. Therefore it should be put more attention in personal hygiene prevention in hospital.

Keywords: personal hygiene, hand wash, medical students, hospital units

KNOWLEDGE, ATTITUDES, AND PRACTICES REGARDING ELECTRONIC CIGARETTES AMONG GRADE FIVE STUDENTS FROM TIRGU MURES, ROMANIA

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Background: The aim of our study was to assess the knowledge, attitudes, and practices regarding e-cigarettes among grade five students from Tirgu Mures, Romania. **Material and methods:** The sample included 231 grade five students from Tirgu Mures, Romania. The students participation was voluntary. Data were collected using an anonymous questionnaire. The study was conducted with the approval of the County School Inspectorate and the school principals. **Results:** The mean age of the respondents was 11 years. Virtually all students knew about e-cigarettes and most of them have learned about the products from shopping areas and internet. Lifetime ever use of e-cigarettes was 6.1%, while last 30 days use was 1.3%. The most frequently declared reason for trying e-cigarettes was curiosity. While 18.2% of the students believed that e-cigarettes were less harmful than conventional cigarettes or not harmful at all, 23.4% believed they were equally harmful, and 16.9% believed they were more harmful. A little more than 40% of the students did not know how harmful the e-cigarettes were. 16.5% of the students actively sought information about e-cigarettes and the most frequently used information sources were the internet and the parents. Among the most trusted sources of information were considered medical doctors, the Ministry of Health, and relatives. 93.1% of the students declared they will definitely not try using e-cigarettes during the next year. **Conclusions:** Although virtually all grade five students in the studied sample knew about e-cigarettes, only a few of them have ever tried e-cigarettes and even less were actual users. Most of the students did not have an opinion about the harmfulness of e-cigarettes and few of them have actively sought information about the products. Up-to-date adolescent tobacco prevention programs should address e-cigarette use and should employ the influence of those information sources that are most trusted by secondary school students.

Keywords: electronic cigarettes, adolescents, electronic nicotine delivery devices, smoking

THE STUDY OF MEDICAL ORIGIN WASTE MANAGEMENT SYSTEM IN ROMANIA

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Background: Our purpose was to study the periodic assessment and to promote the national legislation on the management of hazardous and non-hazardous waste resulting from medical activity in order to protect health and to prevent illness from the living environment. **Material and methods:** There were studied different reports completed by the territorial public health authorities to the Regional Public Health Authority Centers (CRPS Iasi, Mures, Cluj, Timisoara) and National Institute of Public Health (INSP Bucuresti). There were centralized and statistically processed the data reported by CRSP Mures and completed the national database of waste resulting from medical activity at National Institute of Public Health and National Center for Monitoring of Risks in the Community Environment, Bucuresti, years 2015, 2016, 2017. **Results:** There were centralized the quantitative and qualitative data and statistics determined in waste management system and resulted from medical activity having the aim to reduce the risks associated with hazardous waste management practices in sanitary units. The strategical goal of medical origin waste management system in Romania is to reduce the waste quantities by 25%. **Conclusions:** It is concluded that the Romanian waste management system resulting from medical activity should be respected and improved to have a more efficient medical origin waste management.

Keywords: waste management, medical activity, national legislation, health authorities

SARCOPENIA AND REGULAR EXERCISE. DOES IT MATTER?

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Background: The progressive, age-related loss of muscle mass and function is commonly seen in general communities, especially, as the aging of societies is progressing worldwide. Physically inactive people can lose more than 1% per year of their muscle mass after the age of 50. **Material and methods:** We compared elderly people (mean age 71.77 years +/-7,362 SD, gender distribution 76% female) with regular exercise and active mature athletes with same aged healthy people, with a sedentary lifestyle. For measuring muscle performance, we used dynamometer for grip strength and Short Physical Performance Battery for muscle performance. **Results:** Physically active group had significantly better results, in both measurements: grip strength (p=0.04) and SPPB (0.02). **Conclusions:** Regular, long-term physical activity seems to preserve muscle strength and physical function.

Keywords: sarcopenia, elderly, exercise, muscle strength

THE PHYSICIAN'S ROLE IN PREVENTING AND QUITTING SMOKING

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Background: World No Tobacco Day is celebrated every year on 31st May, representing for smokers around the world an opportunity to reconsider the reasons why they use this vice and try to give up. Romania has started since 2009 to implement the main smoking control policies, united under the acronym MPOWER. **Material and methods:** In our study there are discussed the results of some national and international studies regarding smoking as risk factor and cause of hospitalization, tobacco consumption of doctors and their role in prevention. **Results:** Tobacco consumption in Romania is still high with a global prevalence of 27% in 2014, meaning about 5 million smokers over 15 years old. From the total amount spent for acute patients hospitalization, 28% is due to smoking. It is estimated that 15-20% of smokers are unaware of the implication of smoking in the etiology of stroke, acute miocardic infarct or lung cancer. The number of people who manage to quit smoking while receiving support from medical professionals is significantly higher than those who manage to quit smoking alone. **Conclusions:** Romania has made a notable leap in last years on the European tobacco control scene. Hospitalization can be reduced if people quit smoking.

People's awareness of smoking effects can be seen as a contribution to socio-economic development and progress in which health promoters are involved.

Keywords: smoking, tobacco control, physicians, role in prevention

THE ANALYSIS OF SOME MINERAL WATER SOURCES IN HARGHITA COUNTY

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Background: Most of mineral water sources in Romania are found in Harghita county where there are three big mineral water production companies. Mineral water consumption is usual in this region. **Material and methods:** There were compared the characteristics of the following mineral water sources: Tusnad - source FH 35, Perla Harghitei - source F1 and Borsec - source Borsec. Data provided by local public health authority (DSP Harghita) contain chemical, microbiological and radioactivity measurements made between 2008-2016, following the Government Decision 1020 from year 2005. The chemical analysis consists of next indicators: conductivity, pH, total hardness, oxidability, ammonium, nitrates, nitrites, organic substances. These analyses were performed once a year in the laboratory of public health authority from Harghita county. **Results:** The electrical conductivity from studied sources was < 2500 uS/cm, pH values were between 6,01- 7,61. The ammonium content of every sample was under 50 mg/l, but due to the endogenous origin of ammonium a quite high percentage was over 0,5 mg/l. Except of one analysis, microbiological and radiochemical data respected the admitted limits. **Conclusions:** The analysed mineral water sources can be consumed even results indicate difference between sources. To maintain the water quality, severe sanitary protection areas are provided for these sources.

Keywords: mineral water analysis, Harghita county, public health authority

INTERNAL MEDICINE

THE RELATIONSHIP BETWEEN DIFFERENT PARAMETERS OF BLOOD PRESSURE VARIABILITY

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Background: The role of blood pressure (BP) load as a parameter to identify severe ambulatory hypertension and to predict target organ damage is controversial. Whether elevated BP load is associated with higher BP variability has not been established. To investigate the relationship between different parameters of 24-hour derived blood pressure monitoring (ABPM) reflecting abnormaly elevated BP and BP variability. **Material and methods:** The study was conducted at the County Clinical Hospital, Department for Internal Medicine IV and included 100 treated hypertensive patients. We performed 24-hour ambulatory BP monitoring with validated devices (ABPM 04 and 05, Meditech Ltd, Hungary®). Measurement s frequency was set at 20 minutes daytime and nighttime. The 24-hour BP variability was assessed by the formula of average real variability (ARV) and by standard deviation (SD). The parameters used to define abnormally elevated BP, BP load and percent time elevation (PTE%) were edited automatically by the software. **Results:** Mean age was 61,42±12,66 years, there were 44 male, 56 female patients. Among study populations 34 patients were dipper. We found positive correlation between systolic BP load and ARV, p=0.01, (CI: 0.06063 to 0.4291, r= 0.2541). No correlation was found between PTE and ARV, p=0.9. We neither found correlationn between systolic BP load and SD, p=0.3 nor between PTE and SD, p=0.22. **Conclusions:** We found that patients with elevated BP load might develop also an increase in BP variability. Therefore in the correct management of patients with hypertension parameters of elevated BP values and those reflecting its variability should be assessed.

Keywords: hypertension, BP variability, BP load, ABPM

TOPHACEOUS GOUT MANAGEMENT IN AN ADULT PATIENT WITH CONGENITAL HEART DISEASE, SEVERE PULMONARY HYPERTENSION AND CHRONIC RIGHT HEART FAILURE – A CASE REPORT

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Background: Gout is a common disabling disease in Europe. Despite effective treatments, gout`s management remains suboptimal. Hyperuricemia/secondary gout can occur in patients with congenital heart disease associated with polycythemia, and is recently demonstrated in pulmonary hypertension patients. Recent studies suggest hyperuricemia has a role in mediating local vasoconstriction and pulmonary vasculature remodeling. **Material and methods:** We present a 41 years old male with secondary chronic tophaceous gout and significant chronic heart disease (ventricular septal defect surgically corrected, pulmonary hypertension, atrial fibrillation, heart failure), admitted in for cardiac evaluation and specific treatment. Pharmacological treatment of heart failure included diuretics, beta-blockers, oral anticoagulation. Patient`s history revealed chronic tophaceous gout, with 8 to 10 arthritis attacks/year, medical records confirmed severe intolerance to Allopurinol. On presentation, the patient presented gout arthritis attack, with left knee impairment and local inflammatory signs. Clinical examination revealed multiple tophi of various dimensions and localizations. Serum uric acid (UA) level: 9.48 mg/dl, with positive inflammatory markers and mild elevation of direct bilirubin and creatinine. **Results:** Two targets were aimed: gout attack treatment and chronic therapy targeting lowering UA values and prevention of recurrent attacks. After cardiovascular evaluation gout attack therapy with Colchicine and NSAID was started. Chronic treatment was initiated with Febuxostat and low dose Colchicine. Gout attack improved completely after acute phase treatment. After 6 months of treatment just one minor gout attack was reported and UA values decrease to 7.35 mg/dl. Patient was referred for surgical excision of left knee tophi. **Conclusions:** Gout management in complex cardiovascular patients should be adjusted accordingly to their cardiovascular and renal status. Treatment options should have few side effects, lowering

UA level, improve patient`s functional status, increase compliance and QOL. Lowering the levels of UA can also decrease the risk of left atrial thrombus or development of deep vein thrombosis. Interdisciplinary medical approach and management is mandatory.

Keywords: tophaceous gout, cardiovascular patient, interdisc

CAN CHRONIC HEPATITIS C BE ERADICATED? FIRST EXPERIENCE WITH DIRECT-ACTING ANTIVIRAL AGENTS IN A TERTIARY GASTROENTEROLOGY CENTER

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Background: Treatment with direct-acting antiviral agents was introduced in november 2015 in our country, with restrictive indications. We aimed to evaluate the effectiveness and adverse effects of the interferon-free regimen, in the first group of patients treated in our clinic. **Material and methods:** We performed a retrospective study including all patients that underwent interferon-free therapy in the Gastroenterology Clinic of Mures County Hospital between November 2015 and October 2016. All patients were treated with Viekirax(Ombitasvir12,5mg/ Paritaprevir75mg/Ritonavir50mg), Exviera(Dasabuvir 250mg) associated with weight-based doses of ribavirin for 12 weeks (24 in liver transplant). According to the imposed criteria, all patients were genotype 1b, grade F4 liver fibrosis, corresponding to Child Pugh A compensated cirrhosis, except for a liver transplanted patient who had F2. Complete blood count and biochemical parameters were evaluated at baseline,1 month, at the end of treatment(EOT) and 12 weeks after. Viral load was determined at EOT and 3 months after, to check if the sustained virological response(SVR) was achieved. **Results:** 42 patients were approved for treatment in our unit. 24 of them were female, the mean age was 59(46-77)years. At baseline 42.5% of patients were naive. 1 month after the initiation of treatment all patients had normal transaminase levels and 60% presented mixed-type hiperbilirubinemia. During treatment we noticed in 37.5% of patients a drop in the hemoglobin levels, that normalized at SVR. Pruritus, fatigue, diziness and cephalea were the main side effects related. There was 1 case of discontinuation of treatment at 6 weeks after initiation due to severe adverse effects (onset of encefalopaty). AT EOT and SVR all patients had undetectable viral load. **Conclusions:** Our first experience with the interferon-free regimen showed excelent results, with a SVR of 100%. Althogeter with the fibrosis stage loosening in the inclusion criteria, virus C could be erradicated in some years in our country.

Keywords: interferon-free, Viekirax, Exviera, sustained virological response, compensated cirhosis

NARROW BAND IMAGING ENDOSCOPY IN REFRACTORY REFLUX ESOPHAGITIS

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Background: The examination of normal esophageal mucosa in narrow band imaging endoscopy (NBI) reveals intrapapillary capillary loops (IPCL), as smooth running small diameter, regular capillary vessel (IPCL type I pattern). In inflammatory and dysplastic lesions, specific morphological changes (IPCL type II-V patterns) are detected. **Material and methods:** A 61-year-old female pacient underwent upper gastrointestinal narrow band imaging endoscopy for persistent gastroesophageal reflux symptoms. A severe esophagitis was detected, and PPI therapy, for one month was recommended. A follow-up endoscopy was performed by using narrow band imaging with near focus. **Results:** Erosive lesions were detected with irregular and unclear margins, with characteristic features. An ICPL type II endoscopic pattern was found, consisting in dilatation and elongation of capillaries. In some areas, the abnormal vessels lost the loop configuration, and spread in a horizontal plane (IPCL type III pattern). Multiple biopsies were taken and revealed only granulation tissue. **Conclusions:** Various vascular changes detected on NBI endoscopy may be difficult to be quantify. Multiple biopsies with histopathological assessment remain the gold standard for an accurate diagnosis in unclear cases.

Keywords: NBI endoscopy, intrapapillary capillary loops, refractory reflux esophagitis

TRIGGER FACTORS FOR DEVELOPMENT OF ACUTE PULMONARY EDEMA IN THE HEART FAILURE CASUISTRY OF 2ND INTERNAL MEDICINE CLINIC TARGU-MURES

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Background: APE is a frequent medical emergency, characterized by severe dyspnea and orthopnea and pulmonary stasis. Purpose: To identify the trigger factors for APE; to study the associated diseases and their frequency; to present the treatment applied to the various trigger factors of the comorbidities. **Material and methods:** Retrospective study 2nd Internal Medicine Clinic of Targu-Mures between January 2013 and November 2016. Inclusion criteria: patients with chronic heart failure complicated or not with acute pulmonary edema. The study group consisted of 219 patients, divided in 2 subgroups: 100 patients with chronic heart failure without APE , 119 patients with chronic heart failure complicated by APE. Diagnosis: -Anamnesis -Clinical examination -Laboratory studies -ECG -Echocardiography -Thoracic X-ray For the statistical analysis of the data we used the following programs: Microsoft Excel, SPSS, GraphPad **Results:** Patient distribution according to sex: 51% male, 49% female Age: most patients were in the 71-80 year interval (45 male, 42 female) Comorbidities: most frequent arterial hypertension (85%), followed by silent cardiopathy (56%) and type 2 DM (37%) Trigger factors: most frequent tachyarrhythmia (60%), atrial fibrillation (40%), hypertensive crisis (40%), pneumonia (33%) Treatment: For APE patients most frequent loop diuretics (82%), ß blockers (75%) and antiplatelet agents (71%), for control group ß blockers (61%), loop diuretics and antiplatelet agents (47%) **Conclusions:** The most frequent trigger factors are tachyarrhythmia, hypertensive crisis and pneumonia. Our data is in accordance with that from the specialty literature, thereby the treatment applied in heart failure (ß blockers, ACE inhibitors, diuretics) has favorable effects and can prevent the development of acute pulmonary edema. Final conclusions: The early detection and correction of the trigger factors for APE is extremely important, as well as the early diagnosis and adequate treatment of the comorbidities. In this way we can prevent the development of acute pulmonary edema, which is a life-threatening clinical entity

Keywords: acute pulmonary edema, trigger factors, tachyarrhythmia, hypertensive crisis, pneumonia

NEONATOLOGY

LATE ONSET CRITICAL COARCTATION OF THE AORTA IN EXTREMLY PRETERM INFANTS - CASE PRESENTATION

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Background: Coarctation of the Aorta may be critical in the neonatal period if its located pre or juxtaductal, and could present symptoms when the ductus arteriosus closure decreases blood flow in de descendent Aorta.The closure of the ductus arteriosus often times is delayed in preterm infants. **Material and methods:** The authors present the unrelated cases of two preterm infants with late onset critical coarctation of the Aorta **Results:** Case 1: S.B. a 28 weeker male premature infant admitted to the neonatal intensive care unit with mild respiratory distress syndrome, stable on CPAP within the first weeks of life. A heart murmur detected on the third week of life was interpreted as persistent ductus arteriosus, due to lack of other patognomonical signs such as acidosis, decreased diuresis, differencies of upper versus lower extremities blood pressure. Echocardiography detected critical coarctation of the aorta, with slightly constricted ductus arteriosus, and PGE1 infusion was introduced. The correction of the coarctation was performed at the age of 12 weeks due to early signs of congestive heart failure.Case 2: V.V. 28 weeker male infant, second twin, admitted to the neonatal intensive care unit with respiratorz distress syndrome. After an initial good evolution, on week 3 of postnatal age, a heart murmur was detected along with slight decrease of diuresis and frequent apneic spells. Echocardiography showed critical coarctation of the aorta with constricted ductus arteriosus. PGE1 infusion was started. He underwent corrective surgery at 2.5months of age. **Conclusions:** Ductal closure in premature infants often times is delayed, causing heart failure due to ductal steal syndrome. In the presence of coarctation, ductal patency is mandatory in order to maintain proper blood flow in the descending aorta. Symtomes are not specific and if echocardiography is not available, routine medication for ductal closure may worsen the hemodymanic state of the infant. Cardiac screening is recommended especially in prematures.

Keywords: neonatology, congenital heart defects, ductus arteriosus, preterm, coarctation of the aorta

OCCUPATIONAL HEALTH

CARDIOVASCULAR RISK AND OTHER NEW ASPECTS IN CHRONIC INORGANIC LEAD INTOXICATION – EPIDEMIOLOGICAL STUDY

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Background: The severity of the lead poisoning symptoms, years ago, was correlated with the intensity of the exposure, untill now, when the genetic polymorphism proved to be the responsible for the toxicokinetics in the human organism. Another aspect of a recent study is the lead s cardiovascular risk, that can occur even under 40 µg/dl blood level, considering a series of the newly discovered physiological aspects. Also, the medical literature does not speak about a certain exposure limit for the population. The Corund area ~6000 citizens, famous for traditional pottery, combines various types of pollution: professional exposure, but also the family member s exposure since the workshop is close to their living area and the lack of sewerage. The proof for lead exposure are the clinical cases from the Occupational Medicine Clinic from Tîrgu Mureş and also from Nr I. Pediatrics Clinic, the existence of two minor cases. **Material and methods:** The existing environmental studies between 2001-2017 from de DSP Harghita archive does not show the existence of lead determination. It has been analyzed the morbidity reports from the general practitioner s office in Corund between 2014-2016, which showes a significantly higher risk for some diseases, then another location with the same demographic and social aspects but without traditional pottery - e.g. Remetea, Harghita county. **Results:** Here are some of the results: hypertension OR=3,81, IC95% 3,357-4,184, p<0,0001; chronic ischemic cardiopathy OR=1,436, IC95% 1,219-1,691 p<0,0001; neuropsychiatric disorders- neurotic disorder OR=3,42, IC95% 2,81-4,17, p<0,0001; 3,41-4,26, p<0,0001; but also metabolic disorders- calcium deficiency OR=17,89, IC95% 7,87-40,69, p<0,0001; dyspepsia OR=11,33, IC95% 8,97-14,30, p<0,0001; had a higher risk among the citizens from Corund. **Conclusions:** We consider necessary the toxicological evaluation for the proper health risk assessment on Corund s population, by correlating data from morbidity data. An evaluation of serum lead levels in terms of cardiovascular risk would mean a new challenge.

Keywords: inorganic lead, exposure, cardiovascular risk, arterial hipertension

OPHTHALMOLOGY

OCULAR SURFACE ASPECTS AFTER PHACOEMULSIFICATION IN PATIENTS WITH AUTOIMMUNE DISEASES

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Background: The aim of our study was to determine eye surface changes after cataract surgery in patients diagnosed with autoimmune diseases. **Material and methods:** 14 patients were examined before surgery and 1 month postoperatively. Slit-lamp biomicroscopic examination, visual acuity and qualitative and quantitative tear film aspects were evaluated. **Results:** 1 month after surgery an increase of dry eye signs and symptoms was noticed in 8 patients and corneal changes in 6 cases. Postoperatively, a statistically significant decrease was revealed in tear film break up time compared with preoperative values. **Conclusions:** In patients with autoimmune diseases, pre and postoperative treatment cause a more severe ocular surface disease after surgery than preoperative status. Visual prognosis of patients with dry eye depends on optimal therapy and appropriate monitoring of ocular surface damages.

Keywords: autoimmune disease, cataract, ocular surface, tear film

CLINICAL STUDY OF SURGICAL TREATMENT DIFFICULTIES RELATED TO ZONULAR ASPECTS DURING PHACOEMULSIFICATION PROCEDURES

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Background: Zonular laxity and zonulolysis are favored by circumstances such as pseudoexfoliation syndrome, myopia, age, hypermature cataracts, previous ocular surgery and trauma. **Material and methods:** We performed a retrospective study including 50 patients with zonular laxity and zonulolysis who underwent phacoemulsification procedure for cataract. **Results:** The etiology of the disorder was age, pseudoexfoliation, myopia and trauma. Surgeries had a high degree of difficulty, therefore capsular tension rings were needed in 10 cases. **Conclusions:** Zonular changes can sometimes lead to intraoperative surprises. Their surgical approach is possible with appropriate equipment and adequate experience.

Keywords: cataract, phacoemulsification, zonula

ORTHOPEDICS

ARTHROSCOPIC MENISCAL REPAIR - MID TERM RESULTS

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Background: To evaluate the mid term results of the arthroscopic suture i n longitudinal meniscus lesions in the red-red and red-white zone **Material and methods:** 46 patients were evaluated after 8 years that underwent arthroscopic suture (inside-out technique) of the medial meniscus and were follow up to 36 months.23 patients had aditional ACL tears and we make the reconstruction surgery in the same time using hamstring method. The medication was same for all the patients and they use a rehabilitation protocole different if they have only meniscus tears or combined with ACL tear. **Results:** Patients were re-examined and yhe average Lyshol score was 93.We have 5 patients who after 3 months need partial meniscectomy.The rwst of the patients returned to their former activities after 6 months period,including those who underwent an ACL surgery. **Conclusions:** In case of the lomgitudinal ruoture of the medial meniscus in red-red and red-white zone arthroscopic suture has an excellent results even if there are aditional ACL tear which should be treated in the same time.

Keywords: meniscus tear, suture, arthroscopy

THE ROLE OF MESENCHYMAL STEM CELL IN FRACTURES HEALING

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Background: Stem cells in osteoarticular disorders are newly used and discussed in orthopaedic surgery. The mesenchimal stem cell is harvested from the autologus bone marrow aspirate. This tehnique is a new treatement procedure in the process of fracture healing. There are a few studies in the literature wich are discussing the effect of mesenchimal stem cells in osteoarticular disorders. Most of the studies presents results of using this treatement in bone defects. The aim of our study is to present the most relevant findings according to the effect of bone marrow aspirate concentrate in the healing process of a fracture. **Material and methods:** Authors made an evidence base analisys of the data from the literature. The studies were selected from PubMed, Medline and Web of Science. We compared the results and conclusions of the selected studies and we made our own discussion on the effect of mesenchymal stem cells in fracture healing. **Results:** We analise 62 studies wich discuss the effect of mesenchymal stem cells in traumatology and we chosed the level 2 evidence based studies according to Oxford levels of Evidence. Authors of this study has noted 16 benefical effects of mesenchimal stem cell in osteoarticular pathology. **Conclusions:** In the main part of the selected studies, authors observe that mesenchymal stem cells increaseases the bone healing and callus formation, they are helping bone modelling in callus formation and also can be used in the treatement of bony defects.

Keywords: mesenchymal cell, bone marrow aspirate, stem cells, fracture healing

ACETABULAR REINFORCEMENT RINGS IN REVISION HIP ARTHROPLASTIES

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Background: Treating large segmental acetabular defects, secondary to prosthesis loosening, is one of the most difficult challenges in revision arthroplasty of the hip. The purpose of this study was to evaluate the clinical and radiographic outcomes of reconstruction of acetabular defects with morsellised cancellous allografts and Protetim reinforcement rings. **Material and methods:** Between 2010-2016, at the IInd Clinic of Orthopaedics and Traumatology, Tg. Mures weperformed 63 revisions of acetabular components (in 53 patients) using Protetim reinforcement rings and morsellised cancellous allografts. The final evaluation was

made on 41 patients with a mean age of 60 years (30-78), 41 women and 22 men, with a mean follow-up period of 5,7 years (3,8-9,6). The osseous defects were classified according to Paprosky in type 2A -8 cases, 2B -18 cases, 2C 6 cases, 3A -24 cases and 3B -7 cases. Clinical evaluation was done using Harris Hip Score. Radiologically, the osseous allografts were considered integrated when their density was similar to the host bone. **Results:** Preoperatively, the mean Harris Hip Score was 42 points (23-67) and at the last examination it was 84 points (61-94). In 48 cases the results were excellent and good, in 8 cases they were satisfactory and in 7 cases unsatisfactory. In 53 cases we noticed radiografic signs of osseous integration of the grafts. There were 3 patients with deep infection on whom Girldestone procedure was performed. **Conclusions:** The acetabular reconstruction using morsellised cancellous allografts and reinforcement rings can provide success of revision hip arthroplasties. The rings provide immediat support for the acetabular component and protects bone grafts from excessive early stresses while union occurs thus allowing early patient rehabilitation and good long term results.

Keywords: revision hip arthroplasties, acetabular reconstruction, reinforcement rings

OUR SHORT TERM EXPERIENCE USING THE TIGHTROPE® DEVICE FOR ACUTE ACROMIOCLAVICULAR SEPARATION.

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Background: The traumatic lesions of acromioclavicular joint is commonly occurred in young and active patients, most of them due to direct fall on the shoulder. Numerous surgical techniques have been proposed to stabilize the acromioclavicular joint separation. Our purpose was to present our short term results using the TightRope® system in acute acromioclavicular joint dislocation. **Material and methods:** Between 2015 january - 2017 january, at our Orthopaedic Department we performed open reduction and coraco-clavicular ligament reconstruction with TightRope® system in 7 patients for acute acromioclavicular dislocation. All of the patients were young and active males with a mean age of 26 years. All of the patients had type III injuries according to Rockwood s classification. After the surgical procedures a sling was used for 3 weeks and then the patients started an active, controlled recovery with a full range of motion. The mean follow up period was 12 months, and the patients were evaluated clinically (using the Oxford Shoulder Score) and radiologically for loosing the reduction at 6, 12, 24 weeks after the operation. **Results:** In 5 out of 7 patients there were no loss of reduction at 24 weeks. In 2 patients the antero-posterior radiographs showed widening of clavicular tunnel with 2.5mm with an average loss of reduction of 9.7mm. At the last follow up the Oxford Shoulder Score shows 29.2 points. No intraoperative complications were noticed. 1 patient underwent revision surgery and the other one awaits for revision. **Conclusions:** Type I and II acromioclavicular separation in most of cases are treated non-operatively, but the treatment of type III injuries remains still controversial. Our short term results showed good results using a TightRope® device in acromioclavicular dislocations. This techniques is a simple, safety one and enables a rapid recovery, however a longer follow up is also needed.

Keywords: Orthopaedics, Orthopaedics, acromioclavicular dislocation, TightRope fixation

TESTING LOCALLY AVAILABLE ANTIBIOTICS IN BONE CEMENT MIXTURES

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Background: In the treatment of bone infections, we often use bone cement for implant fixation, filing the cavities remaining after debridement, spacer manufacturing and local antibiotic deposit creation. If the pathogen causing the infection is not determined respectively if the antibiogram allows us we use commercially available cement - mostly Gentamycin based. If the pathogen is resistant to the antibiotic from the pre-mixed cement, we have to use special cement. In the literature we have data for the safe mixing ratio of the components and the mechanical properties of the product but those components are not the same as the components made available by the local industry - they differ in chemical composition and even states of matter (solid, liquid). In our hands the results published in the literature are not always reproductible - we consider it important to test the effect of mixing of locally available antibiotics on the mechanical properties of bone cement. **Material and methods:** We have used a world-wide

available bone cement and we have mixed it with Cefuroxime, Vancomycin, Targocid (Teicoplanin), Clyndamicin, Gentamicin, Tienam (Imipenem/Cilastin) és Levofloxacinnal in 2 and 4g / 40g ratio and we have tested the tensile and compression strength of the resulted product. **Results:** In every case the cement has set. Serious alteration of mechanical properties of mixtures containing high concentrations or liquid antibiotics have been observed. **Conclusions:** The mixtures containing high concentrations or liquid antibiotics cannot be used for mechanical loading only for cavity filling - and for creating local antibiotic deposits.

Keywords: infection, bone cemnet, antibiotics, spacer

OUR EXPERIENCE IN THE TREATMENT OF SEVERE HALLUX VALGUS ASSOCIATED WITH DEGENERATIVE ARTHRITIS USING METATARSOPHALANGEAL JOINT ARTHRODESIS

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Background: Hallux valgus surgery is always a custom procedure. For the treatment of the hallux valgus in our daily practice we have to choose between several treatment options based on the clinical presentation, the anatomy of the deviations, the present degenerativ joint disease. In severe deformity, significant stiffness, arthritis, pain at mid-range of motion the fusion procedures are indicated. **Material and methods:** Eleven patients underwent metatarso-phalangeal arthrodesis on the firsth ray with stabilization provided by a dorsal plate and screws in the last year. In each pacient the severe hallux valgus was associtated with degenerative arthritis and subluxation of the MTP joint. In each case on the preoperativ radiographic measurements the hallux valgus angle was over 60º, the intermetatarsal angle was over 18º. The average pacient age was 67 years. In each case we stabilized the fusion of the firsth metatarso-phalageal joint in 15º of dorsiflexion, 10º of valgus, and we replaced the metatarsal head above the sesamoids. In the firsth four weeks partial weith bearing on the calcaneal region was allowed, after that partial weith bearing for the plantar region up to six weeks. They returned to normal walking after six weeks. **Results:** At the six weeks on postoperativ radiograph 9 cases had complete fusions, and 2 partial unions. The imediat postoperativ radiographic measurements the hallux valgus angle was 11º± 4º, the intermetatarsal angle was 10º± 3º, witch returned to normal values after total weith bearing. After six weaks the hallux valgus angle remaind in normal values, and the range of motion of the interphalageal joint increased. **Conclusions:** The clinical and radiological outcome of the first metatarso-phalageal arthrodesis stabilized with dorsal plate in severe hallux valgus was good and functional, all the patients returned to normal footwear.

Keywords: poster, orthopeadics, hallux valgus, arthrodesis; first metatarsophalang

SURGICAL TREATMENT OF HALLUX VALGUS

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Background: There are numerous types of surgical techniques used in the treatment of this pathology. In this study we made an evaluation of the clinical and radiological outcomes at patients who underwent to modified Chevron osteotomy. **Material and methods:** We followed for 12 moths 23 female patients with moderately to significantly increased intermetatarsal angle, average age 55 treated with modified Chevron osteotomy technique with realignment of the soft-tissue at the level of the first metatarsophalangeal joint. The American Orthopaedic Foot and Ankle Society score (AOFAS) was used for evaluation. **Results:** The average preoperative AOFAS score increased from 49.9 to 89.1 during the 12 month follow-up. The AOFAS based hallux valgus score increased significantly in all of our cases. The average preoperative intermetatarsal (IM) angle of 16° and hallux valgus (HV) angle of 31° enhanced to 11° IM angle and 12° HV angle. Sesamoid reposition was attained at 17 patients. Mobility enhancement at the level of the first metatarsophalangeal joint was described in 19 patients. In one case we had a wound healing complication, that has been treated conservatively with the use of sterile bandage till the wound heals. **Conclusions:** The modified Chevron osteotomy is an optimal and safe surgical technique in treatment of hallux valgus.

Keywords: hallux valgus, Chevron osteotomy, follow-up, intermetatarsal angle

OUR EXPERIENCE IN OPEN VERSUS PERCUTANEOUS REPAIR OF ACHILLES TENDON INJURIES

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Background: In case of the Achilles tendon injurie the treatment methods could be conservative, surgical percutaneous or open surgical. The advantages of the surgical treatment are the shorter rehabilitation period and a better functional results. The disadvantage is the postoperative infection, or wound heeling problems. The percutaneous surgery eliminates these problems, but the sural nerve injury could be a complication. **Material and methods:** In our study 25 patients were followed who had undergone surgical treatment for Achilles tendon injuries. In 8 cases we performed a percutaneous surgery and in 17 cases we used an open surgery method. The average follow-up was 6 months in all the two groups. In all cases there was a positive Thompson test, limping walk and the inability to stand on the toes. After surgery in all the cases we used a rigid casting for about 3 weeks in full equinus, and after the third week partial weight bearing were allowed and the use of a functional brace. Full weight bearing was allowed after 7 weeks. For the clinical evaluation after surgery we used the American Orthopedic Foot and Ankle Score and the Visual Analog Scale. **Results:** All the patients at the time of the last control was able to walk or climbing the stares without limping. We had no re-rupture after neither procedure. All the evaluation scores showed significant improvement, we did not experience any difference between the two groups. Despite that the most common complication after percutaneous surgery is the sural nerve injury, we have not encountered such complication. **Conclusions:** Although we had less cases treated in percutaneous way, we can say that there were no differences between the two groups in terms of the heeling process or the functions after the surgery. The advantages of the percutaneous surgery are the simplicity of the procedure and the short intraoperative time.

Keywords: Achilles tendon, percutaneous, open surgery

ACETABULAR RECONSTRUCTION USING REINFORCEMENT DEVICES AND BONE GRAFTS IN HIP REVISION –FOLLOW UP

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Background: Bone deficient acetabulum represents a challenge for surgeons when performing hip revision surgery, acetabular reconstruction can be achieved using reinforcemend devices (RD) and bone grafts. The purpose of this study is to assess the outcomes of RD usage in combination with bone allografts in Paprosky type II and III. **Material and methods:** Patients treated in the Orthopedic Clinic of Tîrgu Mureş between January 2005 and October 2015, with a minimum 2 years follow-up were included in this study. Morselised and structural bone grafts were used to correct acetabular defects, and a RD (Protetim, Hódmezővásárhely, Hungary) was used in all cases. **Results:** The mean values acquired post-operatively and at the last follow-up regarding the restoration of the rotational center of the hip by lowering it showed no significant differences. The integration of bone grafts could be seen at two years post-operatively in the majority of cases. There were no significant differences between the means obtained postoperatively and at the last follow-up for the medial acetabular wall thickness and the abduction angle of the RD. **Conclusions:** Using a Protetim RD and bone grafts in acetabular reconstruction in total hip revision surgery presented good mid-term outcomes, providing stability for up to 15 years.

Keywords: acetabular reconstruction, hip revision surgery, reinforcement device, bone graft

IS PATELLAR DENERVATION IN TOTAL KNEE ARTHROPLASTY A SOLUTION FOR POSTOPERATIVE ANTERIOR KNEE PAIN?

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Background: Anterior knee pain is a common symptom in patients who underwent total knee arthroplasty (TKA), being widely

associated with nociceptive receptors dispersed in the soft tissue surrounding the patella. Denervation of the patella using an electrocautery could provide benefits regarding anterior knee pain in TKA. **Material and methods:** 62 patients (mean age 67 years) who underwent TKA were divided into two groups; group A (34 patients) underwent TKA with patellar denervation and group B (28 patients) previously underwent TKA without patellar denervation..KSS score, range of motion (ROM) and VAS were compared pre- and postoperatively on hospital discharge day. Patients with wound complications were not included in this study. **Results:** During the hospitalisation of patients included in the study, no significant differences were observed regarding ROM, KSS score. Anterior knee pain was experienced in both groups, VAS showed a significant better result for group A when compared to group B. **Conclusions:** Patellar denervation using electrocautery during TKA can reduce postoperative anterior knee pain, further evaluation and follow-up are required in order to support these results.

Keywords: anterior knee pain, patellar denervation, total knee arthroplasty, VAS, KSS

OSTEOARTHRITIS OF THE KNEE: PRELIMINARY RESULTS IN THE TREATMENT WITH A NOVEL HYALURONAN

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Background: Multiple studies assessing the treatment of symptomatic early-stage osteoarthritis (OA) with intra articular hyaluronic acid derived products showed good results. This study aims to evaluate the effectiveness of an new hyaluronic acid-based hydrogel (Hymovis®) in the treatment of early-stage knee osteoarthritis. **Material and methods:** A prospective, single-centre, clinical trial was conducted. 35 patients with degenerative knee OA were included. Inclusion criteria: age between 45-80, radiographic Kellgren grade II or III osteoarthritis, minimum 35mm score on the visual analogue scale (VAS), pain for at least 6 months and agreement to participate. Patients received two injections at a one-week interval. Evaluator assessed the patients using Western Ontario and McMaster University Osteoarthritis Index (WOMAC) and VAS. Evaluation was performed before, at 2 and 6 months after injections. **Results:** A significant improvement on WOMAC pain subscale was observed at 6 months after the injection. At two months, pain subscale score decreased from 10.34 to 9.34. At six months a significant decrement in pain parameters compared to baseline was observed (from 10.34 to 7.72; P=0.0004). Median points on VAS significantly ameliorated after 6 months (from 7.42 to 5.73; p<0.0001). Regarding physical function, a statistically significant difference compared to baseline was observed at the end of the study (from 29.74 to 25.18; p=0.0025). WOMAC stiffness component did not differ from baseline at any time during follow-up. **Conclusions:** Pain relief installed with a delayed onset but had a prolonged duration. The novel hyaluronic acid-based hydrogel had effective results, particularly after six months post-injections and offers good short-term results in treatment of early-stage osteoarthritis.

Keywords: knee ostheoarthritis, hyaluronic acid, hyaluronic acid-based hydrogel, WOMAC score, VAS

POSTEROLATERAL CORNER RECONSTRUCTION: A CASE REPORT

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Background: Injuries of posterolateral corner are complex lesions of frontal, sagittal and transversal stabilizing structures of the knee, often associated with other main stabilizers of the knee (anterior and/or posterior cruciate ligament ruptures), with difficult treatment decisions, difficult surgical steps and difficult postoperative rehabilitation. Retrospective short-term clinical assessment of one case of posterolateral corner reconstruction, using an achilles tendon allograft, offered by the National Transplant Agency, after an ipsilateral anterior cruciate reconstruction (autologous graft). **Material and methods:** This case report reviews a diagnostic approach, details of surgical technique and postoperative management in a delayed reconstruction of a combined anterior cruciate ligament (ACL) and posterolateral corner (PLC) reconstruction. PLC reconstruction was performed at 3 months after ACL reconstruction. Clinical evaluation was performed with Tegner activity level scale in different postoperative phases. **Results:** After ACL reconstruction rehabilitation, this patient presented with an increased varus, external rotation, and recurvatum laxity (varus thrust gait, positive dial trest). Magnetic resonance imaging was performed to assess the damaged structures and eventual other simultaneous injuries. We performed PLC reconstruction (LaPrade technique). Postoperative rehabilitation included 6 weeks knee

immobilizer and hinged knee brace up to 6 months. Light sport activity was permitted after 10 months from PLC surgery (level 5 in Tegner scale). **Conclusions:** Literature shows good objective and subjective results with this technique, with concomitant reconstruction of the other damaged stabilizing structures of the knee. Long-term studies should be performed to prove efficacy of both stability and functionality of this complex surgery.

Keywords: posterolateral corner, Achilles tendon allograft, LaPrade technique, Tegner activity level scale

THE TREATMENT OF BONE INFECTIONS WITH PMMA AND INTRAMEDULLARY OSTEOSYNTHESIS COATED IN BONE CEMENT WITH HIGH TARGET ANTIBIOTIC CONTENT

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Background: The treatment of bone infections remains a challenge for the treating physician and, at the same time, a considerable financial burden. For patient, failed treatment means prolonged morbidity and frequent disability. In the Clinic of Orthopedics and Traumatology of the Mures County Clinical Hospital, a new treatment for these conditions was introduced in 2016 by the use of intramedullary osteosynthesis coated in bone cement with high target antibiotic content. **Material and methods:** This paper presents the results obtained in four cases of bone infection wich was not responsive to usual antibiotic treatment. In all cases the infection affected the long bones: one radius, one tibia, two femurs. In all four cases the bacterial strain was S. aureus MRSA and the antibiotic used was Targocid. In all cases the bone cement coating was made during intervention. At 40 g PMMA was added 2 x 400 mg Targocid. The controls were performed at four weeks after discharge then three months, six months, one year. **Results:** Although the results are in short term it looks promising. Only in one case we were forced to remove the locking screws witch have produced pain, and during this intervention the patient received three more doses of Targocid. **Conclusions:** Although this method is not a new one, this tip of application of bone cement gives a new treatment for cases witch were hardly resolved, and allows precocious mobilization of the patients and through this the affected members function is partial recovered.

Keywords: bone infections, intramedullary osteosynthesis, bone cement

THE RESULTS AFTER ONE-TIME SURGERY ON PATIENTS WITH CHONDRAL DEFECTS AND ACL RECONSTRUCTION

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Background: The anterior cruciate ligament (ACL) rupture is a well-known situation encountered especially on active people. These injuries are sometimes associated with articular cartilage defects. The cartilage problems can appear from traumatic injuries or chronic pathology, these situations can be found isolated or with other problems such as ligamentous or meniscus tears. Orthopedic surgeons are trying to solve the cartilage pathology in one-time intervention using various surgical methods. **Material and methods:** We have retrospectively analyzed a number of 30 patients which underwent ACL reconstruction. A group of 7 candidates presents chondropathy grade III-IV on Outerbridge scale. We treat this situation with Pridie microfracture technique and ACL reconstruction in one intervention. **Results:** A standardized rehabilitation protocol was applied to the patients. The group of patients with ACL reconstruction has started the recovery with partial weight-bearing at 14 days and those with chondral lesions and ACL reconstruction at 6 weeks. The LYSHOM score was > 90 to all patients at 12 months evaluation. **Conclusions:** Our study, shows insignificant differences according LYSHOM score between the two groups of patients at a minimum follow-up of 1 year. Pridie microfractures have a good outcome if done under special circumstances like defects smallest then 1 cm or femoral condyle defect. Microfractures used with scaffolds populated or not with chondrogenesis inductive cells is a debate that must pursue. New researches and improvements are vital to obtain implants with a higher biocompatibility and biodisponibility.

Keywords: microfractures, scaffolds, ACL reconstruction

PATHOLOGY

CHALLENGES IN DNA EXTRACTION FROM FFPE TISSUE

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Background: FFPE (formalin-fixed paraffin-embedded) tissue is the most common way to preserve biological material for diagnostic purposes. The integrity of DNA extracted from FFPE tissue can be widely affected due to the DNA cross-linking and fragmentation because of the formalin fixation of the biological material. **Material and methods:** DNA from FFPE tissue sections were extracted using commercial available kits: Roche High Pure FFPET kit for manual isolation, Roche and Invitrogen fully automated magnetic beads isolation from 15 preserved biological samples of colorectal cancer (from 3x5µ sections) for further molecular analysis. Quantity and Quality was measured with NanoDrop Lite (Thermo Scientific), statistical analysis was done wit Graphpad Instat Tukey-Kramer Multiple Comparisons Test. **Results:** The median value of concentration after manual extraction was 144.62±76.554 ng/µL (37.6-275.1ng/µL) with proper quality (OD: >1.8). With automated extraction the following values were obtained: Roche 11.053±10.41ng/µL (0.3-35.1ng/µL) and Invitrogen 11.073±8.1591ng/µL (0.7-29.8ng/µL). There was no statistical significance between the two automated methods ($p>0.05$), nevertheless extreme difference between both automated and manual method ($p<0.001$). **Conclusions:** Manual kits are good for a higher quantity and quality of DNA but it takes longer time to perform. With automated methods lower quantity can be obtained with the same quality, but in a shorter time and with a larger number of probes. Based on number of samples it is advantageous to use manual extraction with few materials and automated isolation with large number of probes. Manual extraction is more proper for DNA adducts studies. This paper was supported by UMF Tirgu Mures, Romania, project frame 275/11.01.2017.

Keywords: colorectal cancer, DNA extraction, DNA quantity

ELEPHANTIASIS NOSTRAS VERRUCOSA: A CASE REPORT

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Background: Elephantiasis nostras verrucosa(ENV) is a rare clinical condition associated with chronic non-filarial lymphedema due to prolonged lymphatic obstruction caused by chronic venous stasis, congestive heart failure, obesity, infections, trauma or tumors. Clinically it features impressive changes such as massive edema, mossy plaques and cobblestone-like nodules with extensive ulcerations, whereas microscopic examination reveals only minor abnormal findings. **Material and methods:** We present the case of a 61 year old man with sepsis due to severe gangrene and bilateral trophic lesions that involves the distal extremities of the lower limbs. **Results:** Macroscopic examination revealed grey to pink/brown confluent plaques with a moss-covered appearance affecting the skin of both feet from the tip of the toe to the proximal third (segment) of the lower leg, just below the knee. The lesions were symmetrical on both feet. Microscopically, pseudoepitheliomatous hyperplasia with hyperkeratosis and papilomatosis, fibrosis of the dermis and chronic inflammation were observed. **Conclusions:** Considering that various types of chronic stimulation can trigger ENV, knowledge of this entity is important in order to differentiate it from other skin conditions. Optimal patient management depends on a good patient-doctor communication and treatment strategy should be planned on a case by case basis.

Keywords: elephantiasis nostras verrucosa, lymphedema, chronic inflammation, gangrene

A PARTICULAR CASE OF LOW-GRADE PANCREATIC NEUROENDOCRINE TUMOR SHOWING HEPATIC METASTASES

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Background: The aggressivity of neuroendocrine tumors is mainly related on the number of mitoses, tumor localization and Ki67 index. **Material and methods:** The objective of the paper was to present a case of low-grade neuroendocrine tumor of the pancreatic head that metastasized at more than 10 years after diagnosis. **Results:** In a 51 year-old woman that underwent surgery for a low-grade (G1) neuroendocrine tumor of the pancreatic head in 2004 (diagnosed as a pancreatic carcinoid) and received six cycles of chemotherapy with somatostatin analogues, hepatic metastases were diagnosed in 2017. The single hepatic metastasis was identified in the 6th segment of the liver and metastasectomy was performed. Under microscope, the 35-mm metastatic tissue showed similar immunoprofile and grade as for the primary tumor. The three neuroendocrine markers synaptophysin, neuron specific enolase (NSE) and CD56 were positive and Ki67 index was below 5%. **Conclusions:** In patients with neuroendocrine tumors, independently from the tumor grade and stage, chemotherapy should be performed and long-time CT-scan surveillance is necessary.

Keywords: carcinoid, neuroendocrin tumor, pancreas, Ki67

MERKELL CELL CARCINOMA OF THE SKIN – A CHALLENGING DIAGNOSIS

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Background: Neuroendocrine tumors commonly involve the gastrointestinal tract, pancreas and lungs but are rarely encountered in the skin. The objective of the paper was to present a particular case of a tumor of the gluteal region. **Material and methods:** A 80 year-old male was hospitalized for surgically removal of a slowly-growing nodule of the skin of the gluteal region. **Results:** The histopathology analysis revealed, in the dermis and deep tissues, proliferation of small, monotonous round cells with scant eosinophilic cytoplasm and round nuclei with finely granular and dusty chromatin. The tumor cells resulted positive for chromogranin and synaptophysin but also for the epithelial markers keratin AE1/AE3 and keratin 20. The CDX2 was negative and no colorectal tumor was detected at CT-scan. The Ki67 index was higher than 80%. Based on the immunoprofile, the focally dots-like expression of Keratin 20 and clinical information, the possibility of occurrence of a metastasis from a colorectal carcinoma was excluded and the diagnosis of Merkell cell carcinoma was established. **Conclusions:** Correct diagnosis of a neuroendocrine skin tumor should be based on clinicopathological information and a possible metastasis should be firstly excluded.

Keywords: neuroendocrine tumor, Merkell cell carcinoma, skin, metastasis

EVALUATION OF A DNA EXTRACTION AND PURIFICATION PROTOCOL USING ARCHIVED THYROID SAMPLES

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Background: Archived samples represent a valuable, yet underexploited resource for retrospective, molecular genetic studies. However, obtaining an adequate genomic DNA from archives samples is challenging. In this work we present an efficient, reliable protocol for DNA extraction from archived thyroid samples that can be applied in downstream molecular analysis. **Material and methods:**

Our study included 25 formalin-fixed, paraffin-embedded (FFPE) tissues, corresponding to 25 papillary thyroid microcarcinomas (PTMC) and 11 archived thyroid FNA (AT-FNA) smears (Bethesda diagnostic categories II-IV, cell number/smear ranging from 200 to 3000). We assessed a DNA extraction protocol, based on a precipitation method, using a commercially available DNA extraction kit (MasterPureTM DNA purification kit, Epicentre). The concentration (A260) and the purity (A260/A280 ratio) of the isolated DNA was determined using a spectrophotometer. To assess the DNA quality, all cases were subject to real time PCR amplification for a housekeeping gene (GAPDH - glyceraldehyde-3-phosphate dehydrogenase) and for BRAF gene, respectively. **Results:** Using this extraction method we produced good quantity and purity DNA from all both FFPE specimens AT-FNA smears. Moreover, the GAPDH target could be specifically amplified from the isolated DNA samples in all the cases. We successfully assessed the BRAF mutation status in 24/25 PTMC cases (16 cases BRAF negative, 8 cases BRAF positive) and in 9/11 AT-FNA smears (7 cases BRAF negative, 2 cases BRAF positive). **Conclusions:** DNA extraction from archived samples, including FFPE tissues and AT-FNA smears is feasible. We have validated an efficient and reproducible DNA extraction protocol offering a good DNA quality, concentration and purity for further molecular analysis. Acknowledgement: This work was supported by the University of Medicine and Pharmacy of Tîrgu-Mureş Research Grant No. 275/1/11.01.2017.

Keywords: DNA extraction, archived samples, GAPDH gene, BRAF gene

CLASSIC VERSUS DIGITALIZED DIAGNOSIS – A HOPE FOR THE FUTURE

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Background: The aim of the paper was to present some preliminary results regarding the digitalized quantification of the immunoprofile of tumor budding, in colorectal cancer specimens. **Material and methods:** In eight randomly selected cases of colorectal cancer, surgical specimens, without preoperative chemotherapy, digitalization and automatically quantification of tumor buddings and their immunoprofile was performed. To study the budding profile, the antibodies E-cadherin, Maspin, CD44 and beta-catenin have been used. In the same cases, classic interpretation using the Nikon Eclipse microscope was also done by two residents trained in the field of colorectal cancer and two experienced pathologists. **Results:** Under microscope, the experienced pathologists performed a more proper quantifaction that was similar to the digitalized system. For the residents, using the digitalized slides was considered more challenging. For all of the four antibodies, the identified percentages were similar using the two methods. The digitalized quantification was proper for E-cadherin and proved to not be useful to distinguish the nuclear versus cytoplasm expression of maspin, nuclear versus membrane positivity of beta-catenin and stromal versus tumor expression of CD44. **Conclusions:** In pathology departments, digitalized pathology seems to become a challenging perspective change but some aspects as subcellular localization of biomarkers still need classic exploration under microscope.

Keywords: colorectal cancer, buds, immunoprofile, digitalized pathology, maspin

AGE-RELATED CHANGES IN MORPHOLOGY AND NUMBER OF THE GONADOTROPH CELLS: A HISTOLOGICAL STUDY ON NORMAL PITUITARY GLAND

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Background: Non-functioning pituitary tumors, especially gonadotroph tumors are frequently found in elderly patients. Some of the authors have concluded that this could be linked to some age-related changes in morphology and number of gonadotroph cells. We conducted a prospective study on normal pituitary gland, trying to identify some connections between age and size and between age and number of luteinizing (LH) secreting gonadotroph cells. **Material and methods:** All cases were collected from autopsies and normal pituitary glands were included based on inclusion and exclusion criteria. For each of the gland, an immunohistochemical sectioning protocol was developed, using the antibody against-LH. Cell measuring and counting was manually performed on multiple slides for each pituitary gland. **Results:** Six out of 71 pituitary glands were included in our study: 2 from young and 4 from elderly patients. The surface area of the gonadotroph secreting cells was larger in elderly than in young patients and those aged 75 and over were found to have the lowest number of LH-secreting gonadotroph cells. **Conclusions:** This

study showed that measuring and counting of the cells is feasible, but it is challenging and requires the meticulousness and expertise of an experienced pathologist. Further studies with a larger series of cases from more than one institution are needed to clarify the results of our study.

Keywords: gonadotroph cells, gonadotroph tumors, cell number, cell size, age

MIXED TUMOR OF THE LIVER - A DIFFICULT DIAGNOSIS

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Background: Combined hepatocellular-cholangiocarcinoma (cHCC-ChC) represents only 1% of the primary liver carcinomas. The aim of the paper was to present one of these rare cHCC-ChC cases. **Material and methods:** A 87-years old male patient was hospitalized with suspicion of acute lithiasic cholecystitis that was confirmed at ultrasonography examination. The computer tomography scan showed multiple hepatic nodular lesions. Anterograd cholecystectomy was performed and one of the hepatic lesions was biopsied. The hepatic biopsy consisted in two greyish fragments fixed in 10% neutral formalin, embedded in paraffin blocks, after which tissue sections were stained with Hematoxylin and eosin (H&E) and various immunohistochemical reactions were performed. **Results:** Under microscope, the hepatic specimen was entirely composed of atypical large cells with abundant cytoplasm, marked nuclear pleomorphism, some with prominent nucleoli, arranged in solid areas, focally forming glandular structures, all placed in a desmoplastic stroma. Focal positive expression was observed with the following immunohistochemical reactions: Cytokeratins (AE1/AE3, 7, 18, 19), Vimentin, S100, ⊠-catenin. Hepatocyte Specific Antigen showed focal, unspecific expression. Proliferation index Ki-67 was below 50%. Immunostaining with HMB45, Carcinoembryonic antigen, Alpha feto-protein, Cytokeratin 20, CD117, CD56, Cytokeratin 8 and CD105 presented negative reactions. The final diagnosis was that of a primary high grade hepatic malignant tumor, cHCC-ChC, with a sarcomatous component disclosed by vimentin and S100 expression. **Conclusions:** The high aggressivity of multifocal tumors of the liver may be induced by the sarcomatoid component.

Keywords: hepatic tumor, combined hepatocellular-cholangiocarcinoma, Vimentin, S100

FALSE POSITIVE AND FALSE NEGATIVE CASES IN THYROID CYTOPATHOLOGY

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Background: The main indication for thyroid fine needle aspiration cytology (FNAC) is palpable and non-palpable nodules, the prevalence of the latter being much higher compared to the former. Despite being a well-established method in detecting thyroid malignancy false positive (FP) and false negative (FN) cases do exist. The aim of our study was to evaluate the number of FP and FN cases and addressing their possible causes. **Material and methods:** Our study includes 1105 FNAC over a 4 year period (2014-2017). Cytological diagnoses were grouped according to Bethesda categories. FP cases were defined as cytological diagnosis of Bethesda 5 or 6, with benign histology; whereas FN was defined as cytological diagnosis of Bethesda 2 with malignant histology after surgery. **Results:** Of all cases, 66 (6%) were classified on cytology as either Bethesda 5 or 6; the histology was available in 41 patients (62%), resulting a 12% FP rate. Out of all cases, 827 (75%) were classified as Bethesda 2. Only one patient underwent surgery and had benign histology, making the calculation of the FN rate impossible. **Conclusions:** According to large studies false-positive rates are reported between 1% and 10%, the most common pathology being follicular adenoma. We observed a higher-than-average rate of FP cases, all of which were Bethesda 5 on cytology. False-negative rates are reported between 1-3%, the most common cause being papillary thyroid carcinoma. The accuracy of benign thyroid cytology result is often difficult to establish, since most of the patients with a benign (Bethesda 2) result do not undergo surgery.

Keywords: pathology, cytology, thyroid, cytology, diagnostic accuracy

PEDIATRICS

CHILD APPROACH TO KAWASAKI DISEASE - PRACTICAL ASPECTS

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Background: Kawasaki"s disease continues to be a challenge for the clinician because the disorder may be difficultto recognize; there is no laboratory test for dignosis but with effective treatment the disease progression is favorable. Currently, most epidemiological and immunological evidence indicates that the causative agent is pobably an infection. **Material and methods:** The group of patients enrolled 19 children admitted to the Pediatric Clinic I, Târgu-Mureş from January 1, 2006 to December 31,2007. we followed in the observation sheets for each patient those variable that allowed the definition of the clinical status of Kawasaki disease (anamnesis and clinical exam), association with other diseases, some complications and the evolution of cases. **Results:** Numeric and percentage assessment and distribution were used depending on : age groups, gender, treatment, symptoms, duration of hospitalization, death and evolution. Also, information on the socio-demographic profile, history, possible risk factors and other important parameters was also recorded.The incidence of cases was higher in 2015 (31.57 %) and the most affected age group was 1-2 yeras (42.1 %). The male gender is more affected (63 %). It was been noticed that the most of the cases showed typical symptoms of the disease and there was no correlation with the duration of hospitalization. Fever is the constant element, and the most common clinical signs were : bilateral cervical adenopathy, extremity changes, bilateral rash and conjunctivitis. The most common complications were coronary aneurysms and these cases required additional hospitalization days. **Conclusions:** Because there is no specific test in Kawasaki disease assessment, the diagnosis is exclusion, supported by clinicaş criteria. the importance of studying Kawasaki disease derives from the nature of the complications it causes : coronary aneurysms, herat failure and myocardial dysfunction or even myocardial infarction.

Keywords: general pediatric diseases, children, Kawasaki, disease

CYTOMEGALOVIRUS INFECTION MIMICKING WILSON DISEASE IN CHILDREN

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Background: Wilson s disease is a rare autosomal recessive inherited genetic disorder that leads to the storage of cooper in different organs. The symptoms are ralated mainly to the liver and brain, and can consists in: vomiting, weakness, ascited, legs edema, jaundice and pruritus, but also tremors, muscle stiffness, speaking disorders, personality changes, and seeing or hearing impairment. Cytomgalovirus (CMV) infection is usually asymptomatic, but in immunocompromised hosts it can manifest as a mononucleosis syndrome involving symptoms of acut hepatitis. **Material and methods:** We report this case with the aim of underlying the fact that CMV infection in children can mislead the pediatrician into establishing a wrong diagnosis of Wilson s disease. **Results:** We present the case of an 8-year-old boy, admitted in our clinic for a hepatic cytolysis syndrome of unknown etiology. The onset of the disease was 10 days before the admission with hyperchromic urine, reasons for which he was initially investigated in the regional hospital, where he was discovered with increased level of transaminases, and there were excluded both type A viral hepatitis and infectious mononucleosis, being referred to our clinic for further investigations. The investigations performed in our clinic revealed positive IgM and IgG anti-CMV antibodies, but also a low level of ceruloplasmin. We also performed a genetic test and we ruled out Wilson s disease. We repeated in dynamics the anti-CMV antibodies, and we noticed a decrease of IgM type and persistence of positive IgG type. The patient s evolution was slowly favorable with supportive therapy. **Conclusions:** Even though CMV infection is usually manifest in immunocompromised hosts, it can also affect otherwise healthy children, and it can mimic more severe conditions, such as Wilson's disease, which must be excluded.

Keywords: Wilson's disease, Cytomegalovirus infection, children

ACQUIRED BONE MARROW FAILURE SYNDROME - CASE REPORT

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Background: Bone marrow failure syndrome is a life threatening blood disorder which affects 2 out of 1.000.000 children/year. It may be inherited in 15-20% of the cases and acquired in the rest. Severe pancytopenia in the peripheral blood and a hypoplastic bone marrow are the mainstay of the disorder. **Material and methods: Results:** We present the case of a 13-year-old girl without serious medical history who presented with fatigue, pallor and skin petecchiae. Laboratory tests showed leucopenia and severe neutropenia (< 0,5 G/L), anemia with Hgb 7,64 g/dl, Htc 20,18%, and thrombocytopenia of 10 G/L. Reticulocyte index was very low (0,75) and the bone marrow was extremely hypocellular without tumor cell infiltration. The girl had no overt infection at the time of admission. During her hospital stay, she developed severe epistaxis and metrorrhagia due to severe thrombocytopenia. We excluded hepatitis and other viral infections, autoimmune diseases, myelodysplastic syndromes, severe bacterial infections, leukemias and other tumoral bone marrow infiltrations, as well as some inherited bone marrow failure syndromes such as Fanconi anemia, dyskeratosis congenita, Schwachman- Diamond syndrome and Diamond- Blackfan anemia. The patient received supportive therapy with antiinfective isolation, leucocyte depleted packed red cell and thrombocyte transfusions and antihemorrhagic medication. The patient was sent to a hematologic centre of excellence from Bucharest for further investigations and specific treatment. Acquired aplastic anemia can be treated with hematopoietic stem cell transplantation (HSCT)or immunosuppressive therapy with cyclosporine A and antithymocyte globulin. Newer drugs such as Eltrombopag or alemtuzumab are under investigation. Diagnosis in due time and early therapy in specialized centers are beneficial for the prognosis. Best results are offered by matched sibling HSCT. **Conclusions:** We presented a 13 year-old girl with a rare disorder in childhood, an acquired severe aplastic anemia.

Keywords: hematology, pediatrics, aplastic anemia, child

SOME PANCREATIC DISEASE IN CHILDREN – CASE PRESENTATIONS

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Background: Despite the fact that pancreatic diseases are not very common among paediatric emergencies, there are still a challenge for practitioner. Abdominal ultrasonography is an important tool for diagnosis, but not very accurate, because of difficult examination of this organ. **Material and methods:** The authors present 2 cases of pancreatic disease in teenage: one case of acute pancreatitis and one case of insulinoma. **Results:** First case is a 12 years girl, who presented with left abdominal pain and vomits. The first impression was acute pancreatitis. In acute pancreatitis, diagnosis is based on clinical symptoms (such as abdominal pain and vomiting), serum pancreatic enzyme levels, and imaging studies. In this particular case, the diagnosis was suspected based on characteristic type of abdominal pain, and immediately confirmed by abdominal ultrasound, before the laboratory results came back showing the elevation of pancreatic enzymes. The second case is a 16 years girl, who presented 2 severe episodes of hypoglycemia the last one associating convulsions. Insulinoma was very high on the list of differential diagnosis, and the pancreatic tumor was confirmed by MRI, while abdominal ultrasound failed to detect the tumor. **Conclusions:** Ultrasonography of pancreas is sometimes difficult to be performed, but is very important in disease such as acute pancreatitis while for pancreatic tumor CT or MRI are more accurate.

Keywords: pediatric emergencies, ultrasonography, pancreatitis, insulinoma, ultrasonography

THE ROLE OF ABDOMINAL ULTRASONOGRAPHY IN DIAGNOSING MEDICAL AND SURGICAL EMERGENCIES IN CHILDREN

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Background: Medical and surgical emergencies in children cover a large pathology, but the most of cases are abdominal. The most important cases that involve the paediatrican and also the surgeon are hepatic and gall blader disease, apendicitis, diverticulitis, kidney and urinary tract diseases, intussusception, testicular or ovarian torsion etc **Material and methods:** The authors present 2 cases of emergencies in children, where ultrasonography had an essential role in diagnosis. as a noninvasive and immediate available imaging investigation, **Results:** Case nr 1 is a 15 years old girl, admitted due to abdominal pain, vomits and headache. The next day she became yellowish while abdominal ultrasonography showed gall bladder stones and choledocholithiasis so she received a surgical treatment. Case nr 2, a 12 years old girl, presented with several days history of abdominal pain and vomits. Laboratory tests showed elevated white blood cells, and elevated C reactive protein. Abdominal ultrasound showed a large, heterogenous mass in the pelvis, measuring 63 mm in diameter. The provisional diagnosis of a ovarian disease was made, both by paediatrician and gynecologist. A second opinion was asked and a surgery performed, and the final diagnosis was appendicitis. **Conclusions:** Diagnosis of medical emergencies in paediatrics can be sometimes very difficult, due to misleading symptoms, superposition of several organs on the same ecographic area and attenuation of clinical features after analgesic and/or antibiotic treatement.

Keywords: emergencies, ultrasonography, apendicitis, ultrasonography, emergency

COMPLEMENTARY DIAGNOSTIC METHODS OF INTESTINAL ASCARIASIS

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Background: Ascariasis is the most common intestinal parasitosys in childrens. Characteristic symptoms of infestation are abdominal pain, appetite loss, paleness and in massive infestation even bowel obstruction. The diagnosis is made by identifying the appearance of the worm or eggs in stools. The problem is that stool examination may frequently be negative for eggs, because of the time needed for migration and maturation of the worm, or because the infestation was made only with male worms which don t produce eggs. CBC counts show eosinophilia only during the tissue migration phase of the infection. Serological tests are not clinically useful for ascariasis. **Material and methods:** The authors present the case of a 4 year old patient, which shows the following sympthoms : diffuse abdominal pain, appetite loss, no weight gain, paleness and intermittent vomiting. The sympthoms begun approximately 3 months before presentation at the clinic. At the recomandation of the general practitioner, the patient followed a sympthomatic treatment, without any results. **Results:** Laboratory investigations revealed anemia and eosinophilia, but repeated stool examination remained negative. Abdominal ultrasound, performed with linear array probe, reveals that intestinal lumen contains some rounded in shape structures with a peripheral echogenic line and central echogenic focus, with anechoic area in between, appearing as a "target" sign, which is highly suggestive for roundworms. After treatment with albendazole, the worms were present in the stool. **Conclusions:** Ultrasonography of abdomen, which is a quick, safe, non-invasive and inexpensive examination, can be very useful in ascariasis diagnosis.

Keywords: ascaridiasis, ultrasound, stool examination

SIMPLE BIOMARKERS TO ASSESS URINARY TRACT INFECTIONS' SEVERITY IN INFANTS AND CHILDREN

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Background: Urinary tract infection (UTI) represents the 2nd bacterial infection in children. Neutrophil-lymphocyte ratio (NLR)

and MPV have lately been confirmed as biomarkers for systemic inflammation. NLR was associated with numerous inflammatory and malignant disorders (bladder, colorectal, gastric, and lung cancers). There are closed connection between NLR and bacterial infection such as pneumonia, sepsis, and systemic inflammatory response. In this study, the association of neutrophil-lymphocyte ratio (NLR), thrombocyte-lymphocyte ratio (TLR), MPV, ESR, CRP with febrile UTI is studied. **Material and methods:** We performed an observational cross-sectional study that included patients with UTI admitted to Pediatric Nephrology Department from January 2016 until August 2017. In this research a totally 129 diagnosed children with UTI were included. NLR and TLR were calculated by analyzing differential leukocyte and thrombocyte count in complete blood count. **Results:** 129 patients were registered; they were divided in febrile UTI group: 48% children, and non-febrile UTI group (52% cases). Mean NLR for lower UTI was 1.89±1.83 and in febrile UTI group was 3.58±5.05 (p 0.02), for MPV 9.14±1.01 respectively 9.82±1.07 (p 0.001), while for TLR we had 118.65±82.97 vs 106.48±44.04 (p>0.05). **Conclusions:** The results of our study show that there is a significant relation between NLR and MPV and febrile UTI. These are simple and cheap parameters of inflammation that can be calculated in almost all labs. Furthermore, NLR may be a reliable marker for the prediction of severe UTIs and moreover it may be used a risk factor for renal scars in febrile UTIs.

Keywords: pediatrics, infectious disease, inflamation, parameter, UTI

PANCREATITIS IN THE CHILD - AN ENTITY NOT SO RARE

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Background: An uncommon condition in pediatric patients, pancreatitis represents the inflammation of the pancreas. The clinical picture is dominated by abdominal pain (usually with epigastric location), and paraclinically - elevated serum digestive enzymes. Imaging studies are useful for diagnosis (Ultrasonography, Computed tomography scanning, Radiography). Complications of pancreatitis could be hemorrhage, necrosis, ductal fistulae, and pseudocysts. Acute pancreatitis resolves in a few days with supportive treatment (intravenous hydration, analgesics, and bowel rest); parenteral nutrition may be required for prolonged episodes, and surgery for those with complications. **Material and methods:** We evaluated the cases of pancreatitis in our pediatric department in the last five years (2013-2017), assessing the clinical aspects, duration of hospitalization, complications and co-morbidities. **Results:** We had 14 patients with these diagnosis, equally distributed by gender, three of them having 3-4 recurring episodes. The age of the patients was between 3 and 17 years, with an average of 12 years. Four of the cases were associated with hepato-biliary disorders (especially lithiasis), two cases occurred posttraumatically, two cases of toxic etiology (associated with ethanol consumption and polypragmasy, respectively), a case has been reported in an obese patient with multiple metabolic complications, two patients showed signs of enteroviral infections, and in three other cases no particular cause was identified. The duration of hospitalization was between 2 and 11 days, averaging 5.68 days. The degree of severity was not influenced by the level of amylase. Less than half required parenteral nutrition. **Conclusions:** Although this disease is uncommon in the pediatric population, physicians who meet patients with symptoms of abdominal pain should have a high index of suspicion for pancreatitis.

Keywords: pancreatitis, child, abdominal pain

HEREDITARY MICROSPHEROCYTOSIS IN THE EXPERIENCE OF THE PEDIATRIC CLINIC NR. 2 TG MURES

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Background: Hereditary microspherocytosis (HMS) is the most frequent hemolytic anemia in northern-European population. It is characterized by the presence of the small spherocytes with low resistance in the reticulo-endothelial system of the spleen. Hemolysis cause pallor, jaundice, hepato-splenomegaly, biliary calculus. Aims: The evaluation of the incidence, clinical signs and complications of HMS in our clinic. **Material and methods:** We studied retrospective a five year period between 2012-2016. **Results:** In this period we diagnosed 16 patients aged between 1 month and 17 years, the sex ratio was with the predominance for the girls (75%). We found significant increase of liver and spleen in this period. 10 patients had positive familial antecedents for HMS. Important complications were found in 6 patients. **Conclusions:** Most cases were included in the mild/moderate degree of

severity and needed only clinical controls and folic acid supplementation. A small number of patients present important clinical complications needing surgical treatment.

Keywords: anemia, hereditary spherocytosis, splenomegaly

THE ASSESSMENT OF MALIGNANT ABDOMINAL TUMORS IN CHILDREN

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Background: Detection of an abdominal mass in a child is an alarming finding for both parent and practitioner. Diagnostic studies including lab analises, ultrasonography, computed tomography, and magnetic resonance imaging provide an accurate diagnosis in most cases. The purpose of this paper is to evaluate the clinical, paraclinical and imaging characteristics of abdominal tumors in children, the type of oncological diagnosis, treatment and their evolution. **Material and methods:** The medical records of 36 patients admitted in Paediatric Clinic I Tg-Mures between the ages of 0 and 18 years, with malignant abdominal tumors seen between 2001 and 2016 were reviewed. **Results:** Wilms tumor was the most common tumor constituting 33.3% of all cases. The others included Non- Hodgkin s lymphomas (27.7%), neuroblastomas (22.2%), germ cell tumors 8.3% and a miscellaneous group of other tumours. Majority of patients (80.5%) were under 12 years of age. The male to female ratio was 2.5:1. The most patients were diagnosed in advanced stages of disease, stage III-IV. The commonly utilized techniques to aid diagnosis were ultrasonography and computerized tomography scan and the common treatment modality was a combination of surgery and chemotherapy. For all abdominal tumors, the mean follow-up was 87 months and the survival rate was 66.6%. **Conclusions:** With early diagnosis and multimodality treatment, the survival rates for childhood malignancies can be greatly improved.

Keywords: children, malignancy, abdominal tumor

PHARMACY

HPLC METHOD APPROACH FOR CAPTOPRIL IMPURITIES PROFILING

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Background: The objective of the study was to improve the HPLC/UV method described in the European Pharmacopoeia 9-th Edition for Captopril related impurities in order to reduce the time of analysis and to improve the resolution between API, main known impurities and unknown impurities formed under forced degradation conditions. **Material and methods:** Analyses were performed on an Agilent Technologies (USA) 1100 series HPLC system. The separations were performed of a Luna C18 (2) 250 X 4.6 mm column containing 5 µm size particle (Phenomenex, USA) at 50°C column temperature, using a mobile phase consisting of phosphoric acid 15mM and acetonitrile ACN (Merck, Germany). Detection was accomplished at 210 nm for captopril and its impurities A,B,C,D,E (Sigma Aldrich). All the standard solutions were prepared in methanol (Merck, Germany). **Results:** Starting from a mobile phase consisting of phosphoric acid 15mM and acetonitrile, we performed different isocratic and gradient elutions due to the fact that the Impurity C has a very similar chromatographic behaviour as Impurity E. The optimal experimental conditions were established at a flow rate of 1.2 ml/min and the gradient elution in a time of analysis of 30 minutes including column reequilibration. The elution order was: Impurity C;Impurity E;Captopril;Impurity D;Impurity B and Impurity A. **Conclusions:** The new developed HPLC method allowed the separation of all five specified impurities of captopril and API with high reproductibility, excellent resolution and selectivity. The overall analysis time was shorter than EuPh 9.0 LC method and the proposed method allowed separation of known and unknown impurities formed under forced degradation conditions. Acknowledgement: This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI - UEFISCDI, project number PN-III-P2-2.1-BG-2016-0115, within PNCDI III, contract number 107BG/2016, project title "Profilarea cromatografică a impurităţilor înrudite chimic - soluţii analitice de tip spin-off".

Keywords: captopril, impurities, HPLC

CAPILLARY ZONE ELECTROPHORESIS APPLICABILITY FOR DETERMINATION OF SOME AROMATASE INHIBITORS

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Background: The main focus of this research was to elaborate capillary electrophoresis (CE) methods for the determination of letrozole (LET), anastrozole (ANA), and exemestane (EXE), with applications in pharmaceutical industry and pharmacokinetics. **Material and methods:** The three aromatase inhibitors were determined by capillary zone electrophoresis (CZE) methods. A simple CZE method was designed and validated for determination of LET using borax as background electrolyte (BGE). For simultaneous analysis of the three compounds addition an additive, respectively carboxymethyl ⍺-cyclodextrine (CMbetaCD), was added to the BGE. The two methods were validated in conformity to ICH standard. The suitability of CZE methods was verified for bulk material, pharmaceuticals and spiked urine samples. **Results:** The first CZE method using a 90 mM borax as BGE demonstrated to be an effective method for determination of LET in 2 minutes, using the following optimized electrophoretic conditions: 50 °C temperature, 50 mbar/2 s injection parameters and +20 kV applied voltage. In the second method for the separation of LET, ANA and EXE a 100 mM borax containing 5 mM CMbetaCD BGE was selected, using the following conditions: 25°C temperature, 20 mbar/2 s injection parameters, and +25 kV applied voltage. The separation took place in approximately 10 minutes. The parameters of validation were calculated. The CZE method was evaluated for LET determination from spiked urine samples. Also LET, ANA and EXE were successfully quantified from pharmaceuticals. **Conclusions:** This study demonstrates the suitability of CZE method for the determination of LET, ANA and EXE from pharmaceuticals and also for LET quantification in spiked urine samples without any special treatment. Thus our CZE method could be useful for other biological

samples. Our developed CE methods could be very valuable in determination of counterfeit drugs, often used by doped athletes.

Keywords: letrozole,, anastrozole, exemestane, capillary zone electrophoresis,, cyclodextrines

IMPROVED HPLC-DAD ANALYTICAL METHOD FOR THE ANALYSIS AND IMPURITY PROFILING OF SPIRONOLACTONE

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Background: Current HPLC analytical methods for the analysis of spironolactone and its impurities require high analysis time while covering a narrow spectrum of impurities. Moreover, EuPharmacopoeia. 9.0, proposes a 65 minutes long HPLC method which is time consuming, implies a high solvent consumption leading to higher costs per analysis. We aimed in developing a simple, robust and economical HPLC-UV method which would imply a shorter analysis time and would be appropriate for the analysis of spironolactone and its specified and unspecified impurities. **Material and methods:** Analytical method development underwent using a Flexar 10 UHPLC system. For the chromatographic separation, a Kinetex RP, C18, 2.6 µm particle size column was used. Standard solutions of Spironolactone, Impurities A, C, I, E, F and 7-alphathiospironolactone, unspecified impurity, were prepared using analytical grade substances. All solvents used were of HPLC purity. Eventualy, the chromatographic method was used for the profiling of impurities that might appear in stress forced conditions. **Results:** The new developed method was capable of eluting the API and six of its impurities, including one unspecified impurity, in less than 26 minutes under an isocratic elution mode. The induced stress condition responsible for the highest degradation rate was NaOH 0.1 M, when 7-alphatio spironolactone and canrenone being the two major compounds to be formed. **Conclusions:** With an overall analysis time of less than 26 minutes and after the analytical validation process, the new HPLC method was successfully used for the spironolactone impurity profiling. Moreover, the new method can be used "in house" by the industrial manufacturer, in the quality control processes. This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS/CCCDI - UEFISCDI, project number PN-III-P2-2.1-BG-2016-0115, within PNCDI III, contract number 107BG/2016, project title "Profilarea cromatografică a impurităţilor înrudite chimic - soluţii analitice de tip spin-off".

Keywords: spironolactone, impurity profiling, HPLC, 7-alphathiospironolactone

NEW ASSOCIATIONS OF FILM POLYMERS FOR DERMAL AND TRANSDERMAL THERAPY

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Background: The high susceptibility to infections was identified in people with weak immune system or at which the natural defense and the normal microbial flora have been affected because of a disease or treatment. The high incidence of infections requires the development of new pharmaceutical forms based on prolonged release antifungals. This study aims the development of some new miconazole nitrate dermal film formulations, considering the quantity of the used polymers. **Material and methods:** There were established the mechanical resistance, the film elongation and the water absorption and water loss capacity of the new pharmaceutical forms. The capacity to release the miconazole nitrate from the films was assessed using the disk diffusion method, with Franz cell through Teknokroma membrane. The dissolution media consisted of a phosphate buffer solution with pH 7.4 at 32 ^{0}C. **Results:** The formulations requiring more drying time lead to better in vitro dissolution. The capacity to incorporate water requires prolonged drying compared to other dermal and transdermal films mentioned in the literature. The dissolution media was selected considering the low dissolution capacity of the used antifungal into aqueous solution. The associated colloids are also used as solubilizing agents due to the capacity of their micelles to transfer into aqueous solution different compounds that are either insoluble or difficult to dissolve, without modifying their chemical structure and the pharmacodynamical action. **Conclusions:** The release of miconazole nitrate included in HEC/PEG_{400} or HPMC films with thickness of maximum 0.30 mm varies in time

depending of the type and the relationship between the polymers used. HEC/PEG_{400} films manifest proper properties for an intended dermal use. ***Acknowledgments:*** The study was carried out with the financial support of Farmaciile FarmavitPlus S.R.L. Company, through the internal grant 275/11.01.2017 of University of Medicine and Pharmacy of Tirgu Mures Romania.

Keywords: dermal film, miconazole nitrate, HEC, HPMC, Franz cell

CLINICAL EFFICACY STUDY AS A MODEL FOR COSMETIC FORMULATIONS DEVELOPMENT

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Background: Moisturizing creams are key component in skin care, restoring the barrier function of the epidermis and preventing excessive water loss. The paper proposes to demonstrate the stages of a clinical efficacy study of a moisturizing cream formulated for facial use and prepared in a community pharmacy. **Material and methods:** An instrumental evaluation of the immediate hydration and kinetics of facial hydration process by corneometry (Corneometer® CM 825, Courage Khazaka, Germany) was performed. This method is based on the measurement of dielectric constant of keratin lipids that is much lower compared to water. As a result, the dielectric constant of the cornea layer, as measured by the corneometer, is directly proportional to its degree of hydration. **Results:** The study protocol has gone through the following essential steps: developing product use instructions for application to healthy volunteers; establishing the duration of the study; choice of the instrumental method; elaboration of the procedure (establishment of test area / control area, points and order of measurement); the choice of statistical methods for analysis and interpretation of the clinical results. **Conclusions:** Applying the test cream twice in 24 hours causes an increase in the degree of hydration in the epidermal superficial layers of treated hemifacies areas, compared to the same areas of untreated hemifacies: nasolabial - 30.4, forehead - 15.8, cheekbones - 11.0 and the chin - with 5.4 corneometric units, respectively. All the changes measured as differences determined by the treatment applied in the four studied facial areas are, however, insignificant from the statistical point of view.

Keywords: moisturizing cream, pharmacy formulation, efficacy study, corneometer, cosmetic

PNEUMOLOGY

SYSTEMIC LUPUS ERYTHEMATOUS WITH APPARENTLY CLINICAL ACUTE ONSET, FLARED UP AFTER RIFAMPICINE DURING AN ACTIVE PULMONARY TUBERCULOSIS

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Background: The antituberculous treatment (Isoniazid and Rifampicin) can cause adverse reaction/immunoallergic "lupus like" syndrome. **Material and methods:** We present the case of a young woman admitted in Clinic of Pneumology for dry cough, sweating, arthralgia and weight loss with a 3-months slow onset. Chest-x-ray: inhomogeneous apical infiltrates. The results of induced sputum do not evidence Koch bacilli at microscopy. The broncho-alveolar lavage reveal tuberculosis (TB). **Results:** The adverse reaction of antituberculous treatment appears after 1 week: oral/nasal ulcers, purpura, hands edema, malar rush and erythema. We suspected an allergic reaction (to Rifampicin or Isoniazid) or a SLE in acute onset flared up by Rifampicin. The SLE criteria were met: oral ulcers, malar rush, anemia, leukopenia, nephritis, antinuclear, anti-double-stranded DNA and antiphospholipid antibodies. We excluded Rifampicin and temporarily Isoniazid and introduced immunosuppressive drugs (corticoids, hydroxychloroquin) and individualized TB treatment (Pyrazinamide, Etambutol,Prothionamide).The TB was cured after 9 month of antituberculous treatment. **Conclusions:** The two diseases have been negatively influenced each other. Systemic lupus erythematosus is a risk factor for tuberculosis reactivation. In the same time Rifampicin can activate a latent SLE with acute onset.

Keywords: lupus erythematosus, acute onset, Rifampicine

DIAGNOSIS OF MULTIPLE PERIPHERAL ADENOPATHIES IN PUBERTY MAY BE A MAJOR CHALLENGE?

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Background: Peripheral polyadenopathy occurs in the context of numerous conditions: infections (tuberculosis, HIV-infection, mononucleosis), lymphomas, leukemias, collagenosis, sarcoidosis, drug reactions or lipid storage diseases. Confirmation of the disease associates anamnesis, clinical examination, CT scan, ultrasound, microbiology, blood tests, immunology, biomarkers, biopsy and histopathological examinations. **Material and methods:** We present the case of a 16-year-old patient (without pathological medical history) with thoracic pain, low fever, dyspnea, nocturnal sweating, mucopurulent expectoration, submandibular adenopathies. The antibiotic treatment instituted in primary medicine was without clinical improvement. The patient was sent in the Pulmonology Clinic. Thoracic CT revealed basal pneumonia, mediastinal and axillary adenopathies. The patient presented supraclavicular, submandibular and axillary painless mobile adenopathies, negative tuberculin test; bronchoscopy (extrinsic bronchial compression, acid fast bacilli negative in bronchial aspiration), HIV-serology negative, discrete anemia, thrombocytosis, ASLO-positive, pharyngeal exudate and blood culture negative, slightly increased serum angiotensin converting, bone marrow biopsy without modification. **Results:** Antibiotic, non-steroidal anti-inflammatory and bronchodilator therapy was instituted. We suspected lymphoma and the patient was sent for axillary excision-biopsy. In surgery ward the biopsy was initially timed (waiting for the results of the above investigations). The final histopathological examination established the diagnosis of a malignant lymphoma with large anaplastic cell with specific immunohistochemistry (CD30, Bcl-2, LCA, Ki67 positive). The patient began targeted cytostatic treatment. **Conclusions:** Peripheral polyadenopathy associated with the mediastinal one raises a large suspicion of sarcoidosis or malignant lymphoma. Etiological investigations are laborious, hierarchical, but the histopathological examination by excision - lymph node biopsy remains the investigation of choice and should be performed as quickly as possible. Immunohistochemical biopsy tissue characterization allows targeted oncological treatment.

Keywords: diagnosis challenge, puberty, multiple adenopathies

PSYCHIATRY

ATTACHMENT DISORDER IN CHILD PSYCHOPATOLOGY

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Background: In the child life happen different psychotraumatic events wich may change his behavior and psychic functioning,all the more so as the child is younger. The psychic vulnerability of the child is his inability to resist to the constraints of the environment,the inability to influence them.The mother-infant separation remains a psychotraumatizing event,being especially intense in the infant of 5 month to 3 years old.The child develops an anxious attachment reaction,discribed by Bowlby in 1960.The evolution and the severity of this patology depends on the child age at the moment of separation and of its duration. **Material and methods:** 47 children have been assesed between 5,10 and 17,8 years old , with attachment disorder,admitted into Clinic of Pediatric Neurology and Psychiatry Tg-Mures in 2016,being psychologically examined,applying different specific scales:STAI-C,MASC,SCARED-R,CAT,family drawing.The clinical diagnosis has been established according to DSM 5 and ICD-10 criteria. **Results:** The mother-infant separation is a psychotraumatizing event which changes the child behavior all the more so as the child is younger. **Conclusions:** Mother absence or the psychic diseases of the biological parent,early institutionalization,psysical and affective neglect,the physical abuse,poor social and economic conditions,temperamental traits of the child constitute an psychopatological factor,determining: cognitive and affective disorders, psychosomatic symptoms, adjustment disorder,emotional and behavioral disorders or pronounced personality traits.

Keywords: child, psychic vulnerability, attachment disorder

PUBLIC HEALTH

CORRELATION BETWEEN FERTILITY AND ECONOMIC DEVELOPMENT

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Background: Fertility is influenced by a number of factors.The purpose of this study was to evaluate the relationship between the level of fertility and the economic and social development. **Material and methods:** To measure economic and social conditions we used Gross Domestic Product (GDP) per capita (in US dollars) and the Human Development Index (HDI). Fertility was assessed by the Total Fertility Rate (TFR).We analyzed data from 233 countries worldwide, and particularly, for Romania. We created a database and analyzed by GraphPad. **Results:** In 2015, for 233 states, the average GDP per capita was 13566.91 USD. For the 233 countries, a statistically significant negative correlation was found between TFR and GDP per capita (rho = -0.7644, p <0.001). In Romania, between 1990 and 2015, the average gross GDP per capita was 4559,54,74 USD, and the highest TFR was registered in 2009 (1,66). For the analyzed period, there is a statistically insignificant positive correlation between the GDP per capita and TRF (rho = 0.3762, p = 0.0582). In 2016, for European states (31), between HDI (Human Development Index) and RTF was a statistically significant positive correlation (rho = 0.3642, p = 0.0440). Between TFR and HDI in the period 1990-2015, in Romania, there was a positive insignificant statistical correlation (rho = 0.0864, p = 0.851). **Conclusions:** Low levels of fertility in economically developed countries represents a demographic and public health problem. Population policies should target the issue of natality decrease. Economic development can be a solution for Romania, contrary to other states, perhaps by attracting young emigrated families back into the country and at the same time by limiting the number of young people leaving the country.

Keywords: fertility, demographic, GDP, development

NICOTINE NUTRIENT PROGRAM

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Background: Smoking is an expensive source of joy that takes away lives. Nutritionist students have only Nicotine Nutrient Program in smoking cessation. **Material and methods:** Nutritionists want to participate as member of Smoking Cessation Teams, because they can provide effective counseling intervention on smoking cessation. **Results:** Adequate fruits, vegetables and whole grains (15-45g) help body needs to replenish nutrients lost and organs damaged from smoking. The side effects of smoking are dehydration and acidification, which can be balanced by water (0.03xkgweight) and an alkaline diet. As antioxidant, nutritionists recommend vitamin E (400-800 IUs daily), vitamin A (10,000 IUs), vitamin C (1-2g) and selenium (200-300 mcg) to protect the cell membranes from biochemical irritations generated by cigarette smoke, thereby reduces cancer risk. The toxic heavy metal, cadmium, absorption and toxicity are reduce by trace element zinc (30-60 mg/day). Folic acid (1g) Vitamin D (200-400 IUs) and Vitamin K (100-300 mcg) are also important as well as Coenzyme Q10 (20-60 mg). Minerals required in detoxification period are magnesium (500-900 mg), manganese (5-10mg), molybdenum (300-600 mcg), potassium (200-500 mg), vanadium (150-300 mcg), iodine (150-250 mcg), iron (women 20-40 mg, men 10-20 mg) and the essential fatty acids 6 g/day (5 g omega-6 PUFA/day + 1 g omega-3 PUFA/day) for women and 8 g/day (6.4 g omega-6 PUFA/day + 1.6 g omega-3 PUFA/day) for men. Regular exercise, walking, and getting used to breathing deeply of the fresh air are also part of the Nicotine Nutrient Program. **Conclusions:** A combination of adequate diet, intake of dietary supplements and physical exercise could help the patients to reduce the unpleasant effect of smoking cessation. Health professionals having different specialities are required to work together for the best

results, so all of them should be trained for this purpose.

Keywords: nutritionist, smoking cessation, dietary fiber, vitamins, minerals

THREE-YEAR OF FOLLOW-UP OF SMOKING BEHAVIOR OF PHARMACISTS STUDENTS

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Background: To follow-up of tobacco use prevalence among health professional pharmacists students and evaluation of smoking habits at Pharmacy Faculty according to the Global Health Profession Students Survey adapted for the University of Medicine and Pharmacy Târgu Mureş during three years. **Material and methods:** The survey was conducted one week of the second semester of study 2014, 2015 and 2016. The original questionnaire was composed of 59 questions divided into seven sections, but the final form of the romanian and hungarian questionnaire was composed of 72 questions, distributed in 8 sections in 2014, and 84 questions (9 sections) in 2015 and 90 questions (10 sections) in 2016, because we added country-specific questions on knowledge about the Smoke Free University Proiect and new smoke free legislation in Romania. Data were analysed with the software SPSS. The level of significance was $p < 0.05$. **Results:** 413 students answered to the questionnaire in 2014, 393 students in 2015 and 451 students in 2016. Prevalence of current smokers was 29.5% in 2014, 26,1% in 2015 and 29,9% in 2016 and only 5.1% in 2014, 3.6% in 2015, 6.4% in 2016 do not want to stop smoking. Every follow-up years 82.1% of the students agree to restrict smoking in the central building of the university, student dormitories and university hospitals. **Conclusions:** The three-year follow-up of the smoking behavior of pharmacist students emphasizes that the presence and knowledge of the project and the legislation are not enough for students to quit smoking, it is also necessary to teach them.

Keywords: smoking, tobacco use, Health Profession Students Survey, Smoke Free University Proiect, smoke free legislation

CHANGES PRODUCED BY SMOKE FREE LAW IN THREE UNIVERSITIES FROM TIRGU MURES

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Background: The smoke-free law nr. 15/2016 was adopted for the protection of nonsmokers from second hand smoking. The purpose of our study is to assess the changes produced after the adoption of this law in three universities from Tirgu Mures **Material and methods:** We analyzed the answers given to the adapted versions of Global Health Professions Student Survey questionnaire by third year students of the University of Medicine and Pharmacy Tirgu Mures (UMPh), Petru Maior University (PMU), and Sapientia University (SU) before and after the adoption of the law. The number of participants were: UMPh: before 512, after 559, PMU: before 250, after 231, SU: before 185 after: 131 students. We used the IBM-SPSS program for descriptive statistical evaluation. Chi square test was used to test statistical significance. **Results:** The prevalence of smoking remained unchanged the highest in SU 42.7%. The prevalence of occasional smoking declined significantly at the UMPh (28.4% before 22.9% after p=0.03). Smoking in the central buildings of universities significantly declined in all studied universities but none of them complied totally to the law. Smoking at university properties remained unchanged. **Conclusions:** Our study indicates an improvement in respecting smoke free regulations after the adoption of the law. Further efforts should be made at all three universities to increase compliance and to enforce existing policies.

Keywords: smoking, students, smoke free regulations

SOCIAL SCIENCES

IMPLEMENTATION OF THE CONCEPT OF HEALTH IN THE

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Background: Keeping a body of mind and soul clean and unthinkable has always been a sine qua non for the Romanian people. **Material and methods:** The concern for this desideratum has manifested itself over time, starting and consolidating then the triad: family - school - church, realizing today a continuity, practically in another form, of what we call, education for health , Complex and necessary. **Results:** In this context, the book "The Book of Cognition or Romanian Legendary for the First Class of Poporan Schools", which appeared in 1852 in Vienna (this year marks its 165th anniversary since its appearance), is found in an accessible and pleasantly pleasant form for the student (7), the "Decalogue for Health" poetry where from the teachings of health (washed clothing, weather, work, sleep, and soul), the information transmitted is more than useful, welcome and useful, respecting the peculiarities of the age of the audience. **Conclusions:** Thus, maintaining health emerges as a priority, cultivating, no matter what the weather and time, the essence of the "Mens sana in copore sano".

Keywords: decalogue, health, student, education, information

EFFICIENT COPING MECHANISMS USED IN INTELLECTUAL STRESS SITUATION BY THE MEDICAL STUDENTS

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Background: The present study sought to determine which coping mechanisms were used in stressful situations generated by both psychological and physical tasks, in medical students. **Material and methods:** The target group (N = 100; Mage= 22.34), was given a psychological task, and the control group (N = 100; Mage= 20.11) was given a physical task. Both groups were exposed to a mild state of stress induced by the placement of video cameras in several corners of a classroom. The participants were told that their behavior was being monitored by a team of psychology experts in behavioral interpretation. After this introduction, the target group was tasked with completing a questionnaire with multiple choice questions and the control group carried out a physical test. Finally, both groups completed the COPE Inventory which measured their coping mechanisms. We expected that both stressful situations in the experiment would be equivalent to an exam. **Results:** The results indicated statistically significant differences between two of the coping mechanisms of the target group and control group, namely Acceptance [M = 10.73; t(19) = 3.79, p < 0.001; CI -1.91, -0.60], and Planning [M = 9.47; t(19) = 4.70, p < 0.01; CI -1.99, -0.81]. The results indicated that the target group used these two mechanisms much more intensely in comparison with the control group. **Conclusions:** The two coping mechanisms, Acceptance and Planning, are functional patterns exhibited during confrontation with psychological stress, such as exams. These are effective psychological mechanisms used in stressful situations by students.

Keywords: medical psychology, behavioral sciences, coping mechanism, stress, medical students

SURGERY

SURGICAL RESECTION FOR GASTROINTESTINAL METASTATIC MELANOMA

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Background: Malignant melanoma is one of the most common malignancies that causes metastasis in the gastrointestinal tract. Gastrointestinal metastases may be present at the time of primary diagnosis or decades later, as the first sign of recurrence. Diagnosis of lesions in the gastrointestinal tract is usually delayed until complications such as obstruction, bleeding or perforation occur. The most common locations in the gastrointestinal tract are the small intestine, stomach and colon. **Material and methods:** We present 5 cases with gastrointestinal metastases of malignant melanoma, operated in our clinic during 2003-2017. Gastrointestinal metastases occurred between 1-9 years after the diagnosis of cutaneous melanoma. They were diagnosed due to complications such as digestive haemorrhage, intestinal occlusion, gallblader perforation. The localization of the metastases was in the stomach, stomach-jejunum, liver-gallblader, duoden-jejun, cecum. **Results:** In the first case we performed subtotal gastrectomy, in the second case 2/3 gastrectomy and segmental resection of the jejunum, in the third case cholecystectomy with atypical resection of the hepatic segment 5, in the case of the fourth cephalic-duodenopancreatectomy with the resection of the first jejunum, and the fifth case right hemicolectomy. Rate of survival was 1 year in 2 cases, 2 years in 1 case, and in cases with hemicolectomy and cephalic-duodenopancreatectomy patients are alive at 8 months, respectively 5 years after surgery intervention. **Conclusions:** Metastatic melanoma of the gastrointestinal tract should be suspected in any patient with a history of cutaneous melanoma with gastrointestinal symptoms. The resection of metastases improves symptoms, can achieve prolonged remission and improves quality of life. Acknowledge: This work was partially supported by the University of Medicine and Pharmacy of Tirgu-Mures, Romania, in the joint project with Studium Prospero Foundation and Hungarian Science Academy, research projects frame 136/2017.

Keywords: malignant melanoma, gastrointestinal metastases, resection

UROLOGY

THE EXPERIENCE OF UROLOGY CLINIC TARGU MURES IN THE MANAGEMENT OF STAGHORN CALCULI

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Background: To evaluate the outcomes of Percutaneous Nephrolitotomy treatment for staghorn calculi, specifically looking at stone free rate, morbidity and mortality, complications, operative and median hospitalization time. **Material and methods:** Over a period of 29 years (1987-2016) we diagnosed 8756 patients with renal calculi, with 1376 patients (15.76%) with staghorn calculi, 17 patients (1.23%) with bilateral staghorn calculi and 4 patients (0,29%) were children with staghorn calculi. **Results:** There were 51.01% females and 48.98% males with a median age of 49. Type C staghorn calculi was the most encountered followed by type B and A. Stone free rate at the end of the surgical intervention was 81.75%. Diabetes mellitus (38.49%), followed by increased blood pressure (16.66%) and obesity (18.25%) were among the top co morbidities. 10.82% of the patients had complications. Immediate postoperative complications were hemorragies (2.18%) and sepsis (3.05%). Late complications after PCNL were gross haematuria in four patients, perirenal abscesses in three patients. A small number of patients (0.29%) remained with residual hydronefrosis due to ureteral stenosis. Thirteen patients (0.94%) had relapsed after 6 months to 1 year. **Conclusions:** Percutaneuos nephrolitotomy is still a method of choice for staghorn calculi associated with high stone free-rates and low incidence of operative, postoperative and late complications.

Keywords: percutaneous nephrolitotomy, stone free, complications

NEPHRON SPARING APPROACH IN A POLYTRAUMA PATIENT

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Background: Renal trauma occurs in approximately 1-5% of all traumas. The management goal of patients with renal injuries is to preserve the renal function, minimizing morbidity and decrease nephrectomy rates. **Material and methods:** We present the case of a 26 year old polytraumatized male, victim of a car accident, presenting massive gross haematuria, liver contusion, right kidney grade IV laceration and a perirenal hematoma with a maximum size of 2,5 cm, right psoas major muscle contusion, hemoperitoneum, multiple fractures in upper and lower limbs, sacrum and hip bone, ribs and vertebrae, acute posthemorrhagic anemia. **Results:** An emergency exploratory laparotomy, hepatic, hemostasis, peritoneal lavage and a right multiple nephrorrhaphy was performed. As the renal capsule was heavily damaged, a perirenal fat flap and Surgicel was used for hemostasis, and a watertight closure of the collecting system. One week after the patient s mobilization, an important haematuria occured, so arteriography was performed which showed a normal aspect with no indication for arterial embolization. **Conclusions:** Renal reconstruction should always be attempted over nephrectomy, especially in cases where the primary goal of controlling haemorrhage is achieved and a sufficient amount of renal parenchyma is viable. Combining arteriography and selective embolization we can push the limits of this reconstructive surgery.

Keywords: renal trauma, nephrorrhaphy, reconstructive surgery

COMPLICATION OF JJ STENT FORGOTTEN FOR 3 YEARS- CASE REPORT

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Background: The use of ureteric stents is an accepted standard practice in the management of ureteric obstruction. **Material and methods:** We report this case with the aim to point out possible, serious complications due to long-term forgotten indwelling stent. **Results:**

Case report: A 38 year female patient was admitted to our hospital with influenced general condition presenting fever (38.2 C0), right renal colic, under antibiotic treatment prescribed by GP for bilateral basal pneumonia. She had double J stent insertion, 3 years ago, neglected by her, at another urological service. At the presentation she was with right flank pain. Imagistic examination showed encrusted right double J stent at the proximal and distal coil, right hydro-nephrosis with hyper echoic images at the renal pelvis and urinary bladder. Laboratory examinations revealed leukocytosis, anemia, mild renal impairment, and bacteriuria. It was performed right nephrostomy for drainage. The patient evolution was unfavorable, toward urosepsis associated with respiratory insufficiency. Thoraco- abdomino- pelvic CT scan confirmed the stent encrustation on both ends, turbid liquid accumulation in peritoneal and pleural cavity. It was performed laparotomy with lavage and drainage of the peritoneal cavity and the retroperitoneum. The left pleural liquid collection increased considerably requiring active pleurostomy. One month later a right nephrectomy with partial extraction of the encrusted stent was performed with good recovery. The bladder calculus and the remained part of stent was scheduled to be carried out later, but unfortunately, she didn`t show up for the cystolithotomy and extraction of the remaining stent. **Conclusions:** Forgotten ureteral stents lead to significant morbidity. Factors like level of education and counseling of the patient before and after procedure plays a vital role in avoiding these complications. In some cases with severe septic complications and/or failure of the endoscopic removal open surgery procedures are required in order to remove these devices.

Keywords: ureteral stent, complications, double J stent, obstructive uropathy

TO DO OR NOT TO DO THE SURGERY - THIS IS WHAT URODYNAMICS HELP THE PATIENT AND THE UROLOGIST TO DECIDE (CASE REPORT)

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Background: In many cases, stress urinary incontinence (SUI) requires a surgical treatment, intending the improvement or remission of the symptomatology on long term. **Material and methods:** We present a case of a 43 years female who was admitted in Urology Department from Tg Mures, accusing urine loss to effort with an insidious begining 10-15 years before. From the history of the patient I have noted: hysterectomy 6 months ago and the postoperative worsening of urinary symptomatology. **Results:** Clinical examination revealed loss of urine on cough and Valsalva maneuver. Ultrasound: bladder without pathiological findings, with no post-void residual urine (PVR). Micturition diary- normal bladder capacity, normal urinary frequency during the day, loss of urine in quantuty of 10-100 ml/day on pad test. Uroflowmetry revealed a flat shape of the curve,Qmax=15 ml//s, without PVR. Pressure flow study result, established the diagnosis of underactive detrusor and stress urinary incontinence. **Conclusions:** Urodynamics help us to choose a right option of surgical treatment or, if the case, to avoid surgery when this can lead to worst quality of life.

Keywords: stress urinary incontinence, underactive detrusor, uroflowmetry, urodynamics, pressure flow study

THE EFFICACY OF EXTRACORPOREAL LITHOTRIPSY IN PATIENTS WITH LITHIASIS ON SOLITARY KIDNEY

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Background: ESWL, a non-invasive treatment used in the treatment of renal-ureteral lithiasis, was introduced in medical practice in 1980 in Germany. It can be successfully practiced even in case of patients with single kidney lithiasis. **Material and methods:** We performed a prospective / retrospective study of all patients with single kidney (congenital, surgical or functional) and lithiasis, treated and followed in Urology Clinic in Târgu Mureş from 23 July 1991 until 31 December 2015. All single kidney lithiasis patients who met the following criteria were included in the research: functional kidney without stasis and calculus ≤ 20 mm. A total of 203 patients were enrolled in the study. **Results:** The number of patients assigned by gender is approximately similar: 101 male (49.75%) and 102 (50.25%) female. In terms of age, the mean age was 56.75 +/- 13 years. Most calculi were found in inferior calves (34.49%), pelvic urether (20.91%) and lumbar (16.72%). There have also been renal units with multiple lithiasis. Some patients required autostatic stenting or percutaneous nephrostomy prior to ESWL sessions either due to septic conditions or

obstructive anuria. In 185 patients (91.13%), total calculus disintegration was obtained after one or more lithotripsy sessions. A total of 173 patients (85.22%) returned to the regular control at 3 months or later, showing a rate of stone free of 86.75%. **Conclusions:** Although the discussion regarding the optimal treatment in renal ureteric lithiasis on the single kidney is still open and new treatment options are becoming numerous, given good efficacy, low incidence of complications, and high rate of stone-free (86.75 %), we consider ESWL to be the appropriate therapy in these patients if the indication is properly established and is performed by an urologist with extensive experience in this field.

Keywords: extracorporeal lithotripsy, single kidney, lithiasis

PENOPLASTY BY SCROTUM TUNNELISATION - SURGICAL TECHNIQUE AND POSTOPERATIVE COMPLICATIONS

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Background: The aim of the paper is to present the pathology and the therapeutic technique in patients who injected mineral oils under the skin of the penis. **Material and methods:** We performed a retrospective study over a 4-year period (2013-2017) in which we introduced 6 patients admitted to the Tg Urology Clinic. Mures for fibrosis fistulae at the penile area after the subcutaneous injection of vaseline or kanamycin. **Results:** Each patient uderwent one or more penile skin reconstruction surgery by 3 tunneling methods in one or two surgery stages. The postoperative evolution of patients was favorable with per primate healing in 4 cases, for 2 cases we needed additional interventions and grafting of the cutaneous flap from the inguinal region. **Conclusions:** Penile tunneling using scrotal flap has good results due to the vascular graft allowing faster wound healing and an aesthetic result. This form of penile augmentation can lead to major complications (extensive edema, ulceration, tissue necrosis, fibrosis), which even despite adequate medical interventions can cause aesthetical and functional damage to the penis.

Keywords: penile tunneling, penil augmentation, surgical complications

THE IMPORTANCE OF POST-VOID RESIDUAL URINE IN THE MANAGEMENT OF WOMEN'S VOIDING DYSFUNCTIONS

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Background: The aim of this paper is to highlight the place of post-void residual urine (PVR) evaluation and the urodynamic diagnosis of voiding dysfunctions in women. **Material and methods:** We performed a retrospective study over a period of 3 years in Mures County Hospital, Clinic of Urology. In this study we included 47 women which presented the selection criteria (voiding symptoms, PVR confirmed by abdominal ultrasound,over 50 ml and the results of urodynamic investigations: uroflowmetry and pressure-flow study). **Results:** The mean age of the patients was 51,97+/-16,07 SD(standard deviation) years old with wider extremities between 20 to 78 years old. The mean value of PVR was 140 ml (50-260 ml). The measured quantity of PVR was between 50-100 ml, in 31 cases,100-200 ml in 9 cases and PVR more than 200 ml in 7 cases.The mean value of Peak flow rate (Q max) was 11,70 ml/s +/- 6,82 SD. The urodynamic diagnosis (pressure flow study) revealed detrusor sphincter dyssynergia in 14 cases, 11 with underactive detrusor, 14 with acontractile detrusor, 2 with obstruction due to genital prolapse gr III and IV, 2 with urinary retention post TOT and 4 with urethral stenosis. Statistical analysis demonstrated a correlation between the quantity of post void residual urine and value of Qmax (r= -0,32 and p=0,02) and also the existence of PVR and diagnosis of impaired detrusor contractility, p=0,02. **Conclusions:** Urinary retention in women is a condition that needs an adequate attention and a proper diagnosis protocol, in order to take into account the study of detrusor contractility. A significant post-void residual urine can be associated with an impaired detrusor contraction.

Keywords: urinary retention, uroflowmetry, urodynamics, post-void residual urine, underactive detrusor

COMPARISON OF LONG-TERM OVERALL SURVIVAL OF PATIENTS WITH G1 AND G2 GRADE TA BLADDER TUMORS

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Background: Bladder cancer is one of the most common cancer of the urinary tract, occupying the second place after prostate cancer in men. Aims of the study: compare long-term overall survival in patients with G1 and G2 grade Ta bladder cancer after TURBT and investigate clinic and pathologic prognostic factors for overall survival of G1 and G2 Ta patients. **Material and methods:** A total of 200 patients with G1 and G2 Ta non-muscle invasive bladder cancer underwent TURBT in the urology department durring 1.01.2006 to 31.12.2008. Average follow-up was 109 months. Inclusion criteria: Ta at first manifestation, G1 and G2 grade tumors with no CIS. 36 patients were excluded due to concomitant CIS (1), high risk tumors (4) and lost of follow-up (31). Statistical analysis was performed using STATA 11.0. **Results:** A total of 164 were included with primary G1 and G2 Ta tumors. The mean age of the patients was 63.3 years (range 21-89). 135 were males (82.3%) and 86 (52.4%) had diameter of tumors >3 cm. Multiple tumors in 78 (47.6 %) cases, G2 tumors in 105 (64 %) patients. Adjuvant, BCG local (endovesical instillations) treatment administrated in 32 (19.5%) patients. Recurrence was observed in 26 (15.8 %) and progression in 5 (3%) patients. At 10 years after diagnosis a total of 102 patients (62.2%) were survivors. Advanced age at diagnosis was associated with overall mortality 69 yrs. vs. 59.8 yrs. ($p<0.001$). 10 year survival in G1 patients was 67.8 % (CI 54.3-78.1) and G2 patients was 59 % (CI 49-67.3) ($p=0.31$). BCG treatment was associated with higher OS, 84.4% vs. 56.8%, $p=0.004$ at 10 years. **Conclusions:** Patients with well diferrentiated (G1) and moderately well differentiated (G2) Ta tumors have similar overall survival at long-term after diagnosis. Patients older than 70 years are at risk to die in the following 10 years after diagnosis.

Keywords: long-term, recurrence, progression, G1 and G2 grade non-muscle invasive bladder cancer, overall survival

POSTERS

APPLYING SOFTIS-PED DOCTOR-PATIENT INTERACTION STRATEGIES TO TEACHING MEDICAL ENGLISH (ME) COMMUNICATION

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Background: SoftisPed Erasmus+ Strategic partnership project no. 2016-1-RO01-KA203-024630, coordinated by the University of Medicine and Pharmacy of Tirgu Mures and involving joint work of parterns from other four European countries, envisages to optimize the quality of pediatric education and care by addressing the development of students soft skills, with communication as a central ability. **Material and methods:** Linguistic strategies of the SoftisPed IO2 Module - Communicating with children - were applied in teaching Medical English communication with a group of second year GM students (N = 72). The ME class integrated group-work autonomous speaking and reading of a series of medical narrations on the importance of history taking and physicals for establishing a correct diagnosis. In turns, students communicated contents to their peers, applying the piloted strategies: teach-back, repetition, validation, adaptation of pace, voice tone and volume, to environment and interlocutors. These strategies helped the students check peer-understanding in much the same way as a doctor will have to check the patient s understanding of his/her explanations and instructions. **Results:** Class communication in an EFL/ME context can often be inappropriately perceived by students as mainly a teacher-student, student-teacher exchange with only tangential involvement of student-student interactions, with lurking, nondemocratic participation and no immediate relevance for their medical career, as major drawbacks. Adaptation of doctor-patient interaction strategies shifted the ME class communication paradigm to an authentic, more engaging and meaningful goal. Feedback obtained from their interlocutors through teach-back, validation and repetition, helped students customize and enhance their performace, also by adapting their pace, tone and volume to their listeners. **Conclusions:** Besides the linguistic component, adoption of doctor-patient communication strategies to a Medical English learning context had potential benefits pertaining to task authenticity, student involvement and satisfaction, and especially increased awareness about the expressed need of these strategies in their future medical practice.

Keywords: Softis-Ped, doctor-patient communication, Medical English

LABORATORY TESTS USEFUL IN MANAGING ASTHMA IN CHILDREN

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Background: In many industrialized countries, asthma is the most common chronic disease in the pediatric population. In children with a family history of atopy, asthma is more common, outdoor allergens, viral infections, tobacco smoke and pollution are favorable factors for triggering asthma. **Material and methods:** To demonstrate the atopic level, total serum IgE was measured, blood eosinophilia was measured for the body's reaction and for the etiological agent of the allergy, specific IgE testing (respiratory and food allergen combination, 36 allergens) was performed. **Results:** This study included 84 patients, aged between 2 and 18 years, who were admitted to the Pediatrics Clinic in Sibiu during 2014-2016. Total serum IgE was measured with the Vidas analyzer, eosinophilia was measured with a Sysmex XS-1000i analyzer and specific IgE was measured with the MAST CLA system. Of the total number of patients, 76% were males, 24% females, 66% were urban and 34% were rural. 79% of patients had a high level of total IgE, blood eosinophilia was increased in 68% of cases and specific IgE was altered in 52% of cases (high level, 3 and 4). **Conclusions:** The combination of the three lab tests gives a clear picture of asthma in children. The advantage of these tests is the collection of a blood sample, being an easy method to investigate a child. Male and urban patients (much higher pollution) were more affected.References: L. B. Bacharier, A. Boner, K.-H. Carlsen, P. A. Eigenmann, T. Frischer, M. Gçtz, P. J. Helms , J.

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Keywords: chronic disease, allergens, blood eosinophilia

OSTEOLIPOMA OF THE TONGUE - A RARE TUMOR IN THE ORAL CAVITY

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Background: Lipomas in the oral cavity may appear on the tongue, lips,floor of the mouth. Osteolipoma is part of "the lipoma family" and is a very rare benign tumor that can develop on the dorsal part of the tongue.In european maxillo facial surgery literature only a few cases are discribed in the oral cavity. **Material and methods:** We present a case of 65 years old male patient that presented a tumor on the dorsal part of the tongue. The tumor was painless, well delimited, highlighted from the tongue plane and with a diameter about 2 cm. After preoperative preparation the tumor is excised and an histopathologic exam is performed. **Results:** Surgical evolution of the case was good with no recurrence of the tumor after six months. **Conclusions:** Osteolipoma of the tongue is a rare entity, surgical excision is the only treatment.

Keywords: osteolipoma, tongue, surgery

DENTAL HEALTH STATUS OF TWO ROMANIAN GROUPS OF CHILDREN WITH RURAL AND URBAN RESIDENCE

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Background: Dental caries remains a widespread disease of the modern world and it has a negative influence on the psychological development of children, which might experience social discomfort from an early age. We aimed to evaluate the oral health status of children from urban and rural areas of Bistriţa-Năsăud County, correlated to socio-economic and behavioral factors, in order to increase the level of dental health education and oral hygiene. **Material and methods:** Based on specific criteria, 92 children aged between 12-18 years from a rural and an urban school were included in our study. Each participant completed a questionaire regarding the personal dental hygiene habits, followed by a complete dental examination. The results were statistically evaluated using the Chi-squqre test at a confidence interval of 95%. **Results:** Comparing the results obtained in urban and rural areas we observed that 59% and 22% of children visit the dentist once a year for control, 41% and 78% needed emergency treatment, 98% and 76,5% usually use tooth paste during their daily oral hygiene programm.These differences were statistically significant ($p<0.05$). **Conclusions:** The level of oral hygiene proved to be unsatisfactory in both rural and urban areas. Despite the improvements observed in urban area compared to previous studie, there is still an imperative need for oral health preventive programms based on the collaboration between parents, teachers and dental care providers.

Keywords: oral health status, level of oral hygiene, dental care providers

PERFORMANCE OF MANUAL AND ROTARY ENDODONTIC INSTRUMENTS IN THE CLEANING OF THE APICAL THIRD OF THE ROOT CANALS: A HISTOLOGICAL STUDY

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Background: The correct and complete preparation of the apical part of the root canals is considered to be a "sine qua non" condition for excellence in endodontic therapy. Once we achieve this goal, the final cleaning and three-dimensional obturation of the entire endodontic system will become possible. The aim of our study was to evaluate the efficiency of manual and rotary endodontic instruments in performing thorough cleaning of the apical part of the root canals. **Material and methods:** A total of 26 root canals of freshly extracted human teeth were divided in two groups and instrumented using manual endodontic instrument (step-back technique with circumferential filling motion) and the ProTaper rotary system. The apical parts of the roots were sectioned, prepared based on a histological protocol and examined with an optic microscope regarding the presence of soft tissue on dentinal root canal walls. The results were recorded based on a scale from 0-3 and the data was finally statistically analyzed with the Kruskal-Wallis test. The significance level was set at a value of $p<0.05$. **Results:** In the apical thirds of the root canals, manual endodontic instruments showed a better shaping ability compared to rotary files, as less soft tissue was noted during histologic examination ($p<0.05$). The rotary files proved more effective in removing debris from dentin walls towards medium third of the root canal, creating best conditions for proper cleaning. **Conclusions:** Manual endodontic instruments are still very important during shaping and cleaning of root canals and proved a better cleaning performance of apical third of the root canals. The morphological variations of this area impose to specialists in endodontics high technical skills and a thorough knowledge on endodontic anatomy, in order to achieve an effective treatment.

Keywords: endodontic treatment, manual files, root canal morphology, Ni-Ti rotary systems

ACUTE NECROTIC-HEMORRHAGIC PANCREATITIS ASSOCIATED WITH PULMONARY THROMBEMBOLISM

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Background: Acute necrotic-haemorrhagic pancreatitis is a dramatic condition with complex etiology, characterized by activation and release of pancreatic enzymes, glandular autodigestion and systemic inflammatory response. **Material and methods:** We present the case of a 56-year-old patient, known for chronic alcohol abuse, chronic toxic hepatopathy with myocardial infarction 6 years ago, on oral anticoagulation (Trombostop 2mg/day, without INR control). He presented himself in the emergency service with intense abdominal pain, nausea, vomiting, fever, anxiety, dyspnea, peripheral edema, symptoms that have been progressively installed for about a month and aggravated in the last week. Objective examination - discomfort with orthopnea, abdominal distension, epigastric sensitivity and regurgitation, slow intestinal transit, sclera icterus, hypotension, tachycardia. **Results:** Hyperleukocytosis-25060/mm⊠; hemoglobin-13g/dl; serum amylase-811 U/l; serum lipase-634 U/l, INR (International Normalized Ratio)-6,69, Fibrinogen-980mg/dl; Abdominal ultrasound-hepatic steatosis; inherent pancreas, enlarged cephalic with calcifications; intestinal ascites; Thoracic computed tomography (CT)- massive pulmonary thromboembolism, Abdominal CT-inomogenous pancreas, pancreatic pseudocysts, portal vein thrombosis, intestinal ascites. Echocardiography-Dilated cardiomyophaty.Our diagnosis was- Acute severe pancreatitis, Pulmonary thromboembolism, Portal vein thrombosis, Pancreatic neoplasm in observation, Thrombophilia, Ischemic and dysmetabolic dilatative cardiomyopathy. Dicumarin overdose. Hydroelectrolytic and metabolic balancing treatment, nutritional support, antibiotic therapy, somatostatin, antialgic, antispasmodic, oxygen therapy, Clexane (under the control of Partial Thromboplastin Time- APTT) have been performed. The patient's condition worsened rapidly, so that the state of shock followed by death in the next two days. Necropsy showed- Acute

necrotic-haemorrhagic pancreatitis, Pulmonary thromboembolism, Dilatative cardiomyopathy, Sequelae of myocardial infarction. Portal vein thrombosis has not been confirmed. **Conclusions:** This association between massive pulmonary thromboembolism and acute pancreatitis has posed problems of diagnosis and treatment. Late patient presentation, alcohol abuse, dicumarol treatment which has accentuated the process of fibrinolysis in acute pancreatitis have resulted in a fatal outcome.

Keywords: fibrinolysis, lipase, acute pancreatitis

THE SEVER FORM OF CHRONIC GOUT AT THE FIRST PRESENTATION

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Background: The chronic gout, less common today, is manifested with persistent pain and joint swelling, the presence of tophi in osteoarticular tissue, periarticular, soft tissues, association of inflammatory processes, ulcerations, nephropathy. **Material and methods:** We present the case of a 68-year-old rural patient: obese with high blood pressure, hyperlipidemia, alcohol consumer in youth, with a high-fat diet. The patient had no presentations at his family doctor or specialist doctors, but accused arthritis in the past 10 years, he noticed the appearance of tophi in his hands and feet, which have increased progressively. Currently, he is hospitalized for intense pain in the hands and legs, functional impotence, swelling, ulceration, dyspnea with orthopnea, peripheral edema. **Results:** On the objective exam, we detect articular deformities through the presence of tophi in the fingers of his hands and feet, at the level of the ears. The size of the tophi varies from a millet grain to a dove / chicken egg, variable consistency, with rocky forms accompanied by redness, local warmth, ulcerations, functional impotence. Acid uric-11,1 mg%. Radiographs show joint changes -gaps, geodes, marginal osteophytis. ECG-left ventricular hypertrophy, depression of the ST segment in inferior derivatives. TA-165/95 mmHg, urea-272,08 mg%, creatinine-3,85mg%. Bacteriological examination of the skin secretions - Proteus Vulgaris. The treatment took into account the hydroelectrolytic and metabolic balancing: Glucocorticoids short- term treatment (30mg / day, 4 days), Colchicine 2x0.5mg / day a week and then 0,5mg / day (5 days /week), liquids 1.5-2 l / day, Milurit 3x100mg /day, Losartan 50mg/day. Antibiotic treatment with Meronem, based on the antibiogram-2x1g iv /day.(10 days). **Conclusions:** Repeated untreated attacks have led to a form of chronic arthritis with irreversible deformities and loss of articular mobility and the association of urinary nephropathy, this makes the prognosis unfavorable even despite a well-managed treatment.

Keywords: chronic gout, geodes, tophi

TONSILLAR NON-HODGKIN'S LYMPHOMA ASSOCIATED WITH ILEOCECAL SARCOMA –CASE REPORT

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Background: Non-Hodgkin's lymphoma of the Waldeyer's ring is a relatively rare disease and the palatine tonsil is the most frequently involved site. Most tonsillar lymphomas reported in the literature was diffuse large B-cell non-Hodgkin lymphoma. Tonsillar lymphoma is a type of extranodal lymphoma and is the most common location, after gastrointestinal site. The majority of these patients are in the early stage. **Material and methods:** We present the case of a 76-year-old woman who was admitted to our hospital in the may 2016 with a diagnosis of tonsillar diffuse large B-cell non-Hodgkin lymphoma. The onset was with bilateral hypertrofy of tonsils, sore throat, dysfagia and dysphonia. Her medical history is: arterial hypertension, obesity and gallbladder carcinoma in 2008. **Results:** We performed blood tests and we found elevated serum LDH and ESR and moderate normocrome normocytic anemia. The CT scan revealed left cervical lymphoadenopathy and an ileocecal tumour with satelite adenopathies and also a subhepatic tumour. We performed the colonoscopy but due to the obesity of our patient, it was impossible to prelevate a biopsy. We started the chemotherapy for diffuse large B-cell non-Hodgkin lymphoma and she received 6 cycle CHOP combined with rituximab. After the chemotherapy we performed a PET-CT scan, where it was highlighted a ileocecal tumour by 100/112/143 mm with posterior peritoneal invasion and right cervical adhenopathy by 65/35/40mm. In the march 2017 the ileocecal tumour was extirpated, the histological diagnosis was undifferentiated sarcoma and the patient was guided towards oncology. **Conclusions:** Tonsillar s lymphoma is a rare disease, which tends to present at an early stage and usually it has a good

response of the chemotherapy and radiotherapy, with favourable prognosis. Unfortunately our case had a unfavourable prognosis because it was associated with a very agressive type of cancer, with a history of another neoplastic disease and with multiples comorbidities.

Keywords: lymphoma, sarcoma, tumour

PARTICULAR ASPECTS OF ACUTE PULMONARY EMBOLISM IN OUR GEOGRAPHICAL AREA

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Background: Acute pulmonary embolism (PE) represents a major cause of hospitalization, morbidity and mortality worldwide. Prognostic of patients with pulmonary embolism is influenced by several factors, used to create approved scores for early (30 days) and late (six months) mortality risk. **Material and methods:** The aim of our study was to find different parameters witch influence the prognostic and mortality of these patients, in our geographical area. We performed a retrospective and prospective observational study, on consecutive patients with PE admitted in our hospital between 2012 and 2016. The diagnosis was confirmed by computer tomographic pulmonary angiography. Initial mortality risk assessment was performed according to curent guidelines recommandations. Clinical datawas recorded; echocardiography and blood analysis were performed on all subjects. The patient were followed for six months after admission. For statistical analysis Student's t test, Mann-Whitney U test and Chi-Square test were applied. **Results:** The mean age of patients was 69+/_12 years, with approximately the same gender distribution. Most frequently symptom was dysphnea and the most common risk factors were deep vein thrombosisi and heart failure. According to PE curent guidelines, the patients were assigned in low (10,5%), intermediate (80,7%) and high (8,8%) risk group. Early mortality rate (30 days) was 8,7% for all study subjects. In our study, a higher RV/LV ratio, lower TAPSE (tricuspid annular plane systolic excursion), McConnel sign and elevated NT-proBNP values were all related to late mortality(six month). **Conclusions:** Although many risk factors have been identified in the study, their involvement in mortality remains uncertain compared with existing literature datas in this field.Project funded through Internal Reserch Grants by University of Medicine and Pharmacy Tirgu Mures, Nr. 17800/22.12.2015

Keywords: pulmonary embolism, early mortality risk, late mortality risk

THE OPINION OF A STUDENT GROUP REGARDING THE CURRENT ASSESSMENT SYSTEM USING TEAM BASED LEARNING AND CASE BASED LEARNING AT PEDIATRIC DENTISTRY DEPARTMENT

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Background: Team Based Learning (TBL) and Case Based Learning (CBL) have been widely adopted in the medical education system all over the world including our Faculty of Dentistry. TBL and CBL as student s assessment methods were initially introduced last year to 10 pilot departments within the faculty including Pediatric Dentistry. The purpose of this study was to get a direct feedback from the students about how teachers from Pediatric Dentistry Department apply these teaching and evaluation methods. **Material and methods:** The study consisted in assessing the opinion of a group of students in the fifth year of the dental education program about the effectiveness of TBL and CBL methods. From the total of 110 from both sections Romanian and Hungarian responded 98 students and the evaluation method used was a questionnaire asking students to specify briefly the positive and negative aspects related to TBL and CBL sessions at Pediatric Dentistry compared to other dental departments. The data on students perception regarding the application of these methods and the positive and negative impact on the effectiveness on acquiring basic knowledge in Pediatric Dentistry field were centralized. A statistical comparison between the results registered at our department with the results obtained at other dental departments was made. **Results:** The results showed a number of positive aspects regarding TBL and CBL session: appropriate course material, graduate learning, team discussions, interesting cases commonly found in practice. Regarding the negative aspects the most common opinions referred to the short time allocated to each question, the degree of difficulty, lack of planning of TBL and CBL session at faculty level to avoid overloading the students

program. **Conclusions:** The study shows that the TBL and CBL methods are an effective way to stimulate learning throughout the semester if the basic principles of these methods are respected.

Keywords: Team Based Learning, Case Based Learning, Pediatric Dentistry, opinion

EVALUATING ELDER ABUSE

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Background: Elder abuse is a frequent entity encountered in every society and it will increase in the future as the global population is growing rapidly with an overall increase in life expentancy.The purpose of this study is to evaluate elder physical abuse cases reviewed at the Forensic Institute from Targu Mures. **Material and methods:** It was an retrospective study ,involving an experimental design evaluating persons aged 65 or older who requested an forensic certificate from the Forensic Institute in Targu Mures, between 1st of January 2014 and 31st December 2015.Were taken in account multiple types of abuse and been coded each of these types. **Results:** 5025 forensic medical certificates were issued at request from the Forensic Institute of Targu Mures in 2014,were M=10.00,SD=4.93 and 5595 in 2015 were M=17.00,SD=7.09.There is a statistically significant difference between the medians of elder abuse in 2014 and 2015 with $p<0.05$,CI =6.86 to 12.58.Chi square test ,$p<0.05$ as in 2014-2015 there is an association between gender and type of relation with aggressor. **Conclusions:** Because there is an increase in number of abused elder persons aged 65 or more there is an imperious necessity of participation of various health care professionals in order to complete these expertises. There is a necessary to develop some more evidence of some objective measures for abuse. We have to take in account the point of view of the victim. There should be consensus about international guidelines for diagnosing elder abuse and preventing strategies.

Keywords: forensic psychiatry, neglect, elder abuse, mental health, emotional abuse

INFLUENCE OF THE BRAINED DERIVED NEUROTROPHIC FACTOR VAL66MET POLYMORPHISM ON OBESITY MEASURES AND RELATED METABOLIC COMPLICATIONS

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Background: Brain-derived neurotrophic factor (BDNF) with a key role in the survival and differentiation of neurons appears to be involved in energy metabolism and food intake. Its levels have been found to decrease in obesity, and increased by physical exercise. BDNF with its receptor TrkB appear as important targets of the leptin-melanocortin system, and loss of function mutations were found to associate with hyperphagia. By controlling irisin, its action on beige adipocyte transformation may represent therapeutic potential. The Val66Met (rs6265) functional polymorphism determines decreased activity by affecting intracellular trafficking and secretion, however, association studies with metabolic complications remain inconclusive. **Material and methods:** We investigated rs6265 effect on anthropometric and metabolic parameters in 236 middle-aged subjects from Mures county. Genotyping was carried out by PCR-RFLP, using AAACATCCGAGGACAAGGTG/CCTCATGCACATGTTTGCAG and Eco721. **Results:** Minor allele frequency dependent on obesity did not differ significantly (20.36 vs 22.7%), nor did the metabolic syndrome development risk according to rs6265. In 66Met carrier obese males patients, BMI (31.66±5.75 vs 30.29±4.5 kg/m2, $p<0.1$), systolic and diastolic blood pressure (154.60±19.58 vs 146.31±20.01 and 86.18±11.23 vs 91.83±12.16 mmHg, $p<0.05$) were higher; in women no such difference could be demonstrated. **Conclusions:** In conclusion, rs6265 of BDNF, considered a regulator of systemic and brain energy metabolism and cardiovascular health, may modulate metabolic complication severity and progression. Offering a potential link between cognitive dysfunction and the metabolic syndrome, with possible implications in healthy aging by lifestyle interventions strongly motivate further research.

Keywords: brained derived neurotrophic factor, rs6265, obesity, metabolic syndrome, cardiovascular health

THE USE OF POLYPROPYLENE PATCHES IN THE SURGICAL TECHNIQUES OF BRONCHIAL STUMP CLOSURE, AFTER PULMONARY RESECTIONS

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Background: One of the most common complications that may occur in patients undergoing pulmonary resections is bronchial stump fistula.The incidence of bronchial stump fistula in patients with pulmonary resections ranges between 0 and 20%, depending on the surgical team experience. The purpose of this paper is to evaluate the efficiency of an innovative bronchial stump closure procedure. **Material and methods:** We performed a retrospective observational study in which we used the experience of 1st Surgery Clinic from the University Emergency County Hospital Mureş, for a period of 2 years, between 1.10.2015 and 1.10.2017. We enrolled 41 patients with pulmonary resection practiced for non-small cell lung cancer. The closure of the bronchial stump was performed with isolated wires of 2.0 Prolene armed with patches of Polypropylene. **Results:** In our study, lobectomy was performed in 31 cases (75.6%), 6 patients (14.63%) were subjected to bilobectomy, and left pneumumectomy was performed in 4 patients (9.75%). The incidence of bronchial stump fistula in these patients was 2 cases (4.87%). In both cases the conservative treatment option was chosen. **Conclusions:** The low rate of bronchial stump fistulas shows that the surgical technique used has beneficial effects. In order to validate this procedure in clinical practice it is necessary to carry out studies on much larger numbers of patients.

Keywords: polypropylene, pulmonary resections, bronchial stump closure

DEEP VENOUS THROMBOSIS AND PANCYTOPENIA IN A YOUNG PATIENT

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Background: Deep venous thrombosis (DVT) is the presence of coagulated blood, a thrombus, in one of the deep venous conduits that return blood to the heart. Often, the clinical dilemma is that symptoms (pain and swelling) can be nonspecific or absent. However, if left untreated, the thrombus may become fragmented or dislodged and migrate to obstruct the arterial supply to the lung, causing potentially life-threatening pulmonary embolism. **Material and methods:** We present the case of a 44 year old patient with a history of right hemicolectomy and segmentary resection of the descending colon (traffic accident), admitted to our department for swelling and edema of the right leg. The venous Doppler ultrasound confirmed the diagnosis of DVT of the right femoral-popliteal-calf axis. We started the patient on oral and LMWH anticoagulation. We performed laboratory analyses and other investigations. **Results:** Laboratory analyses showed marked pancytopenia (hyperchrome macrocytic anemia, leukopenia, thrombocytopenia) with progressive decrease of the values. Sternal punction was performed for bone marrow analysis and cell phenotyping. Abdominal ultrasound showed a possible lesion adjacent to the left inferior renal pole. Upper digestive endoscopy found chronic gastritis and esophagitis. **Conclusions:** We consider that the pancytopenia is most likely in the context of megaloblastic anemia (needing confirmation by determining the levels of Vitamin B12 and folates). The only risk factor that could explain the DVT would be a neoplasia, but we need confirmation by abdominal computer tomography. The association of the two entities is unusual and needs further examining.

Keywords: deep venous thrombosis, pancytopenia, megaloblastic anemia, neoplasia, young patient

METHODS FOR DETERMINING THE EFFECTIVE DOSES RECEIVED BY PATIENTS IN THE CASE OF RADIODIAGNOSTIC FACILITIES FOR GRAPHY

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Background: For a better estimate of the risks a patient undergoes during a *Röntgen Diagnosis* procedure, it is necessary to know the effective dose received by this one. In Romania, two methods are used to track the effective dose received by the patient when using an X-ray installation. In one method, the radiological installation is equipped with a DAP meter that displays the product s dose value during the procedure. The second method involves calculating the entrance surface air kerma. Purpose. We aim to verify the accuracy of the method proposed by the specialized institutions for calculating the patient s entrance surface air kerma, by comparing the results obtained by computation with the value of the dose area product displayed by the DAP-meter. **Material and methods:** For data collection, a fixed Röntgen Diagnosis device, RIVIERA BLADE model, was used with maximum parameters: 150 kV, 400 mA. The records of the "Registry of Radiographic Exposure Individual Parameters" are used, respectively the patient s weight and height, kVpacient, mApacient, , the focal-detector distance at which the exposure was performed and dose area product. Entrance surface air kerma - K (SI) - is the kerma in air measured on the central axis of the incident beam in the plane of the patient s beam entrance surface, respectively at the focal-skin distance, multiplied by the retroscattered factor which takes into account the radiation scattered by the patient. **Results:** After applying the t student test to compare the final results obtained by calculation and direct display, it is observed that the association is statistically significant, with $p < 0.05$. **Conclusions:** The calculation method proposed by the institutions in our country with competence in this field is correct and can be used where there is no DAP meter to directly measure the dose at the entrance surface.

Keywords: radioprotection, effective doses, Röntgen diagnoses

LESS INASIVE SURFACTANT ADMINISTRATION IN PRETERM NEONATES WITH GESTATIONAL AGE LESS THAN 32 WEEKS

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Background: Less invasive surfactant administration (LISA) in prematures with respiratory distress syndrome (RDS) is a new non-invasive technique that avoid intubation and mechanical ventilation (MV). Our objective was to evaluate the effectiveness and the possible complications of LISA technique of surfactant therapy in preterm infants compared with other techniques. **Material and methods:** Infants threatened by RDS with gestational age <32 weeks were categorized into two groups: 1) without premedication, a narrow-bore catheter was inserted into trachea under direct laryngoscopy, exogenous surfactant (200 mg/kg) was then instilled, followed by reinstitution of CPAP - infants included in LISA group. 2) Surfactant was given via an endotracheal tube followed by MV, or using INtubation SURfactant Extubation (INSURE technique), followed by CPAP - infants included in control group. **Results:** 17 infants (29.3%) were treated with LISA, 9 infants (15.5%) received INSURE treatment, and 31 (53.4%) required intubation. Mean gestational age for those included in LISA was 27.8 days (SD 1.57, vs.26.4 days (SD 2.23) for those included in the control group, p=0.38, and birth weight in LISA group was 1061grams (SD 229.5) vs. 931.2 grams (SD 332.5), p= 0.65 for control group. For those infants included in LISA group, need for intubation and MV was diminished, OR 0. 36, (0.19 to 0.66), with a similar trend for chronic lung disease (CHD), OR 0.64 (0.49 to 0.85), for retinopathy of prematurity (ROP) OR 7.11 (0.54 to 0.93), for persistent ductus arteriosus (PDA), OR 0.821 (0.5 to 1.12), and for intraventricular hemorrhage (IVH), OR 0.74 (from 0.54 to 0.97). Length of respiratory support and hospitalization was diminished for those included in LISA group and mortality was lower 6% compare to 15% in control group, p=0.02. **Conclusions:** LISA is a potentially effective alternative to other techniques of surfactant administration, but further study is needed on a larger number of patients.

Keywords: Surfactant, LISA, INSURE

THE RISK OF DEVELOPING POST-THROMBOTIC SYNDROME AFTER DEEP VEIN THROMBOSIS

Danila Mihaela[1], Pintea-Simon Ionela[1]

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Background: Post-thrombotic syndrome (PTS) has a major impact on patients with deep vein thrombosis(DVT) regarding their quality of life. There is difficult to identify the patients with high risk to develop post-thrombotic syndrome after deep vein thrombosis. The main objective of this study was to identify the prevalence and the risk factors that are involved in PTS after an episode of DVT. **Material and methods:** It was an observational, retrospective study of 122 patients with DVT hospitalized in the Emergency County Clinical Hospital from Tîrgu Mures between January 2015 and January 2017. **Results:** In this study, the prevalence of PTS was 52%. Applying the Villalta scale as a standardized assessment of PTS at the enrollment visit, we obtained the following results: 16.4% having severe character, 24.3% moderate, 59.3% mild character. Women were at increased risk (67.21%) to develop PTS compared with men(32.79%). Patients with proximal DVT(64.75%) had an increased risk of PTS compared with popliteal localization of DVT(35.25%). We also classified the patients using the body mass index (BMI): 1.63% were underweight, 27.04% were normal weight and 71.31% were overweight. Occurrence of PTS was increased in patients with higher body mass index. **Conclusions:** PTS remains a frequent complication of DVT despite optimal anticoagulant therapy and use of compression stocking. The risk of developing PTS after DVT is increased in female, obese patients, with proximal DVT.

Keywords: post-thrombotic syndrome, prevalence, deep vein thrombosis

ONE OF A THOUSAND FACES OF SYSTEMIC LUPUS ERYTHEMATOSUS - A CASE REPORT

Danila Mihaela[1]

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Background: Systemic lupus erithematosus(SLE) is an autoimmune disease that can involve any organ system, exhibiting great diversity in presentation. Pericardial effusion is rare as an initial manifestation of SLE. **Material and methods:** Case report **Results:** A 19- year-old woman, with no past medical history, presented with complaints of shortness of breath, non-productive cough, asthenia and fever over the past 2 months. On admission, the patient was febrile, had a heart rate of 145 beats/min and a respiratory rate of 42 breaths/min. Physical examination revealed muffled heart sounds, decreased breath sounds at the left lung base, mouth sores and conjunctival hyperemia. Investigations suggested large pericardial and minimal pleural effusion. After a thorough investigation, the diagnosis of SLE was established based on positive clinical and immunological findings. The patient satisfied 5 of the 17 Systemic Lupus International Collaborating Clinics (SLICC) for classifying SLE, namely serositis, mouth sores, anemia, positive serum ANA and positive anti-dsDNA antibodies. The patient was discharged by the 20th hospital day, on a therapeutic regimen of 32 mg/day of methylprednisolone. **Conclusions:** This case report showed one of the atypical presentation in systemic lupus erythematosus which can often delay the diagnosis.

Keywords: systemic lupus erythematosus, pericardial effusion, autoimmune disease

IMPORTANCE OF EARLY DIAGNOSES OF CHILD WITH MUSCULAR HYPOTONIA

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Background: Muscular hypotonia is a common symptom in children which requires a neurological evaluation. Hypotonia poses different diagnosis problems in case of acute or episodic installation of disease in which the patient has normal muscle tone compared to persistent postnatal hypotonia. The aim of this study was to evaluate the clinical particularities of early diagnosis of

hypotonia and the argumentation of the need to know them for the purpose of early and prophylactic treatment of the deficiency. **Material and methods:** This retrospective study included 118 patients aged between 4 months and 15 years with signs of motor impairment, patients admitted to the Department of Neurology and Pediatric Psychiatry Tirgu Mures between 2015 and 2016. d to persistent postnatal hypotonia. **Results:** 104 pacientes (88.1%) were central type hypotonic and only 10 (8.5%) had the peripheral cause. Of the central forms 69 (58.5%) were the group of those with cerebral palsy, 30 (25.4%) with retarded neuro motor reflex, the metabolic cause being identified in 2 (1.7%) cases, and the genetic defects in 3 (2.5%). Pathological pregnancy history (54.2%), low Apgar score (72.4%), perinatal hypoxia (44%), TORCH (22.1%) were the most common cause. The evolution in time was correlated with the recovery plan and drug treatment, the age of recovery, the intensity of the recovery plan as well as associated pathology. In most patients who underwent an intensive recovery program (kinetotherapy, physiotherapy with repeated hospitalization in specialized centers) there were very good results, showing a favorable evolution (69.1%) **Conclusions:** Careful supervision of pregnancies, especially those at risk, is one of the most effective ways of prevention but cannot be ever 100% guarantee. The kinetotherapeutic treatment, regardless of the cause, remains essential in these hypotonic conditions. The kinetotherapy program should be individualized and adapted to the particularities of each patient.

Keywords: muscular hypotonia, early assessment, kinetotherapy, infant

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The 10th Conference of PhD Students and Young Doctors

December 13th 2017

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PLENARY CONFERENCES ABSTRACTS

December 13th 2017

STRATEGIC DEVELOPMENT OF RESEARCH AT MANCHESTER – FITTING THE PIECES OF THE JIGSAW TOGETHER

Prof. dr. Mark Slevin PhD, FRCPath, Manchester Metropolitan University, UK

This short seminar will focus on mechanisms to obtain a functional strategic vision with the strap lines of FOCUS-QUALITY-IMPACT. Broadly, the challenges range from being able to identify world-leading research with the potential to impact on health and society; to administrate and implement a series of support mechanisms to enable growth of critical mass; to assess infrastructural requirements, and be able to compare quality with neighbouring, national and international institutions. Considering the importance of teaching and teaching quality and its critical link to research excellence, the two processes should work transparently and hand-in-hand.

PAST AND FUTURE POPULATION HEALTH EFFORT FOR LONGER AND BETTER LIVES

Prof. dr. William Au PhD, Professor, University of Medicine and Pharmacy at Tirgu Mures, Romania; Shantou University Medical College, China; and University of Texas Medical Branch, Texas, USA

Health is not only defined by the absence of disease but by being able to live fulfilled life everyday. Therefore, many factors need to be realized to achieve the healthy goal in life. Examples of some of the factors involve self determination, society conditions and well-executed regulations. Establishment of appropriate regulations, e.g. protection from exposure to environmental toxic substances, requires significant contributions from public health scientists and clinicians to provide evidence which can influence development of regulations. In USA, the Department of Health and Human Services establishes priority goals periodically which enhance factors which contribute to better health, e.g. Healthy People 2020, Healthy People 2030. Our better quality of life and longer life-span were significantly enhanced by such efforts in the past and also in the future. Specific examples will be presented and discussed.

TARGETING DNA REPAIR IN CANCER THERAPY WITH ALKYLATING DRUGS

Prof. dr. Bernd Kaina PhD, Professor and Director, Institute of Toxicology, University of Mainz, Germany

Although alkylating agents are potent environmental mutagens and carcinogens, they are also used as first-line therapeutics for the treatment of malignant brain tumors and several other types of cancer. They alkylate DNA at several sites, and the minor product O6-alkylguanine represents a major cytotoxic DNA adduct, activating the apoptotic pathway. Autophagy and replicative senescence are also induced by the lesion, indicating a complex signaling network evoked by a single type of damage. While, for methylating agents, the DNA repair enzyme MGMT acts protectively, mismatch repair sensitizes against these responses. Searching for drug modifyers, we identified homologous recombination as key node of cancer cell resistance and showed that activation of the ATR pathway is majorly involved. Data will be presented demonstrating that pharmacological inhibitors of homologous recombination and the DNA damage response enhances the killing effect of alkylating anticancer drugs, with PARP inhibition causing synthetic lethality. Further, we established the TCM drug artesunate as drug modifier, having impact on drug-induced senescence and apoptosis. Pathways involved in upregulation of DNA repair and apoptosis genes will also be discussed, highlighting their importance at the cutting edge between cell's survival and death. Supported by DFG KA724.

THE EPIGENETIC BLOCKAGE OF CARCINOGENESIS: A NEW WAY TO CANCER PREVENTION

Prof. dr. Alberto Izzotti MD, PhD, Professor, University of Genoa, Italy

DNA damage plays a role in carcinogenesis but is not sufficient to cause phenotipic changes because the cell possesses a remarkable variety of processes aimed at counteracting its consequences. DNA-repair and apoptosis can be effective in protecting cells but, under certain circumstances such as long-term exposures, can be insufficient or either dangerous inducing mis-repair and mutations or cell loss and tissue degeneration, respectively. A third line of defense against carcinogenesis is the epigenetic control of the expression of damaged genes as exerted by control of methylation status and microRNAs. The control of methylation by drug is difficult because of the bivalent effect of this approach on different genes (e.g., hyper-methylation of cancer-suppressive genes is an adverse effect). Conversely, microRNAs exert a gene-specific control silencing the expression of targeted oncogenes. Accordingly, despite the early occurrence of mutations in oncogenes during carcinogenesis, cancer does not occur for decades due to the effective protection exerted by the microRNA machinery. The modulation of this protective effect by either drugs or small molecules is a new frontier for cancer prevention.

THE STETHOSCOPE, THE SCALPEL AND THE PEN

Prof. dr. Gabriel Gurman Ben Gurion University, Beer Șeva, Israel

Medicine is a profession which, according to many who know it closely and from their own experience, claims total dedication and belonging, but it also requires a certain level of superiority complex.

It is said that a doctor starts his career with the belief that he is the deputy of God and he ends it with the conviction that God is his deputy.

In my profession as an anesthetist-reanimator, I have had the feeling , not just once, that I share with God, the responsibility of the patient's life and that only cooperation between us can lead to the expected results.

But so many times during his practice, the doctor struggles with the inability to influence the fate of the patient and has to undergo another force, a strong and decisive one.

This is why writing, not just once in the fiction literature, represents the solution to the professional frustration of the doctor. A character or a playwright character fully obeys the decision and the "treatment" of the person who created him and guides the fate of the whole action. The hero behaves exactly as the writer wishes, always and without exception.

Long before turning into a writer, the doctor becomes, by force of circumstances, a story collector. The classic doctor only acts after listening to the patient's "story". The story is called anamnesis.

The fictional truth constrains some to try to separate the two types of "stories", the real and the imaginary one, and thus solving the paradox that finds refuge in the soul of every doctor-writer, the struggle between the precision of the scientist and the imagination of the writer.

One of the questions that comes out of the hundreds of pages describing the inner world of the doctor-writer is about the importance of writing for a doctor.

In other words, after the phenomenon is described and studied ("doctors have writer's inclinations"), it is required to understand this reality and the etiology of the phenomenon is sought.

What came first? The chicken or the egg?

Does the doctor write out of instinct or necessity? Is the impetus of the inner knowledge of soul physiognomy or the desire to penetrate into the core of human philosophy at the basis of a young man's decision to devote himself to the medical profession?

Or, on the contrary, putting thoughts, ideas, professional experience on the gloss of the paper comes from a need to widen the range of professional tools available to a doctor in the treatment of his patient?

A cynical might firmly affirm that what is really behind the passion of writing is in fact the chase of glory and / or the pecuniary advantage.

However, I believe that most of the doctors who write, are doing it because of a calling, out of a need or a desire to better understand the human suffering, and not only the one that is caused by illness. They are also doing it to more effectively help the patient whose fate is in their hands.

COMMON ENGLISH LANGUAGE ERRORS IN MANUSCRIPTS SUBMITTED

Prof. dr. Ario Santini MD, PhD, DipFMed, BDS, DDS, FDS, FFGDP, DGDP, FADM The University of Medicine & Pharmacy, Tg-Mures, Romania

Hon Fellow. The University of Edinburgh, UK

Rejection is the norm in academic publishing.

Even researchers at the top of their field have experienced rejection.

Several peer-reviewed studies have investigated the reasons why journals reject papers which are not related to the manuscript scientific quality. The main finding was poor use of English and careless preparation of the manuscript with authors being informed that the English-language structure was unacceptable and required to be significantly improved.

The presentation will deal with the most Common English language errors, as found in 97 recently reviewed papers submitted from nine European countries over the last eighteen months.

CONFERENCES ON SECTIONS - ABSTRACTS

December 13th 2017

Section 1.1.

FOCUSING ONTO MOLECULAR TARGETS FOR DEVELOPMENT OF PRECISION AND PERSONALIZED MEDICINE

Prof. dr. William Au PhD, Professor, University of Medicine and Pharmacy at Tirgu Mures, Romania; Shantou University Medical College, China; and University of Texas Medical Branch, Texas, USA

Selection of therapeutic protocols for treatment of patients are based on careful evaluation of patient history and diagnosis, etc. With this traditional approach, patients with the same disease are assumed to be rather homogeneous although there are significant variations in drug response among them. Therefore, there has always been strong desire to improve therapeutic responses which are based on characteristics of individual patients. With the development of molecular and whole-genome techniques, personalized and precision therapy can be achievable. Take breast cancer as an example. Nowadays, breast cancers are classified based on different stages, histology, biological bahavior and genetic information such as expression of estrogen receptors, Her-2 and mutation of the BRCA genes. Based on whole-genome analysis, patients can be further classified into different groups. All the collected information can be used to design therapy that attacks specific molecular targets for better treatment outcomes.

DNA REPAIR AND DEATH REGULATION IN CELLS OF THE IMMUNE SYSTEM

Prof. dr. Bernd Kaina PhD, Professor and Director, Institute of Toxicology, University of Mainz, Germany

Cells of the immune system are key mediators of inflammation. They also control cancer growth, which is harnessed for immune vaccination and immune checkpoint control in cancer therapy. We assessed the sensitivity of cells of the immune system to genotoxicants, focussing on the myeloid lineage. Previously, we showed that in monocytes DNA repair proteins of the BER pathway are downregulated, while during maturation into macrophages and DCs they become upregulated and cells aquire resistance to genotoxicants, including reactive oxygen species (ROS). Extending this work, we analysed DNA repair proteins in neutrophils and compared them with monocytes and T cells. We show that, similar to monocytes, neutrophils are deficient in BER. Monocytes, neutrophils and macrophages respond to activation by a ROS burst, which kills monocytes while macrophages are protected. We propose that the monocyte's death resulting from impaired DNA repair regulates the immune response by controlling macrophages and DCs in the ROS enriched inflammatory area. A comparative analysis of blood cell sensitivity to IR revealed that monocytes are not the most sensitive cell type in the hematopoietic system. T cells are clearly more sensitive, although they are repair competent, undergoing apoptosis following IR already in a low dose range. The mechanism of down-regulation of repair in monocytes and the high sensitivity of cells in the lymphoid lineage will be discussed. Supported by DFG KA724.

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MICRORNA IN CANCER DIAGNOSIS AND PROGNOSIS

Prof. dr. Alberto Izzotti MD, PhD, Professor, University of Genoa, Italy

MicroRNAs alteration is the driving force of carcinogenesis. Cancer onset occurs only when the microRNA machinery is irreversibly altered. Accordingly, microRNA alterations are hallmarks of cancer cells and can be used to identify their presence. MicroRNA released from cancer cells into body fluids can be detected to perform early cancer diagnosis according to the 'liquid biopsy' approach. The analysis of microRNA 'signature' may be applied to identify high-risk individuals to undergo cancer screening and secondary prevention. MicroRNAs deriving from multiple organs contribute to the microRNAs detectable in blood thus more specific body fluids, such as brioncholaveolar lavage fluid for lung cancer, can be used. MicroRNA in cancer cells are highly unstable and can be used to to acquire chemo-resistance. Accordingly, microRNA analysis is applicable to develope personalized therapeutic approaches and microRNA transfection in cancer tissue can be used to overcome chemoresistence.

Section 2.1.

NEW FRONTIERS IN INTERVENTIONAL CARDIOLOGY

Prof. dr. Benedek Imre UMF Tirgu Mures,România

VULNERABLE PLAQUE – MYTH OR REALITY?

Prof. dr. Benedek Theodora UMF Tirgu Mures, România

Section 2.3.

STILL LOOKING FOR NEW STROKE/DEMENTIA THERAPEUTICS IN THE 21ST CENTURY

Prof. dr. Mark Slevin PhD, FRCPath, Manchester Metropolitan University, UK

It is nearly three decades now since any novel therapeutic passed phase II clinical trials for use in acute or hyper-acute stroke treatment. The pathophysiological changes occurring after stroke are complex and with blood-brain-barrier penetration also difficult to bypass, any effective therapy would probably need to be combinational (2 or more drugs targeting different or multiple cells and pathways); delivered with the capacity for timed release; and targeted with the capacity to home to damaged brain tissue or reside there long-enough to dampen inflammation, protect against cell death and direct tissue regeneration. The question I will discuss within this mini-seminar is – could stem cells be utilised as a tool to provide such a combinational therapy?

FREUD AND ANESTHESIA

Prof. dr. Gabriel Gurman Ben Gurion University, Beer Șeva, Israel

Despite of the many clinical trials that are trying to find the most effective and accurate method of measuring the depth of general anesthesia, today we still do not have a satisfactory solution to this problem. Because of this, the possibility of keeping a certain degree of memory during anesthesia is logical and it is confirmed by those cases where the patient can correctly reproduce what is heard in the operating room, while he is supposed to be at a desired level of suppression of the cortical functions. This exact reproductive phenomenon is called explicit memory, and it occurs in about two thousand cases of general anesthesia. But the Freudian philosophy, based on the concept of the subconscious, can help with the interpreting of the consequences of maintaining an anaesthesiology of another type of memory, which does not allow the reproduction of the stored details; this situation is called the implicit memory. Unfortunately, currently there are no accurate studies to determine the frequency of this phenomenon, but it exist and it has bad consequences for the patient, often resulting in the post-traumatic stress disorder. Not even the induced hypnosis, a method in which great hopes have been put in the past, does not solve the problem. On the contrary, because of the relatively high frequency of false testimonies under hypnosis, today it can be argued that this method has come out of the current usage. In an essay published a few years ago, I suggested the resemblance between the implicit memory phenomenon with the phenomenon described by Freud, of his famous patient, Ana O., in which he found elements that connect the implicit memory during sleep with the negative symptoms included in the post-traumatic stress disorder. The conclusion is that it is mandatory to keep the so-called “behavioral labels” in the operating room, starting from the idea that theoretically, any patient may, during anesthesia, retain a certain degree of explicit or implicit memory, that can lead to unwanted postoperative side effects.

Section 3.1.

LATE ORAL CONSEQUENCES OF EARLY CHILDHOOD CHEMOTHERAPY

Prof. dr. Márton Krisztina and Németh Orsolya Department of Dental Preclinical Practice, Dental Faculty, Semmelweis University, Budapest, Hungary

Objective was to investigate the long-term effects of chemotherapy on the oral health of children with emphasis on the cariological status and further more onto the major and minor salivary gland function.

Method: Thirty-eight 12-year old children (mean age 12.3±0.58 years) who underwent chemotherapy between 1 month and 7 years of age and 40 age and sex matched healthy controls with the same social background composed the study group. The cariological status (the DMF-T number), unstimulated and stimulated whole saliva flow rates and palatal saliva flow rate were assessed. Salivary buffer capacity was also investigated.

Results: DMF-T number (controls: 2.2±2.10 vs. patients: 4.61±3.71, $p<0.05$) and high range of buffer capacity of saliva was also significantly higher ($p<0.05$) in the patients than in the control group. Stimulated whole saliva flow rate (0.849 ml min^{-1} vs 1.132 ml min^{-1}), ($p<0.05$) in the test group was found to be significantly lower than in the control group. Palatal saliva flow rate (1.64 µl min^{-1} cm^{-2}) was significantly higher ($p<0.05$) in the test group compared to the controls (0.456 µl min^{-1} cm^{-2}). No statistically significant difference was found in the unstimulated whole saliva flow rates.

Conclusions: This current investigation has shown that salivary gland function is changed after years of childhood chemotherapy, that can be a reason of a worst cariological status compared to the healthy controls, though minor salivary glands might compensate the lost major gland-function. This study also revealed the abnormalities of the dentist's role in the oncology team.

CRANIO-FACIAL ALTERATION IN FACIAL ASYMMETRY

Prof. dr. Mariana Pacurar UMF Tirgu Mures, România

Facial asymmetry is a endognatie, with a prevalence between 3-5% among the children and teenagers. The etiology is plurifactorial and have an major impact in facial aesthetic changes. And functionals types untreated can lead to anatomical facial malformations which requires surgery treatment. The authors have proposed to assess both the lateral cephalometric craniofacial changes, as well as aspects of facial asymmetry by anthropometric measurements. Analysis was performed on a transverse plane, study models before orthodontic treatment, and the parameters were quantified craniofacial sphenoid angle, the length Y axis, the length of planum, so facial measurements, head and models are useful in the early diagnosis and individualized treatment plan, focusing on the possibility of expansion Joint maxillary dentition made. Facial measurements, head and models are useful in the early diagnosis and a individualized treatment plan, focusing on the possibility of expansion Joint maxillary dentition made. Asymmetric face can be detected early and craniofacial measurements are important in determining indicators of functional or anatomical laterognathia. All forms of facial asymmetry requires combination therapy: functional appliances and mechanical expansion. Where anatomical detected late, orthodontic therapy followed by surgery will achieve the desired result.

FARMACIE (PHARMACY)

PRELIMINARY STUDY ON THE ANTIBACTERIAL ACTIVITY OF LYOPHILISED VIPERA AMMODYTES AMMODYTES SNAKE VENOM.

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Background: Snake venom is a complex mixture of proteinaceous components, which exert numerous biochemical and pathophysiological effects, including neurotoxicity, myotoxicity, cytotoxicity and cardiotoxicity. Several venoms and venom components have also exhibited antibacterial activity, suggesting that some proteins might be used as potent antibacterial agents. **Material and methods:** The minimum inhibitory concentration (MIC) of *Vipera ammodytes ammodytes* (long-nosed viper) venom was determined against six bacterial strains using the serial two-folds dilution method (from 4.0 mg/ml to 1.9 µg/ml). The six bacterial strains used comprised of three Gram-positive (*Staphylococcus aureus, Methicillin-resistant Staphylococcus aureus (MRSA), Enterococcus faecalis*), and three Gram-negative (*Escherichia coli, Klebsiella pneumoniae, Pseudomonas aeruginosa*) bacteria. The minimum bactericidal concentration (MBC) was determined for concentrations above the observed MIC values by spot-inoculating the inhibited bacteria on Mueller-Hinton medium. **Results:** The *V. ammodytes* venom presented an inhibitory and bactericidal effect on *S. aureus* (MIC/MBC > 125 µg/ml), *MRSA* (MIC/MBC >125 µg/ml) and *K. pneumoniae* (MIC/MBC > 250 µg/ml). A partial inhibition was observed on *P. aeruginosa* strains at 4.0 mg/ml, but a bactericidal effect was lacking at this concentration. The venom showed no activity on *E. coli* and *E. faecalis* within the concentration range used for the experiment. **Conclusions:** The results of our study indicate that *V. ammodytes ammodytes* venom has a marked antibacterial activity against different Gram-positive and Gram-negative bacteria. The observed effect is possibly related to the venom's content in antibacterial proteins, particularly phospholipase A_2 and L-amino-acid oxidases. Further separation of venom components may lead to the isolation of several antibacterial agents. **Acknowledgements**: This work was supported by the Studium Prospero Foundation and the Hungarian Academy of Sciences (Contract No. 139/26.01.2017).

Keywords: vipera ammodytes, long-nosed viper, antibacterial, MIC, MBC

CHIRAL DISCRIMINATION OF VENLAFAXINE ENANTIOMERS BY CAPILLARY ELECTROPHORESIS USING CYCLODEXTRINS AS CHIRAL SELECTORS

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Background: Venlafaxine (VEN) is a modern antidepressant of the serotonin-norepinephrine reuptake inhibitor (SNRI) class. It is a chiral substance, used in therapy as a racemic mixture, though differences between the pharmacological actions of the enantiomers of both VEN and its metabolites are documented. **Material and methods:** Capillary electrophoresis (CE) represents an interesting option in the enantioseparation of pharmaceutical substances with advantages related to the rapid method development, low consumption of analytes, reagents and chiral selectors and high versatility in using different chiral selectors. Cyclodextrins (CDs) are the most frequently used chiral selectors in capillary electrophoresis because of their large availability, low UV absorbance and capacity to include in their cavity a large number of organic substances. **Results:** A complex screening using different native and derivatized, neutral and ionized CDs was carried out to find the optimal chiral selector for the determination. Chiral resolution was observed when using the anionic sulfobutyl ether β-CD (SBE-β-CD), but the best results were obtained by using a dual CD system containing a neutral and a ionized CD (SBE-β-CD + HP-β-CD). The analytical conditions were optimized using "one factor at time" technique. The optimized conditions were the following: 25 mM borax, pH 9.30, 5 mM SBE-β-CD + 10 mM HP-β-CD chiral selectors, + 20 kV voltage, 20 ºC temperature, 50 mbar/1 sec injection parameters, 230 nm UV detection. The analytical performances of the method were verified and the method was applied for the determination of VEN from pharmaceutical

preparations. **Conclusions:** Capillary electrophoresis proved to be a useful and attractive option for the preliminary stereoselective analysis of VEN.

Keywords: venlafaxine, antidepressant, capillary electrophoresis, enantioseparation, cyclodextrins

CHIRAL SEPARATION OF AMLODIPINE ENANTIOMERS BY CAPILLARY ELECTROPHORESIS USING EXPERIMENTAL DESIGN METHOD OPTIMIZATION AND CYCLODEXTRINS AS CHIRAL SELECTORS

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Background: Amlodipine (AML) is a dihydropyridine-type inhibitor of the slow calcium channels, used in the treatment of hypertension and angina pectoris. AML is a chiral substance used in therapy as a racemate, but the two enantiomers, R(+)-AML and S(-)-AML do not have the same pharmacological activity, the calcium channel blocking activity residing in the S(-)-AML enantiomer. Our objective was the development of a simple method for the discrimination of the two enantiomers of AML by capillary electrophoresis (CE) using cyclodextrins (CDs) as chiral selectors. **Material and methods:** CE due to its rapid method development, short analysis time, large versatility in choosing and changing chiral selectors and low consumption of reagents, offers an useful alternative in the chiral separation of pharmaceuticals. The most frequently used chiral selector in CE are CDs, which are added directly in the buffer solution. **Results:** In the preliminary analysis, a complex screening of several native and derivatized CDs was carried out in order to establish the optimum chiral selector. As a result of this process carboximethyl-β-CD (CM-β-CD) was selected for the enantiomeric separation. A factorial analysis study using orthogonal experimental design in which several factors are varied at the same time was performed in order to optimize the separation. The optimized method (25 mM phosphate buffer, pH = 9.0, 15 mM CM-β-CD, 15 °C, + 25 kV, 30 mbar/1 second, detection at 230 nm) was successful for baseline separation of AML enantiomers within 5 minutes. **Conclusions:** The analytical performances of the optimized method were checked and the applicability of the developed method was verified by quantifying the AML enantiomers from pharmaceutical preparations. CE proved to be a suitable method for the enantioseparation of AML and can be used successfully in its preliminary chiral analysis.

Keywords: amlodipine, capillary electrophoresis, chiral separation, cyclodextrine, experimental design

INFLUENCE OF FORMULATION AND TEST VARIABLES ON THE IN VITRO AVAILABILITY OF OXICAMS FROM POLYMERIC FILMS

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Background: Transdermal therapeutic systems (TTS) are pharmaceutical forms for prolonged release. Diffusion of the active substance through TTS is characterized by the drug mobilization among the polymeric chains of the matrix. The availability of the active ingredient in TTS is time and formulation dependent. The purpose of this study is an individual and comparative analysis of a release/permeation profile using mathematical and statistical methods. **Material and methods:** Films based on hydroxypropylmethylcellulose and oxicams (meloxicam/tenoxicam) were obtained by solvent evaporation technique. The availability of the active substance was evaluated by the Franz method under different experimental conditions. Comparative analyzes of the results were based on the influence of the pH of the receptor compartment, test membranes and formulation variables. **Results:** Using the analysis by pairwise procedure of the individual yield curves, the statistical parameters f1 and f2 were calculated. The values of f1 higher than 15 shows some differences between formulations, most likely due to formulation variables, but f2 values between 50-100 indicate that the yield profiles are somewhat similar. Simple regression linearization of the yield curves shows an increased percentage in concentration of the active substance released depending on the formulation and test variables. The AUC shows that the rate of release and the amount of oxicam yielded are influenced by the pH of the acceptor compartment and by the type of test membranes. **Conclusions:** The variability of the in vitro availability of oxicams from the

polymeric films analyzed under the same experimental conditions demonstrates the influence of the composition of the formulations. A pH of 7.4 was favorable to the passage of a higher concentration of the active substance. The transfer through the test membranes was influenced by their structural particularities. *The study was carried out through the internal grant 275/11.01.2017 of University of Medicine and Pharmacy of Tîrgu Mures, Romania.*

Keywords: Farmacie (Pharmacy), Farmacie (Pharmacy), oxicams, polymeric films, variables

IN VITRO STUDY OF ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITORY ACTIVITY OF RED WINE AND ITS CORRELATION WITH POLYPHENOL PROFILE

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Background: Many phytochemical research studies showed the ACE inhibitory activity of some polyphenols as: flavan-3-ols, procyanidins, etc. Although, ACE inhibitory activity of some polyphenols is a widely studied issue, the number of works which study red wine's antihypertensive capacity is low. Due to the high polyphenol content of red wines we intended to measure its ACE inhibitory activity. **Material and methods:** Twenty-eight red wines available on Romanian and also on the international market were used in this study. The ACE inhibitory activity was quantified using an artificial substrate with a tripeptide structure (N-[3-(2-furyl)acryloyl]-phenylalanyl-glycyl-glycine, FAPGG). Under the influence of ACE the tripeptide structures is dissociated on FAP (furylacryloylphenylalanine) and GG (glycyl-glycine). The hydrolysis is quantified by measurement of absorbance decrease during 20 minutes at 340 nm, using a FluoSTAR OPTIMA micro plate reader. The measurement was performed in triplicate and the result was calculated by MARS Data Analysis Software. Enalapril was used as a positive standard and the results were expressed as percent of ACE inhibition (Inh.%). **Results:** Red wines ACE inhibitory activity was between 12.90 % ⊠96.00 %. A matrix analysis using Excel XLState software, correlation between different parameters and ACE inhibitory activity was observed. A significant positive correlation was obtained for monomeric anthocyanins (Spearman r = 0.457), myricetin (Spearman r = 0.391) and quercetin (Spearman r = 0.331). Although, the p-coumaric acid chemical structure do not suggest an ACE inhibitor activity, a significant positive correlation between this compound and ACE inhibitory activity was establish (Spearman r = 0.337). **Conclusions:** Based on correlation matrix analysis anthocyanins were found to be the most effective ACE inhibitors. These positive result on ACE inhibition screening, give meaning for further examination of in vivo biological effects.

Keywords: Pharmacy, ACE inhibitory activity, red wine, micro plate reader, polyphenols

IDENTIFICATION OF THE PLANT DRUG PRUNELLAE SPICA BASED ON MACROSCOPIC AND MICROSCOPIC CHARACTERISTICS

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Background: Prunella vulgaris L. belongs to the genus Prunella, Lamiaceae family, Nepetoidae subfamily. In Romania the genus Prunella includes Prunella vulgaris L., Prunella grandiflora (L.) Jacq and Prunella laciniata L.. Amongst these, Prunella vulgaris is of particular importance, having numerous pharmacological actions. The purpose of this study is to analyze macroscopically and microscopically the main characters by which Prunellae spica can be identified and distinguished from other fruit-spikes from species of the Lamiaceae family **Material and methods:** Prunella vulgaris L. was harvested from Mures county, Romania, at the end of the blooming season when the spike become brownish-red. The dried fruit-spikes were left to soak in water to achieve the desired consistency. The nucules, before being analyzed, were softened in hydroalcoholic solution (ethanol/water in a 1:2 ratio). Sections of the plant material were made by hand with a razor and cleared with 80% chlorohydrate solution for 5 minutes, followed by rinsing with water. Sections and surface preparations were mounted in glycerin with 8% gelatin **Results:** Following the macroscopic and microscopic analysis, the main characters of Prunellae spica, which can be identified to distinguish this herbal drug from other fruit spikes of the Lamiaceae family, have been highlighted **Conclusions:** Because there are very little data in the literature about this species and those are of a general sort, our results related to histo-anatomical researches, bring new information

related to the species Prunella vulgaris L., a species widespread in Romania

Keywords: prunellae spica, fruit spike, nucules

THE IMPACT OF THE HOSPITAL PERSONNEL WAGE INCREASE ON THE COST-EFFECTIVENESS OF HEALTH TECHNOLOGIES / HTA STUDIES

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Background: In Romania there were 5 legislation acts between 2015 and 2017 which conducted to a huge salary increase for hospital personnel. To cover the financial impact of these decisions, the government payed an extra amount of money for public hospitals as a subvention. The hospitalization care fees remained unchanged. As a consequence, the HTA studies which use the official fees, will not take into account these subventions and will have a wrong measurement of cost effectiveness of the health technologies.The objective of the study is to evaluate the impact of the hospital personnel wage increase on HTA studies. **Material and methods:** In this study we analysed detailed income and cost data in 2017 semester 1 from 15 hospitals to evaluate the impact of the salary cost increase on average day hospitalization costs, with and without the salary subvention costs. We used the data and the methodology of the controlling system from these hospitals. **Results:** In these hospitals the subvention payed by the National Health Insurance House to cover the increased salary cost were 39.7% of the payment made for hospital services. The average day hospitalisation costs in acute care were 309 RON / day without and 432 RON with salary subvention.In the case of those medical technologies which have direct effect on hospitalization length reduction, if we take into account only the acute care payments, without including these salary subvention, we will grossly underestimate the cost effectiveness of these new technologies, with a negative impact on population access to innovative technologies and the cost-efficiency of the whole health care system. **Conclusions:** The subvention payed for hospitals to cover the salary increase has a negative impact on the correctness of the evaluation of HTA or HTA adaptation to local data and will conduct to the underestimation of the cost-effectiveness of new technologies.

Keywords: health technology assessment, drug cost-effectiveness, HTA, pharmacoeconomics, health care financing

MEDICINĂ CLINICĂ (CLINICAL MEDICINE)

THE PROGNOSTIC VALUE OF INTRATUMORAL MICROVESSEL DENSITY IN GASTROINTESTINAL STROMAL TUMORS

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Background: In many cases of gastrointestinal stromal tumors (GISTs), the assessment of prognosis remains a challenge. Recently, the prognostic role of angiogenic markers, especially CD31, VEGF-A and CD105 was hypothesized. In this study, we proposed to present data regarding the possible prognostic value of the intratumoral microvessel density (IMVD) with immunohistochemical methods in patients with GISTs. **Material and methods:** Tissue microarray blocks (TMA) were performed from 80 GISTs diagnosed at the Department of Pathology of Tirgu-Mures (Romania) between 2003 and 2015. The IMVD was quantified with CD31, CD105. VEGF-A cytoplasmic expression of the tumor cells was also evaluated together with the Ki67 proliferation index. **Results:** VEGF-A expression was observed in 32.5% of cases (n=26). VEGF-A expression were directly correlated with the mitotic rate (p=0.0001), recurrence risk (p=0.001), intratumoral necrosis (p= 0.001) and presence of distant metastases (p=0.03). The IMVD quantified with CD31 showed a statistically significant correlation with tumor localization (p=0.01). Thus, GISTs from the small intestine showed higher IMVD value and higher Ki67 score (p=0.01). In the case of CD105-labeled IMVD, a statistically significant direct correlation was observed with the tumor size (p=0.02). Thus, independently of localization, cases larger than 5 cm were associated with a higher IMVD-CD105 and with an increased mitotic rate (p=0.001). Correlations between high IMVD-CD105 and increased risk of recurrence (p=0.00003) was also observed. The patients overall survival was significantly correlated with the IMVD quantified with CD31, but was not correlated in the case of CD105 and VEGF-A. **Conclusions:** Markers of tumor angiogenesis in GISTs, especially CD31, may be useful in assessing the prognosis, in addition to classical prognostic factors.

Keywords: Gastrointestinal pathology, Gastrointestinal pathology, GIST, angiogenesis, CD31, CD105, VEGF-A

SCIATIC NERVE REGENERATION IN WISTAR ALBINO RATS EVALUATED BY IN VIVO CONDUCTIVITY AND IN VITRO 1H NMR RELAXOMETRY

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Background: The aim of this study is to develop new *in vivo* and *in vitro* methods, based on electric conductivity and ^{1}H NMR relaxometry to evaluate and quantify the nerve regeneration after injury. **Material and methods:** For this study, 32 Wistar Albino rats were divided into 2 groups. The left sciatic nerve was interrupted using a sharp blade. In the first group direct suture reconstruction was performed, and for the second group a silicone nerve graft was used. The rats were sacrificed at 4, 6, 8 and 10 weeks after nerve reconstruction. From each group a number of two rats were selected for *in vivo* electric conductivity and *in vitro* ^{1}H NMR relaxometry measurements. **Results:** The threshold of the stimulating voltage, response time and conduction velocity were measured. The results were correlated with the time elapsed after injury and reconstruction methods. In the injured nerve we observed a significant increase in the threshold of stimulus and a decrease of conduction velocity. During regeneration process the response velocity increases slightly from week 4 to week 8 for the direct sutured nerve. The T_2 distributions measured for all groups presents four peaks associated with ^{1}H located in different pools: bounded on to the collagen fibrils from axons, epineurium, perineurium as free water and inside blood vessels. **Conclusions:** Significant differences were observed between direct suture and nerve graft reconstructions. The *in vivo* electric conductivity showed that the response velocity in the case of direct suture reconstruction at 10 weeks after lesion the nerve healed.

Keywords: Plastic and reconstructive surgery, Anatomy, Rat's sciatic nerve regeneration, electric conduct

THE IMPACT OF CLOSTRIDIUM DIFFICILE INFECTION ON CHILD'S ULCERATIVE COLITIS – A CASE REPORT

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Background: Clostridium difficile infection is a severe condition that affects mainly people with predisposing factors like elderly or immunocompromised hosts, individuals diagnosed with inflammatory bowel diseases, treatment with proton pump inhibitors, etc. Ulcerative colitis is a chronic inflammatory condition of the bowel and it belongs to the family of inflammatory bowel diseases. **Material and methods:** We report the case of a 16-year-old male adolescent diagnosed with ulcerative colitis who developed a severe infection with Clostridium difficile in order to underline the implications this infection regarding the patient's management and evolution. **Results:** We present the case of a 16-year-old male adolescent admitted in our clinic with rectal bleeding for approximately 1 week. His personal history revealed a similar episode one month before the admission with spontaneous remission. The clinical exam showed diffuse abdominal tenderness. The laboratory parameters were within normal ranges, and the colonoscopy pointed out multiple hemorrhagic lesions and edema of the rectum, sigmoid and descending colon, suggesting the diagnosis of ulcerative colitis, confirmed by the histopathological exam. We initiated steroids and adjuvant therapy, but the patient's lack of compliance led to his discharge at request. After approximately 5 days he presented with fever, abdominal pain and an increased number of diarrheic stools, up to 11/day with fresh blood. The laboratory parameters showed leukocytosis, anemia, and increased inflammatory biomarkers. The stools exam revealed Clostridium difficile infection. Despite the eradication of Clostridium difficile infection, the patient's evolution was stationary, needing multiple blood transfusions and human albumin substitution, and he continued to present up to 10 stools/day. We administered Azathioprine, but he developed side-effects. Thus, we initiated biological therapy (Infliximab) and the evolution improved slowly. **Conclusions:** Clostridium difficile infection can burden the evolution of ulcerative colitis. The early diagnosis and management of this infection are mandatory in children with ulcerative colitis.

Keywords: Clostridium difficile, children, ulcerative colitis

IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION TREATED BY PRIMARY PERCUTANEOUS CORONARY INTERVENTION, THE OCCURRENCE OF NO-REFLOW IS RELATED TO THE MAGNITUDE OF MYOCARDIAL DAMAGE

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Background: The no-reflow phenomenon complicates up to one third of primary percutaneous coronary interventions (PCI) performed in patients with ST-segment elevation myocardial infarction (STEMI), affecting the short- and long-term prognosis of these patients. Predicting no-reflow in this high-risk population could guide the interventionist in choosing the most adequate approach. **Material and methods:** A total of 428 patients treated by primary PCI for STEMI were included in the analysis. Parameters related to the magnitude of STEMI-related myocardial damage (i.e., hemodynamic [blood pressure, heart rate, Killip class, and left ventricular ejection fraction on admission], ECG [sum of ST-segment elevation], and biochemical [troponin I and creatine kinase-myocardial band levels] parameters) were assessed and compared between patients with and without no-reflow. **Results:** No-reflow occurred in 100 of the 428 patients. Heart rate ($p<0.01$), Killip class ($p=0.02$), troponin I ($p=0.02$), and creatine kinase-myocardial band ($p=0.04$) on admission were all significantly higher, whereas left ventricular ejection fraction was significantly lower ($p<0.01$) in patients with no-reflow. In multiple regression analysis, heart rate ($p<0.01$), left ventricular ejection fraction ($p=0.03$), and troponin I levels ($p<0.01$) remained independent predictors of no-reflow. **Conclusions:** The magnitude of myocardial damage, reflected by the higher heart rate and troponin I levels and the lower left ventricular ejection fraction on admission, appears to significantly affect the propensity to no-reflow in STEMI patients treated by primary PCI. These simple and widely available parameters could help identifying the patients that are most likely to develop no-reflow and who would benefit

from more intensive prophylactic strategies.This work was supported by the University of Medicine and Pharmacy of Tîrgu Mureş Research Grant number 17800/1/22.12.2015.

Keywords: ST-segment elevation myocardial infarction, primary percutaneous coronary intervention, no-reflow

RESULTS OF TRANSSPHENOIDAL SURGERY FOR NON FUNCTIONING PITUITARY ADENOMAS IN THE 9TH DECADE

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Background: Population ageing is common and the number of persons aged over 80, steadily increasing. Autopsies reveal that about 13% of very elderly patients could harbor a pituitary tumor. Surgical management of these tumors is controversial as exponential increase of post-surgical mortality in this extreme age group has been described. Our study aimed to determine the prevalence of pituitary tumors and safety of endoscopic transsphenoidal pituitary surgery in patients aged over 80. **Material and methods:** A retrospective study was performed on two series of elderly and very elderly patients operated between 2007 and 2015 for non-functioning pituitary adenomas. To properly delimit age groups a 5-year gap was imposed. Tumoral characteristics (height, invasion, histopathological grading), comorbidities, preoperative and postoperative visual, endocrinological status and surgery results were compared between the two groups. **Results:** Fifteen very elderly patients (>80) were compared to 49 elderly patients (65-75).A male predominance was seen in both series. No statistical difference was found between tumoral characteristics, comorbidities, preoperatory endocrinological or visual status. Postoperative, we found a statistically significant improvement, visual status in the very elderly group (p=0.0012). No deaths were recorded and no difference was noted in postoperative complications or length of hospital stay between the two groups. **Conclusions:** Age over 80 is not by itself a predictor of worse clinical outcome in the case of endoscopically treated pituitary tumors. Accent should be placed on visual pathway decompression, reduced surgery time.

Keywords: endoscopy, transsphenoidal surgery, pituitary tumors, elderly

MEASURING THE RETINAL NERVE FIBER LAYER (RNFL) THICKNESS AS A METHOD OF EARLY DIAGNOSIS IN ALZHEIMER'S DISEASE

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Background: This study aims to identify the thickness of the retinal nerve fiber layer (RNFL) as a potential biomarker for early detection in Alzheimer's disease (AD). **Material and methods:** Twenty four AD patients and 34 first degree relatives of AD patients (AD-REL) and a control lot from the general population have been included. All the participants had an optical coherence tomography (OCT) for both eyes and RNFL and macular thickness were analysed in all lots. **Results:** The mean RNFL thickness was thinner in AD patients as compared to AD-REL for both eyes, but statistically significant for the right eye only (right eye AD = 94.8±10.5 mm, AD-REL=99.87±8.5 mm, p=0.04; left eye AD=96.5±8.9 mm, AD-REL=100±10.1 mm, p=0.17). The most significant difference was observed in the superior quadrant of the right eye (p<0.001). Comparing the RNFL of the two groups with the general population, it was observed that actually RNFL thickness in general population was thinner than AD and AD-REL groups, the most significant difference being in the superior quadrant of the right eye (mean difference between AD and general population = 25.2 mm, p<0.001; mean difference between AD-REL and general population = 52.4 mm, p<0.001). There were no statistical differences between the 3 groups when analysing the macular thickness. **Conclusions:** The RNFL is thickest in relatives of patients with AD. This might support the hypothesis that there is an underlying pre-symptomatic inflammatory mechanism of the retinal nerve layer in individuals at risk of developing AD. However, further monitoring of these individuals is needed to fully support these findings.

Keywords: Alzheimer's disease, early diagnosis, biomarkers, retinal nerve fiber layer, optical coherence tomography

CARDIAC TRANSPLANTATION - THE METHOD OF CHOICE IN CARDIAC PATHOLOGY

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Background: Cardiac transplantation in humans was first performed in the world in 1967. In the 1980s it became a form of accepted treatment for end-stage heart diseases. Cardiac transplantation is considered as a viable therapeutic alternative in those patients whose survival is estimated to be below 50% at 1 year under medical treatment. The therapeutic target of cardiac transplantation is not only prolonging the life of the patient, but also improving the quality of life so that it is similar to that of healthy people. According to the literature, the mean survival time of patients receiving this procedure is 8.3 ± 1 year, during which patients are compulsorily enrolled in immunosuppressive therapy programs. The general guidelines for cardiac transplantation indication are established in their current form since 1995. The achievement of the cardiac transponder pursues two objectives of primary importance. The first objective is the long-term survival of the patient with irreversible cardiac disorders; secondly, improvement in post-transplant quality is sought. The immune response of the transplanted patient to allograft involves two mechanisms: one cellular and one humoral, manifested by overactive, acute and chronic rejection reactions. Endomiocardial biopsy remains the gold standard in the diagnosis of the rejection reaction after a cardiac transplant. Recently, techniques based on molecular gene expression in peripheral blood have been developed, being used as non-invasive methods to detect acute rejection reactions. **Material and methods:** -- **Results:** -- **Conclusions:** Heart transplantation remains the procedure of choice in end-stage heart diseases, especially in those with an estimated 1-year survival below 50% despite optimum medical therapy. The main issue associated with heart transplantation is represented by the immune response, leading to acute or chronic transplant rejection, which can be diagnosed with the help of endomiocardial biopsy.

Keywords: Cardiac Transplantation, Immunohistology, Biopsy

THE DEPRESSION PREVALENCE RATE IN ROMANIA

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Background: The principal objective of this study was to evaluate the prevalence of depression among the Romanian population. **Material and methods:** 375 persons were the subjects of a study done for screening depression. The dates for this transversal, cross-sectional study were collected in a balanced way from every county. The study was done by landline telephone and we used the patient health questionnaire 2 (PHQ - 2) followed in the appropriate cases by patient health questionnaire 9 (PHQ - 9). We controlled socio-demographic factors such as: gender, age, residence, professional status. **Results:** The results showed a 12.53% prevalence of depression in Romania: 8.8% mild, 2.13% moderate and 1.6% moderate/severe. The prevalence of depression is the highest at an age of 70 years old or more - 23.7%. The gender distribution shows that between 19-29 years old, females are a lot more affected, but between 30-39 years old the situation is opposite, while for over 70 years old the results are similar. Yet, it is known (Breslau J et al, 2011) that the prevalence of depression may fluctuate according to socio-cultural factors. In another study (Mihai A et al, 2014), that linked depression to employment status, a higher prevalence of depression 18-23% was found. **Conclusions:** Evaluation of depression correlated with socio-demographic factors is very important for understanding the ways in which the health system should respond. The strenght of this study was that of reaching persons over 60 years old, both from urban and rural areas.

Keywords: Clinical Medicine, Psychiatry, depression, prevalence rate, socio-demographic factors

OMEGA 3 PUFAS SIGNIFICANTLY REDUCE PLASMA CONCENTRATIONS OF TIMP-1 AND MCP-1 IN CEREBRAL ISCHEMIC RATS

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Background: The aim of the study was to assess the dynamic changes in cytokines profile in tMCAO (transient Middle Cerebral Artery Occlusion) ischemic rats in comparison with Omega 3 polyunsaturated fatty acids preconditioning. **Material and methods:** 40 Wistar male adult rats randomly divided into sham (n=10), ischemic (n=20) and Omega 3 groups (n=10), underwent tMCAO using a silicone thread technique. The surgical procedure was performed with the minimum invasive procedure. Blood was withdrawn at 6h and 24h after reperfusion, and ischemia was verified 24h after reperfusion by MRI acquisition. Neurological assessment was performed using a five-point scale behavioral test. Five cytokines (TNFalfa, IL6, TIMP-1, MCP-1 and VEGF) were analyzed simultaneously using the multiplex immunoassay based on xMAP technology. **Results:** Plasma concentration of TIMP-1 was higher in ischemic and Omega 3 group compared to sham, 6h after reperfusion; in the ischemic group, the concentration of TIMP-1 (44.33 ± 20.8 ng/ml) raised significantly at 24h comparing to Omega 3 group (15.67 ± 7.70 ng/ml), p<0.0001. Plasma MCP-1 concentration did not differ between sham (0.70± 0.46 ng/ml) and Omega 3 group (0.89 ±0.30 ng/ml), but in the ischemic group, MCP-1 plasma level was significantly higher (1.51 ±0.67 ng/ml), p=0.001. While in the ischemic group, concentrations were elevated at both points of measurement, in the Omega 3 group the level significantly decreased after 24h (p=0.0005). **Conclusions:** Omega 3 PUFAs decreased plasma MCP-1 level, a key cytokine involved in the inflammatory cell migration. Additionally, in Omega 3 preconditioning group, TIMP-1 expression was lower, probably due to a lower activation of matrix metalloproteinases.This work was supported by an internal research grant from the University of Medicine and Pharmacy Tîrgu-Mureş (Project nr. 17803/1/22.12.2015).

Keywords: Neurology, MCP-1, TIMP-1, Omega 3, ischemic stroke

CORRELATIONS BETWEEN PERSONALITY DISORDERS AND AXIS I DISORDERS

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Background: Personality disorders can be defined as unhealthy patterns of thinking and behaving which can be described by pathological personality traits. These traits lead to impairment in social functioning and increase the vulnerability for Axis 1 disorders. The present study investigated the prevalence of personality disorders and the relationship between personality disorders and Axis 1 disorders in a sample of university students. **Material and methods:** A sample of university students (N=294) completed The Personality Diagnostic Questionnaire - Version 4 and the DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure-Adult. **Results:** 14,28% of the students met diagnostic criteria for at least one personality disorder, with no significant gender difference. There was a moderate correlation between depression and borderline personality disorder(r=0.27, p<0.0001), anxiety and avoidant personality disorder(r=0.49, p<0.0001), psychosis and antisocial personality disorder(r=0.30, p<0.0001) and an increased vulnerability for substance use among students with Cluster B personality traits. Personality functioning is more impaired among persons with borderline personality traits. **Conclusions:** The results suggest that personality disorders increase the vulnerability for Axis 1 disorders which might have a great impact on the quality of life.

Keywords: Personality disorders, The Personality Diagnostic Questionnaire - Version, DSM-5 Self-Rated Level 1 Cross-Cutting Symptom, Personality traits

PROPHYLAXIS VERSUS INFECTIOUS COMPLICATIONS IN MALIGNANT LYMPHOMA PATIENTS AFTER AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Background: The autologous transplantation of stem-cells (ASCT) harvested from peripheral blood represents an elementary therapeutic method for recidivated or treatment resistant malignant lymphoma patients. Due to the high dose myeloablative conditioning regimen followed by aplasia the bacterial and fungal infections represent a high risk after the transplantation. **Material and methods:** A retrospective analysis was performed including a group of malignant lymphoma patients that underwent ASCT during 2017. The aim of the study was the examination of the occurring bacterial infections, with or without previous prophylactic tratment and determining their impact on hospitalization period. **Results:** The study had a total number of 14 enrolled patients. Because of the presence of central venous catheter, all of the patients benefited from prophylactic medication with 3rd generation cephalosporine. In case of neutropenic fever occurrence carbapenem administration has been intitiated. In 11 cases it was no evidence of bacterial infection and the median post ASCT hospitalization of this group was 14.3 days. In 2 cases bacteriological evidence of infection has been found, with a median post ASCT hospitalization of 18 days. One pathological agent was a pseudomonas aeruginosa revealed from pharyngeal secretion. The other colonized bacteria were a coagulase negative staphylococcus. In these cases targeted antibiotic therapy has been initiated according to the antibiogram. **Conclusions:** The antibiotic prophylaxis decreases the appearance of bacterial infections after ASCT and also decreases the hospitalization period conducting to a faster patient recovery and a cost efficient patient management.

Keywords: autologous hematopietic stem cell transplantation, malignant lymphoma, infectious complications, prevention

THE IMMUNE RESPONSE IN MULTIPLE SCLEROSIS PATIENTS TREATED WITH INTERFERON BETA-1B FOR MORE THAN A DECADE

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Background: Beta-interferon (IFN) is an immunomodulator agent used for the treatment of multiple sclerosis (MS) and a first-line therapy, with extraordinary long term results, especially regarding the disability progression. **Material and methods:** We conducted a clinical and paraclinical evaluation in Neurology 1 Clinic of Tirgu Mures Emergency County Hospital. They were treated continuously, for more than 10 years with IFN-1b. The patients were assessed based on demographic and clinical criteria (relapse rates, physical disability quantified by the EDSS, neuropsychiatric tests - Beck's depression inventory and SDMT). An immune panel consisting of pro and anti-inflammatory cytokines was collected for all the patients (IL-10, IL-17F, IL-1beta, IL-21, IL-25, IL-31, IL-33, IL-6, sCD40L, TNFalfa). **Results:** From the total of patients, 47 (67.14%) present with a recurrent-remissive form in 2017, and 23 (32.85%) patients present with secondary progressive form. The preliminary analysis of the subsets of cytokines demonstrates a significant correlation between the serum levels of IL-17F and the number of recurrences, with no impact on the EDSS score. A strong correlation ($p<0.0001$) was noticed between the serum levels of SCD40L and IL-31 ($r=+0.7016$) an anti-inflammatory cytokine. **Conclusions:** The heterogeneity of the immune response secondary to IFN-1b treatment implies a permutation of the immune response towards an anti-inflammatory spectrum, therefore the assessment of the humoral immunity might represent an alternative in quantifying the individual response to therapy.

Keywords: Multiple Sclerosis, Interferon beta, Cytokines, Immune response, Disability Progression

SHOOTING ACCURACY UNDER TRAINING LOAD IN BIATHLON

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Background: Identifying the main shooting influence parameters over 25 to 60 minutes at ≥90% of maximum heart rate activity, may influence the final results due to the fact that missing a target will impose a penalty time or an increased competition distance. **Material and methods:** A transversal observational study was conducted in Romania, on a group of 7 biathlon elite male athletes between 15 and 30 July 2017. The analysis was carried out over 13 training days, including 300 km and 825 shootings in the polygon at 65-85% HRmax, during general training period in order to analyse shooting accuracy ratio (shooting%; number of shootings out of 5). The analysis was carried out using Polar V400 GPS devices to determine HR (%, b/min), Speed (km/h), Distance (km), Timing (minutes), Positive (Dif+) and Negative difference level (Dif-) in order to establish adaptation through speed and heart rate. **Results:** Shooting analysis showed that the accuracy ratio increased in standing (≥80%) as against prone positioning (<80%). Thus, increased speed generated changes in shooting accuracy resulting a reduction in %shooting to 90% (4 out of 5 targets) (p=0.0255, r=-0.256, CI95%=-0.4608 to-0.0258). Improved shooting% was associated with minimal HR% changes during polygon standing (p=0.0094). Many influence factors were related to prone positioning analysis including positive difference level (+50m/0.5km) which established speed reduction (≤16km/h), an increased heart rate during shooting (≥75% of HRmax) and a reduction in shooting% (≤80%) as against the standing position. **Conclusions:** Several influence factors were related to a reduced prone positioning shooting%, including positive difference level, reduced speed and a higher timing causing an improper run after shooting. Thus, we identified low shooting accuracy and effort evolution in prone position as against standing position.

Keywords: Biathlon, Elite, Shooting, Adaptation, Heart Rate

PSORIASIS PALMOPLANTAR- THERAPEUTIC APPROACH

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Background: Less common form, palmoplantar psoriasis has as particularities resistance to topical treatment and deeply affected daily activities. **Material and methods:** Based on the analysis of three clinical cases from the Tg.Mures Clinic of Dermatology, the present study makes a review of the recently published literature on this subject. Articles have been searched for in the PubMed and Cochrane database, using as keywords: palmoplantar, psoriasis, treatment, acral, quality of life. **Results:** The cases distinguish themselves by early onset: 9 years old, or a late one: 71 years old and by association with psoriatic erythroderma. The high scores of the Psoriasis Area and Severity Index (PASI) and the Dermatology Life Quality Index (DLQI) certify the severe forms of the disease. All cases were resistant to conventional local treatments. The evolution was slowly favorable with systemic PUVA and infliximab. Our cases calling into question the need for a treatment protocol adapted to these patients. The review of the published literature proposes a protocol for this pathology: first-line therapy begins with topical corticosteroids, calcipotriene and acitretin, continuous with phototherapy, including UVB nb, PUVA and monochromatic excimer laser. Second-line systemic agents include methotrexate and cyclosporine. For cases resistant to conventional treatment we can use biologic therapy: tumor necrosis factors inhibitors, anti-interleukin agents and phosphodiesterase type 4 inhibitors. Discussions: Specialty literature, demonstrating significantly, from a statistical point of view, the increased need for medication and a much lower quality of life in this group of patients.(2014 Chung J yet al, Bissonnette R et al. in 2016) Miceli A comes to the conclusion in October 2017 that most of these patients will need systemic treatment and a possible updated therapeutic protocol was published by Sarma N. in 2017. **Conclusions:** Palmoplantar psoriasis is a pathology less commonly encountered in current practice which raises diagnostic and treatment challenges.

Keywords: psoriasis, quality of life, palmoplantar, acral, treatment

THE INTRAUTERINE DIAGNOSIS OF RENAL MALFORMATIONS AND THE NEONATAL EVOLUTION - A CASE REPORT.

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Background: The early diagnosis of the urinary system malformations is useful for their appropriate management. Due to the modern diagnostic tools, these malformations are diagnosed in many cases even since the intrauterine life. **Material and methods:** We present the case of a preterm male newborn, diagnosed during the intrauterine life with bilateral pelvicalyceal dilation, whose neonatal evolution was burdened by multiple complications. **Results:** Our patient was born vaginally, at 32 gestational weeks, with a birth weight of 1870 g, APGAR score 8/1 minute and 9/5 minutes, with mild respiratory distress after birth. He was admitted in the Neonatal Intensive Care Unit of the Neonatology Clinic 1, Emergency Clinical County Hospital Târgu Mureş. After approximately 24 hours of life, his general status worsens, with severe respiratory distress, developing a severe respiratory acidosis. Therefore, he needed oro-tracheal intubation and mechanical ventilation, initially non-conventional, with high frequency, and afterwards conventional with intermittent positive pressure. We also administered surfactant, antibiotics and hemodynamic supportive treatment. The thoracic radiography revealed right pneumothorax and congenital pneumonia. The abdominal ultrasound showed a 4^{th} degree right hydronephrosis and left pelvicalyceal dilation. The newborn benefited also from thoracic drainage of the pneumothorax. His clinical and radiological evolutions were slowly favorable. **Conclusions:** The diagnosis of renal malformations during the intrauterine life is of major importance for the management of these patients. Despite this fact, their evolution can be burdened by other complications unrelated to their underlying condition.

Keywords: renal, malformations, neonatal, intrauterine

THE EL GANZOURI AND THE WILSON SCORES PERFORM BETTER IN PREDICTING DIFFICULT INTUBATION OF THE OBESE COMPARED WITH CLASSICAL MALLAMPATI, CORMACK AND SPIDS SCORES

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Background: The evaluation of the airways is of major importance in preventing complications arising from their management in overweight and obese patients. Obesity is known as an independent risk factor for the difficult mask ventilation and difficult laryngoscopy. The aim of the study is to highlight the importance of airway assessment and the correlation of difficult intubation scores with the body mass index (BMI). **Material and methods:** We performed a prospective observational study in the Emergency Clinical County Hospital of Târgu Mureş. We assessed the El Ganzouri, Wilson, Macocha, SPIDS (The Simplified Predictive Intubation Difficulty Score), Mallampati , Cormack scores and Cook criteria in three different study groups: normal weight (BMI= 18,5-24,99 kg/m², n=56), overweight (BMI=25,00-29,99 kg/m², n=50), obesity (BMI≥30,0 kg/m², n=46). **Results:** There are no statistically significant differences between the study groups regarding the Mallampati, Cormack, and the SPIDS scores. There were statistically significant differences between the mean values of El Ganzouri scores (1.33±1.33 vs. 2.06±1.73 vs. 3.21±2.07, p <0.0001) and Wilson scores (0.60±0.84 vs. 1.20±1.37 vs. 1.95±1.44, p <0.0001), laryngoscopy being more difficult according to the Cook criteria in the overweight group (7.1% vs. 18.0% vs. 13.0%, p = 0.002). **Conclusions:** The preoperative airway evaluation of the obese should prioritize the El Ganzouri and/or Wilson scores as they perform better compared with the older ones.

Keywords: difficult intubation, El Ganzouri score, Wilson score

THERAPEUTIC OPTION IN CYSTORECTOENTEROCELE

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Background: Pelvic organ prolapse represents the sliding of pelvic organs into the vagina often accompanied by urinary, sexual, bowel or local pelvic symptoms. These may affect the quality of life in these patients. **Material and methods:** We report the case of a 62-year-old woman, who was diagnosed with a reccurent grade III pelvic organ prolapse with a cervical elongation and with a decubital ulceration, bulky cystorectoenterocele with acute urinary retention, that had been treated with a vaginopexy. The patient had undergone an anterior cystorectocolpopexy with anterior self-fixating mesh (ProGrip^{TM} Self-Fixating Mesh) and a total hysterectomy with bilateral adnexectomy. **Results:** The postoperative evolution was favorable, without surgical complications, good fecal and flatus continence (Wexner score 10), and good urinary function (urinary catheter was removed on the 3th postoperative day). The patient was discharged on the 7th postoperative day. Out-patient follow-up was favorable, no reccurence or other complications at 1 and 3 weeks following surgery. **Conclusions:** ProGrip^{TM} Self-Fixating Mesh may bring real benefits in patients with pelvic organ prolapse

Keywords: Self-fixating mesh, Pelvic organ prolapse, Acute urinary retention

GLOBAL MATERNAL SEPSIS STUDY

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Background: Worldwide, pregnancy-related infections are the third cause of maternal deaths. In developing countries, the burden of maternal deaths caused by sepsis is higher(10,7%) with the greatest percent in Sub-Saharan Africa (10.3%), in comparation to developed countries (4.7%). Even though the awareness and visibility of sepsis have increased, data about the incidence, mortality and morbidity of this pathology remain unclear. Earlier this year, World Health Organization redefined the maternal sepsis. The new definition of maternal sepsis is "a life-threatening condition defined as organ dysfunction resulting from infection during pregnancy, childbirth, post-abortion, or postpartum period". This was the first step of The Global Maternal and Neonatal Sepsis Initiative and Global Maternal Sepsis Study is a part of this intiative. The aim of this study is to improve, prevent, diagnose, and manage maternal sepsis. **Material and methods:** Global Maternal Sepsis Study is a prospective, one-week cohort study that will take place in 54 countries. During this week, all women admitted to or already hospitalised in the facilities that participate in this study with suspected or confirmed infection during pregnancy, childbirth, post-abortion or postpartum will be included using an individual form. In Romania, 23 hospitals are included in the study. **Results:** The study will provide a set of criteria that will be used to diagnose women with maternal sepsis. Data regarding the incidence of maternal sepsis, diagnostic and effective therapy in obstetrics will be available after completing the study. **Conclusions:** In conclusion, the efficient prevention, early identification and management of maternal infection/sepsis will contribute to reducing the morbidity and mortality of maternal and neonatal sepsis.

Keywords: MATERNAL, NEONATAL, INFECTION, SEPSIS

APPROACH TO ACCUTE DIARRHEIC DISEASE IN CHILDREN

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Background: Acute diarrheic disease (ADD) is a frequent pathology in pediatrics, representing the second leading-cause of death among children. Most frequently, the decision of antibiotics initiation for acute diarrhea is an empirical one, without strong evidence to sustain it. **Material and methods:** We performed an analytic, descriptive and retrospective study on 125 patients, aged between 3 days and 18 years old, admitted in the 1st Pediatrics Clinic of Tîrgu Mureş, between January and December 2016, regardless the comorbidities, who were diagnosed with ADD. **Results:** The incidence of ADD was 7.3% of all admissions during

2016. We identified a bacterial etiology in 23 cases (18.4%), whereas a viral etiology was encountered in 53 of the cases (42.4%). Rotavirus infection was documented in 13 patients (24.5% of viral etiology), and there were 4 bacterial ADD cases out of total 23 cases. The medium hospitalization length was of 5 days. We assessed multiple risk factors for a prolonged hospital admission; we encountered a significantly statistical association with the following: fever (p=0.0164), inflammatory syndrome (positive C reactive protein) (p=0.012), hydro-electrolytical imbalances (p=0.006) and the length of hospitalization. Antibiotherapy was initiated in 84 of the patients included in our study (67.2%). All the patients received symptomatic treatment (antidiarrheal, antiemetic, anti-secretory drugs), while 60% of the children included in our study were also given probiotics. **Conclusions:** ADD is mainly a viral, self-limited and benign condition. Stool culture is rarely a helpful investigation, being highly specific but not as sensitive. Considering the self-limited character and the favorable prognosis of this disease, we have encountered that we faced an antibiotics abuse in children diagnosed with ADD. Medical practitioners should focus more on the symptomatic treatment in spite of the etiological one, for the antibiotherapy provides little or no change in the outcome of disease.

Keywords: Acute Diarrhea, Antibiotherapy, Child

PROGNOSTIC VALUE OF HEMOGLOBIN LEVELS ON ADMISSION IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND CHRONIC KIDNEY DISEASE

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Background: Anemia is a common finding in patients with chronic kidney disease (CKD). Several studies have shown that in ST-segment elevation myocardial infarction (STEMI), anemia is a negative prognostic factor. The aim of this study was to evaluate the one-year all-cause mortality prognostic value of anemia in CKD patients hospitalized for STEMI. **Material and methods:** Consecutive patients admitted for STEMI and treated with primary percutaneous coronary intervention between January 2011 and December 2013 were retrospectively included in this study anddivided in two groups based on the presence of CKD (creatinine clearance below 60 mL/min/1.73m^2 calculated with Cockroft-Gault formula). **Results:** Among the 345 patients included in the study, 77 (22.3%) had CKD. Patients in CKD group were older (74 vs. 58 years, p<0.05) and predominantly women (51.9% vs. 22.4%, p<0.05). The prevalence of arterial hypertension was higher in CKD group (85.7% vs. 68.3%, p<0.05), while smoking was more prevalent in non-CKD group (48.9% vs. 19.5%). Patients who died during the first year after STEMI had lower hemoglobin levels (13.2 vs. 14.4 g/dl, p<0.05). On receiver-operating curve analysis, a value <12.8 g/dl was associated with one-year all-cause mortality (specificity 84.01%, sensitivity 47.06%). In CKD patients, hemoglobin was lower (13.2 vs. 14.5 g/dl, p<0.05) and mortality higher (45.1% vs. 18.4%, p<0.05) but anemia (defined after ROC analysis as hemoglobin<12.8 g/dl) was not a predictor for mortality in multiple regression. In no CKD group, anemia and age were independent predictors for one-year all-cause mortality. **Conclusions:** Anemia is an independent predictor of one-year all-cause mortality only in patients without CKD.This work was supported by University of Medicine and Pharmacy, Tirgu Mures, Research Grant number 17800/2/22.12.2015.

Keywords: STEMI, chronic kidney disease, anemia, mortality

THE APPLICABILITY OF MEDICAL AND SPIRITUAL HYPNOTHERAPY IN CASES OF BURNOUT

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Background: This paper brings up for discussion the topic of burnout and explains the importance of using effective therapies such as medical and spiritual hypnotherapy in the treatment of cases of burnout. **Material and methods:** The subjects that will participate in this study have professions that are vulnerable to stress. The study is composed of multiple parts: the evaluation of the subjects for: detecting the cases of burnout; identifying the symptomatology of anxiety and depression. After analyzing the results, the subjects will be divided into categories: subjects that experience burnout and subjects that do not experience burnout. Medical hypnotherapy sessions will be conducted on the subjects that experience burnout, targeting every symptom. After the hypnotherapy

sessions, using the interview method, the aspects that the subject experienced in a subjective way during hypnosis will be documented, as well as the emotions and thoughts that the subject has experience after hypnosis. After the administration of the sessions, at one month interval, evaluations will be repeated to identify the changes that took place at the emotional, thinking and attitude level of the patient as well as his relationship with the work place. The comparison of the results of initial evaluation with the following evaluations regarding the therapy will be conducted to ascertain the changes that appear in the symptomatology of burnout. **Results:** As a result of applying medical and spiritual hypnotherapy on cases of burnout we expect positive results regarding the physical and psychological state of the patient, and the health and behavior changes to be visible in order to be reflected in the patient's attitude towards his professional work, as well as in his job performance, his relationships with colleagues and the family members. **Conclusions:** With the help of spiritual hypnotherapy, the primary causes of all the challenges a person has could be identified and treated.

Keywords: burnout, personality, medical and spiritual

TIME TO RE-EVALUATE THE RECURRENT ABDOMINAL PAIN ASSOCIATED WITH ASCITES

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Background: C1 Inhibitor (C1-INH) deficiency causes recurrent swelling of the skin, obstruction of the upper airways and recurrent abdominal pain due to mucosal bowel swelling. Hereditary angioedema (HAE) due to C1-INH deficiency (C1-INH-HAE) is frequently unrecognized and misdiagnosed, leading to inadequate treatment and unnecessary procedures. **Material and methods:** -- **Results:** AB was referred to our hospital because of recurrent abdominal painful attacks. Complains have started when she was 14, with swellings of her arms followed later by frequent feet edema, edema of the vulva and three facial attacks with one suggesting upper respiratory involvement. Her mother reported similar symptoms. Between 2010-2011, when she was 29, she had frequent recurrent abdominal attacks manifested as violent abdominal pain, nausea, vomiting and diarrhea and repeatedly attended ED. Several abdominal ultrasound examinations detected free peritoneal fluid during attacks. It was decided to perform a laparoscopic investigation during such an attack. Presence of free peritoneal fluid and diffuse mucosal edema and erythema of the intestinal wall was described. HAE due to C1-INH-HAE diagnosis was established only 3 years later, when finally, an allergist was suspecting HAE and was asking for C1-INH activity (17%). **Conclusions:** Physicians should be more aware about HAE in the presence of peripheral edema without urticaria, when associated with abdominal recurrent pain lasting 2-3 days. Right diagnosis will prevent the misdiagnosis and delay of the specific treatment, avoiding also unnecessary abdominal surgical procedures and asphyxiation caused by laryngeal edema.

Keywords: hereditary angioedema, recurrent abdominal pain, ascites

A RARE CASE OF MUSCULOSKELETAL ENDOMETRIOSIS WITH TWO IMPLANTATION SITES: IN THE LEFT BUTTOCK AND THE LOWER THIRD OF THE RIGHT THIGH IN A PATIENT WITH TETRALOGY OF FALLOT. CASE REPORT AND REVIEW OF THE LITERATURE.

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Background: Endometriosis is defined by the presence of endometrial tissue outside of the uterine cavity. Such endometrial ectopic tissues are usually found in the pelvic structures near the uterus. Musculoskeletal endometriosis is extremely rare, therefore the clinicians may encounter difficulties diagnosing it because of the variety of clinical manifestations. **Material and methods:** In the following paper we will present an unusual case of musculoskeletal endometriosis in the left buttock and right thigh muscles of a patient with Fallot Tetralogy. A review of the literature was also carried out using the search engines: Medline, ScienceDirect and Springer. **Results:** Patient A.G.J. aged 33 years II G I P requested medical assistance complaining of regular menstruation pain in the left buttock and right thigh. From the patient's medical history, we noted that shortly after birth she was diagnosed with a

congenital heart malformation - Fallot Tetralogy and in 2012 she had a caesarean delivery. The patient reports that the current illness started spontaneously 7 months ago with pain in the left buttock and right thigh. The soft tissue ultrasound revealed nodular, hypoechogenic, non-homogeneous nodular images with an irregular contour both in the left buttock and right thigh. The result of the histopathological examination detected the presence of endometriosis outbreaks in the two bioptical fragments which established the diagnosis of extragenital endometriosis. Surgical treatment was performed with the removal of the endometriosis outbreaks. **Conclusions:** Dissemination of endometrial cells through blood vessels seems to be the most plausible theory applicable to this case, probably as a result of the C-section in 2012. Without a scientific basis on this theory, we can only assume that this was the mechanism involved in our case and further investigations will help elucidate the mecanism involved in such situations.

Keywords: endometriosis, extragenital, musculoskeletal, cells dissemination, Fallot Tetralogy

MEDICINĂ PRE-CLINICĂ (PRE-CLINICAL MEDICINE)

SCREENING FOR THE INTESTINAL CARRIAGE OF CARBAPENEMASE-PRODUCING GRAM-NEGATIVE RODS IN HOSPITALIZED PATIENTS

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Background: Infections caused by multiresistant germs reflect into an increased number of cases with severe evolution, high morbidity and mortality rates due to therapeutic failures, but also lead to increased costs for medical care. Infections due to carbapenemase-producing bacteria are increasingly involved in nosocomial infections and limit antibiotic therapy. Efficient screening methods are required to evaluate and control the epidemiology of this phenotype. **Material and methods:** Between January-June 2017, 1784 specimens of rectal swabs from high risk wards (ICU, Surgery) were screened for carbapenem-resistant Gram-negative rods (CRGN) on Brilliance CRE Agar. Suspected strains have been identified by routine methods and tested for susceptibility to imipenem and meropenem. The resistance phenotypes to carbapenems were confirmed by Rosco Diagnostica specific tests for Enterobacteriaceae (CPE) and non-fermentative Gram negative bacilli (CPNF). Data was processed statistically. **Results:** Of the total of 1784 rectal swabs collected, carbapenemase-producing strains were detected in 145 samples (8.13%) isolated from 85 patients. Of these, 45 strains (31%) were CPE and 100 (69%) were CPNF. Klebsiella pneumoniae (33 strains, 73.3%) predominated among the CPE, while Acinetobacter baumannii (61 strains, 61%) among the CPNF. All isolates originated from the ICU sections (general, urology, neonatology). Twenty patients presented repeated recurrences over time within their prolonged hospitalization. Time distribution showed the predominance of CPE and CPNF at the beginning of the screening (93 isolates from January to March), with a decreasing trend between April and June (52 isolates). OXA/OXA48 phenotype was the most prevalent within the CPE (65 strains; 65%), while MBL among CPNF (32 strains; 71.1%). **Conclusions:** Intestinal carriage of CRGN is prevalent in ICU patients. The most common carbapenemase producing strains were Acinetobacter baumanii, Pseudomonas aeruginosa and Klebsiella pneumoniae. A decreasing trend in the number of carbapenemase producing isolates was found, possibly due to a better implementation of germ control.

Keywords: Carbapenemase, Gram negative bacilli, Bacterial resistance, Screening

TOBACCO CONSUMPTION AMONG PUPILS FROM 9TH CLASS IN CHISINAU

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Background: Adolescents represent a vulnerable population with risk for tobacco use. Our general aim was to analyze the particularities of tobacco consumption among pupils from 9th class in Chișinău, Republic of Moldova. **Material and methods:** The study included 12 schools from Chisinau, the sample included 368 pupils (177 girls and 191 boys) from 9^{th} classes. The survey instrument was an anonymous online questionnaire applied earlier in the ASPIRE project that included a set of items regarding tobacco consumption among pupils. **Results:** Aproximately half (50.1%) of the pupils have tried to smoke a whole cigarette. The proportion of pupils who tried to smoke was higher among 14-15 year-olds (41.3%) than those aged 12-13 (25.5%) and 10-11 years old (13.1%). Pupils who have tried conventional cigarettes, have tried also electronic cigarettes (85.8%), hooka (34.5%) and cigars (29.9%). 10.3% of pupils smoked cigarettes occasionally 1-5 days a month. Among those who smoked during the past 30 days, 29.1% smoked less than one cigarette a day and 22.6% smoked 2-5 cigarettes a day. **Conclusions:** Tobacco consumption among 9th grade pupils was mostly casual, not regular. Adolescents represent a very important category of smokers towards whom tobacco control experts must concentrate their efforts, by strong educational policies to prevent smoking initiation and to promote early smoking cessation, before becoming severely addicted to nicotine.

Keywords: smoking, pupils, schools

DIMENSIONAL PERSONALITY PROFILE AND ITS RELATIONSHIP WITH COMMUNICATION SKILLS

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Background: This study aims to identify the correlations between medical students' dimensional personality profile and the communication skills associated with it. A factorial combination of personality dimensional factors can indicate a person's communication skills. **Material and methods:** Our sample, N=134, consists of first, second and third year medical students, from the University of Medicine and Pharmacy, Tirgu-Mures, with a mean average age of 22.27. The sample was assessed with the DECAS Personal Inventory, an efficient instrument that measures five dimensions of personality: Openness, Conscientiousness, Extraversion, Agreeableness, and Emotional Stability, in rapport with The Big Five theory. The DECAS tests were collected and statistical data was interpreted with GraphPrism7 and Person correlation was used for all personality dimensions. **Results:** Our results indicate the following - Openness was M=8.29, SD=3.40; Extraversion M=10.81, SD=4.11; Conscientiousness M=10.81, SD=3.40; Agreeableness M=10.04, SD=3.30; and Emotional Stability M=7.97, SD=4.14. Thus, there is a positive statistically significant correlation between Openness and Extraversion (P<.001, CI 0.14 to 0.45) and a positive statistically significant correlation between Agreeableness and Emotional Stability (P<.001, CI 0.18 to 0.48). The positive correlation between dimensional factors revealed a personality profile characterized by intellectual interest, mild social abilities, moderate interpersonal connection, but poor emotional stability regarding the relationship with another person.The positive correlation between dimensional factors indicates a personality profile characterized by intellectual interest, mild social abilities, moderate interpersonal connection, but poor emotional stability regarding the relationship with another person. **Conclusions:** It is important to develop a special academic program for these students in order to improve their communication skills such as assertive communication, empathy and congruence with have the role to improve the emotional stability of medical students in relation with patients/another person.

Keywords: personality dimensions, DECAS, communication skills

LIGHT-DARK, DARK-LIGHT AND OPEN FIELD TESTS ASSESMENT. A PILOT EXPERIMENTAL STUDY

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Background: In order to evaluate the mice anxiety and the general locomotor activity levels several tests are used such as: open field test (OFT), dark-light test (DLT) or light-dark test (LDT). This tests are used to evaluate the anxiolytic effect of various drugs. We started this study in order to evaluate the mice natural variability, the accuracy, feasibility, time, cost, adverse events, and effect size (statistical variability) of this tests. **Material and methods:** We included in this observational study a number of thirty mice. All the mice were tested two times in two months. The Ethics Committee of University of Medicine and Pharmacy Tîrgu Mureş, Romania approved this study (34/7.04.2017). **Results:** The medium latency time of Dark-Light-Test was 64 seconds (standard deviation=73.2). Two mice were detected to be outliers. The mean time in the light-compartment was 148.77 seconds (standard deviation=76.58) and the mean number of rearing's was 3.89. None of the mice were detected to be outliers. The medium initial freezing time was 1.64 seconds (standard deviation=1.99). None of the mice were detected to be outliers. The medium distance on Open-Field-Test was 1113.2 cm (standard deviation=543.2). In the case of OFT test, two mice were detected to be outliers. The medium number of crossing was 107 (standard deviation=52.09) and two of mice analyzed were detected as being outliers. All

outliers didn't present physiological needs (urine or excrements) . **Conclusions:** According to our results for accurate results in a battery test including OFT, DLT and LDT tests is necessary to exclude approximatively 20% mice as a result of their natural variability.Between the two test periods the results remained reliable. Acknowledgement:This work was financed by a grant from the Competitiveness Operational Programme 2014-2020,"C-REACTIVE PROTEIN THERAPY FOR STROKE-ASSOCIATED DEMENTIA", ID P_37_674, MySMIS code:103432, contract 51/05.09.2016.

Keywords: OFT, DLT, LDT, Mice, Variability

BLADDER CARCINOMA: CORRELATION OF THE PATHOLOGICAL DIAGNOSIS ON BLADDER TRANSURETHRAL RESECTIONS SPECIMENS AND CONSECUTIVE RADICAL CYSTECTOMY

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Background: With very few exceptions, muscle-invasive bladder carcinomas (MIBC) (pT2) are treated by radical cystectomy. This diagnosis is made on transurethral resections (TUR) specimens. In this study we aim to analyze how this initial diagnosis correlates with the final one on cystectomy. **Material and methods:** We made a retrospective study (2011-2017) focused on cystectomy specimens and their initial diagnosis on bladder TUR. The specimens were obtained from the Urology Department of Tirgu Mures County Clinical Hospital and the pathological diagnosis was established at the Pathology Department of Emergency County Clinical Hospital. **Results:** 41 cystectomies for primary bladder tumors (40 urothelial carcinomas and 1 osteosarcoma) were found. For 29 cases the initial diagnosis on TUR specimen was made in our pathology department and for the remaining cases in other laboratories. It was available from patient's files. WHO 2016 staging system for bladder tumors was used. From 41 cystectomies: 16 cases were pT3, 8 were pT4, 12 were pT2 , 2 were pT1, 2 non-MIBC (pTa) and 1 case had extensive ulcero-necrotic cystitis consecutive to radiotherapy. From these, 12 cases had the same pathological staging as on TUR specimens. 28 cases had a more advanced stage on cystectomy, pT3 or pT4 and 1 case had no residual tumor. 2 cases were found to be non-MIBC on cystectomy (one pTa gigantic papillary urothelial carcinoma and one only pT1). 10 cases had a cystectomy even if on TUR they were not MIBC. **Conclusions:** the pathological diagnosis on TUR specimens is of major importance for bladder cancer diagnosis and treatment choice. In the majority of cases it correlates with the final diagnosis on cystectomy. Some differences are due to the impossibility to establish an advanced stage on TUR specimens as they do not contain all the bladder layers.

Keywords: bladder carcinomas, muscle-invasive, TUR, cystectomy, correlation

FOOD FROM KINDERGARTENS AS A RISK FACTOR FOR HIGH BLOOD PRESSURE IN PRESCHOOL CHILDREN

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Background: Arterial hypertension is a health problem both in young and elderly people. Although in adults it receives special attention, at children the blood presure is not constantly monitored. The aim of the paper is to analyze the link between kindergartens` menus and blood pressure status in preschool children. **Material and methods:** A cross-sectional study was conducted between February and August 2017, on a sample of 330 subjects, in Mureș county, Romania. The inclusion criteria were: children aged between 3 to 6 years, without any chronic disease, enrolled in one of the collaborating kindergartens. Blood pressure was measured with a mechanical tensiometer (Elecson, Italy). Kindergartens` menus were analyzed through daily food records and attendance sheets, for 10 days. **Results:** Average sodium consumption/day was 2.81 grams, with a mean consumption of 78.85 g simple carbohydrates. The mean systolic blood pressure was 95.13±12.73 mmHg, and the diastolic 61.26 ± 7.96 mmHg. The proportion of sodium from children's menu was associated with the systolic blood pressure, expressed in percentiles, (p=0.0003). A significant increase in blood pressure (percentiles) was associated with low dietary fiber ingestion (TAS: p=0.0125,

TAD: p=0.0001), high cholesterol (TAS: p<0.0001, TAS: p<0.0001), high proteins (TAS: p <0.0001, TAS: p=0.0006) and high carbohydrates ingestion (TAS: p<0.0001; TAD: p<0.0001). Consumption of more than 2 g sodium/day, in this study, is a risk factor for preschool hypertension (p=0.0006, OR=18.5, 95% CI: 2.255 to 151.8). **Conclusions:** The unbalanced nutrition from kindergartens with extended schedule increases the percentage of preschoolers with high blood pressure. High consumption of proteins, carbohydrates, sodium, cholesterol, fats, along with a decrease in total fiber percentage, were associated with high blood pressure in children.

Keywords: Sodium, blood pressure, hypertension, preshool, kindergarten

DETECTION OF GENOMIC IMBALANCES IN CHILDREN WITH INTELLECTUAL DISABILITY USING MLPA ANALYSIS IN TÎRGU MUREŞ

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Background: Detection of chromosomal aberrations and copy number variations (CNVs) of the target sequences such as deletion (del) or duplication (dup), by high-resolution target methods, of patients with intellectual disability (ID) with/without multiple associated congenital anomalies, led to the identification of numerous microdeletion/microduplication syndromes. The purpose of this study is to identify genetic mutations by Multiplex Ligation-dependent Probe Amplification (MLPA) for specific microdeletion syndromes, respectively for X chromosome. **Material and methods:** The study group consisted of 75 children referred to the Medical Genetics Laboratory of SCJU Tirgu Mures with ID and associated congenital anomalies, for genetic assessment, testing, and genetic counseling. The MLPA analysis was performed using the P064 MR-1, P245-B1 and P106 MRX kits to determine the genetic mutations. **Results:** The MLPA analysis revealed changes in 15 cases: 7 cases with Prader-Willi syndrome, 3 cases with DiGeorge syndrome, 4 cases with microdeletions of the chromosomes 4p, 5p, 7q and 17p chromosomes and 1 case with the craniofacial syndrome. **Conclusions:** The MLPA analysis can be used as a first-tier test in evaluating ID children with/without associated congenital anomalies because is an affordable method and it allows the detection of atypical microdeletions that are not detectable using conventional cytogenetic and molecular analysis.

Keywords: intellectual disability, MLPA analysis, microdeletion syndromes

THE VARIABILITY OF HEALTHY MICE USING THE TAIL SUSPENSION TEST AND BOISSIER'S TEST

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Background: The literature published describes the possibility to evaluate the dementia or other cognitive disease in model experimental mouse using Tail Suspension Test (TST) and Boissier's four hole-board test. Moreover, the results can be influenced by natural variability with an additive effect. We evaluate the natural variability of mice responses to TST and Boissier's test. **Material and methods:** We obtained the approval of the study from the Ethics Committee of University of Medicine and Pharmacy from Tîrgu Mureş, Romania. Thirty healthy mice were included in our study. The mice were suspended from thirty centimeters (cm) from the ground for TST. For Boissier's test we evaluate the number of head-dips and time spent head-dipping on each of the four holes (3 cm diameter). The latencies of movement, first dipping and four holes dipping were also recorded. In order to detect the outliers, we use the Grubbs' test with a standard significance level of alpha value. **Results:** The mean number of stationary for TST was 10.5 with a standard deviation of +/- 2 and the mean of stationary time was 18.2 seconds with a standard deviation of +/- 9 seconds. The Grubbs' test detected 6 (12%) outliers. For the Boissier's test the mean of latency first dipping was 62.3 with a standard deviation +/-25.4 and latency four hole explore was 220.3 with a standard deviation +/- 85.2. The Grubbs' test detected 9 (18%) outliers. **Conclusions:** According with our results for an accurate study is necessary to exclude from the TST approximately 12% and for Boissier's test 18% of mice due to their natural variability.Acknowledgement: This work was financed

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Keywords: Boissier's test, Tail Suspension Test, Natural Variability

CORNER TEST AND BLACK PLATFORM TEST PROTOCOL. A PILOT STUDY

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Background: The initial evaluation of murine model before starting a study is crucial for representative results and for a quality research, especially when the study proposes approach the brain functions. We studied the quality of sensorimotor functional test (corner test) and sensorial reflexes tests to evaluate the mice responses. **Material and methods:** Thirty laboratory mice were included in this observational study. After we established the standard condition for the tests we performed the corner test which was conducted by introducing the animal into the center of a standard square cage (35 x 35 x 25 cm) and counting the number of corners visited and rearings during a period of 30 s. Sensorial reflexes and posterior legs extension reflex were measured by holding the animal by its tail and slowly lowering it towards a black surface. This study was approved by the Ethics Committee from University of Medicine and Pharmacy of Tîrgu Mureş, Romania. **Results:** For corner test the mean number of vertical and horizontal moves were 14, with a standard deviation (SD) of 9. Sensory motor test revealed a mean of 16 second and 6.8 cm, distance covered and the latency to fall. No significant outliers were detected. **Conclusions:** We did not observe significant differences among mice. The sensorial reflexes and posterior leg extension test described didn't have outliers but the challenge of this test is represented by the possibility of failed responses.Acknowledgement: This work was financed by a grant from the Competitiveness Operational Programme 2014-2020, "C-REACTIVE PROTEIN THERAPY FOR STROKE-ASSOCIATED DEMENTIA", ID P_37_674, MySMIS code: 103432, Contract 51/05.09.2016.

Keywords: corner test, sensorial reflexes tests, mice

NONCONFORMING EVENTS MANAGEMENT PLAN IN THE CLINICAL LABORATORY

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Background: -- **Material and methods:** Nonconforming events management plan is based on the quality management principles, risk management and pacient safety. This study is the continuity of a pilot study that took place between 1st of January 2015 and 31st of December 2015, for the Biochemistry Department, that had as a result preparing "The quality indicator worksheet" (nonconforming event being the specimens conformity-hemolysa, lipemia). This study, in the initial phase, has established the activities that occur from the identification up to the ending of the nonconforming event, including the key decisions. In the second phase, the flow chart and the process maps have been prepared to identify the nonconforming events from the pre-examination, examination and post-examination processes. The study batch represented the whole analyse orders received by the laboratory for the period January 2016 - December 2016, for the Biochemistry Department, paying attention to the tendency of reoccuring and the degree of the control over the nonconforming event after the implementation of the improving opportunities established after the pilot study. **Results:** In the pilot study versus the present study, the procent of the hemolysed specimens was 0,99% vs 1,42%. In the pilot study versus the present study, the percent of the lipemic specimens was 0,23% vs 2,35%. **Conclusions:** The nonconforming events management plan must be structured and organised in a manner in which it allows reporting a nonconformance, root cause investigating, nonconformances monitoring, but also identification of the improving opportunities and the risk reducing opportunities.

Keywords: nonconforming event, quality indicator, flow chart, process map

A MINIMAL INVASIVE SURGICAL METHOD FOR OBTAINING ADIPOSE TISSUE FOR STEM CELLS ISOLATION

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Background: The aim of this study was to describe a surgical minimal invasive method for adipose tissue harvesting in order to obtain Adipose tissue Derived Stem Cells (ADSCs) used in heart valves tissue regeneration. **Material and methods:** The minimal invasive procedure was performed on six adult sheeps weighing 20±3 kg, aged 6-12 months. The study was conducted with the Ethics Committee approvel no.131/21.10.2016. The interventions were performed intra-vitally on light sedation, under sterile conditions, at the Experimental Station of UMF Tg-Mures. For sedation, subcutaneously Detomidine (10-20 µg/kg) and inhaling Sevoflurane subsequently were used. The surgical protocol consisted of placing the animal in lateral decubitus, the interscapular region was shaved and antiseptisized with Betadine solution. A 2 cm incision was made, followed by the subcutaneous disection for adipose tissue site accessing. Samples of 0,5 cm^3 were collected in sterile tubes containing culture medium. The intervention was completed by the closure in anatomical plans of the skin using simple Blair-Donatti sutures, followed by the application of silver nitrate solution. Atipamezol with a dose of 1:1 relative to the sedation dose with Detomidine was administred for awakening, as well as an i.m. analgesic, the vital functions of the animal being monitored. **Results:** During the sedation there were no signs registered of bradycardia or hypotension, common adverse effects when using this type of anesthetic medication. Also, vomiting, muscle twitching or hypothermia were not registered after recovery from sedation. There were no cases of postoperative wound infections or dehiscences, all experimental animals recovered favorably, without any type of complication. **Conclusions:** The proposed surgical protocol proved to be an easy and minimal invasive method for adipose tissue harvesting, without postoperative complications of the experimental animals. Acknowledgments:This work was supported by a grant from the Competitiveness Operational Programme 2014-2020, ID:P_37_673.

Keywords: adipose tissue, stem cells, sheep, minimal invasive

CRYOPRESERVATION – A TIME BUYER SOLUTION FOR STEM CELLS IN REGENERATIVE MEDICINE RESEARCH

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Background: Using Regenerative Medicine and Tissue Engineering principles a valvular substitute was imagined, combining scaffolds, stem cells and bioreactor conditioning. For this purpose the scaffold is represented by previously decellularized porcine heart valves and the stem cells are isolated from sheep adipose tissue. In order to extend their availability in time, a preservation method was needed with minimal cell loss and suitable for sheep adipose tissue derived stem cells (ADSCs). **Material and methods:** This study is part of a grant which has the approval of the Ethics Committee of UMF Targu Mures. From 6 sheep adipose tissue was harvested in an aseptic manner and environment. ADSCs were isolated using enzymatic and mechanic agents, then cultured in an incubator for 16±2 days, until reaching full coverage of the flask base. The obtained cultures were cryopreserved in a DMSO solution and placed at -140^{0}C. After cryopreservation their viability was tested using Tripan Blue Staining Solution. The limit of the ADSCs viability percentage was settled at 80%. **Results:** Six ADSCs cultures were obtained consisting in over 108 Million ADSCs and consecutively placed in 54 cryotubes in a ratio of 2 mil/piece and refrigerated at -140^{0}C. Over 88% viability after cryopreservation was found after the Tripan Blue Staining. The cultures tested were kept until reaching an appropriated ADSCs number when the process of cryopreservation was repeated. **Conclusions:** DSMO cryopreservation represents a suitable method for ovine ADSCs for regenerative medicine. This covers the downside of limited usage of stem cells in vitro before they differentiate into more specialized cells, offering usable ADSCs when needed with minimal cell loss. Acknowledgement: This work was supported by a grant from the Competitiveness Operational Programme2014-2020, Tissue engineering technologies for cardiac

valve regeneration, valve-regen, idP_37_673, Mysmis code:103431, contract50/05.09.2016.

Keywords: cryopreservation, cardiac valve, regenerative medicine, stem cells

"PLUMP PINK" CELLS: AN IMPORTANT MORPHOLOGICAL FEATURE IN PAPILLARY THYROID MICROCARCINOMAS

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Background: Papillary thyroid microcarcinoma (PTMC) is defined as an incidentaly found tumor measuring 1cm or less. In this study, we aimed to investigate the importance of reporting different morphological features such as the presence of "plump pink" cells (PPCs), in a series of PTMC cases. **Material and methods:** We re-analyzed all consecutive PTMC cases, registered at the Department of Pathology, Tîrgu-Mureş Emergency County Hospital from 2003 to 2014. The following histopathological features were noted: tumor size, multifocality, extrathyroidal extension, histologic variant, tumor's border, PTC nuclear features, tumor associated stromal reaction (fibrosis/desmoplasia/sclerosis), calcifications, intratumoral lymphocytic infiltrate, intratumoral multinucleated giant cells and lymph node involvement. PPCs were definied as cells with abundant eosinophilic cytoplasm and PTC nuclei. We also quantified the PPCs component as diffuse (up to ≥20%) or focal (<20%). **Results:** Our study included 206 PTMC foci of wich, 91 were ≥5mm and 115 <5mm PTMC. We found PPCs in 48/206 PTMC foci, of wich 34 foci had a diffuse distribution and 14 had a focal PPC component. This distinctive cell type was seen mainly in ≥5mm PTMCs, and the differences were statistically significant (0.002). Only 14 smaller (<5mm) PTMC foci presented diffuse PPC component. We have also shown that larger PTMCs were significantly associated with tumor associated stromal reaction (fibrosis/dezmoplazia/sclerosis) (p=0.0001), calcifications (p=0,007) and intratumoral multinucleated giant cells (p=0,0001). **Conclusions:** In this study we have shown that specific tumor cell features like PPCs, tumor associated stromal reaction, calcifications, intratumoral multinucleated giant cells are significantly more prevalent in large PTMCs. All these parameters are important to be mentioned in the histopathological report, as they could have an impact in predicting the tumour biological behaviour and could help the clinician in better guiding the patient's management.

Keywords: "pump pink" cells, thyroid, papillary microcarcinoma

AQUAPORIN 2 EXPRESSION IN HUMAN FETAL KIDNEY DEVELOPMENT

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Background: The kidney develops from two mesodermal primordia. In the 13th week the metanephrogen zone, the cortex and the renal pyramids reaches their final forms. The fetal metanephric kidney produces large volume of dilute urine for the the maintenance of amniotic fluid. Aquaporins are transmembrane water channel proteins which transport water trough a biological membrane. There are thirteen aquaporins, only seven are present in the kidney. Aquaporin 2 (AQP) is a water channel mostly located on the supranuclear region and apical membranes in the kidney's collecting duct and it is responsible for vasopressin mediated water reabsorption. **Material and methods:** We studied using immunohistochemical techniques kidney tissue samples collected from 33 post mortem fetuses of 9-24 weeks. **Results:** We found a specific pattern of AQP2 expression in the kidneys studied by us. The expression of AQP2 was present in the connecting tubules and collecting ducts of the kidneys in the period studied by us. In the 9-12 weeks period the expression was citoplasmatic, which transformed to apical membrane expression in the period of 13-20 weeks. In the 21-24 weeks period the expression was both citplasmatic and apical membrane. So far most of the studies made about the expression of AQP2 during kidney development were made on rat and sheep kidney specimens. AQP2 expression was present by day 18 of fetal life and started increasing by day 3 post-natally in rats. In the sheep the AQP2 level is increasing but never reaches the 50% of the adult. **Conclusions:** Studies on humans so far shows low level of AQP2 during the last half of gestation. Thus our finding completes the data found in literature about the expression of AQP2 in the development of the human kidney.

Keywords: fetal kidney, aquaporin 2, aquaporins

STOMATOLOGIE (DENTISTRY)

EVALUATION OF THE VERTICAL DIMENSION OF BASIS MANDIBULAE IN PATIENTS WITH DIFFERENT VERTICAL SKELETAL PATTERNS

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Background: The vertical facial type of humans has a great impact on the morphology of mandible. These morphological differences have an important clinical implication. The purpose of this study was to evaluate the differences of the vertical dimensions of basis mandibulae according to vertical skeletal growth pattern using orthopantomograms (OPG). **Material and methods:** The study was conducted on 40 orthopantomograms of patients diagnosed with different vertical growth patterns based of cephalometric analysis. The sample included 13 normodivergent, 13 hiperdivergent and 14 hipodivergent subjects. The vertical dimension of basis mandibulae was measured on the left hemimandible on every OPG with the Image- Pro Insight software. **Results:** It was found that the vertical dimension of the basis mandibulae was significantly bigger in the hipodivergent facial type under the canalis mandibulae. Furthermore, in the hiperdivergent facial type the vertical dimension was significantly smaller above the canalis mandibulae under the apexes of first molar. **Conclusions:** According to our results the skeletal divergence has a significant impact on the vertical dimension of basis mandibulae.

Keywords: basis mandibulae, hipodivergent, hiperdivergent, normodivergent, orthopantomography

CRANIO-FACIAL ALTERATION IN FACIAL ASYMMETRY

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Background: Facial asymmetry is a endognatie, with a prevalence between 3-5% among the children and teenagers. The etiology is plurifactorial and have an major impact in facial aesthetic changes. And functionals types untreated can lead to anatomical facial malformations which requires surgery treatment.The authors have proposed to assess both the lateral cephalometric craniofacial changes, as well as aspects of facial asymmetry by anthropometric measurements. **Material and methods:** Analysis was performed on a transverse plane, study models before orthodontic treatment, and the parameters were quantified craniofacial sphenoid angle, the length Y axis, the length of planum, so facial measurements, head and models are useful in the early diagnosis and a individualized treatment plan, focusing on the possibility of expansion Joint maxillary dentition made. **Results:** Facial measurements, head and models are useful in the early diagnosis and a individualized treatment plan, focusing on the possibility of expansion Joint maxillary dentition made. **Conclusions:** 1.Asymmetric face can be detected early and craniofacial measurements are important in determining indicators of functional or anatomical laterognathia. 2. All forms of facial asymmetry requires combination therapy: functional appliances and mechanical expansion. Where anatomical detected late, orthodontic therapy followed by surgery will achieve the desired result.

Keywords: Dental Medicine, Orthodontics, asymmetry, teleradiography, orthodontics

INVESTIGATION OF SALIVATION AND ORAL HEALTH STATUS IN HUNGARIAN SMOKING PATIENTS

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Background: Our objective was to assess the minor and whole salivary flow rates, the prevalence of xerostomia and related dryness

symptoms, and the oral health status of smoking compared to the non-smoking patients from different age groups in Hungary. **Material and methods:** 901 patients (age: 18-92 years, 376 male (41.7%), 525 female (58.3%) have been involved into the investigation. A questionnaire was designed to evaluate the subjective sicca symptoms. Unstimulated whole saliva flow rate (UWS) were measured by the spitting method, palatal (PS) and labial (LS) minor salivary gland flow rates were collected by the Periotron method. A dental (DMF-T), and periodontal (periodontal probing depth, maximum CPI-score, Löe-Silness plaque-index, calculus-index and Ainamo-Bay gingival bleeding index) examination was carried out. Statistical analysis: χ^2-test, Students t-test; significance level: $p<0.05$. **Results:** Smokers were 35.9% (43.4% of the men and 30.5% of the women) of the examined persons (323 out of 901). A significantly higher number (44.8%) of smoking men between the age of 30-40, and smoking women between the age of 20-29 (51.4%) reported xerostomia, compared to the non-smoking men (6.5%) and women (27.1%), respectively. LS in smoking women was significantly lower (2.06±1.3 µl/cm²/min) compared to the non-smoking ones (2.99±2.4 µl/cm²/min). However, no significant difference was shown in either the Unstimulated Whole Saliva (UWS), or in the DMF-T values. An increased plaque retention, a significantly higher average probing depth, maximal CPI score, gingival bleeding index, and a higher accumulation of calculus were also observed among smokers in one or more age groups. **Conclusions:** Smoking might cause a significant destruction in the periodontal status. Smoking may also contribute to xerostomia or any other sicca symptoms, however, it does not influence the UWS significantly.

Keywords: smoking, xerostomia, periodontal status, salivary secretion, DMF-T

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