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FARMACIE (PHARMACY)

INFLUENCES OF STORAGE CONDITIONS AND EXTRACTING SOLVENTS ON ANTHOCYANIN AND TOTAL POLYPHENOLIC CONTENT FROM BILBERRIES AND BLUEBERRIES. CORRELATIONS WITH THE ANTIOXIDANT ACTIVITY.

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Background: Blueberries and bilberries are known for their high content of anthocyanins and total polyphenols, with multiple implications in human health. The objective of this study was to assess storage effects on anthocyanin and total polyphenol content in different bilberry and blueberry extracts and to evaluate the antioxidant effect of these fruits. **Material and methods:** Total polyphenolic content (TPC), total monomeric anthocyanin content (TMAC) and antioxidant activity (AA) was determined on fruits in the first month and after three months storage at either -20 °C or -50 °C. Two different solvents were used (methanol and 50% ethanol). Free radical scavenging activity on DPPH and ABTS was used to evaluate AA of berry extracts. **Results:** There were significant differences between the concentration in the first month and after three months storage in both types of fruits. TPC in blueberries decreased with 27% in three months and TMAC decreased with almost 35%. For bilberries we observed a decrease of 26% in TPC and of 46% TMAC. Regarding the extracting solvent, we noticed that total polyphenols were better extracted with 50% ethanol than with methanol, comparative with the total monomeric anthocyanin content, which was higher in the methanolic extracts. No significant or slightly significant differences were observed between the fruits stored at -20 °C or -50 °C. The highest scavenging activity was observed in 50% ethanol extracts. **Conclusions:** Storage conditions are an important factor that can influence chemical composition of fruits. Although freezing is a good option for preservation, our study showed a high decrease in the concentration of total polyphenols and in anthocyanins after only three months. The freezing/thawing process probably affected the anthocyanin profile more than the freezing itself. Further studies are needed for better understanding the changes that can appear during the storage.

Keywords: Blueberry, Bilberry, Anthocyanin, Polyphenols, Antioxidants

EVALUATION OF MECHANICAL PROPERTIES OF MATRIX TYPE TRANSDERMAL THERAPEUTIC SYSTEMS

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Background: Transdermal delivery represents an intensely studied alternative to oral delivery of non-steroid anti-inflammatory drugs (NSAIDs) in the treatment of rheumatic diseases due to its ability of avoiding the side effects of the oral route. The ability of the NSAID to be released from a transdermal therapeutic system (TTS) is fundamentally influenced by certain mechanical properties that must be provided to the bioadhesive matrix by a suitable formulation. This study aims to present the evaluation of the mechanical properties of three NAIDs matrix as part of the formulation development process. **Material and methods:** 12 matrix formulations of TTS (meloxicam-MX1_4, tenoxicam-TX1_4 and indomethacin-IND1_4) were prepared by the solvent casting evaporation technique, using hydroxypropylmethylcellulose (HPMC 15000, HPMC E5) and/or ethylcellulose (EC) as matrix-forming polymers. Each of the resulted products was evaluated by determining: the behavior towards water vapor in controlled humidity (evaluation of porosity); and the elongation capacity, tensile strength and bioadhesiveness (evaluation of mechanical properties). **Results:** The characteristics of the 12 evaluated products were as follows: thickness below 1mm, weight between 2.38g-2.73g, moisture absorption between 2.23%-5.54% and moisture loss between 11.06%-23.44%. The tensile strength and the elongation capacity (up to 80%) were directly affected by the type of polymer and its concentration. The tensile strength at break was found to be a parameter which increases with the concentration and the viscosity of the polymers:

HPMC15000 1.5% (MX3,TX3,IND3)⊠ HPMC15000 1% (MX2,TX2,IND2) ⊠ HPMCE5 3% (MX1,TX1,IND1) ⊠ HPMC15000 1.5%+EC 1% (MX4,TX4,IND4). The adhesive force was found between 60.5g-184.3g. **Conclusions:** The evaluated properties of systems and the determined parameters are essential to select the proper formulation for the further studies: HPMC15000 (MX3,TX3,IND3) in concentration of 1.5% leaded to a TTS matrix with better properties compared to the other studied formulations.

Keywords: transdermal therapeutic system, matrix type, mechanical properties, bioadhesiveness

STUDY OF AUTHENTICITY OF RED WINE BASED ON POLYPHENOL AND MINERAL ELEMENTAL FINGERPRINTING

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Background: Red wine is a widely used and liked alcoholic beverage, manufactured from red grapes. Due to steadily increasing demand, more and more low-grade wines appeared on Romanian market. The polyphenol content and mineral elemental composition of red wine can be used as main factors for discrimination and originality check. From this point of view, we measured the phenolic profile and mineral element contents of red wine, then the experimental data were subjected to principal component analysis (PCA). PCA is a simple statistical procedure to decrease the dimensionality of the data matrix and to convert original variables into some new vectors (principal components), which described the different between the samples. **Material and methods:** Twenty-eight red wine available on Romanian and also on the international market were used in these study. Fourteen non-flavonoid/flavonoid compounds and cis-/trans-resveratrol were analyzed by HPLC-UV/ESI-MS and HPLC-UV/APCI-MS, respectively. Thirty-five macro and trace mineral elements were measured by inductively coupled plasma mass spectrometry (ICP-MS). PCA of the data was performed using Microsoft Excel XLState software. **Results:** Through PCA we observed the relationships between different parameters. Based on the HPLC-UV/ESI/APC-MS results and on the score plot of PC1 and PC2 existence of several groups of vines was observed. In the PC score projection of mineral element contents, eight group were separated. These results appeared to be related to the geographic origin of wines. **Conclusions:** This work described a procedure to characterize red wine, based on polyphenol profile and mineral element composition. PCA result indicated obvious differences between samples. The polyphenol content is an effective tool to identify the type of grape used for obtaining the wines. Also its mineral elemental fingerprint can be used as a device to obtain information about the geographical origin of the wine.

Keywords: polyphenol profile, HPLC-UV/ESI/APCI-MS, mineral element, ICP-MS, principal component analysis

ENANTIOMERIC QUALITY CONTROL OF R-PRAZIQUANTEL BY CAPILLARY ELECTROPHORESIS

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Background: Schistosomiasis is a so-called "neglected" tropical disease. Praziquantel remains the only viable option for the prevention and treatment of the disease, being distributed as part of mass drug administration campaigns. The antischistosomial activity resides in the R-enantiomer, while the antipode is the inactive distomer, doubling the size of the tablet. A formulation containing only the eutomer is currently in Phase II clinical trial. **Material and methods:** The enantiomers of the drug were separated by cyclodextrin-modified capillary zone electrophoresis. Nine anionic cyclodextrins were screened for their ability to discriminate between the uncharged enantiomers. In order to gather information about the enantiodiscrimination process, the datasets were interpreted in terms of stability constants and complex mobilities. **Results:** Seven of the nine investigated selectors presented chiral interactions with the enantiomers, the best results being obtained with sulfated-⊠-cyclodextrin, where quasi-equal

stability constants were accompanied by extreme selectivity values and was explained on the basis of highly different mobilities of the diastereomeric associates. After optimization (50 mM phosphate buffer pH 2.0, supplied with 15 mM sulfated-⊠-cyclodextrin, reversed polarity with an applied voltage of -15 kV, capillary temperature 25 °C, short-end injection with -50 mbar x 2 seconds), analysis time under 10 minutes were obtained, while maintaning high resolution (Rs>10). The method was validated according to the ICH guideline for the determination of S-praziquantel as an optical impurity. Application of the method was tested on in-house synthetised R-praziquantel batches and on commercial, combination tablets containing racemic mixture of the drug. **Conclusions:** A suitable method was developed for the cost-effective enantiomeric quality control of R-praziquantel, which could support the development and introduction of the chiral switch of PRZQ. The method presented herein can be suitable for the cost-effective enantiomeric quality control of the future chiral switch of PRZQ.

Keywords: chiral separation, schistosomiasis, chiral switch, complex mobilities, enantioseparation

LC-MS/MS DETECTION OF TESTOSTERONE IN PLASMA WITHOUT DERIVATISATION. COMPARISON OF DIFFERENT TYPES OF MASS SPECTROMETRY DETECTION

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Background: Liquid chromatography tandem mass spectrometry (LC-MS/MS) has become a powerful technique for quantifying testosterone in different matrices. Important tasks in LC-MS/MS field are the sample throughput, automation and the ability to measure low levels of analytes in faster analysis time. This preliminary study was designed in order to compare different types of mass spectrometry detection of testosterone without derivatisation in terms of limit of quantification. **Material and methods:** Triple quadrupole (QQQ) and ion trap (TRAP) mass spectrometers coupled with LC systems were used. The methods were optimised in terms of ionisation source and mass spectrometer parameters. Chromatographic conditions were then selected in order to achieve a high-throughput analysis after protein precipitation of plasma samples. After reversed phase separation on C18 columns and ESI+ ionisation, testosterone concentrations were monitorised by using specific MS/MS transitions (m/z 97.2, 109.2 and 253.2 from 289.2). **Results:** Testosterone was quantified without pre-derivatisation, after reversed-phase cromatographic separation and positive ionisation mode. The lower level of quantification was limited for both TRAP and QQQ analysis at 1 ng/ml. **Conclusions:** All methods proved to be suitable for measuring typical levels of testosterone in male human and rat plasma, being useful in routine analysis. Accordingly, LC-MS/MS expands diagnostic capabilities in endocrinology due to high-resolution and high-accuracy mass analyzer detection. Aknowledgement: The study was supported by the grant no. 17/23.12.2014, title "Inhibitorii de aromatază ca substanţe dopante. Model experimental la şobolani", Complex Research Projects, Competition 2014, University of Medicine and Pharmacy form Tîrgu Mureş, Romania.

Keywords: LC-MS/MS, testosterone, plasma

MEDICINĂ CLINICĂ (CLINICAL MEDICINE)

HEMORRHAGIC GASTRITIS AFTER IRON SUPPLEMENTATION – CASE PRESENTATION AND A REVIEW OF THE LITERATURE

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Background: Gastritis is an inflammatory condition of the gastric mucosa, whose etiology is very diverse. Reactive gastritis is a subtype of inflammation caused by different endogenous or exogenous triggers. Oral iron supplements can lead to a corrosive injury of the gastric mucosa, the so called `iron pill-induced gastritis. **Material and methods:** We aim to underline the potential severe side-effects of oral iron supplements in a case of a 16-year-old female patient, admitted in the Pediatrics Clinic 1 Tg. Mureş with upper digestive hemorrhage and severe abdominal pain. **Results:** We present the case of a 14-year-old female patient, admitted in the Pediatrics Clinic 1 Tg. Mureş for intense abdominal pain and upper digestive hemorrhage. Her personal history revealed the fact that she received oral iron supplementation for approximately 1 month, being diagnosed with iron deficiency anemia. The clinical exam pointed out pallor and abdominal pain at palpation in the epigastric area. The blood tests showed: anemia, probably post-hemorrhagic, and increased iron level. We performed an upper digestive endoscopy, and noticed multiple brown deposits, severe edema of the gastric mucosa and multiple hemorrhagic injuries. The histopathological exam underlined iron deposits in the gastric mucosa. The oral iron supplementation was ceased at the moment of admission. We initiated therapy by vein with proton pump inhibitors for 5 days, and the evolution was favorable. We discharged the patient after five days, with the recommendations to avoid oral iron supplements further on, to follow an adequate diet for at least 1 month, and to continue the treatment with oral proton pump inhibitors for 1 month. **Conclusions:** Hemorrhagic gastritis can be a potentially fatal condition. Every gastroenterologist must be aware of the so called iron pill-induced gastritis, and to recognize its endoscopic particularities.

Keywords: oral iron supplements, gastritis, upper digestive hemorrhage, iron pill-induced gastritis, child

PHOSPHORYLATED NEUROFILAMENTS HEAVY CHAINS CORRELATE WITH SEVERITY OF ISCHEMIC STROKE

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Background: The aim of the study was to assess the utility of plasma phosphorylated neurofilaments heavy chains (pNfH) as a reliable marker for diagnosis and prognosis of ischemic stroke patients and a correlation between pNfH, as a neuroaxonal damage marker, and hsCRP as an inflammatory marker. None of the peripheral markers have been postulated as pathognomonic for this pathology, so far. **Material and methods:** 124 ischemic stroke patients admitted during the first day after onset and 40 healthy controls were included in this study. The severity of neurological deficit was assessed by NIHSS on day 1, 3, 5 and before discharge from the hospital and functional outcome by mRS at discharge and after 3 months. Blood samples were collected on day 1, 3, 5 for dynamic evaluation of these parameters. Plasma pNfH concentration was assessed by ELISA method and hsCRP by immunoturbidimetric assay. **Results:** Assessment of pNFH in the first day did not reveal any statistical difference between patients and control, while hsCRP was significantly higher in patients vs controls on the first day. The fifth-day results revealed a significant difference between patients and controls, both for pNFH and hsCRP. A statistically significant positive correlation between pNFH and stroke severity evaluated with NIHSS in all three-time evaluation points has been found and a significant negative correlation with functional outcome evaluated with mRS at discharge and after 3 months. Regarding a type of stroke, in cardioembolic stroke levels of fifth-day pNfH and hsCRP were higher than in atherothrombotic and small vessels occlusions. **Conclusions:** Peripheral pNfH levels correlate with severity of ischemia evaluated with NIHSS and with functional outcome evaluated at discharge and 3 months later. Regardless correlation with inflammatory status, there was a positive correlation between pNfH and hsCRP. These results suggest that pNFH could predict the degree of neural destruction and functional outcome after ischemic stroke.

Keywords: ischemic stroke, neurofilaments, hsCRP

UPDATES IN THE MANAGEMENT OF ELDERLY PATIENTS WITH PERIPHERAL ARTERY DISEASE AFTER REVASCULARIZATION

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Background: Peripheral artery disease is associated with a high risk of morbidity and mortality, therefore the management of patients after endovascular interventions should include periodic assessment of risk factors, disease progression and monitoring the operated arteries. The aim of this study is to update the two peripheral vascular monitoring techniques: Doppler index (ankle-brachial) and postoclusive reactive hyperemia. **Material and methods:** The study was conducted on a sample of 30 patients who underwent a revascularization procedure consisting in either a bypass with Dacron prosthesis or autologous vein, or by endovascular techniques. Doppler ankle-brachial index was determined and postoclusive reactive hyperemia photoplethysmography (tensiometer cuff placed below the knee and the transducer on the toe of the researched leg) was performed immediately post intervention, every 2 months or whenever the patient complaints have worsened. **Results:** The mean age was 62.5±8.66 years. The intensive treatment (Alprostadil iv 20µg/day, 10 days along with chronic treatment with Cilostazol 2x100mg/day orally) was initiated when the Doppler ankle-brachial index fell below 0,5, the postoclusive reactive hyperemia being a marker of collateral microcirculation. In a total of 13 patients with critical Doppler index below 0.3 but with reactive hyperemia photoplethysmography over 2 mV/V we decided for conservative treatment. After 6 months, peripheral perfusion increased (from 1.18±0.71mV/V to 3.15 ± 2.04 mV/V), patients quality of life was acceptable and an improvement of claudication distance was observed (from 92.67 ± 10.19 m to 251.7 ± 17.37 m). In 12 patients with critical ankle-brachial index (< 0.3), with no answer to reactive hyperemia (0.80 ± 0.34mV/V), angiography and revascularization intervention were repeated, amputation being necessary in 5 cases. **Conclusions:** Regular control of revascularized patients with two vascular diagnostic techniques allows a more accurate assessment of hemodynamic status of revascularized limb and establishing a more precise criteria for revascularization or amputation.

Keywords: peripheral artery disease, postocluzive reactive hyperemia, microcirculation

AN ELECTRONIC-READY HYBRID MASS CASUALTY INCIDENT FIELD CHART MODEL FOR ROMANIAN EMERGENCY AGENCIES

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Background: Patient data documentation in mass casualty incidents necessitates customized charts that are quick to fill in by the emergency personnel while complying with physical requirements and providing clarity and a high density of medical information. There is no officially adopted model by the Romanian emergency agencies at the moment. **Material and methods:** A hybrid mass casualty incident chart was designed that merges a pen and paper-like based solution with optical and electronic tagging and removable elements. A hybrid patient bracelet is also paired with the hybrid chart with the same function. **Results:** The chart is deployed as a rigid but light liquid-proof sheet. Data fields are clearly structured into color-highlighted sections for patient identification, brief history, clinical examination, vital signs, procedures, treatment, diagnosis, notes and evacuation. One side of the chart is equipped with dynamic color-coded severity detachable elements that stick to the chart by embedded magnets. Parts of the chart in use contribute to ad-hoc physical patient records at the secondary triage and evacuation posts respectively. The paired bracelet provides detachable QR codes ± NFC tags stickers that enable electronic tracking for customized applications. **Conclusions:** The current model provides novel functions like dynamic patient severity coding, ease of use by employed materials, patient tracking by optical and wireless tags, ad-hoc patient records and redundant elements. Even if production costs may be higher, but not prohibitive, than other models, the advantages of putting the current model into practice may provide benefits in such overwhelming events that are likely to substantially compensate for a pre-event financial effort.

Keywords: mass casualty incidents, patient chart, electronic chart, MCI chart, hybrid chart

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF SLUG EXPRESSION IN GASTROINTESTINAL STROMAL TUMORS

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Background: In carcinomas, SLUG is known to favour the tumor cell invasion. In patients with gastrointestinal stromal tumors (GIST) few reports revealed unfavorable outcome of SLUG positive cases. The aim of the study was to present our data regarding the possible diagnostic and prognostic value of the immunohistochemical (IHC) expression of SLUG in patients with GISTs. **Material and methods:** In 80 consecutive cases with GISTs diagnosed at the Department of Pathology of Tirgu-Mures (Romania) between 2005-2015, tissue microarray blocks (TMA) were performed to evaluate the SLUG nuclear expression. To consider a case to be SLUG positive, the cut-off value of 5% positive nuclei was used. The IHC stains with the diagnostic markers DOG-1, C-KIT and Ki67 were also performed. **Results:** SLUG was espressed in 71/80 cases (88.75%). The positivity for DOG-1 and c-KIT was seen in 61/80 and 74/80 cases, respectively. SLUG expression was not correlated with the tumor size (p=0.724). All of the 20 cases diagnosed as high grade GISTs (≥5 mitoses/HPF and Ki67 index higher than 5%) have expressed nuclear SLUG. Most of the DOG negative (17/19) and all of the C-KIT negative cases (6/6) showed SLUG positivity. **Conclusions:** SLUG expression is present in over two-thirds of GISTs and might be used as an additional diagnostic marker for high grade DOG-1/c-KIT negative GISTs with aggressive behaviour. This paper was partially supported by The University of Medicine and Pharmacy of Tirgu-Mures, Romania, team research projects frame: UMFTGM-PO-CC-02-F01 - No 19/2014.

Keywords: gastrointestinal stromal tumor, SLUG, prognostic factor

THE ASSESSMENT OF BLOOD PRESSURE VARIABILITY IN PATIENTS WITH CHRONIC KIDNEY DISEASE ON RENAL REPLACEMENT THERAPY

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Background: Blood pressure variability (BPV) was identified as a cardiovascular (CV) risk factor in nondialysis subjects. Given the high burden of cardiovascular complicationsion in patients on renal replacement therapy due to fluid shifts, we aimed to assess blood pressure profile and variability respectively before, after and during hemodialysis (HD). **Material and methods:** A number of 36 hypertensive patients with end stage chronic kidney disease (CKD) were included. Renal replacement therapy was performed with a NIPRO dialysis machine usig continuous dialysis. On the day with HD, blood pressure (BP) measurements were performed with a validated semiautomated device (Omron M3), every 15 minutes- 10 measurements before initiating HD, 8 measurements during dialysis and 10 after terminating HD session. Blood pressure variability was calculated using the average real variability (ARV). Laboratory parameters were compared before and after HD using paired t test. **Results:** Mean age was 57.33±14.23 years, there were 16.66% female, 83.33% male. Most patients - 28- had creatinine clearence between 5-10 ml/min/1.73m2. Regarding systolic BP variability we recorded 6.30±2.16 mmHg versus 9.96±2.09 mmHg versus 7.10±2.37 mmHg after dialysis, p<0.001. Mean systolic BP was 150.04±13.92 vs. 144.68±21.17 mmHg vs. 145.94±17.76 mmHg, p=0.08. Serum potassium was 4.48±0.18 mmol/l vs 3.94 mmol/l after dialysis, p=0.014. Creatinine showed a statistically significant reduction 7.97 ±0.53 mg/dl vs. 5.09±0.44 mg/dl, p=0.02. Blood urea was 163.4±19.62 mg/dl vs. 101.5±13.11 mg/dl, p=0.013. **Conclusions:** In order to prevent early CV complications of CKD, blood pressure oscillations should be assessed and avoided. The evaluation of peridialytic BPV could represent an important parameter in the management of hypertensive patient with CKD on renal replacement therapy.

Keywords: CKD, dialysis, blood pressure variability, hypertension

IMMUNOLOGICAL AND CLINICAL CONSIDERATIONS IN PATIENTS WITH MULTIPLE SCLEROSIS TREATED FOR AT LEAST 10 YEARS WITH INTERFERON -1B.

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Background: Multiple sclerosis (MS), chronic, demyelinating disease of the central nervous system, is caused by an abnormal immune response in genetically susceptible individuals secondary to various environmental, infectious and genetic factors. The first immunomodulatory agent used for the treatment of MS was interferon beta-1b (IFN-1b)**Material and methods:** In this study we included 67 patients treated continuously with IFN-1b for more than 10 years. The patients were assessed based on their demographic data, clinical features: relapse rates, disability progression assessed by the expanded disability status scale (EDSS) and neuropsychiatric features: depression scores evaluated by the Hamilton scale, cognitive tests evaluated using SDMT test. A pro and anti inflammatory cytokine panel (IL-4, IL-19, IL-17A, Il17F etc) is being collected in our selected group of patients. We defined two groups: patients with an EDSS score < 4.0 in 2016 and patients with an EDSS score ≥ 4.0 in 2016. **Results:** The average age at the beginning of the treatment was 30.69 years. The mean duration of the disease was 12.34 years. By comparing the annual relapse rates before and after the treatment was initiated, in the first group we notice a statistical significant reduction in recurrences. An increase in the disability score positively correlated with a decrease in the intelectual performance. **Conclusions:** Long term treatment with disease modifying therapies such as IFN-1b proved to have a favorable effect on patients with a recurrent-remitting form of MS.

Keywords: Multiple Sclerosis, relapses, cytokine, disability, interferon beta-1b

A PARTICULAR CASE OF PULMONARY HYPERTENSION IN CHILDREN: PERIPHERAL PULMONARY ARTERY STENOSES

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Background: A rare cause of pulmonary hypertension in children is reprezented by the peripheral pulmonary artery stenosis. **Material and methods:** Herein we describe a 13-year-old male patient with progressive dyspnea and continuous thoracic murmur, diagnosed with severe pulmonary hypertension due to the multiple peripheral pulmonary artery stenoses. In addition it has been revealed the progressive narrowing of the descending and abdominal aorta. **Results:** Transthoracic echocardiography showed the presence of the right ventricular dilatation, severe tricuspid regurgitation and severe systolic right ventricular pressure of 110mmHg. A mean pulmonary artery pressure of 53mmHg was determined by heart catheterization. Angiography imaging showed multiple, significant narrowings at distal branches of the both pulmonary arteries associated with progressive narrowing of the aorta starting at the arterial isthmus throughout the descending thoracic and abdominal aorta without significant focal stenosis. **Conclusions:** Due to the diffuse location of branches stenoses, pulmonary artery balloon angioplasty was not recommended. Based on the severe increase of the right-sided cardiac and pulmonary arterial pressure, medical therapy with pulmonary vasodilator stabilized his clinical condition.

Keywords: pulmonary hypertension, peripheral pulmonary artery stenosis, children

GENETIC MUTATIONS IN A CHILD WITH SEVERE OBSTRUCTIVE HYPERTROPHIC CARDIOMYOPATHY – A CASE REPORT

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Background: Hypertrophic cardiomyopathy is a heterogeneous condition in terms of etiology, with high variability in phenotype expression, and causing significant morbidity and mortality during childhood. Severe forms with early onset are described in

children with mutations in PTPN11 gene. **Material and methods:** We present the case of a 10 years old girl, diagnosed in infancy with a severe form of obstructive hypertrophic cardiomyopathy, and in whom genetic studies revealed two different mutations. **Results:** The patient was first evaluated in our unit when she was 13 months old, being referred for investigation of a heart murmur. Her familial history is positive for hypertrophic cardiomyopathy, with other two identified family members diagnosed with this disease, though with a much milder form. Since echocardiography revealed a severe form of obstructive hypertrophic cardiomyopathy, she began treatment with a beta-blocker agent. The gradient in the left ventricular outflow tract progressively increased, and she was referred for left ventricular myectomy, with a significant decrease of the outflow tract obstruction after the surgical procedure. Prior surgery, BNP serum level was elevated (352,5pg/ml), after myectomy a much lower value was identified (92pg/ml). Genetic studies showed mutations on two different genes (PTPN11 and BRCA2). **Conclusions:** Hypertrophic cardiomyopathy is a genetic disease with high variability in terms of phenotype expression. Genetic testing is recommended in all patients, especially in those with severe forms and early onset of disease.**Acknowledgement**: This paper was carried out in the research project no 17800/7/22.12.2015, financed through Internal Research Grants by the University of Medicine and Pharmacy Tîrgu Mureş / Center for Advanced Medical and Pharmaceutical Research, University of Medicine and Pharmacy Tîrgu Mureş, Romania.

Keywords: genetic mutation, hypertrophic cardiomyopathy, children

MULTIPLE MYELOMA ASSOCIATED WITH DILATATIVE CARDIOMYOPATHY - CASE REPORT

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Background: In the last 25 years cancer and heart diseases have the leading causes of morbidity and mortality. This is the reason why the therapies for cancer progressed importantly in the past 15 years. Anthracyclines are the drugs of first choice in the treatment of patients with multiple myeloma, but chemotherapy causes cardiotoxicity which is the major cause of mortality in cancer survivors. **Material and methods:** We present the case of a 57-year-old man with cardiological medical history (myocardial infarction, ischemic heart disease, arrhythmias, valve insufficiency) who was diagnosed with multiple myeloma, benefited a combined chemotherapy with Vincristine, Doxorubicine, Cyclophosphamide and Methilprednisolon. After the 2th course of treatment the patient presented sings of cardiotoxicity, this is the reason why we reduced the dose of chemotherapy. We obtained a proper hematological response after the treatment but with significant cardiological toxicity. The patient presented pulmonary edema, arrhythmias and the cardiological examiantion confirmed dilatative cardiomyopathy. Recenly we attempted to collect stem cells for autologous stem cell transplantation, but the cardiological status did not premit this (cardiac insufficiency after second apheresis procedure). **Results:** In this case we were not able to perform the autologous stem cell transplantation, because the patient s heart status was inadequate. In some patient with hematologic malignancies the risk of performing autologous transplantation is higher than adapted dose chemotherapy. **Conclusions:** Hematologist and cardiologist should collaborate to use preventive strategies to reduce the cardiotoxicity after chemotherapy by changing the treatment dose, should receive a frequent monitoring and introducing cardioprotective agents.

Keywords: Cardiovascular complications, Chemotherapy, Cardiotoxicity, Myeloma multiplex

CLINICAL, IMMUNOLOGICAL AND EPIDEMIOLOGICAL CORRELATIONS OF TUBERCULOSIS / HIV COINFECTION IN PATIENTS INFECTED WITH HIV IN OLT COUNTY DURING 2005-2015

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Background: Tuberculosis (TB) / HIV coinfection is an important problem regarding global health with diagnostics and treatment challenges, but also significant economic costs. Constant increasing global number of people infected with HIV (PIH) is causing changes in TB clinical and epidemiological data. HIV infection increases up to 20 times the chance of progression from latent

infection with M. tuberculosis to active forms of TB.The paper aims to assess patients with TB-HIV coinfection in Olt county Registered in Regional Center for Monitoring and Evaluation of HIV / AIDS in Craiova (demographics, comorbidities, clinical symptoms, immunologic evaluation for the moment of TB diagnose, TB type, TB related number of treatments) in order to identify risk factors for progression to active TB in this subset of patients. **Material and methods:** We performed a retrospective descriptive study using records of patients infected with HIV (PIH) in 2005-2015. We analyzed patients registered with TB-HIV. **Results:** We analyzed 256 medical charts of PIH of which 76 (29.68%) had at least one treatment for TB. Only with minor difference predominated women (52.7%) and rural residence (54%). Majority is formed of those born in 1980-1990 (86.84%), with predominance of Romanians (93.4%) compared to the Roma. Regarding all TB diagnoses (pulmonary and extrapulmonary) 48 were new cases, other 28 presented relapses, 2 cases presented multidrug-resistance. TB and HIV have been diagnosed at the same time in 25 cases (32.89%). At the time of TB diagnosis 40 patients (52.63%) had CD4 + lymphocytes count <200 cel/ ml. We noticed the absence of prophylaxis for TB in PIH, high incidence of hepatitis B among those with HIV/TB coinfection (18.42%). **Conclusions:** Higher risk of developing active TB in patients with HIV infection is correlated with severe immunosuppression, situations in which the clinical expression, radiological and bacteriological findings are often atypical.

Keywords: tuberculosis, immunosuppression, HIV

EVALUATION OF FACTORS INVOLVED IN ND:YAG CAPSULOTOMY RATES AFTER INTRAOCULAR LENS IMPLANTATION

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Background: The leading cause of blindness is due to cataract formation, with the only means of treatment being phacoemulsification and intraocular lens implantation. In spite of intraocular lens improvements, about 10% of patients still require neodymium: yttrium-aluminum-garnet (Nd:YAG) laser capsulotomy within 2-3 years from surgery, for posterior capsule opacification. Posterior capsule opacification, a fibrotic condition, remains the major long-term postoperative complication. The pathogenesis of this condition is multifactorial and involves factors such as: surgical tehnique, material and design of intraocular lens and patient factors. The aim of the study is to investigate the incidence and etiology of Nd:YAG laser capsulotomy treatment for posterior capsule opacification. **Material and methods:** This is a retrospective longitudinal study that reviewed 650 patient charts that underwent Nd:YAG laser capsulotomy between 2013 and 2016. These charts were correlated with patient files from Tg Mures Ophthalmology clinic, individuals who had cataract surgery with intraocular lens implantation between 2009 and 2016. **Results:** 331 eyes of 289 patients were included in the study, 24.5% of patients were aged under 60 of age and 75.5% over this age limit. Mean period between the cataract surgery and laser treatment was 31 months. When taking into account intraocular lenses, similar number of hydrophilic (176) and hydrophobic (155) lenses were included in the study. Out of the total number of lenses, 251 were square edged. 62 patients presented systemic associations (diabetes mellitus). **Conclusions:** Intraocular lens design and several systemic and ocular associations are known as posterior capsule opacification determinants; nevertheless, the exact implication of each factor is subject to debate. Understanding the biological processes governing the posterior capsule opacification formation leads to surgical outcome improvement and subsequently patient satisfaction.

Keywords: intraocular lens, neodymium: yttrium-aluminum-garnet capsulotomy, posterior capsule opacification, hydrophilic lens, hydrophobic lens

SHOX-GENE MOLECULAR GENETIC DIAGNOSTICS WITH MLPA TECHNIQUE IN CHILDREN WITH IDIOPATHIC SHORT STATURE

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Background: The isolated haploinsufficiency of the SHOX-gene is one of the most common cause of short stature determined by monogenic mutations. The SHOX-gene is located in the X and Y chromosomes pseudoautosomal region. The heterozygous deviation of the gene can be detected in the 2-15% of patients with idiopathic short stature, in 50-90% of Leri-Weill

Dyschondrosteosis syndrome, and in almost 100% of patients with Turner syndrome. **Material and methods:** The MLPA (Multiplex Ligation-dependent Probe Amplification) is the first recommended molecular genetic method for the detection of deletions occurring in the SHOX-gene. We performed SHOX-MLPA on 109 patients in the Laboratory of Endocrine Genetics at the II. Department of Medicine, Semmelweis University, Budapest. **Results:** From the 109 examined samples 8 proved to be positive with MLPA. The most common genetic defect of the SHOX-gene is the deletion. From the 8 positive samples in 3 we found complete heterozygous deletion of the whole gene while in 5 cases partial deletions, were detected. In positive cases the clinical picture was heterogeneous, although the main symptom was the short stature. The deletion of this gene is characterized by feminine domination, which can be explained by the fact that the deletion of the short arm of the X chromosome is more frequent, than the rupture of the Y chromosomes short arm. Examination of family members didnt show SHOX-gene deletions. **Conclusions:** The understanding of the SHOX-genes role at molecular biological level permit the accurate identification of the SHOX-gene alterations (deletion or mutation). Its molecular genetic examination is justified for patients who present typical clinical symptoms of SHOX deficiency phenotype, or suffer of idiopathic short stature. Based on the accurate genetic diagnosis, the physician can give proper genetic counseling for the patient and his/her family, informing them about the evolution of disease and about the potential therapeutical considerations.

Keywords: SHOX-gene, idiopathic short stature, Leri-Weill Dyschondrosteosis

HETEROZYGOUS DELETION IN EXONS 4-5 OF SHOX-GENE IN A PATIENT WITH IDIOPATHIC SHORT STATURE

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Background: Growth retardation resulting in short stature is a major concern for parents and because of its great variety of causes, a complex diagnostic challenge for clinicians. Isolated SHOX-gene haploinsufficiency is one of the most important monogenic causes of short stature which have been described in 2-15% of individuals with idiopathic short stature. SHOX deficiency leads to a variety of different skeletal phenotypes and clinical conditions. **Material and methods:** After clinical examination, hormone measurements (hGH, IGF-1, TSH, ATPO, cortisol), and some biochemical assays (eg.glycemia) were performed. Bone alterations were overviewed by radiological examinations. To determine the possible alterations of the SHOX-gene, genomic DNA was extracted from the leucocytes by the method recommended by QIAgen, and Multiplex Ligation-dependent Probe Amplification (MLPA) technique was employed. **Results:** The 11-year-old girl was born at full term with a birth weight of 4000 g, and has short stature since she was a small child. At 9 years, her height was 124,5 cm (-2,35 SD) and her weight was 40 kg. Clinically, she was moderately dysproportionate, with cubitus valgus and palatum ogivale. She was in puberty, Tanner stage 1 breast development. Actually she has 45kg presenting obesity gr.1, and has Tanner stage 2. Endocrinological diagnostic tests did not reveal any abnormalities excepting a slightly elevated TSH of 14.55 µIU/mL (0.25-5.00). There was no evidence of growth hormone and IGF-1 deficiency either. Molecular genetic testing revealed a heterozygous deletion in exons 4-5 of SHOX gene. **Conclusions:** This case is the first case from our centre diagnosed with deletions of exons 4-5 of SHOX-gene suggesting the importance of screening for SHOX mutations in patients with idiopathic short stature, especially in children with increased sitting height-to-height ratio or decreased extremities-to-trunk ratio.

Keywords: SHOX-gene, exons 4-5, idiopathic short stature

CARDIOTOXICITY OF ANTICANCER DRUGS: MANAGEMENT, CLINICAL UPDATES AND LITERATURE REVIEW

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Background: Treatment of malignancies has evolved much lately that has progressively increased the occurrence of adverse cardiac effects such as: heart failure, myocardial ischemia, arrhythmia, pericarditis, systemic hypertension and thromboembolic events. It is

essential to keep track with the optimal management of cardiovascular status by determining cardiac biomarkers and using non-invasive investigations in these patients. An early diagnosis of cardiac involvement can be performed following the current cardio-oncology guidelines, the 2016 European Society of Cardiology Position Paper on cardio-oncology and establishing correct timing of patient assessment based on risk factors, complications and treatment protocols. This review is intended to present the most used chemotherapeutic drugs in hematological malignancies, the frequent cardiovascular complications highlighting the importance of early detection of signs of cardiotoxicity for reducing mortality and morbidity, and also comes to help the clinician with up-to-date informations in evaluation and treatment strategies of these patients. **Material and methods: Results: Conclusions:**

Keywords: cardiotoxicity, cardio-oncology, hematological malignancies, chemotherapy

GASTROINTESTINAL MANIFESTATIONS OF HEREDITARY ANGIOEDEMA

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Background: Abdominal manifestations of the hereditary angioedema (HAE) attacks are usually misdiagnosed until the correct diagnosis is established based on low levels of C1 inhibitor activity. **Material and methods:** The Romanian registry includes 94 HAE patients diagnosed in the past 12 years. Data about the start of symptoms, date of HAE confirmation by C1 INH measurements, diagnoses in the emergency departments, proposals for abdominal surgery and performed abdominal interventions before the correct diagnosis were also registered. The past 12 months events update was made by phone. **Results:** Of the 94 HAE patients, 88 could be contacted and have responded to our questionnaire.The mean delay of the diagnosis of HAE was 16.49 years. We have recorded 951 peripheral, 799 abdominal, 175 facial and 90 upper respiratory attacks in the last 12 months. 86 patients presented with abdominal attacks during their lifetime. 25 patients have had likely unnecessary surgeries. Ascites was a common feature found during these interventions, strongly suggesting those procedures were inappropriate. Misdiagnosis before confirmation of the C1 INH deficiency was reported by 76 patients, the most common errors being gastroenteritis, appendicitis, cholecystitis and pancreatitis. Proposals for abdominal surgery were reported by 24 HAE patients. 27 patients are taking Danazol (mostly 100 mg every 2-3 days) and we can observe that the frequency and severity of acute abdominal attacks during danazol treatment shows a major improvement than without this drug. **Conclusions:** Abdominal attacks are characteristic for the HAE clinical pattern, occurring in more than 90% of HAE patients. Misdiagnosis is associated with inadequate treatments, including unnecessary surgical procedures.

Keywords: hereditary angioedema, abdominal attacks, C1-INH

STUDY OF RISK FACTORS DEPENDING ON AGE GROUPS IN DEEP VEIN THROMBOSIS

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Background: In the XXI century, deep vein thrombosis (DVT) has become a real challenge in terms of increased number of recurrent episodes, making it a public health problem worldwide with mighty economic and social impact. The aim of study is to analyze the incidence of DVT in our region and profiling risk factors according to age groups, to realize educational programs of prevention and treatment for populations at risk. **Material and methods:** We conducted a retrospective observational study based on data collected from observation charts of patients admitted to 2nd Medical Clinic, Emergency County Hospital Tirgu-Mures between January 1st 2013- September 30, 2016. In this study we included, based on a informed consent, 354 patients with documented deep vein thrombosis, which analyzed the risk factors involved in developing this disease according to age groups. **Results:** The distribution by sex shows that 54.2% of cases were male. Distribution by decades of age showed 23.7% of cases in the seventh decade, 23.2% of cases in the eighth decade. Regarding the profile of risk factors was observed 37.3% obesity, 35% cases in varicose veins of the lower limbs, 32.2% restraining, 26.6% neoplasms and 23.7% smoked.It revealed that 25.4% of cases of recurrent DVT episodes, males are affected in 54%. In terms of cardiovascular risk factors present in patients with DVT was revealed hypertension in 58.76% of cases, followed by disorders of lipid metabolism with averages of 188.03 cholesterol and

carbohydrate metabolism averages 112.3. **Conclusions:** In most cases, risk factors for deep vein thrombosis are known to, only a third of cases remain idiopathic. The population at risk requires proper prevention through educational programs to avoid, where possible, exposure to risk factors involved in the occurrence of deep vein thrombosis.

Keywords: deep vein thrombosis, risk factors, varicose veins, neoplasms

REAL TIME DIAGNOSIS OF SESSILE SERRATED POLYPS USING NEWEST CLASSIFICATION: CASE PRESENTATION

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Background: Endoscopic classifications of colon polyps using narrow-band imaging techniques did not include specific features by which to differentiate neoplastic serrated lesions until recetly in 2015, when the Workgroup serrAted polypS and Polyposis (WASP) classification was validated. **Material and methods:** We present the cases of two patients that underwent colonoscopy in the Gastroenterology Unit of Mures County Hospital that were eventually each diagnosed with a small colon polyp, very resembling in all features at the first look: around 1 cm size, same color as the background, regular surface and vascular pattern. The lesions were photo-documented using an advanced imaging endoscope, both in white-light and narrow-band imaging (NBI) with near-focus mode, and targeted biopsies were taken from each polyp. According to the NBI International Colorectal Endoscopic Classification (NICE classification) both polyps were in vivo characterized as type I, corresponding to a hyperplastic polyp. The endoscopic images were later retrospectively assessed applying the WASP classification criteria (presence of a clouded surface, indistinctive borders, irregular shape, dark spots inside crypts). **Results:** When carefully characterized using WASP classification one polyp was indeed assessed as hyperplastic, meanwhile the other one gathered more criteria and was classified as sessile serrated adenoma, aspect further confirmed by the histopathological report. **Conclusions:** Real time diagnosis of sessile serrated lesions using the WASP classification is a valuable tool in predicting polyps hystology, that could replace biopsies if done by an expert endoscopist.

Keywords: serrated polyps, endoscopic classification, hyperplastic

THE ROLE OF PSYCHOTHERAPY ADDED TO LIFESTYLE CHANGES IN OBESITY TREATMENT

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Background: Obesity appears to be the result of a complex interaction between genetic, environmental, neuro-endocrinology, psychosocial and behavioral factors. Obese patients can develop over time psychological co-morbidities, materialized in psychiatric disorders, most commonly occurring mood and affective disorders, such as depression and anxiety. **Material and methods:** A group of 42 obese patients, aged between 27 and 65 years, from a family medicine practice, 19 men (mean age 55.14 +/- 8.50 y.o.), 23 women (mean age 55.12 +/- 8 50 y.o.) were studied. Patients attended a supervised combined program, consisting of lifestyle changes (low-calories diet intake and physical training) and psychotherapy (motivational interview, cognitive-behavioral therapy). After 12 months of monitoring patients were divided into two equal sub-groups. For another 6 months, only 21 of 42 patients (50%) continued psychotherapy added to lifestyle changes. Body weight of each patient was monthly determined for the first 3 months, then regularly every 3 months. According to WHO guidelines weight target was 15% loss of initial weight after 12 months. Student t-test for unpaired equal data was used to assess the target weight achievement after 12 months. For subsequent comparing data between the two sub-groups we used Mann Whitney test for unpaired data and Student's t test with Welch correction. **Results:** All patients achieved their therapeutic target weight after 12 months of combined program ($p = 0.0440$). The 21 patients following psychotherapy for all 18 months continued losing weight or maintaining their weight target. The others failed in maintaining their therapeutic target facing relapses ($p = 0.0162$). **Conclusions:** Psychotherapy added to lifestyle changes play an important role in obesity treatment. Achieving and maintaining optimal body weight depends on long term psychotherapy.

Keywords: Obesity, psychotherapy, lifestyle changes combine

GENETIC INVESTIGATION OF CYTOKINE GENE POLYMORPHISMS ON CEREBRAL ISCHEMIA IN RATS

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Background: Cytokine are implicated in the inflammatory mechanism and associated with cerebral ischemia. The aim of our study was to investigate if there are correlation between this two cytokine gene polymorphisms (tumor necrosis factor alpha - TNF, interleukin6 - IL6) and stroke recovery after temporal occlusion of the middle cerebral artery (MCAO). **Material and methods:** This study was performed on 6 Sprague Dawley male rats. We used a binocular stereo microscope for bilateral carotids occlusion and a dental drill for performing a craniotomy and finally we performed MCAO for 90 minutes by using a micromanipulator. The Adhesive Tape Removal and Cylinder Test were applied before and after surgery. For cytokine genotype investigation we used fresh blood samples collected on EDTA vacutainers. The DNA was isolated and PCR-RFLP methods were performed by using specific primers and digestion enzyme. **Results:** For TNF gene polymorphism the genotypes were as follow: 3 AA (wild type homozygous), 2 AG (heterozygous) and 1 GG (variant homozygous). For IL6 gene polymorphism we found 3 GG, 2 GC, 1 CC. Half of the studied rats had the variant allele for both gene polymorphisms (AG+GC, GG+GC, AG+CC) and they presented the lowest scores on tests after surgery compared with the initial scores. **Conclusions:** Our findings suggest that cytokine gene polymorphisms may be associated with a slow process of recovery after cerebral ischemia in rats.

Keywords: TNF, IL6, MCAO, stroke, rats

TERAPIA TROMBOZEI VENOASE PROFUNDE CU ACENOCUMAROL VERSUS ANTICOAGULANTE ORALE NOI.

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Background: The incidence of deep vein thrombosis (DVT), according to literature is 80 in 100.000/year, and one in 20 people suffers at least one episode of DVT during their lifetime. In hospitalized patients, the incidence of DVT varies between 20-70%. Male-female ratio is 1.2:1. Studie aim: We evaluated the recurrence risk of DVT in patients already with at least one other episode of DVT, treated with acenocumarol compared with NOAC treatment, in a period of 3 years. **Material and methods:** We performed a retrospective study on 62 adult patients who presented at least one episode o DVT. The patients were divided in two groups, one treated with acenocumarol and the other treated with NOACs. **Results:** DVT reoccurred in 5 patients treated with acenocumarol, and no cases of DVT recurrence were noted in the NOACs group. **Conclusions:** NOACs given to patients with DVT reduces significantly the risk of recurrence, compared to acenocumarol.

Keywords: deep vein thrombosis, novel oral anticoagulants, acenocumarol, deep vein thrombosis, novel oral anticoagulants, a

CORRELATION BETWEEN RBP4 AND VARIOUS LIFESTYLE AND METABOLIC FACTORS IN OBESE CHILDREN

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Background: Childhood obesity's prevalence continues to rise at an alarming rate. The role of adipocytokines derived from visceral adipose tissue, such retinol binding protein (RBP4) in the development of obesity in children is not completely understood yet. Aim: to analyze the role of seric RBP4 in obese children and its relationship with various lifestyle and metabolic factors. **Material and methods:** A case-control study was conducted on a sample of 57 children, 5-18 years old, who were evaluated in the Pediatric I and Endocrinology Clinic of Targu Mures between April -September 2016. The following variables were analysed - age, sex, environment, body mass index standard deviation score, body composition based on bioimpedance analysis, physical activity energy expenditure (PAEE), food pyramid, lipid profile, blood glucose, uric acid and RBP4 plasmatic levels. **Results:** The study included 38 obese children and 19 controls, matched for age, sex and environment ratio. Obese children have higher levels of triglycerides (95.7 vs. 65mg/dl, p=0.0063) and uric acid (4.77 vs. 4 mg/dl, p=0.0172) and lower levels of HDL cholesterol (53.8 vs. 59.5mg/dl, p=0.0469), but with no statistically significant difference in RBP4, glucose and fat mass. There is no significant difference in the food pyramids of obese and non obese children. In multilinear regression, meat &protein is the only food group with significant influence on uric acid and triglycerides. Levels of RBP4 and glucose are not influenced by any of the food groups. There is a significant difference between PAEE in obese and non-obese children (907kcal/day vs. 591.2kcal/day, p=0.0033). **Conclusions:** There were no signficant differences in the estimated physical activity, nutritional behaviour and RBP4 levels between the two groups, with significant differences in the metabolic profile. This is a ongoing study and larger samples might yeld different results in the future.

Keywords: obesity, children, seric RBP4, physical activity, food pyramid

A STUDY ON THE EFFECT OF STATINS IN GASTRO-DUODENAL LESIONS IN AN ENDOSCOPIC POPULATION

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Background: 3-Hydroxy-3-methylglutaryl-coenzyme A reductase inhibitors, also known as "statins", are used to lower blood cholesterol levels and to prevent atherosclerosis. Besides their lipid-lowering effect, they present beneficial effects in lowering cardiovascular risk, as well as in cerebral ischemia and stroke. Experimental studies performed on rat models showed a gastroprotective effect of statins in Aspirin induced lesions. On human subjects, the gastroprotective effect of statins is not clearly established, and there are different results regarding this effect in patients with antithrombotic therapy. Aim: To determine if statins offer a gastroprotective effect in patients with gastrotoxic drug consumption (NSAIDs and antithrombotic medication). **Material and methods:** A consecutive series of 564 patients who underwent upper endoscopic examination between 2014-2016, were recruited. We analyzed the correlation between gastrotoxic medication, Helicobacter pylori (HP) infection and the severity of endoscopic gastric lesions (based on the Lanza classification) in patients with or without statin treatment. We used a structured interview and medical records in order to investigate drug exposure, to register symptoms and other comorbidities for each patient. **Results:** We compared the severity of the lesions between the study group (patients with statin treatment, n = 222) and the control group (patients without statin treatment, n = 342). We found no protective effect of statins in patients with antiplatelet treatment (p = 0.3115), anticoagulant treatment (p = 0.509), in patients with or without H. pylori infection. We observed that in H. pylori positive patients who were treated with anticoagulants (coumarins) and statins, there was an increased risk of developing mild or severe gastric lesions (p = 0.07; OR:0,452) **Conclusions:** Statin treatment was not associated with a gastroprotective effect in

patients with antiplatelet or NSAID therapy in our study group. An increased risk of developing mild or severe endoscopic lesions was noticed in H. pylori positive patients with combined anticoagulant and statin therapy.

Keywords: antiplatelet therapy, Aspirin, Statin, endoscopic lesions

THE ROLE OF PARENTS COPING STYLE ON DISEASE MANAGEMENT IN CHILDREN WITH INSULIN DEPENDENT DIABETES MELLITUS

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Background: A chronic disease as insulin dependent diabete mellitus (IDDM) is an important stress factor for a child and his family. The parents understand, feel and react different in front of diagnosis and treatment's recomandations , and these influence the disease management in children with IDDM. The objective were to evaluate the perceive stress in parents of children with IDDM, to find a relation between stress and coping strategies used by them. The main hypotesis was that parents of children with diabetes who use adaptive coping styles have lower stress levels and better disease management for helping their children. **Material and methods:** SACS Scale (Assertive action, Social relation, social support, prudent action, instinctive action, avoidance, indirect action, antisocial action, agressive action) was applied to 20 parents during semi structured interview, in the Day Care Diabetes Centre of the Association of Children with Diabetes in Targu Mures.The sampling method was non-randomized, the available participants were used, from practical considerations . Data from the questionnaires were processed quantitatively in SPSS 22- descriptive analysis, and qualitative analysis on perceived quality of life. **Results:** The parents who have functional, positive an proactive style of coping perceived less level of stress about the disease and the therapy and can better implement the doctors recommendations, with positive effects on children's health ann quality of life. **Conclusions:** Considering the importance of parent's coping style as a model able to influence the child attitude and care regarding the own health problem, a sistemic family therapy could be a solution.

Keywords: Diabetes in children,, Stress, Copying Parents

GASTRIC POLYPS: A RETROSPECTIVE STUDY

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Background: Gastric polyps are small lesions found incidentally on upper gastrointestinal endoscopy performed for an unrelated indication. They are usually asymptomatic but infrequently large polyps can cause symptoms of bleeding, pain and gastric delayed emptying. **Material and methods:** To retrospectively review the characteristics and frequency of gastric polyps found in a series of 6700 consecutive endoscopies done over 2 years. Material and Methods: Fifty three patients (58.49% men and 41.5 % women) with at least one gastric polyp found during upper gastrointestinal endoscopy were included in the study. Their location, size and histopathological findings were analyzed. **Results:** The polyps were classified according to World Health Organization as hyperplastic, adenomatous and fundic glands polyps. The most frequent polyp types were hyperplastic (64.15%). Fundic gland polyps accounted for 26.41% of the cases and respectively 9.43 % for adenomatous polyps. The polyps were 0.4-3.5 cm in size with the most of them measuring < 1 cm. High grade dysplasia was found in one adenomatous polyp (20%). **Conclusions:** Gastric polyps are a common finding during endoscopy. Despite the fact that more than 90% are asymptomatic, some types of gastric polyps have significant malignant potential. They therefore require further intervention for histological evaluation and appropriate management including polypectomy and endoscopic surveillance.

Keywords: Internal Medicine, Gastroenterology, Upper gastrointestinal endoscopy, Gastric polyps, High grade dysplasia

USEFULNESS OF TRANSTHORACIC 3D ECHOCARDIOGRAPHY IN DIAGNOSIS OF TYPE A AORTIC DISSECTION – CASE PRESENTATION

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Background: In type A aortic dissection (AoD) early and accurate diagnosis is essential to improve prognosis, by applying urgent surgical repair. Classical and advanced cardiac imaging are essential in this regard. 3D transthoracic echocardiography (3D-TTE), an advanced noninvasive technique, could offer a comprehensive evaluation of the ascending aorta in this setting. **Material and methods:** Our case, a 61 years old male, was referred to our department from a territorial hospital with the diagnosis of heart failure and aortic regurgitation. At the admission the patient complained of dyspnea with orthopnea, severe fatigue and a non-exertional, non-anginal chest pain-discomfort, symptoms appearing three month before. At the physical examination we found a severely distressed patient with bilateral, basal crackles, and a loud proto-mesodiastolic murmur accompanied by a 5/VI ejection murmur in the aortic area. **Results:** The routine 2D transthoracic echocardiographic examination revealed a severely dilated ascending aorta (72 mm) and an intimal flap inside. To characterize better the anatomy of the type A AoD, a 3D-TTE examination was performed using the X5-1 xMATRIX probe of the Philips Epiq7 machine. The relevant real time 3D (anatomic mode, zoom mode and xPlane) and full volume (with diverse cropping planes) images are presented for illustration. **Conclusions:** Our case demonstrates, that in patients with adequate acoustic windows, 3D-TTE could provide a dataset that is capable of making the accurate diagnosis of type A AoD.

Keywords: type A aortic dissection, cardiac imaging, 3D transthoracic echocardiography

MEDICINĂ PRE-CLINICĂ (PRE-CLINICAL MEDICINE)

EVALUATION OF THE ROMANIAN DIETITIAN'S EMPLOYMENT SYSTEM AND INFLUENCING FACTORS

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Background: Our purpose was to highlight the social and economic factors that make harder the professional integration process of licensed Dieticians in the Romanian health care system. **Material and methods:** We have used a prospective study based on a questionnaire for assessing the level of Dietitian's employability. Data collection was conducted over a period of 4 months from a total of 105 licensed dieticians and the inclusion criterion was the Dietitians with License Diploma, who graduated at our university and found a job in the last 5 years. **Results:** In our sample, females were predominantly (75.24%), and the average age was 28.5+/-5,4 years old. All respondents got a job after graduation, in various fields of work related to their competences. To 32.69% of them, their employees didn't ask them to have the bachelor's degree in Nutrition and Dietetics when they were hired comparing 28.85% of them who were asked about it. We evaluated the risk factors that may threaten the profession of a Dietician linked to the workplace environment (like public or private places) and we found out that poor payment (OR=1.61; CI=1.11 to 2.35; p=0.01), the lack of importance of the university degree in Nutrition and Dietetics (OR=2.12; CI=1.30 to 3.46; p=0.01) and the long period of waiting after graduation before getting a job in the field (OR=1.64; CI=1.26 to 2.16; p=0.001), were the main risk factors for the employment status of a Dietitian in a public institution versus a private one. **Conclusions:** We have identified a variety of factors that are slowing down the employability of the Romanian licensed Dietitians, along with inadequate jobs offer and poor working conditions, with deficiencies both at the private or the public sector.

Keywords: dietitian, employment, health care

DIFFERENCES IN CONSUMPTION OF FOOD GROUPS BETWEEN OVERWEIGHT AND NORMAL WEIGHT INDIVIDUALS IN ROMANIA - ONLINE STUDY

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Background: There is a rising prevalence of obesity in Romania, and diet may be a major determinant of this. We aimed to assess differences in types and prevalence of food groups consumed by overweight and normal-weight people in Romania. **Material and methods:** For this observational study, we used an online questionnaire, which was completed by 988 people from different cities of Romania and was composed of 40 items on consumption frequency of the main food groups. **Results:** Study participants belong mostly the younger age group (18-24 years old) with a share of 45.49%, participation decreasing progressively with age, due to the low number of Internet users from age group over 45 years (7.49%). The majority being women with a share of 79.87% and from total subjects 61.46% had normal weight, 19.49% were overweight and 9.48% were obese. The proportion of underweight (14%) and normal weight(71%) is higher in age group between 18-24 years, the overweight proportion (57%) is higher in age group between 55-64 years and obesity predominates in age group between 45-54 years (31%). We noticed that there was no difference between the consumption of cereals and derived products, depending on weight status (p<0.001). Overweight/obese individuals were found to eat larger quantities of 4 food items compared with normal weight individuals. These included cooked meat (35.83% vs. 24,67%), cold cuts (41.74% vs. 36.12%), fried food and saturated fats (54.83% vs.49.34%), sweetened drinks (34.27% vs. 29.96%). Consumption of fresh fruits and oleaginous fruits was higher among normal-weight than among obese individuals (p<0.001). **Conclusions:** Overweight individuals were found to consume larger quantities of certain food items/groups compared with normal weight individuals. Interventions should aim at limiting overall food consumption among obese and

overweight individuals and to promote nutritional counseling.

Keywords: nutrition, obesity, food groups, consumption, dietitian

THE INFLUENCE OF THE MARKETING MESSAGES FOR UNHEALTHY FOOD ON STUDENTS EATING BEHAVIOR

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Background: Currently, the marketing of unhealthy food which contains salt, sugar and fats is widely recognized as a major risk factor for the development of diet-related non communicable diseases.The research aims to assess the influence of the marketing messages for unhealthy food on students eating behavior and food choices. **Material and methods:** In the present research participated 272 students aged between 18-29 years from the State University of Medicine and Pharmacy "Nicolae Testemiţanu" from the Republic of Moldova. An anonymous questionnaire was used after written informed consent according to the Protocol of Ethic Committee. **Results:** The findings showed that ¼ of students think that the most used sources for promotion of unhealthy food products are TV and Internet. About 21.25% of men and 22.75 % of women are interested in the information about the discounts and 15.17 % of women and 16.53 % of men are curious about the gifts offered by food companies. Also, 32.42 % of women and 14.96% of men declared that their appetite increases while watching or hearing the advertising about unhealthy food. The results showed that 45.51 % of women and 40.94% of men have bought and consumed unhealthy food after watching or hearing the advertising messages. **Conclusions:** In spite of promotion of healthy dietary habits, the findings showed that marketing messages for unhealthy food can influence student's food choices and even their dietary behavior.

Keywords: marketing, unhealthy food, behavior

NEW TECHNOLOGIES IN REDUCING SMOKING OF ELECTRONIC CIGARETTES - LITERATURE REVIEW

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Background: Smoking is the leading cause of death worldwide. Conventional cigarette smoke, is not healthy and involves numerous health risks. To help smokers to quit smoking, electronic cigarettes were offered on the market, being considered initially to be a risk-free alternative. The basic ingredient of the electronic cigarette is propylene glycol and secondary ingredients are water, nicotine and flavor reproducing normal cigarette, and later studies demonstrated the risk of using these products as well. **Material and methods:** Our aim was to review the latest literature studies regarding usage and health risk of electronic cigarettes. **Results:** A report from UK emphasized that the usage of electronic cigarettes is "at least 95 percent less risky" than smoking tobacco, and this type of devices should be available for smokers who want to quit. In the last 5 years, millions of people have quitted smoking after using these products, and because these products were permitted by law, the rate of classic smokers was declining much faster than period with total prohibition. Barometer European Union informed also- about e-cigarettes that a quota of 12% of Europeans have already tried e-cigarettes, and 2% are currently use it, with a frequency that increased since 2012 till now (7% / 1%). EU teenagers were more likely to experience e-cigarettes than adults (13% of those between 15 to 24 years old compared to 3% of those who had more than 55). Although smokers were motivated to start using e-cigarettes in order to reduce or quit smoking (67%), only 21% of them were able to reduce the concentration of nicotine in their body and only 14% were able to quit smoking. Above all this, new studies showed a health risk coming from e-cigarettes as well. **Conclusions:** Although the experts' opinions about the safety of using electronic cigarettes versus tobacco cigarettes were divided, however the frequency of users of this product was increasing annually, meaning we have to improve our education and community interventions especially among teenagers to prevent the burden of chronic diseases.

Keywords: e-cigarettes, smoking tobacco, teenagers

DATA ABOUT PROHIBITION SELLING OF TOBACCO PRODUCTS TO PERSONS UNDER THE AGE OF 18 IN MOLDOVA

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Background: Section 4.2, Article 17.7, paragraph 4 of Law No. 278 from Republic of Moldova about Tobacco control was approved on 14.12.2007, and stipulated the following: in order to ensure that the person that purchase tobacco products and related products reached 18 years, sellers are obliged to request from the buyer ID presentation or other official document with photo of the person, showing its age. **Material and methods:** Our aim was to evaluate the impact and practices of Moldova population regarding the tobacco control legislation empowered since 2007. **Results:** It was found that 27.5% of rural questioned girls purchased cigarettes and 61.7% of them were asked to prove their age, 46.6% of boys and 47.3% respectively. In the urban area a share of 23.2% girls from high schools with tuition in Romanian bought cigarettes and 52.7% of them were asked to prove their age, boys - respectively 53.3% and 40, 9%. A share of 32.6% girls from urban high schools with teaching in Russian bought cigarettes and 69.2% of them were required to prove their age; accounting for 40.3% boys have bought cigarettes, and in 40.8% of them were asked for any document to prove their age. **Conclusions:** Higher rates of more than half of respondents who purchased cigarettes and were not required to present an ID that would prove their age confirms that tobacco control legislation in Moldova is not respected.

Keywords: pupils, tobacco, sales

SMOKING PREVALENCE IN PREGNANCY: COMPARISON OF SELFREPORT AND SALIVA COTININE TESTING

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Background: Active or passive exposure to cigarette smoke in utero, can be associated with a several adverse reproductive health problems, both for the mother and the child.The objective of our study was to estimate the prevalence of self-reported smoking compared to the Salivary Cotinine levels in a group of pregnant women from Mures county. **Material and methods:** The test for identification of Salivary Cotinine levels has been applied to 230 pregnant women from 54 General Practitioners cabinets in Mures county, in 2014. This test was evaluated with NicAlert Saliva pads, based on the use of monoclonal antibodies for cotinine. **Results:** Smoking status was directly influenced by Roma ethnicity (p = 0.0001, OR: 4.9, 95% CI = 1.90-12.77) and the low level of education (p = 0.0001. OR: 5.69. 95% CI 0.86-11.25 2). The high frequency of family members who are smoking in the presence of pregnant women, had a unfavorable impact on smoking habit in subjects investigated (p=0.0001, OR: 2.26, 95% CI = 1.22-4.20). Our data showed that an increased level of Cotinine is associated with active smoking (OR=56.2), passive smoking (OR=11.5), and addiction as well (OR=46.0) **Conclusions:** Salivary cotinine test identified a high prevalence of cotinine among both passive and active smokers who dropped out smoking before pregnancy, and based on this we want to develope more efficient community interventions among pregnant women in our county.

Keywords: pregnancy, smoking, saliva cotinine

ENERGY METABOLISM ACTIVITY ADAPTATION REPORTED TO MENSTRUAL CYCLE DURING MAXIMAL EFFORT

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Background: Both physical and psychological stressors, during athlete's activity, may be associated with hormonal imbalances, involving menstrual dysfunction. Therefore, metabolic efficiency identification in different phases of the menstrual cycle takes into account an established principle, related to the fact that a significant secretion of estrogen/progesterone influence the energy metabolism during exercise. **Material and methods:** A transverse observational study was conducted during February to March 2016, in Bucharest, Romania, on a sample of 25 elite female rowers with worldwide representative activity. Thus, the menstrual cycle evolution was monitored, during training, in the study group over 90 days. Within the period mentioned, we conducted a VO2max test, indoor, over a standard rowing distance of 2.000 m. The test was scheduled during the transition between days 45 to 50, of the menstrual cycle motorization. The VO2max test was conducted through Cosmed Quark CPET equipment and Concept 2 ergometer, without imposing a time limit, or an effort performed in stages. **Results:** The average completion time was 420 seconds. Therefore, the effort debut, characterized through oxygen debt and a high ATP+CP consumption (median of 85.80 seconds) was associated with the growth period of progesterone secretion (>14 days). However, carbohydrate consumption during the race (median of 22.11 g/race) decreased inversely with the menstrual cycle day (p=0.0201, CI95%=-0.8666 to -0.04288, r=-0.5923), reporting an increase in lipids energy use (median of 1.0 g/race) during the transition from ovulation phase (>14 day of the menstrual cycle). Performing the VO2max test during ovulation period imposed an overall increase in carbohydrate consumption lowering the lipid contribution. **Conclusions:** Increasing age (up to 29 years-study group) entails, during progesterone secretion, an increased use of fats, during the effort, limiting the respiratory exchange ratio value. Lower age (under 21-study group) plans to increase the glycolysis capacity by increasing total energy derived from carbohydrates, regardless of the menstrual cycle.

Keywords: Age, Menstrual Cycle, Women, Energy System, Elite

THE INTERNAL FAILURE QUALITY COSTS IN A CLINICAL LABORATORY

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Background: Financial resources of the laboratory are limited for the provision of medical services, but laboratories seldom acknowledge how much of their resources are waisted for the "cost of poor quality". The purpose of this paper is to set a model for the internal failure quality costs evaluation, and to eliminate the useless expenses from the preanalytic process. **Material and methods:** Internal failures are those that are identified and corrected in the laboratory before they affect the patients. When a specimen does not meet the acceptance criteria for the examination, the laboratory incurred the collection cost. Every time an event is repeated due to reasons that could have been avoided, the failure costs are incurred by the laboratory. The study was run in the Biochemistry Department from a private clinical laboratory in Târgu Mureş, from January to December 2015. In the first stage, the elements involved in calculating the failure costs associated with a recollecting of a nonconform specimen are established. Only the direct costs (material and personnel) have been introduced, because the internal costs (facility and administration) would be the same for the laboratory even if the specimen is collected once or several times. In the second stage, the monthly internal failure quality costs have been calculated. Based on these data a preanalytic process quality report has been prepared. **Results:** Up to 30% of the laboratory costs have been wasted for unnecessary or poor quality services. **Conclusions:** The costs can be reduced by quality improvement. Internal failure quality costs can be reduced only when they are identified, while the causing processes are corrected, measured and monitored.

Keywords: failure, quality costs, nonconform specimen

MDR1 3435T>C GENE POLYMORPHISMS AND RISK OF NEPHROTIC SYNDROME IN CHILDREN

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Background: The present study aimed to investigate the relation between multidrug resistance-1 (MDR1) gene polymorphisms, namely MDR1 3435T>C susceptibility and response to treatment with prednisone in children with nephrotic syndrome. **Material and methods:** The MDR1 3435T>C genotypes were investigated by using a PCR-RFLP (polymerase chain reaction-restriction fragment length polymor-phism) method in 67 children with NS and in 137 healthy children. **Results:** The wild type genotype was found in 23 patients and 45 controls, the heterozygous genetype in 40 patients and 58 controls and the variant genotype in 4 patients respectively 34 controls. Four patients with the mutant genotype for NPHS2 R229Q gene was also heterozygous for MDR1 323 T>A poymorphism. The homozygous genotype with the variant allele was more frequent found in the control group (p=0.01, OR: 0.23, CI 95% 0.07-0.73). No significant difference was observed regarding the heterozygous genotype distribution for MDR1 3435T>C gene polymorphism in NS children and control group (p=0.36, OR: 1.349, CI 95% 0.7-2.56) but the statistically diferences decresed after the allele comparation beetwen groups (p= 0.05, OR: 0,65, CI 95% 0.42-1). **Conclusions:** According to our results we consider that the MDR1 3435 C allele is not a risk factor for nephrotic syndrome patients.

Keywords: MDR, gene, polymorphism, nephrotic, syndrome

ANALYSIS OF THE COUNTY LEVEL ALLOCATION OF THE FUNDS IN 2013-2015 FOR HOME CARE SERVICES BY THE ROMANIAN NATIONAL HEALTH INSURANCE HOUSE

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Background: The objectives of the study are to evaluate the allocation of funds on county level for home care services to see if the resource allocation is made equitable or not. **Material and methods:** The data used for this study is from the annual report of NHIH for 2013, 2014 and 2015. Based on National Statistic Institute demographic data for 2015, I analysed the resource allocation per capita for every county, also, I made an analysis per capita using only elderly population (65+), who mainly benefits of home care services. **Results:** In 2013-2015 the budget allocation by NHIH for home care services increased with 52.8%. This change was not uniform, in some countries we can see increasing financing with more than 100%, in other decreasing with 10-60%. In the analysis of per capita allocation in 2015 we can see counties with high financing compared to national average: Bucharest (5.16 times over national average), Cluj (x 1.69), Călăraşi (x 1.62). On the bottom we can find counties with very low allocation: Botoşani (x 0.05, respectively 20 times below national average!), Sălaj (x 0.06), Constanţa (x 0.13). The difference in financing between first county and last county is x 97, it's mean the allocation for Bucharest is 97 times higher than Botoşani County. The difference between top 10% of the counties and last 10% is x 33. If we include in analysis only the 65+ aged population, the differences will be even higher. **Conclusions:** The allocated funds for home care services increased in 2013 - 2015, but there are high differences in resource allocation in different counties comparing both per capita and per capita 65+ data. The allocation system is inequitable, discriminating counties and their population.

Keywords: home care, equity, health care financing, health policy, National Health Insurance House

GENOTYPE-PHENOTYPE CORRELATIONS IN STRUCTURAL ABNORMALITIES OF CHROMOSOME 18

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Background: Structural abnormalities that involve chromosome 18 are rare cytogenetic rearrangements, and the most frequent are

deletions, isochromosomes and ring chromosomes. **Material and methods:** We present clinical and cytogenetic findings in our three patients (two females and one male) with structural abnormalities of chromosome 18. **Results:** GTG banding karyotype analysis revealed two cases with isochromosome 18q, 46,XX,i(18q), and one case with a distal deletion of 18q, 46,XX,del(18)(q21). Microcephaly, dysmorphic features (broad or flat nasal bridge, hypertelorism, cleft lip and palate), growth deficiency, developmental delay, minor anomalies, congenital heart defects and renal malformations are a few of the commonest features observed in our patients. Genotype-phenotype correlations are made. **Conclusions:** This report enhances the importance of cytogenetic analysis of patients with any suspicion of a chromosomal anomaly.

Keywords: structural abnormalities, chromosome 18, cytogenetic analysis

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ANALYSIS OF FR ALPHA ORGANIZATION IN POLARIZED, NON-POLARIZED MDCK CELLS AND HUMAN BREAST EPITHELIAL CELLS – PRELIMINARY RESULTS

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Background: FR, an glycosylphosphatidylinostiol-anchored protein (GPI-AP), is associated with triple negative breast cancers and overall with reduced disease survival. Most cancers have an epithelial origin and loss of epithelial polarity is a critical step towards malignancy. We showed that the organization of GPI-APs regulates their biological activities and that their organization is drastically different between epithelial and fibroblastic cells. The aim: of this research project is to analyse whether FR localization and organization is different in polarized, non polarized and to compare with breast cancer cells. **Material and methods:** All data and experiments were developed in Institut Pasteur, Paris, France under the supervision of Dr Stephanie LEBRETON and supported by Prof. Chiara ZURZOLO's lab. We used as cellular model Madin-Darby Canine Kidney (MDCK) cells since this is the cell line where lab's experience was gathered regarding exocytosis and organization of GPI-APs in correlation with their biological activities. As human breast cell line we used MCF 10A and mDA_mB_231 as breast cancer cell lines. The realization of this project required cell culture, classical immunoflorescence analysed by confocal microscopy and biochemical approaches (Western Blot). **Results:** From the set of experiments that I performed by using Immunofluorescence it seems that FR behave as an expected GPI-AP with a Golgi localization and cell surface in non-polairzed and not-fully polarized MDCK cells. I further revealed that in fully polarized MDCK cells this GPI-AP is alsmost exclusively localized at the apical cell surface and is depending of the cellular content. **Conclusions:** These preliminary data allowed us to characterize this new epithelial cell line MDCK stably expressing exogenously FR. Using the experience achiewed in this great team and by the framework of a PhD programe I will try to determine while FR could became a useful marker for detecting, staging or for improvement of prognosis of patients with FR positive cancers.

Keywords: Breast Cancer, Folate receptor alpha, confocal microscopy, imunoflorescence, MDCK cell line

STOMATOLOGIE (DENTISTRY)

CORRELATION AMONG CHRONOLOGICAL AGE, DENTAL AGE AND CERVICAL VERTEBRAE MATURITY IN ROMANIAN SUBJECTS

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Background: The purpose of this study was to assess the correlation among the chronological age, the dental age and the skeletal maturity in adolescents and young adults. **Material and methods:** The material consisted of panoramic and lateral cephalometric radiographs of 221 subjects, 146 girls (mean age 13.79 ±2.90) and 75 boys (mean age 13.46 ±2.82), inhabitants of Mures County (Central Romania). The chronological age was defined as the time from birth to the day the radiographs were taken. The dental age was evaluated according to Demirjian's method for third molars mineralization stage. Skeletal maturity was evaluated on cephalometric radio- graphs using the cervical vertebrae maturation (CVM) method. Descriptive statistical and linear regression analysis was performed and a coefficient of correlation was calculated **Results:** The mean values obtained for cervical stages for boys and girls were significant (p=0.0171). The third molar mineralization seems to be highly correlated with the gender's chronological age for the whole group and for both genders as well (p<0.0001). The medium age of the cervical maturation showed to be younger in girls than in boys in CS1, CS3, CS5 and CS6 stages. In CS4 stages female subjects are in advance with almost 12 months, these subjects start (CS1) and end (CS6) the cervical maturation at a younger age. **Conclusions:** The results indicate that significant correlation exist between the chronological age and the dental age when crown development ends and between the chronological age and CVM (CS1 and CS6 stages for girls and CS2 and CS5 stages for boys)

Keywords: dental age, cervical maturity, demirjian index, chronological age, molar mineralization

ASSESSMENT OF EMERGENCY DENTAL CARE USAGE IN TIRGU-MURES

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Background: In Tirgu Mures there is a high demand for emergency dental care. The aim of the study was to investigate the reasons of emergency dental treatments provided by the Dental Office of Mures County Emergency Hospital in Tirgu Mures. **Material and methods:** This two-year retrospective study was based on the analysis of all patients dental records who received treatment at the Dental Office of Mures County Emergency Hospital in Tirgu Mures. The study was approved by the Research Ethics Committee of the University of Medicine and Pharmacy Targu-Mures. The data were collected from 2012 february to 2014 february, the first two years since the establishment of this emergency dental office. The dental diagnoses were coded and grouped for analysis. Student t-test was used for statistical analysis and the significance level was set at p<0.05. **Results:** The total number of patients requesting emergency dental care during the studied period was 12780, significantly more females 7846 (61.39%) than males 4934 (38.61%). Pulp infections presented the highest prevalence, 4309 (34%), followed by root remnants 1675 (13%), dental caries 1665 (13%), and periodontal infections 1632 (13%). **Conclusions:** The main reasons of emergency dental treatments were the dental and periodontal infections. The current study revealed that there is an inadequate oral hygiene and lack of a regular dental care in the investigated population. The results suggest that the number of patients who are requesting emergency dental services may be reduced by increased awareness of oral and dental care.

Keywords: Department of Removable Prosthetic Dentistry, Facu, Department of Morphology of Teeth and Dental Arche, emergency dental office, retrospective study, dent

RADIOGRAPHIC VISUALIZATION OF THE RESULTS ACHIEVED IN THE DENSIFICATION OF INTRAORAL BONE TISSUE AFTER USING HYPERBARIC OXYGEN THERAPY: CASE PRESENTATION

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Background: The aim of this research was to study the possibility of increasing the bone density around dental implants by using a minimally invasive therapy, represented by hyperbaric oxygen therapy (HBOT). **Material and methods:** For a better accuracy of the study we conducted implant placement therapy on one side of the dental arches and after a period of three months, we placed the implants in the opposite side of the dental arch, followed by HBO therapy. The radiologic imaging was represented by CBCT s, performed before placing the first implants in one half of a dental arch (control group), after the placement of the implants on the opposite half of the dental arch (HBOT group) and then 3 months after starting the HBOT, respectively by panoramic and retroalveolar radiography. Each patient underwent the indicated hyperbaric therapy number of 20 sessions, for a period of one hour. **Results:** According to measurements on CBCT sites taken before and after hyperbaric oxygen therapy, we have not detected significant differences of bone densification in the implant sites in nonpathological bone. **Conclusions:** Further research should be conducted to demonstrate the potential benefits of HBOT in post-implantation bone densification.

Keywords: Dental implants, CBCT, HBOT

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BIOCHEMISTRY

INVESTIGATION OF LABORATORY PARAMETERS AND LIFESTYLE HABITS IN PATIENTS WITH URINARY AND SALIVARY GLAND LITHIASIS

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Background: Lithiasis is a disease with growing incidence. Infections, predisposition, lifestyle habits, endocrine disorders and other factors can trigger its occurence. The aim of the study was to reveal the relationship between the stones chemical composition, lifestyle and the results of laboratory analyses in patients with lithiasis. **Material and methods:** We studied the data of 265 patients with urinary tract and salivary gland lithiasis from the Urology and Oral Surgery Hospital, and from the Marmed and Procardia units in Tîrgu Mures between September 2009-October 2016. We evaluated the lifestyle habits and body mass index using a questionnaire, microscopical examination and chemical analysis of the stones were made, we processed the data of laboratory analyses. In a selected group calciuria, phosphaturia, serum uric acid, calcium, phosphate, alkaline phosphatase and parathormone (PTH) levels were determined; in case of pathological values calcitonin measurement and endocrinology consultation were performed. **Results:** In case of both localizations the most frequent composition was the combination of calcium oxalate and phosphate, we also identified uric acid/xanthine crystals in several uroliths, cystine and carbonate were found rarely. Excessive calcium intake was observed in the diet of over 80% of the patients having calcium oxalate stones. Almost 70% of the patients had overweight or were obese. The incidence of hematuria and leukocyturia was 79% and 72%, respectively. In the subgroup tested for biochemical and hormonal analyses (48 samples) we found increased PTH concentration in 21%. Some of the subjects had pathological serum calcium, uric acid, alkaline phosphatase results, or elimination of minerals in the urine was abnormal. **Conclusions:** Pathological laboratory results were found in several patients with lithiasis. Healthier lifestyle habits and medical treatment could prevent recurrences of stone formation in several cases. Complex investigation of the patients is necessary to adapt the treatment plan to individual requirements. Funding: Hungarian Academy of Science, research contract nr. 5706/12/02015.

Keywords: diet, laboratory parameters, lithiasis, stone chemical composition, lifestyle habits

CARDIOLOGY

LOW THERAPEUTIC ADHERENCE IN PATIENTS WITH REPEATED HOSPITAL ADMISSIONS FOR ACUTE HEART FAILURE

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Background: Therapeutic adherence (TA) is an important determinant of hospital readmissions for acute heart failure (AHF). **Material and methods:** We evaluated the characteristics of TA in 61 patients (41 men, 20 women, mean age 66,8 years) with repeated hospitalizations for AHF. The patients filled a complex questionnaire containing items dealing with medicine taking, the attitudes related to the illness management (home auto-monitoring, control visits, etc.) and the level of trust in health care system. **Results:** We found, that the 59% of patients do not seek immediate medical help in the case of (worsening) complaints, and one quarter do not attend the regular control visits. Blood pressure is not measured regularly in 40.9%, while weight in 68,8%. Regarding medicine taking habits: 54% forget to take medication, and 29,5% change voluntary the prescribed medication schedule. Side effects influence TA in 52,45%. In 90,16% of cases the patients considered, that a proper information is given about therapy and home monitoring at hospital discharge. **Conclusions:** In our patients we found a consistent relationship between habits reflecting poor TA and the presence of repeated hospitalizations for AHF. This could be considered a major target for interventions aiming prevention of readmissions for AHF.

Keywords: acute heart failure, therapeutic adherence, home monitoring, hospital admisssion

LOW INCOME - RISK FACTOR FOR CARDIOVASCULAR DISEASE AMONG THE ELDERLY

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Background: Cardiovascular disease is the leading cause of death in European and global level, manifesting an increase in the context of socioeconomic conditions. The elderly population category have a higher risk of a cardiovascular disease and poor prognosis due to the influence of socio-economic factors, along with other risk factors. **Material and methods:** We conducted a retrospective study using the statistical reports validated by the National Institute of Statistics of Romania. The analysis we have included data for the first quarter of 2016. The study included retired persons in Romania in the first quarter of 2016 and they were 5.273 million number. **Results:** Most of the group (74.56%, n = 3.932 thousand) was represented by retired people at age limit, with an average monthly pension of 1071 lei, 0.45% accepting early retirement with average monthly pension of 1119 lei and the proportion of those partially retired early was 1.49%, with average pension 644 lei /month retirement of invalidiate causes of 12.36% with average pension 593 lei / month) and a survivor's pension beneficiaries were a share of 11.03% with average monthly pension 497 lei. **Conclusions:** In the context of low income in the studied population conditions for medical care related to cardiovascular disease, frequent in high values at this age can not be completed effectively by measures targeting modifiable risk factors, represented mainly by diet that includes proper food choices, behavior and proper nutritional diet assisted therapy clinic.

Keywords: socio-economic factors, cardiovascular disease, nutritional diet

DENTAL MEDICINE

PRACTICAL ADVANTAGES OF CBCT IN THE SURGICAL TREATMENT OF LOWER IMPACTED THIRD MOLAR

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Background: The imaging method of cone beam having the acronym CBCT which can be better defined as imaging volumetric cone beam (CBVI) is an improved, extremely accurate computed tomography (CT) applicable in the whole field of dentistry. Due to its ability to locate the exact position of the impacted teeth, their relations with neighboring teeth and anatomical structures, the dimensions of sack follicular, the presence of other pathological alterations and the availability of space, CBCT software has an important role in the management of difficult cases of impacted third molar. In some situations, the lower third molar is quite near to the inferior alveolar nerve that the surgical extraction can present a high risk of post-operative sensitive impairs of the skin and mucosa of the lower lip and chin on the same side. **Material and methods:** Our study tried to assess the contribution of CBCT in the pre-operative evaluation and further treatment of patients with impacted third molars in mandibular bone in a difficult position and high risk of inferior alveolar nerve injury. The damage of the inferior alveolar nerve could be a rare but severe neurological complication after surgery of the impacted lower third molars requiring a thorough pre-operative imagistic evaluation of the anatomical relationship between teeth and nerve. **Results:** This paper presents three clinical cases showing positive signs on standard OPG, which presented indicators of a potential contact between the inferior alveolar nerve and the impacted lower third molars. For an improved exploration of the report between third molars roots and the mandibular canal, Dental CT Scan, DICOM image acquisition program and 3D reconstruction with a special software were used. **Conclusions:** The study showed that compared with panoramic radiography, CBCT can improve the evaluation of the surgical risk and allow a more accurate planning of surgical procedure. Acknowledgment: This paper was partially sustained by the Project No. 912/2015 financed by S.C. OPTOMED SRL in collaboration with UMF TG. MURES.

Keywords: impacted third molar, CBCT, inferior alveolar nerve

THE THERAPEUTIC MANAGEMENT OF OPEN BITE

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Background: Open bite is characterized by an occlusion in the vertical direction and amplitude range expansion, sometimes extremely severe, realizing occlusal contacts only in the last molars. The severity of clinical manifestations depends on the multifactorial etiology. Aim: The aim of this study was to evaluate the orthodontic and orthopedic treatment established in open bites in children, adolescents and young adults. **Material and methods:** In order to assess the severity of open bites and types of treatment applied, the study was performed in a group of 350 patients, aged between 6 and 25 years, who requested orthodontic treatment during 2012-2015. The severity of clinical manifestations were identified according to different possible causes, such as persistent infantile swallowing, mouth breathing, finger sucking vicious habits, local dysfunctional factors which augmented the hereditary. **Results:** The processing of data was based on age, gender and type of device used. Choosing an orthodontic therapy, orthopedic therapy or orthognatic surgery to correct open bites depends on the dental, dento-alveolar or skeletal involvement. **Conclusions:** The therapy was individualized according to the age and the severity of vertical inocclusion and structures involved. Orthodontic treatment was most often applied, but most cases were treated multidisciplinary.

Keywords: open bite, orthodontic, orthopedic

THE FIDELITY OF DENTAL IMPRESSIONS: DEPENDENT ON THE MATERIAL OR TECHNIQUE?

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Background: Choosing a right impression material and a correct impression technique for a clinical situation, which can reproduce in an accurate way the details and the dimensions of the prosthetic field, have the most important role in manufacturing a good fixed denture. Our objective was to compare the fidelity of three impression materials: the A-silicones, the C-silicones and the hydro-alginates in different situations, techniques used and particular aspects. **Material and methods:** We realized an in-vitro study by comparing different types of impression techniques (single-step impression, two-step impression, combined impressions) and three impression materials as mentioned before. The quality test was obtained by measuring with a digital micrometer the dimensional stability of them after casting the models. For every model we realized three measurements and the data were introduced in a table. There were other several parameters taken into consideration: the quantity of material, the influence of disinfectants, necessary time to take the impression, special factors that can influence the process. **Results:** The fidelity of reproducing the details can be influenced by the viscosity of the material, the technique used, the compliance with the conditions of imprinting. A-silicones and the hydro-alginates have the greatest accuracy. We found significant differences between A-silicones and C-silicones and between the single-step and two-step impression. **Conclusions:** By comparing the best performing impression materials available on the market nowadays, if the conditions of dental imprinting and the protocol is being followed step by step, we can conclude that the ideal impression would be the one taken with A-silicones in a single-step impression followed by the hydro-alginate impression using the ,,wet field" technique.

Keywords: dental materials, dental impressions, fidelity, technique

MODERN THERAPY OF RESTORATION OF COMPROMISED DENTAL STRUCTURE BASED ON DENTIN HYBRIDIZATION

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Background: The modern restoration techniques of compromised tooth structures in children have as a starting point the structural characteristics of dentin and are based on dentin hybridization phenomenon. Consecutively this process, adhesive resin penetrates the exposed collagen layer after etching to form a hybrid layer at the molecular lever. **Material and methods:** For this study were selected two types of adhesive resin, respectively a classic component adhesive system (C-Bond) and a self-etching component adhesive resin (Futura-Bond) and four study groups and a control group have been formed. All specimens were prepared for examination on scanning electron microscopy (SEM). **Results:** The results obtained from SEM analysis showed hybrid layer formation on the dentin surface and inside the dentinal tubules in all four study groups with different characteristics. **Conclusions:** The present study confirms that the self-etch adhesives are more effective in superficial cavities while the classic adhesives forms a strong dentin hybrid layer in deep cavities due to a different number and size of dentin tubules.

Keywords: dentin hybridization, self-etch adhesive, smear layer

STUDY ON E-LEARNING USAGE OF DENTAL STUDENTS

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Background: The University of Medicine and Pharmacy of Tirgu Mures implemented an online learning system because the

traditional method of teaching based on lectures is not effective in the current society. The first aim of the study was to assess the e-learning usage of dental students. The second aim was to compare their opinion expressed after e-learning platform was launched in 2014 and after gaining more experience as graduating students in 2016. **Material and methods:** Students of the Faculty of Dental Medicine, University of Medicine and Pharmacy of Tîrgu Mureş, were involved in the study. The method used in the present survey was the self-administered questionnaire completed anonymously and voluntarily by dental students: 1.) in 2014 by 1st-6th year students (n=135) and 2.) in 2016 by 6th year students (n=111). The questionnaire contained 16 items regarding e-learning and the subjects could express their opinion and also their own suggestions. For statistical analysis the Chi-square test was used and the level of significance was set at $p < 0.05$. **Results:** E-learning usage increased significantly during the last academic year ($p = 0.0001$). The 6th year dental students reported in 2016 this digital tool made teaching activities much more effective (77%) and facilitated the learning process (85%) compared to the data obtained in 2014 (48% and 37%, respectively) ($p < 0.05$). **Conclusions:** The findings pointed out that e-learning was well received by dental students and it was most appreciated by the 6th year students. The study revealed increasing interest in e-learning usage within the framework of digital education.

Keywords: dental students, e-learning, feedback

BENEFITS OF THE USE OF DARK BACKGROUND MICROSCOPE IN PERIODONTOLOGY

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Background: The initial periodontal treatment aims to reduce the number and to inhibit the activity of microorganisms present in the supra- and subgingival plaque. The use of the dark background microscope permits the highlighting of these bacteria based on their morphological characters. The aim of our study was to evaluate the value of the use of dark background microscope in the initial periodontal treatment **Material and methods:** We included in our study 30 patients with aggressive generalized periodontitis. After the initial examination we divided the patients in two groups: group 1 - control and group 2 - experimental: patients from whom we collected a sample of bacterial plaque, which was examined with the dark background microscope in their presence. Both groups where then subjected to a training session about the methods to control the bacterial plaque accumulation and where recalled to examination after a week. **Results:** After a week during which they applied the plaque-controlling methods the way they were trained, 13 of the 15 patients in group 2 had lower PI values compared to initial examination. In group 1 we observed an improvement of the PI values only in 7 of the 15 patients. **Conclusions:** The patients who, with the aid of the dark background microscope, became aware of the bacterial load of the collected biofilm were more motivated in applying the methods of oral hygiene. These patients understood better the cause of periodontal disease and chose to cooperate with their dentist in the attempt to reduce periodontopathogenic bacteria.

Keywords: periodontopathogenic bacteria, dark background microscope, periodontal disease

POLYMERIZATION SHRINKAGE OF COMPOSITES IN THE LED ERA

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Background: The long-term success of composite restorations is complex and multifactorial. The quality of the restoration, its durability and the predictability of the appearance of the polymerization shrinkage of the composite is influenced by the light source, the functional design of the light and the polymerization time.Determination of the volumetric shrinkage of the resin based composite after polymerization based on the rate of polymerization of the material, type of composite and time of curing when using different curing light sources. **Material and methods:** The in vitro study had samples from 3 types of resin based composites and one compomer. Using two sources for polymerization (LED and halogen lamp), different curing time (10, 20, and 30 seconds), samples from the resin based restorative materials, the contraction of the materials caused by polymerization was determined using a digital micrometer. The statistical data was analyzed by the Student tests using Microsoft Excel. **Results:** The phenomenon of shrinkage was observed in all the polymerized sample materials. Increased shrinkage was measured for the two composites, which are highly dependent on the curing time and type of light. In compomers the shrinkage was attributed to the

polymerization time. **Conclusions:** The shrinkage following the polymerization influences the marginal quality of the resin based restoration, and can cause marginal fissure and detachment of the restoration. By selecting the light source and controlling the curing time, the contraction caused by the polymerization can be diminished and thus the clinical failure of the restoration can be reduced.

Keywords: polymerization shrinkage, restorative resins, light-curing, in vitro

LARGE FULL THICKNESS DEFECT OF THE ORAL COMMISSURE RECONSTRUCTED USING ZISSER'S METHOD – CASE PRESENTATION AND REVIEW OF THE LITERATURE

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Background: Large full thickness defects of the oral commissure can appear after excision of malignant tumors. Theese are very difficult to reconstruct, as both functional and aesthetic results have to be achieved. While for reconstruction of lower lip defects several methods are described, only a few surgical techniques are available in case of oral commissure defects. **Material and methods:** In this paper we present the case of a 72-year-old male patient with a large squamous cell carcinoma of the left oral commissure, extending to the lower lip and cheek region. After excision of the tumor the resulted defect was reconstructed using Zisser s flap. **Results:** Good aesthetics and satisfactory functional results, represented by a good mouth opening and acceptable oral competence were obtained. **Conclusions:** Zisser s method can be applied with good results in reconstructing large full thickness oral commissure defects.

Keywords: oral commissure defect, reconstruction, Zisser flap, squamous cell carcinoma

EARLY TREATMENT IN CLASS III MALOCLUSSION

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Background: Less frequent, but more esthetic damage,class III maloclussion has a complexe etiology ,an unpredictable prognosis and it is considered an emergency in orthodontic field. The most important element in the treatment plan depends by skeletal implication and growing pattern . **Material and methods:** The autors have selected 56 patients with class III anomalies , anterior cross-bite in early mixed dentition, aged 5-9 and analyse some parameters on the growth of the mandible : SNB angle, CVM , Ao-Bo, Y axis in order to start the treatment. The parameters were compared before and after orthodontic treatment using Tweed and Steiner teleradiographic methods. The patients were treated with orthodontic simple devices. **Results:** A high procent 90% from treated patiens had an esthetic, functional and stable results after 3 years . It is importanat to start early the treatment in order to corrected anterior cross-bite in the mixed dentition with simple appliance . In these period is possible to moved forward maxilla and redirected the mandible growth and avoid orthognathic surgical treatment . **Conclusions:** The growth potential of the patient is an important factor for choosing the treatment modality : removable, fixed appliances or orthognathic surgical. Is indicated to establish if the cross-bite is skeletal or dental and prophyll teleradiographic method is very useful. Is useful to treat an anterior cross-bite as soon as possible.

Keywords: cross-bite, orthodontic, appliance, mandible

UPDATE ABOUT BISPHENOL A

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Background: The aim of this paper is to update the knowledge of the reader concerning the impact of Bisphenol-A in medicine and in dental medicine, through a complex synthesis of the known data from the scientific literature. **Material and methods:** The

scientific data about Bisphenol-A was taken from the most recent published scientific articles and they were structured in chapters, like daily sources of Bisphenol-A to which the human is exposed, the presence of Bisphenol-A sources in resin restorative materials, but also the classification of the possible adverse effects on the human organism. **Results:** The scientific literature states clearly that the human organism is exposed daily to Bisphenol-A. There is a very thin border between the maximum permitted dose and the minimum toxic dose that can cause organic disturbances. The possible organic disorders caused by Bisphenol-A are dependent on the age of the individual, the duration of exposure to the substance, the dose of the substance. The organic disturbances can affect the reproductive system, the central nervous system, the metabolism. Children and teenagers, represent a high-risk group regarding the exposure to Bisphenol-A, their organism is more susceptible to the effects of this xenoestrogenic substance. Some dental materials can be sources of Bisphenol. The research concerning Bisphenol-A, the sources and effects is causing a lot of debate. **Conclusions:** Almost every material that has in its composition resin plastic releases Bisphenol-A, the released quantity depends on the influence of different factors, the most common one being high temperature. The existence of Bisphenol-A as a component in plastics and resin based materials is in the present moment irreplaceable, but there are some methods of decreasing the released quantity of Bisphenol-A from restorative materials. The awareness and the clarification of all the side effects represents a challenge and a research topic for the future that it is much needed.

Keywords: bisphenol A, resin based dental materials, plastics, side effects, endocrine disruptors

TEHNIQUE WAX-UP MOCK-UP AND PROVISIONAL IMPORTANT WORKS IN PROSTHETIC TREATMENT

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Background: This presentation addresses technique and method of provisionals works wax-up mock-up but also the importance of these works in prosthetic treatment. In the presentation will discuss how patients can realize the benefits of these temporary works. In the presentation will also present photographs of these works provisional and video with these techniques achieved in dental office. **Material and methods:** material used:print material and material for temporary works. **Results:** in these cases are always very good results because dental abutments protected patient and the patient is very satisfied with the part esthetique. **Conclusions:** This method help very much patients because they can lead a normal life after griding because this works help they functional, aesthetic and masticatory.

Keywords: prosthetic, prosthetic, wax-up, mock-up, prosthetic, temporary, treatment

SCANNING ELECTRON MICROSCOPE ANALYSIS OF TITANIUM ALLOY ORTHODONTIC IMPLANTS

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Background: To analyze structural variations of retrieved orthodontic implants and to evaluate the mechanical properties that may adversely affect stability of orthodontic implants. **Material and methods:** 10 self- drilling mini-implants retrieved after treatment, made from commercially pure (CP) alpha-titanium from two brands Leone™, Italy and ForestaDent™,Germany, were structurally analyzed with scanning electron microscopy according to the degree of morphological deformation of the head, transmucosal neck, threaded body, and tip of the implant at up to 1,000 x light magnification. **Results:** The mini-implants did not present any defects such as bubbles, imperfections or fissures in their internal microstructure. Surface irregularities in the threaded body and tip were observed and significant tip deformation was evident in the majority (80%) of retrieved mini-implants. No significant marks resulting from the manufacturing process were observed. Deposited debris such as carbon, calcium, and phosphorus was observed on the retrieved mini-implants. Extremely high bacterial loads were present in 100 % of cases. **Conclusions:** Mini-implants retrieved after primary insertion exhibited decreased cutting ability due to deformation of the tip structure, as well as surface contamination. We conclude that differences in mini-implant structure and the presence of surface irregularities may influence the

effectiveness of orthodontic anchorage.

Keywords: orthodontic anchorage procedures, orthodontics, scanning electron microscope, mini-implants

CONNECTIONS BETWEEN PERIODONTAL DISEASE AND TYPE 1 DIABETES MELLITUS IN CHILDREN, IN THE SOUTH-EASTERN ROMANIA – STATISTICAL STUDY

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Background: The one-to-one connection between diabetes mellitus and the periodontal disease is well-known. Our study aims at assessing the correlation between the oral health state and biochemical values of children suffering from type 1 diabetes mellitus. **Material and methods:** The study included a group of children and adolescents diagnosed with type 1 diabetes mellitus, aged between 3 and 18, who were distributed in two age groups, namely group I, which included 3 to 8 year-olds, and group II, which included 9 to 18 year-olds. In this study we analyzed the connection between several clinical and paraclinical parameters of periodontal disease and the biochemical parameters of type 1 diabetes mellitus in children. Dental plaque was assessed by the plaque index; dental scale by the scale index; oral-dental hygiene by the OHI index and gum inflammation by the Silness-Löe gum index. Biochemically speaking, we analyzed the values of the biochemical variations of glycated hemoglobin - HbA1C and glycemia. **Results:** The statistical analysis reveals the fact that there are significant differences between the mean values in children aged up to 9 and the mean values in children older than 9. The means are thus higher in children older than 9. We noted and wish to point out the effectiveness of dental therapy, which led to the decrease of the values of the oral health indices in children included in the 2nd age group (older than 9). Periodontal disease is the consequence of several local and general factors. **Conclusions:** Therapy management designed to preserve the oral health state against a background of diabetes mellitus consists of fighting oral infection and keeping the control glycemia values under control as much as possible. The oral pathology of diabetes mellitus patients requires special monitoring, in cooperation with a diabetologist.

Keywords: oral health, periodontal disease, diabetes mellitus

CHANGES IN SURFACE ROUGHNESS OF COMPOSITE RESIN AND ACRYLIC RESIN MATERIALS AFTER SIMULATED TOOTH BRUSHING

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Background: There are a large number of composite resin restorative materials and acrylic resin denture base materials. Brushing procedures exposes them to wear. The objective was to evaluate the changes in surface roughness of 2 types of composite resin restorative materials and 4 acrylic resin denture base materials after simulated tooth brushing. **Material and methods:** Twenty specimens of composite resin materials (self-cure and light-cure) and seventy specimens of denture base materials (heat-cure, light-cure acrylates and acetal) were fabricated according to the manufacturer s instructions. The specimens were subjected to a custom-made tooth brushing simulation device applying a force of 2N. Toothpaste slurry and water was used for the brushing procedures. Surface roughness before and after simulated tooth brushing was measured with a profilometer (Surtronic 25). Data were statistically analyzed using dependent t-tests. **Results:** All the materials showed changes in surface roughness. Light-cure composite resin showed significant changes in surface roughness, while the self-cure composite was more resistant to wear. Among the denture base materials the heat-cure acrylic resin showed the most significant changes and acetal resin base material was the most resistant. **Conclusions:** Surface changes of dental materials depended on their physical and chemical properties and the cleaning procedure. Within the limitation of this study the following could be concluded: self-cure composite was the most resistant to surface changes; the "medium" labeled toothbrush caused significant changes without using toothpaste on the surface of the light-cure composite and the heat-cure acrylic resin materials. Further studies are planned to evaluate other types of composite and acrylic resin materials using different types of toothpastes and brushes.

Keywords: surface roughness, acrylic resin, composite resin

PRELIMINARY STUDY OF OROPHARYNGEAL CARCINOMAS IN THE CLINIC OF ORAL AND MAXILLO-FACIAL SURGERY TIRGU MURES

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Background: Oropharyngeal carcinoma incidence is increasing significantly in well-developed countries. There are approximately 123,000 new cases reported annually, with an estimated mortality of 79,000 cases. Usually, oropharingeal carcinoma affect patients in the fifth through seventh decades of life; but nowadays, more and more, is found in younger people; with men affected three to five times more often than women. The aim of our study was to perform an analysis of the oropharyngeal squamous cell carcinoma incidence in our clinic. **Material and methods:** The retrospective statistical study was conducted in the Clinic of Oral and Maxillo-Facial Surgery Tirgu-Mures, using clinical records and pathological exams. Data were collected over from May 2013 to December 2015 and the study included patients with positive histological diagnosis of oropharyngeal squamous cell carcinoma. Different features - gender, age, smoke and alchohol consuming, carcinoma localization, pathological type, were studied statistically. **Results:** There were 117 patients with oropharyngeal squamous cell carcinoma positive diagnosis: Regarding gender distribution, 79.48% were men and 20.51% were women, with a women-men ratio of 3.87:1. In terms of pathtological type, generaly they are squamo-cell carcinomas: 94.87% were keratinizing-type, and 5.12% belonged to the nonkeratinizing-type. Of the total cases,12.82% were found to be well differentiated, 50.42% moderately differentiated and 36.75% poorly differentiated. **Conclusions:** The results of our preliminary statistical study are consistent with recent researches, in many aspects - one of them, the increasing incidence of poorly differentiated cancers comparing with those well-differentiated (influencing the treatment plan and prognosis). This study is the base for further researches in oropharyngeal carcinomas, in order to obtain reliable data, necessaire in the complex management of oropharyngeal cancer.

Keywords: oropharyngeal carcinoma, squamous cell carcinoma, histological diagnosis

ENT (OTORHINOLARYNGOLOGY)

THE COCHLEAR IMPLANTATION- HOW TO EVALUATES AUDIOLOGICAL PERFORMANCE

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Background: Cochlear implant is the most important method in the treatment of severe and profound sensorineural deafness in children and adults. Cochlear implant connecting an external device and the auditory nerve, constructed so electro-neural loop. The development of cochlear implantation gives a better quality of life in patients with profound deaffness. To evaluate the performance after cochlear implantation it is necessary to consider very important step the selection of patients. **Material and methods:** Between 2014-2016 were performed 23 cochlear implants, in patients between 10 month old and 30 Years old. The selected criteria for cochlear implantation was: bilateral severe or profound hearingloss, a decrease more than 80 Decibel. To all patients, it was done: computer tomography, MRI, audiological investigations and preoperative specifical investigations and treatment. After that, it was performed cochlear implantation, using two type of cochlear implants: 24 RE and 512 Cochlear implants devicec. The surgical procedures was insertion trough the round window and cochleostomy. **Results:** From 23 cochlear implants 15 were unilateral on the right side, 1 on the left side, 2 bilateral simultaneous and 5 bilateral secvential . In 85 % the implantation was performed using round window insertion and in 15 % the cochleostomy. It was implantanted one patient with cohlea malformation, with bilateral secvential implants RE 24, with a Gusher intraoperatory Syndrome . The intraoperatory telemery it showed a normal nerve stimulation. To all patients the activation after the operation, shows a partial degrease of the impedance, exception the patient with cochlea malformation. **Conclusions:** The cochlear implants is an important surgical procedures, witch it is realizing using different type of electrodes..The intraoperatory telemetry is a very important step for activation and fitting . All patients with cochlear implants, need to have a long time rehabilitation and hardworking Program.

Keywords: cochlear implant, bilateral implantation, telemetry, cochlea malformation, Gusher syndrome

HEMATOLOGY

EARLY DEATH IN OLDER PATIENTS WITH ACUTE MYELOID LEUKEMIA

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Background: For acute myeloid leukemia (AML) there are many patient-related or disease-related prognostic factors described. In particular for elderly AML patients, some scoring systems are proposed none of these beeing widely accepted. Because of comorbid conditions, lower tolerance and poorer response to specific therapy, AML in older patients remains a real challenge for any clinical hematologist. **Material and methods:** 33 patients over 65 years old, newly diagnosed with AML (NOS subtype M1, 2, 4 or 5) in our department, between Jan 2011-Dec 2015 (follow-up until 30 Sept 2016-69 months), were included in a retrospective, qualitative, cohort, longitudinal study. According to overall survival OS, we defined two subgroups A: survival shorter than 90 days (42.42%) and B: the rest of cases (57.58%). Parameters to evaluate were noted at diagnosis or for the follow-up period. We analyzed age, gender, performance status, FAB-NOS subtype, prior-known myelodysplasia, leukostasis, hemogram, peripheral and marrow blast percent, routine biochemistry and blood coagulation, adapted nonmalignant Charlson Comorbidity Index and Score-CCI, febrile neutropenia-FN, subacute/acute diffuse intravascular coagulation-DIC features, OS. Statistics: t-test, FischerExact test, Kaplan-Meier curve. **Results:** Median OS was 256 days from diagnosis. Patients in A group has significantly higher CCI ($p< 0,001$), marrow blast percent ($p<0,05$), lactate dehydrogenase value ($p<0,05$), poorer performance ECOG (3 or 4), lower fibrinogen, more frequently leucocyte count >200000/microl and FN, DIC features ($p<0,05$). We found no statistically significant differences between the two defined groups for the other studied parameters. There was also a significant difference between OS evaluated for CCI=0-2 pts patients (median OS 852 days) versus CCI >2 pts patients (median OS 83 days). **Conclusions:** An a priori fatalistic approach should be avoided even in older patients with AML. A proper diagnosis and management of comorbidities, in a multidisciplinary system, with best possible supportive care and adapted intensity chemotherapy would be able to improve survival.

Keywords: acute myeloid leukemia, older patients, early death

HYGIENE

SALIVA COTININE AS INDICATOR OF CIGARETTE SMOKING IN PREGNANT WOMEN

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Background: Exposure to cigarette smoke in utero, wether it is direct or second-hand smoking source, can be associated with a list of adverse reproductive outcomes and health problems, both for the mother and the fetus.The aim of our study was to assess the prevalence of self-reported smoking compared to the Salivary Cotinine levels in a group of pregnant women from Mures county, Romania. **Material and methods:** Test for identification of SC levels has been applied to a number of 230 pregnant women from the lists of 50 General Practitioners cabinets in Mures county, in 2014, along with the health status monitoring for pregnancy evolution. The Salivary Cotinine level was evaluated with NicAlert Saliva pads, based on the use of monoclonal antibodies for cotinine, and was made for the identification of smokers status of individuals. **Results:** Smoking status was directly influenced by the low level of education (p = 0.0001. OR: 5.69. 95% CI 0.86-11.25 2) and Roma ethnicity (p = 0.0001, OR: 4.9, 95% CI = 1.90-12.77). The lack of change in smoking behavior by family members in the presence of pregnant women and inside the house, had a unfavorable impact on tobacco consumption in subjects investigated (p=0.0001, OR: 2.26, 95% CI = 1.22-4.20). Our data showed that an increased level of Creatinine is associated with active smoking (OR=56.2), with passive smoking (OR=11.5), and addiction as well (OR=46.0) **Conclusions:** Salivary cotinine test identified a high prevalence of cotinine among both passive smokers and smokers who dropped out smoking before pregnancy, meaning that not only active smoking can be registered as at high risk for the mother and child, and we have to develope more efficient community interventions among pregnant women in our county.

Keywords: smoking, pregnancy, cotinine, risk factors, intervention

SCHOOL ACADEMIC PERFORMANCE AND EFFECTIVENESS OF ASPIRA - A SMOKING PREVENTION INTERVENTION AMONG HIGH SCHOOL STUDENTS IN TIRGU MURES, ROMANIA

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Background: The aim of the study was to compare the effect of a web-based smoking prevention program on smoking initiation among 9th-grade students in Tîrgu Mureş, Romania, in schools with higher versus lower academic performance. **Material and methods:** The study was designed as a cluster randomized trial. The sampling frame included all the grade 9 classes in the 16 high schools in Tirgu Mures. The participants in the intervention group received five weekly sessions of the ASPIRA web-based multimedia smoking prevention program while those in the control group were not exposed to any educational content. Socio-demographic data, psychosocial characteristics and smoking behavior were collected from students at baseline and at 6-months follow-up. Complex sample logistic regression analysis in SPSS v.22 was conducted to test the efficacy of the intervention on smoking initiation among 1,369 students. **Results:** Never smoker students in the intervention group were 44% less likely to report smoking initiation six months after the baseline assessment (OR=0,560; 95%CI:0.390-0.804). The never smokers in the schools with lower academic performance were twice as likely to report smoking initiation at follow-up evaluation than those in schools with higher academic performance (OR=2.125; 95%CI:1.522-2.966). Sensation seeking and peer influence factors seemed to have an even stronger influence on smoking initiation rate among never smokers at baseline. **Conclusions:** The ASPIRA web-based multimedia smoking prevention program may decrease smoking initiation among multi-ethnic nine graders in Tirgu Mures. Low overall academic performance of the school can interfere with the effects of the smoking prevention program along with social and psychological factors. Funding: Research reported in this publication was supported by the Fogarty International Center and National Cancer Institute of the National Institutes of Health under Award Number 1R01TW009280.

Keywords: smoking prevention, adolescents, academic performance

TOBACCO RESEARCH COOPERATION PERSPECTIVES – ASPIRA ONLINE PREVENTION PROGRAM

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Background: The high prevalence of active and passive smoking in Romania and other countries, the large number of cigarettes smoked daily, the numerous attempts to quit smoking with a low rate of success, all together justify the extension and acceleration of research on smoking and of the interventions aimed at preventing and quitting smoking. Youth represent a very important category of smokers towards whom tobacco control experts must concentrate their efforts. **Material and methods:** The University of Medicine and Pharmacy of Tîrgu Mureş has been running in collaboration a five-year international research project entitled "Building Capacity for Tobacco Research in Romania: A Partnership among Romanian, American and Hungarian Scientists". The activities aimed at strengthening research capacity on smoking in seven areas, ASPIRA-Romania program is one of them. Our general aims were to determine the factors associated with tobacco and data about smoking habits and attitudes using a computer-assisted baseline questionnaire, to apply ASPIRA computer-based tobacco prevention and cessation software and to open new perspectives of cooperation in this field. **Results:** A cross-sectional survey was applied in both intervention and control groups among 1,835 9th grade students and after six month among 1369 students from Tirgu Mures. In the control groups students benefited from a computer-assisted component consisting of interactive multimedia materials. Preliminary data proved the effectiveness of the computer software in smoking prevention in adolescents. **Conclusions:** A bilateral mobility project with Republic of Moldova helps to apply the questionnaire and adapt ASPIRA online program. There are perspectives for cooperation with other South Eastern European countries, respectively to make a comparative study about the effects of the computer-based program in United States of America and Romania. Tobacco research cooperation can contribute to deliver new results, to create new networks of tobacco scientists, to disseminate the application of online smoking prevention method in order to reduce tobacco use.

Keywords: tobacco research, smoking prevention, ASPIRA online program, cooperation

FIRST GLANCE ON THE VARIABLES OF SMOKING ADDICTION VULNERABILITY AND NICOTINE DEPENDENCE WITHIN THE ASPIRA FINDINGS

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Background: This study proposes a first glance on the observed level of proneness toward nicotine use and the presence of symptoms of addiction among smoking teens. **Material and methods:** Data are provided from a school-based, cluster randomized control trial with aim of testing the interactive smoking prevention program among 9th graders in Targu-Mures. Participants are 272 currently smoking students selected from 1835 9th-graders involved in the ASPIRA program. They represent a percent of 14,8 % of the total sample. We assessed the addictive vulnerability with the Hooked on Nicotine Checklist,, completed with Fagerström Tolerance Questionnaire. Both scales proved good reliability (HONC Cronbach's Alpha=0.79, FTQ Cronbach's Alpha=0.85). **Results:** 18% of the currently smoking teens reported no positive answers on the HONC, meaning that they were not habitually smokers. 3,7% from the current smokers achieved a maximum value on the HONC, signaling strong vulnerability toward addiction. The answers of 10 participants (0,8%) from the whole database (N=1532 valid answers) reached the level of nicotine addiction. Data have shown a significantly higher value on the addiction scale items for boys (p=0.001). The number of smoking friends (p = 0.03), the three best friends' smoking habits (p=0.03), and home members smoking (p=0.02) seemed to act as significant moderators of nicotine dependence. **Conclusions:** Data have shown a slightly increased level of nicotine addiction in the case of a few students. Smoking best friends and parents seemed to exert a significant influence on the vulnerability toward addiction among the participants. The 9th graders from the studied subgroup reports themselves as characterized by proneness to nicotine use, but we did not observe the presence of addiction-related severe symptoms. These findings support the idea that

preventive actions should begin at an earlier age, and intervention is recommended in this age group, before smoking addiction occur, especially among currently smoking teens.

Keywords: adolescent smoking, smoking addiction, prevention

BODY CARE TRAINING OBJECTIVES FOR PRE-SCHOOL AGE CHILDREN

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Background: The operational objectives will include information of children, forming attitudes and practices of body care. **Material and methods:** It was studied early education curriculum and educational standards in order to analyze proposed operational objectives for training preschool children in the field of human body care. **Results:** The main objectives are: a. The awareness of children need to have a clean body, tidy exterior, beautiful appearance and that hygiene items are strictly for personal use. b. the possession procedures of body care necessary to acquired: full and part bath, showering, hand washing, parts of the human body care - hair, ears, nose, eyes, teeth, fetuses, armpits, hands, including nails, feet, including nails, genitals, around the anus. c. knowledge about necessary body care utensils and methodology of use: soap, shampoo, sponge, towel, toothbrush, comb, hairbrush, scissors, perfume, deodorant, headkerchief, napkin. **Conclusions:** The objectives of education of preschool age children about body care will include information on the processes needed to possess and utensils used in the human body, forming accuracy attitudes.

Keywords: preschool, body care, objectives

SOME REASONS OF TOBACCO CONSUMPTION AMONG PUPILS FROM IX-XIITH GRADES FROM HIGH SCHOOLS IN CHISINAU

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Background: Studying and analyzing the particularities of smoking among pupils from IX-XII th grades from high schools in Chisinau. **Material and methods:** The study included five schools that teach in romanian language and 5 teaching in russian from Chisinau. The lot was of 863 pupils (boys - 418, girls - 445) from IX-XII th grades. The survey instrument was a questionnaire that included nine questions about tobacco consumption among pupils. **Results:** Pupils from IX-XI th grades from high schools with tuition in romanian responded that the main reason they smoke is because it contributes to mood and removes stress (27.8%), the second reason is to overcome the conflicts in the family, at school or with friends (18.6%) and the third - because they like the flavor of cigarettes (15.5%). Pupils from high schools with teaching in russian smokes of the following reasons: smoking contributes to mood and removes stress (33.3%), because they like the flavor of cigarettes (12.9%) and because it is easier to communicate with others (11.8%). Places where pupils most frequently smokes - on the street or in the park (53.5% of pupils from high schools with tuition in romanian and 73.3% of pupils from high schools with teaching in russian) and at the disco, bar or restaurant (45 5% of pupils from high schools with tuition in romanian and 51.1% of pupils from high schools with teaching in russian). Most often surveyed pupils smoked with friends (80.6% of pupils .from high schools with tuition in romanian and 83.3% of pupils from high schools with teaching in russian). **Conclusions:** The reason that the more pupils smoke is - because it contributes to mood and removes stress; they smoke, usually tin he street or in the park with friends.

Keywords: smoking, pupils, Romanian and Russian teaching schools

REFLECTIONS ABOUT WARNING INSCRIPTIONS OF DANGER ON THE PACKS OF CIGARETTES

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Background: Cigarette packages with warnings for health began to appear from the 60s years in the United States with the first anti-smoking campaigns and applications for interdictions for tobacco advertising - which have been removed from US TV shows in 1971. **Material and methods:** It was studied Law about Tobacco Control in Republic of Moldova and analyzed the recommendations contained in it about the content of the warning inscription about danger of smoking on cigarette package. **Results:** Warnings that must be written on cigarette packets sold in Moldova are mentioned in the Law about tobacco control. They include general warning "Smoking kills. Give up now! "And the message information" Tobacco smoke contains more than 70 cancer-causing substances "and 14 health textual warnings. For a change effective - form a new behavior to users - quitting requires, the message from the package must suggets to subject: what to do, how to do prescribed behavior (procedural knowledge), what benefits it will bring (positive expectations), to help him understand that he is able to do this (self-efficacy), to associate these behaviors with certain events activator (life contexts), strengthen them where they occur (positive reinforcement - reward or negative reinforcement - fine). **Conclusions:** Content of warning inscription of the danger of smoking on cigarette package has only one character of information, which is only the first requirement for forming a new behavior for smokers - smoking cessation and therefore requires increased.

Keywords: the cigarette package, warning inscription, smoking

SELF-DETERMINATION OF HEALTH CONDITION FROM THE MOST PROBLEMATICAL ORGAN SYSTEMS AMONG PUPILS FROM REPUBLIC OF MOLDOVA

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Background: Self-determination of health condition from the most problematical systems among pupils, represent a criterion in assessing the results of the measures implemented in order to raise the standard of living and employment in general and medical activity in particular. **Material and methods:** The study included a sample of 1624 pupils from secondary school (IX - XII) from Moldova, including 742 pupils from rural areas (girls - 419, boys - 323) from schools with tuition in Romanian ; 466 pupils from urban areas (girls - 249, boys - 217) from Romanian-language schools and 416 pupils (girls - 211, boys - 205) from schools with teaching in Russian. Study instrument was a questionnaire that included 94 questions, 13 of them in reference to various complaints on certain systems. **Results:** From the research ensue that the most complaints were recorded in the system: genitourinary, central nervous system (CNS) and respiratory system. In genitourinary system menstrual cycle disorders confirmed 88.5% of pupils from rural areas. In urban high schools with tuition in Romanian 80.3% female pupils accused menstrual disorders,85.9% of pupils in urban high schools with teaching in Russian claimed they menstrual cycle disorders. Of rural pupils had complaints in CNS - 81.4%. In urban areas, high schools with tuition in Romanian - 80.0% complaints,83.9% of urban pupils in schools with teaching in Russian had complaints of CNS. In respiratory system 83.0% of rural pupils said that they presented complaints. Pupils from urban areas from schools with teaching in Romanian 77.9% and schools Russian-language in urban areas 82.2% pupils had complaints. **Conclusions:** The most common complaints among pupils from IX-XII grades, depending on the organ system and living environment system were accused genitourinary (irregular periods, painful menstruation); central nervous system (fatigue, irritability); respiratory system (dry cough, cough regular).

Keywords: pupils, complaints, organ systems

EVALUATION OF INTEREST AND ADDRESSABILITY OF WOMEN DURING PREGNANCY TO HEALTH PRACTITIONERS IN MURES COUNTY

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Background: Pregnancy is inducing major changes for both mother and fetus status, and inadequate lifestyle is an important risk factor that should be managed properly in order to provide safety nets for the future child and his mother.Our aim was to asess the frequency and motives of Mures pregnant women to ask help to General Practitioners (GP s) or Gynecologists, in order to get the support needed to reduce behavioral risk factors. **Material and methods:** We used a cross-sectional survey based on a questionnaire composed of 109 questions, applied in 2013 to newborn mothers from Gynecology clinics from Tirgu Mures city. **Results:** In our sample of 1278 women only 66.97% were registered to prenatal consultations, of which 41.39% preferred to go to the GP s for recommendation, 36.69% to the Gynecologist and 21.92% other sources. 29.80% of them had smoked regularly before pregnancy, 43.30% of these smokers continued to smoke during pregnancy, 52.80% have reduced the number of cigarettes during pregnancy, and only 42.30% have tried to quit smoking. Of all women smoking during pregnancy, only 1.80% requested help from the Health Practitioners for quitting smoking. Only 36.30% of surveyed women, received information from their GP s about proper lifestyle and diet in pregnancy. **Conclusions:** A small frequency of women who smoked during pregnancy have asked for help. Attendance of pre-natal care was deficient, pregnant women are addressing to the GP s and Gynecologists in smal percentages. We need in our county an effective community intervention focused on lifestyle behaviors management in order to reduce the health risks for this vulnerable population group.Research reported in this publication was supported by the Fogarty International Center and the National Cancer Institute of the National Institutes of Health under Award Number R01 TW009280-01.

Keywords: lifestyle, smoking, intervention

DEFINITION THE PHYSIOLOGICAL-HYGIENICAL CONDITIONS OF WORK TO THE COMPUTES TELECOMMUNICATIONS WORKER ON DIFFERENT STAGES OF THE WORK'S CYCLE

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Background: Actuality this examinations is based on the fact that conducted investigations on the cycles at the different telecommunications departments in practice are not reflected in the profility literature. Was conducted a comparative total investigations of the operator s CC and IS health. **Material and methods: Results:** Was conducted comparative total investigations of the operator s CC and IS. The physiological investigations indexes CNS, VNS, NMS, was carried out in 4 times: after 2 work s ours, before the dinner and before 20 - 30 min to the finish works cycles. The biochemical investigations confirmed the dynamics physiological deflexion. The proffesiogrammes demonstrated that at the operators CC work in a stability favorable regime for formation dynamical stereotype: are works on the shift 8 ours; the work is connected with the textual material rich in figures; they constantly change look to the direction "screen - keyboard - document". **Conclusions:** The analyises showed that the operator s health depends of the work s conditions: the forced pose (sit down), hipodynamics, monotonic, the modifications of the lighting, profesiographycal oral moment, using the telephonic garniture, the emotions, etc.

Keywords: hygiene of the work, physiology of the work, video

INFECTIOUS DISEASES

CASE OF INFECTIVE ENDOCARDITIS WITH STREPTOCOCCUS GALLOLYTICUS – DIAGNOSTIC AND THERAPEUTIC CHALLENGE

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Background: The population-based incidence of endocarditis is 4-10 per 100.000 per year, with a slowly higher rate in men.. Quasi 70% of infective endocarditis of native valve has the etiologic agent: Streptococcus viridans, Streptococcus gallolyticus and Enterococcus. Streptococcus gallolyticus frequently colonize the gastrointestinal tract and is an important agent of infective endocarditis. **Material and methods:** We present the case of a man of 59 years with known cardiac comorbidities, which was initially admitted to the Medical Clinic I for a prolonged febrile syndrome, asthenia and adinamie labeled duration of one month. To be noticed that in the past, the patient presented a surgical intervention - bifemural artery bypass surgery and was diagnosed with colon polyps. **Results:** Laboratory data reveal an inflammatory syndrome, the presence of rheumatoid factor, the cryoglobulins, circulating immune complexes, and in blood culture isolate Streptococcus gallolyticus patient was transferred to the Clinic for Infectious Diseases I. Transesophageal echocardiography confirmed the diagnosis of endocarditis of the aortic valve. It has established antibiotic treatment according to antibiogram with amoxicillin/clavulanic acid and vancomycin for 21 days. Evolution during the treatment was favorable. **Conclusions:** Patients with streptococcal bacteremia and digestive pathology should be evaluated and monitored by echocardiography for the diagnosis of endocarditis. Rapid identification of the pathogen and targeted therapy can be lifesaving in the evolution of infectious endocarditis. The installation of a subacute endocarditis aortic valve panel raises clinical and etiologic diagnosis and a course of treatment with a permanent careful assessment of the benefit-risk patient.

Keywords: Streptococcus gallolyticus, colon polyps, infective endocarditis

EPIDEMIOLOGICAL AND CLINICAL ASPECTS OF EPIDEMIC MEASLES IN MURES COUNTY

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Background: Highlighting the epidemiological aspects and clinical course of measles cases hospitalized in Infectious Diseases Clinic I, Tirgu Mures. **Material and methods:** We retrospectively analysed the recorded data (epidemiological - active immunization against measles; clinical - comprising history, physical examination, evolution; haematological tests and blood biochemistry, radiological findings) regarding the patients admitted with the diagnosis of measles from January to October 2016 (ten moths). **Results:** During the study period 206 cases were hospitalized. According to month distribution, the highest number of cases were recorded in August (n =79, 38.39%). The distribution by age groups was: 0-1year: 23 cases (11.1%), 1-5 years: 104 cases (50.48%), 6-18: 68 cases (33%), +18 years: 11 cases (5.33%). Rural enviroment was dominant (n = 179, 86.89%). Gender distribution showed a slight male predominance (n = 111, 53.88%). The clinical forms were: mild or common (n = 37, 17,96 %) and severe (n = 169, 82,04%). The main complications were respiratory: pneumonia and bronchopneumonia (n = 139, 82,24%) out of which 53 (38,13%) developed acute respiratory dysfunction. The evolution was good in all cases, no death recorded. Forms with more severe complications have required prolonged hospitalization. **Conclusions:** The Mures County measles epidemic in 2016 has predominantly affected children in rural agglomerations where outbreaks have occured. There were 2 cases in patients previously vaccinated (four to eight days before the onset). More severe clinical forms are correlated with nutritional status and iron-deficiency anemia. Vaccination strategies are needed to prevent future outbreaks.

Keywords: epidemic measles, children, immunization

INFLAMMATORY BREAST CANCER IN HIV-INFECTED WOMAN

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Background: Inflammatory breast cancer (IBC) represents a very aggressive invasive malignant process. It is characterized with rapid progression and high mortality rate. This uncommon type occurs for about 1-3% of all breast cancers. In seropositive patients may be more aggressive than HIV-negative counterparts. **Material and methods:** We report a case of a 45-year-old female patient, who acquired HIV in 1992 from her HIV-positive partner. Is on treatment with combination antiretroviral therapy from 2001, with good adherence, more than 10 years her CD4 lymphocyte count were over 1000 cells/mm3, with undetectable viral load. In the last 20 years she was admitted only two times and as the only one comorbidity has lipodystrophy. In august 2016 (CD4: 889 cells/mm3) presented at the emergency department of our hospital and reported for fever, chills, right breast edema, warmth, diffuse erythema and induration with retraction of the nipple. She was admitted on the 10th day of illness. For the suspicion of right mastitis was treated with antibiotics and nonsteroidal anti-inflammatory drugs. The breast echographic, mammographic examination and surgical evaluation maintain the possibility of a malignancy. Biopsy was effectuated, which showed inflammatory myofibroblastic tumour. During admission, the patient complained of inappetence, weight loss. **Results:** Based on the second surgical evaluation, clinical status, chest CT, the patient underwent right mastectomy with right axillary lymph node removal. Her postoperative health status is good, the wound is healing by primary intention, appetite has recovered. In present we are waiting for the second histopathologic examination. **Conclusions:** However, there is very limited data available on breast cancers in seropositive patients, this group have an increased risk to develop malignancies. This is a first case of IBC diagnosed in our center. Even though the good immunological status and adherence, the patient developed a very rare malignant pathology, what needs multidisciplinary team for an adequate diagnosis, treatment and follow-up.

Keywords: inflammatory, breast, cancer, HIV, infection

SEVERE ACUTE POLYRADICULONEURITIS IN CHILDRENS - ISSUES IN ETIOLOGICAL DIAGNOSIS AND CLINICAL AND EVOLUTION PARTICULARITIES - SERIAL CASES

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Background: The authors present a series of three pediatric cases with a clinical and biological presentation of acute polyradiculoneuritis, whose etiologic diagnosis was difficult and uncertain. Insidious onset of neurological symptoms during the recovering from gastrointestinal and / or respiratory epidemic disorders and the debute in the warm season can play a key guiding etiological investigation. **Material and methods:** Patients with age range from 1 year up to 4 years old with complete polio vaccination are admitted due to neuroparalitic symptoms appeared in febrile context. The clinical presentation was severe with acute flaccid paralysis, asymmetric: 1 case with lower limb plegia and hemicorp paresis, 2 cases with severe lower limbs flaccid monoparesis , associating , in all cases, cranial nerve polyneuritis with severe encephalitis and in one case meningeal involvement. Anamnesis: the successively installation of eruptive febrile diseases (hand-foot-and-mouth disease), diarrheal episodes or mild respiratory disease with probably enteroviral etiology or an acute respiratory infection. The diagnostic evaluation was complex, including serological and virological investigation and neuroimaging evaluation. **Results:** Two of three cases shows ELISA positive acute phase serology for enteroviruses. CSF examination: lymphocitar pleiocitosis and cyto-albumin dissociation with subsequent albumin-citological dissociation in the severe case. Lombar punction was contraindicated in one case (cerebral edema). Virological examination for poliovirus: negative (1 case). Magnetic resonance imaging emphase changes in filium terminals meninges of L1-L2 segment (1 case), cerebral atrophy (2 cases), unobtrusive expansion of lateral ventricles (1 case). Two of three cases were with severe

polyneuropathy evolution- hemidiaphragm paralysis and speech impairment, mental retardation. **Conclusions:** The evolution of acute polyneuropathies with the involvememtn of acute flaccid paralysis is extremely severe. Their etiological investigation is laborious and trustees in all cases with clinically polio-like aspect. Effective management of this severe condition involves multidisciplinary approach, family and social support but also extreme vigilance of the entire medical sector.

Keywords: poliradiculoneuritis, acute flaccid paralysis, etiology, enterovirus

EXTRAPULMONARY TUBERCULOSIS IN ADULTS IMMUNOCOMPETENT - A DIAGNOSTIC CHALLENGE

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Background: The Mycobacterium tuberculosis infection is a contagious infectious disease with pandemic/endemic/epidemic character in Romania it`s an incidence is 110/100,000 persons with a slight increase in males. The number of people diagnosed with tuberculosis is declining, and the rate of mortality was reduced by 41% compared to the index of 1990. Tuberculosis can be prevented and treated. Pulmonary and extrapulmonary clinical forms can be severe: tuberculous meningitis, lymph node tuberculosis, vertebral tuberculosis, tuberculous serositis (pleural effesium, peritonitis), uro-genital tuberculosis, laryngeal and military tuberculosis. **Material and methods:** The authors present the case of a young immunocompetent illness adult, from rural environment, laborer, known with cardiopulmonary comorbidities. Current illness shows insidious onset: progressively altered general condition, fever, intense headache, nausea, vomiting, back pain and weight loss. **Results:** Physical examination at admission meningeal irritation syndrome, increased intracranial pressure, left hemiparesis, coma GCS (Glasgow Coma Scale) 9 points, reactive to painful stimuli, neck stiffness, psychomotor agitation. The fundoscopy examination was normal, lumbar puncture was performed with CSF (cerebrospinal fluid) examination: clear, Pandy +++, increased CSF protein level and significant pleocytosis. Mycobacterium tuberculosis was isolated in culture from CSF. Slow clinical and biological improvement occurred after the initiation of combination therapy: anti-tuberculosis, depletion, anti-inflammatory and antifungal treatment. CSF control examinations revealed negative Pandy reaction, normalization of CSF protein, CSF glucose levels and decrease the number of cellular elements. **Conclusions:** Installing array of extrapulmonary tuberculosis give, rise to clinical and etiologic diagnostic problems. Mycobacterium tuberculosis infection prognosis depends on the clinical form, the associated comorbidities, early of diagnosis, treatment and adherence to therapy. The central nervous system tuberculosis requires regular monitoring. Tuberculosis is a public health problem that imposes the need of a national control program with multidisciplinary participation.

Keywords: extrapulmonary tuberculosis, immuncompetent adult, meningitis

INTERNAL MEDICINE

CAROTID ALTERATIONS IN PATIENTS WITH NON-ISCHEMIC HEART FAILURE AND THE ASSOCIATION WITH RISK FACTORS

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Background: Heart failure constitutes a very serious cardiac disease that exposes patients to a high risk of mortality just by itself. But when comorbidities appear as well, this risk can rise even further. One of these comorbidities could be represented by carotid artery disease. Objective: To assess carotid alterations in patients with previously diagnosed non-ischemic heart failure as well as the association with cardiovascular risk factors. **Material and methods:** We examined 30 patients from our Department (18 female, 12 male), mean age 57,96 years, who had been diagnosed with non-ischemic heart failure earlier on and who were not symptomatic from carotid viewpoint. We carried out carotid ultrasonography, evaluating the stenotic extent. The patients were divided into three groups: systolic dysfunction (9 patients), diastolic dysfunction (13 pts) and combined systolic and diastolic dysfunction (8 pts). **Results:** Inceptive alterations were predominant (50%), followed by non-significant stenosis (33,33%), no alterations (10%) and significant stenosis (6,66%). The same format could be remarked in the female and diastolic dysfunction groups. Another format, with the prevalence of non-significant stenosis, was noticed in the other 3 groups: men, systolic dysfunction and combined systolic and diastolic dysfunction. Nearly all of the patients had hypertension, more than 50% had dyslipidaemia or low glucose tolerance and only a minority were or had been smoking. **Conclusions:** Non-ischemic heart failure and carotid atherosclerosis is not an unlikely association, with inceptive alterations or non-significant stenosis being the dominant forms. Risk factors are present, most importantly hypertension. We believe that it is important to recognize these changes and apply the adequate therapeutic options, in order to avoid any critical complications.

Keywords: heart failure, carotid atherosclerosis, carotid alterations, risk factors, ultrasound screening

COMPARATIVE ANALYSIS OF HEPCIDIN-25 AND INFLAMMATORY MARKERS IN PATIENTS WITH CHRONIC KIDNEY DISEASE WITH AND WITHOUT ANEMIA

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Background: Hepcidin is a regulatory protein in iron metabolism; we do not know the role in chronic kidney disease anemia. Aim: To compare serum hepcidin profile in chronic kidney disease (CKD) patients with and without anemia and to characterize the relationship between hepcidin, glomerular filtration rate, erythropoietin and inflammatory markers in CKD. **Material and methods:** 22 patients with CKD anemia and 15 patients with CKD without anemia were investigated. CKD anemia. Inclusion criteria: over 18 years, hemoglobin ≤12 g/dl for women and ≤13 g/dl for men, no treatment for anemia 6 months before enrollment, glomerular filtration rate (eGFR) <60 ml/min/1.73m² and stable creatinine three months before enrollment. Exclusion criteria: infection, bleeding, malignancy, systemic or liver disease, immunosuppression, renal replacement therapy. CKD without anemia. Inclusion criteria: over 18 years, no anemia or treatment for anemia, CKD with stable creatinine values three months before enrollment. Exclusion criteria: medical conditions known to have a role in the development of polycythemia. Hepcidin-25 and ferritin were measured by ELISA method. Erythropoietin (EPO), tumor necrosis factor (TNF)-⍺, interleukin (IL)-6 were evaluated using chemiluminescent enzyme immunometric assays. Unpaired T test, Pearson correlation and multiple regression were used for statistical analysis. **Results:** Hemoglobin values were significantly lower in anemia group. There were no differences in terms of eGFR, age, body mass index, serum hepcidin, erythropoietin, fibrinogen, IL-6, and TNF-⍺ between CKD patients with and without anemia. Serum hepcidin correlated positively with ferritin ($r=0.45$ $p<0.05$), TNF-⍺ ($r=0.54$, $p<0.05$) and negatively with erythropoietin ($r=-0.51$, $p<0.05$). Multiple linear regression analysis demonstrated that TNF-⍺ is an independent predictor of serum hepcidin in our patients ($p=0.003$, $R=0.71$). **Conclusions:** We found no differences in serum hepcidin, erythropoietin and inflammatory markers in non-dialysis CKD patients with and without anemia. We conclude that hepcidin, iron and inflammatory

markers cannot explain either alone or together CKD anemia.

Keywords: Chronic kidney disease, Inflammation, Hepcidin-25, Anemia, Erythropoietin

INTERDISCIPLINARY APPROACH TO THE PATIENT WITH HIGH CARDIOVASCULAR RISK

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Background: A number of evidences have shown that patients with type 2 diabetes and hypertension are at higher risk for obstructive sleep apnea (OSA). Our goal was to evaluate a case of a 57 year old patient at high cardiovascular risk from an interdisciplinary poit of view. **Material and methods:** We present a case of a 57 years old, obese male patient with personal history of diabetes mellitus type 2 under insulin treatment, hypertension stage 2, chronic obstructive pulmonary disease, transitory ischemic attack, autoimmune thyroiditis, hospitalized in the Pneumology Clinic of Târgu Mureş, compelling of dyspnea, palpitations, snoring, excessive daytime sleepiness. Poligraphyc examination, cardiac ultrasound, 24-hour ambulatory blood pressure and ECG monitoring, laboratory tests were performed to assess cardiovascular risk factors. Due to excessive daytime sleepiness (EDS), nocturnal respiratory failure,the Epworth scale and Berlin Questionnaire was applied. **Results:** Epworth scale (13 points) as well as the Berlin Questionnaire (16 points) reached high values. The average blood pressure was 140/70 mmHg, daytime and nighttime blood pressure averaged 139/77 mm Hg and 140/69 mm Hg with non-dipper profile. The average real variability was 12,4 mm Hg. The morning blood pressure peak was 179/75 mm Hg with a 110 beats/ minute heart rate. During the four hour polysomnographic investigation, apnea hypopnea index (AHI) was 54,2 per hour, with a number of 48 apneas in 4 hours. The longest period of an apnea was 1 minute and 52 seconds , the desaturation index was 60%. The ECG monitoring showed ischemia during nighttime. **Conclusions:** In high risk patients, in order to offer an individualized treatment, to prevent cardiovascular complications, there is need for an interdisciplinary diagnostic and treatment approach. To increase the efficacy od diagnostic evaluation, combined ambulatory monitoring devices should be used like blood pressure, poligraphy, blood pressure and ECG monitoring.

Keywords: ambulatory blood pressure monitoring, ECG Holter, diabetes, poligraphy, COPD

CYTOREDUCTIVE THERAPY IN ESSENTIAL THROMBOCYTHEMIA PATIENTS

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Background: Essential thrombocythemia is a chronic bcr-abl negative mieloproliferative neoplasm. The main clinical manifestations are hemorrhagic or thrombotic episodes. **Material and methods:** We analized the patients with essential thrombocythemia diagnosed between 2001-2016 in Internal Medicine 1 Clinic. We used the WHO diagnostic criteria valid at the moment of diagnosis. **Results:** We identified 47 patients. 28 patients were diagnosed after clinical complications, mostly thrombotic. The rest of 19 patients were diagnosed after periodic laboratory examinations or recommended for another diseases. In our cohort thrombotic complications were acute myocardial infarction, 8 patients, ischemic stroke, 9 patients, arterial thrombosis of the limbs, 3 patients, abdominal thrombosis, 2 patients, venous thrombosis of the lower limb, 4 patients. Two patients were diagnosed after hemorrhagesi. Hyperthrombocytosis (above 1.500.000 platelets/mmc) it was rare at diagnosis. None of our patients transformed to myelofibrosis or acute leukemia. In 5 of them, in evolution during time, was present poliglobulia, including polycythemia vera diagnostic criteria. Four patients were splenectomized before having a hematological diagnosis. Patients were treated with antiplatelet drugs (acetylsalicylic acid , clopidogrel) and cytoreductive therapy (hydroxureea and anagrelide). In our study antiplatelet treatment did not decreased the incidence of thrombotic complications. The treatment response to anagrelide was variable in different patients and was not correlated with the dose. **Conclusions:** Morbidity is relatively increased in these patients, mostly due to thrombotic complications. Other risk factors for thrombosis (obesity, hypercholesterolemia, smoking) play a major role. Response to anagrelide was variable in our study.

Keywords: essential thrombocythemia, thrombosis, anagrelide

ASSESSMENT OF CHRONIC CRITICAL LOWER LIMB ISCHEMIA IN THE CASUISTRY OF THE 2ND INTERNAL MEDICINE DEPARTMENT OF TÂRGU-MUREŞ

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Background: Chronic critical lower limb ischemia (CCLLI) is a severe involvement of the peripheral vascular system. The importance of this entity lies in the high incidence of amputation and mortality. CCLLI frequently coexists with coronary and carotid involvement, which can endanger patients lives. 3 main etiologies of CCLLI have been identified: diabetic obliterative artery disease (DOAD), atherosclerotic obliterative artery disease (AOAD), obliterative thrombangiitis (OTA). The aim of this study is to divide the patients according to etiology and comparison between the groups regarding the following: assessing the arterial involvement of the lower limbs, coexisting of coronary and carotid involvement, coexisting of cardiovascular risk factors. **Material and methods:** We conducted a retrospective study on 148 patients diagnosed with CCLLI, admitted in the 2nd Internal Medicine Clinic of Târgu-Mureş between 2015-2016. CCLLI was diagnosed using anamnestic data, clinical examination, CW Doppler and Duplex Doppler examination and arteriography. The discharge papers of the patients with CCLLI were processed. The obtained parameters were introduced in Microsoft Excel ® tables, they were statistically processed and graphically interpreted. For the statistical processing we used the Square Chi test in Graph Pad ®, IBM SPSS Statistics 20. **Results:** CCLLI coexisted with coronary and carotid involvement. The cardiovascular risk factors were present at the same time. The 3 etiological factors were present in various degrees. Based on etiology, there are differences in certain characteristics in patients with CCLLI. **Conclusions:** CCLLI is a severe involvement of the vascular system, can endanger lower limb integrity. A possible amputation significantly lowers quality of life. CCLLI frequently coexists with coronary and carotid involvement, which increases the vital risk of these patients. The cardiovascular risk factors coexist at the same time. Diabetic arteriopathy represents the most severe etiology, both from the evolution and prognostic standpoints. We have to take measures to prevent vascular complications so to save the lower limbs.

Keywords: chronic critical lower limb ischemia, coronary involvement, carotid involvement, cardiovascular risk factors, prevention

THE UTILITY OF NARROW-BAND IMAGING ENDOSCOPY FOR DIAGNOSIS OF PREMALIGNANT GASTRIC LESION AND EARLY GASTRIC CANCER

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Background: Often early gastric cancer (EGC) is asymptomatic, that is why most of the patients come for medical investigation already ill with advanced gastric cancer. The detection of premalignant gastric lesions and their control, help the exposure of gastric cancer in its initial stage and implicitly to a prompter access to the appropriate treatment for the patients. This study quantifies the utility of narrow band imaging -endoscopy (NBI) for the detection of premalignant lesions and early gastric cancer. **Material and methods:** This prospective study included 63 patients. They underwent an examination with white light endoscopy (WLE) and Sidney system of biopsy followed by magnifying NBI with targeted biopsies. We monitored the presence of EGC, dysplasia (Dis), intestinal metaplasia (IM). **Results:** IM was diagnosed in 60 patients, and 128 areas. Dis was detected in 11 patients and 13 areas and 2 patients had EGC. The premalignant gastric lesions were detected by both investigation methods. We followed sensibility, specificity, positive, negative predictive values. For NBI we obtained 81%, 75%, and for WLE 52%, 68%. The EGC was diagnosed only with NBI. **Conclusions:** NBI endoscopy is better than WLE for detected IM, Dis and EGC. This method can be used for screening EGC.

Keywords: NBI endoscopy, premalignant lesions, early gastric cancer, sensitivity, specificity

LOW PROTEIN DIET IN CHRONIC KIDNEY DISEASES: FRIEND OR FOE?

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Background: Because of the pandemic rise in the incidence of chronic kidney diseases worldwide, it is understandable why we should take nutritional measures in order to preserve the kidney function. Low protein diets are indicated from stages 3-5 of CKD, but protein malnutrition syndrome can occur. **Material and methods:** We studied a group of 50 patients in stage 4 CKD in which we indicated a diet with 0.7g protein/kg IBW (ideal body weight). Clinical and anthropometric data were collected at the beginning of the study and after 2 years of monitoring. A nutritional questionnaire was analyzed for each patient. All patients were compliant with the diet, a seven day menu was recommended according to the patient s personal nutrition habits. **Results:** Comparing the initial data, after two years the patients parameters (mean) were: serum creatinine 1.4 vs 2.01mg/dl (p=0.07), urea 64 vs 76mg/dl (p=0.34), eGFR 49 vs 35 ml/min/1.73m2 (p=0.002), calcium 9.79 vs 9.7mg/dl (p=0.72), phosphate 3.7 vs 4.1 mg/dl (p=0.24), hemoglobine 12 vs 12.6 (p=0.55), MBI 28 vs 26 (p=0.45), albumine 34 vs 33 g/l (p=0.32). **Conclusions:** Low protein diet is accepted by the CKD patients in order to mantain their kidneys function. After two years all of our patients were still in stage 3 CKD and other clinical parameters remained within normal levels. There was no protein malnutrition in this interval. Efforts should be made to develop a good nutritional plan as the first line treatment in this category of patients.

Keywords: chronic kidney disease, diet,, protein, BMI

MICROBIOLOGY

EPIDEMIOLOGICAL STUDY ON THE PREVALENCE OF PATHOGENIC ESCHERICHIA COLI GROUPS IN THE SUMMER SEASON

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Background: Pathogenic Escherichia coli (PEC) is a pathogen that is involved in diarrheic disease of children younger than 2 years. The purpose was to evaluate the prevalence of PEC serological groups, their antibiotic susceptibility and involvement in acute diarrheic disease. **Material and methods:** Faeces samples were collected from children admitted in the Pediatrics Clinic 2 who presented diarrheic stools and/or gastroenteritis symptoms. The samples were sent for pathogens detection by coproculture in the bacteriology laboratory of the Clinical County Hospital of Tirgu Mures. Lactose-positive colonies grown on McConkey agar were isolated on non-selective media, and the PEC groups were detected by agglutination, using polyvalent O antisera (SSI Diagnostica, Denmark) against pathogenic E. coli EPEC/VTEC/STEC. Antibiotic susceptibility tests were performed accordingly to the laboratory protocol. Clinical and paraclinical findings were also followed. **Results:** During 1st of April - 31st of August 2016, 35 PEC strains were isolated. Most PEC strains (55.6%) presented positive agglutination with Pool1 (O26,O103,O111,O145,O157), while the rest of 8.3%, respectively 33.3% with Pool 2 (O55,O119,O125ac,O127,O128ab) and Pool3 (O86,O114,O121,O126,O142) polyvalent antisera. The prevalence of PEC was the highest in the month of June (38.9%), followed by July (19.4%) and May (16.7%). Diarrheic stools and acute enterocolitis were described in 69.4%, respectively 52.8% of the PEC-positive patients. 77% of children required up to 5 days of hospitalization. The antibiotic resistance of PEC was low (28.6% to Ampicillin, 23.5% to Tetracycline). Three strains were extended-spectrum-betalactamase producers. The hemoleucogram showed a quasinormal number (12,617/mm3) and distribution of the leukocyte parameters. **Conclusions:** The prevalence of PEC is higher in the middle of the summer season and it is associated with diarrhea and/or gastroenteritis. The most prevalent serogroups are among O26,O103,O111,O145, or O157. The antibiotic susceptibility testing of PEC is recommended, due to possible resistance mechanisms. The PEC infection did not alter the blood leukocyte parameters.

Keywords: pathogenic Escherichia coli, diarrhea, gastroenterocolitis, serogrouping, antibiotic susceptibility

INHIBITORY EFFECT OF FRUCTOSE ON CANDIDA ALBICANS GROWTH

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Background: Fructose is monosaccharide with low glycemic index that can be metabolized by yeasts, including Candida albicans (CA), but in a slower rate than glucose. The purpose of this study is to assess the growth rate of CA in fructose environment, in order to reveal a better understanding of the nutrient acquisition strategy. **Material and methods:** The effects of fructose on the growth rate of Candida albicans have been studied by counting the number of yeast cells in presence of different concentrations of fructose. Ten microliters of 0,5 McFarland solution of CA ATCC 10231 were inoculated in 990 µl of nutrient broth with added fructose in four different concentrations: 1000 mg%, 500mg%, 250mg% and 100mg% w/v. During the incubation at 37C in a thermomixer, the number of yeast cells were counted every 3 hours using the Apogee-A50 flow-cytometer, in a forward-scatter/side-scatter plot area that correspond to the CA population. The number of yeast cells was calculated and reported as CFU/ml. All data was normalized against a control sample (without added fructose). Growth curves were plotted and growth rates were calculated. **Results:** Fructose presented an inhibitory effect on CA growth, regardless of its concentration. High concentrations (1000 mg% and 500mg%) of fructose further inhibited the growth rate of CA. Fructose increased the generation time of CA with an average time of 15 minutes, to values of 154-166 minutes (growth rate r = 0.25-0.27). The CA population started to be better defined on the scatter-plot after 6 hours of incubation in presence of fructose, but condensed and well-defined only after 9 hours. **Conclusions:** Our results provide new evidences about the fungal behavior in a fructose-rich environment. Fructose is an inhibitory factor for CA

growth rate. We suspect either a metabolic interaction between fructose and the sugar metabolism or lack of fructose transportation system in CA ATCC 10231.

Keywords: Candida, fructose, microbial growth rate, flow cytometry

NEUROLOGY

FREE-FLOATING CAROTID ARTERY THROMBUS IN THE ETIOLOGY OF ISCHAEMIC STROKE - A CASE SERIES

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Background: Mobile thrombus in the carotid artery is a very rare ultrasonographical finding, representing an uncommon cause of ischemic cerebrovascular events. It is usually detected incidentally on duplex ultrasound examination or angiography. The etiology of the thrombus is variable: complicated atherosclerotic plaque, dissection, cardioembolism, autoimmune diseases and hypercoagulable states. **Material and methods:** We presents 3 cases of ischaemic stroke in young patients secondary to mobile thrombus (26, 42 and 54 years). **Results:** Two of them reported transient ischemic attacks in their medical history. The duplex ultrasound examination revealed a mobile thrombus in the right internal carotid artery (first case), in the bifurcation of the left common carotid artery (second case), and in the left common carotid artery, attached to a hypoechoic atherosclerotic plaque (third case). In all three cases the patients were treated medically (antiplatelet therapy, LMWH, followed by oral anticoagulation). The first patient after 2 weeks of conservative therapy underwent surgical intervention for thrombus removal, complicated in the postoperative period with carotid occlusion. Control carotid ultrasound examination after one year revealed recanalization of the occluded arteries. In the other two cases the control duplex scan evaluation after the conservative treatment revealed the disappearance of the thrombus. **Conclusions:** The duplex ultrasound examination is currently the best diagnostic method for this pathology. Due to its very low incidence, the treatment of carotid thrombus is not standardized, it must be personalized, and the conservative therapy could be successful.

Keywords: free-floating thrombus, carotid artery, stroke

EVALUATION OF DEPRESSION IN A LARGE ROMANIAN COHORT OF MULTIPLE SCLEROSIS PATIENTS

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Background: Depression is the most common psychiatric disease seen in multiple sclerosis (MS) patients. It represents one of the most important determinants of the quality of life of MS patients having a significant negative impact on cognitive functions, vocational status, social and family relationships, adherence to treatment, and it also represents a risk factor for suicide. **Material and methods:** The study included a total of 351 patients with clinically isolated syndrome, relapsing-remitting and secondary progressive MS being in evidence in the Regional MS Center Targu Mures in the period September 2014-February 2015. Depression level was assessed by using the Beck Depression Inventory-Version II (BDI-II). All patients completed a questionnaire with data regarding the level of education, occupational status, marital status, presence or absence of children, demographic and medical informations. Neurological examination was performed in all patients and the level of disabilty was expressed by EDSS score. **Results:** In our group of patients, 191 had BDI-II scores within the normal range, 65 had mild mood disorders, 36 borderline depression, 35 moderate depression, and 24 severe and extreme depression. Age at disease onset, the actual age of the patient, disease duration, number of recurrences and the degree of disability were positively correlated with the severity of depression. Patients with low education levels, pensioners, patients with children had the highest values of the BDI-II scores. With regard to marital status, the highest levels of depression were retrieved in divorced and widowed patients, followed by married patients. **Conclusions:** The prevalence of depression in our group of patients was 27.05%. Determinant factors of depression in this group of patients were age, duration of illness, occupational and marital status, education level and degree of disability. Acknowledgments: This study was supported by the internal research Grant of The University of Medicine and Pharmacy Targu Mures, Grant Number 18/2015.

Keywords: depression, multiple sclerosis, illness

INTERLEUKIN 17- A PREDICTIVE BIOMARKER OF TREATMENT RESPONSE TO INTERFERON-BETA IN MULTIPLE SCLEROSIS PATIENTS

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Background: Multiple sclerosis (MS) is a chronic autoimmune disease of the central nervous system, with only partially known immunopathogenesis. Interleukin 17 (IL-17) plays a major role in the immunopathogenesis of MS. Heterogeneity of MS determines the special attention to early determination of biomarkers of multiple pathological processes in MS. **Material and methods:** The study included 32 relapsing remitting MS patients and 32 healthy subjects (HS).10 patients were naive to IFN-beta1a, 10 were early treated and 12 late treated. Physical disability was evaluated by calculating the EDSS score. The serum levels of IL-17 were determined by ELISA at the beginning of the study, at 6 and 12 months respectively. All patients underwent a brain MRI examination at study onset and visit 12 months. Treatment response was evaluated by Rio score. **Results:** MS patients had higher IL-17 compared to HS. The lowest values ⊠⊠⊠of IL17 were found in the group of early treated patients. In naive group of patients, after one year of treatment, there was a significant reduction of IL-17 level. Baseline IL-17 serum levels were correlated significantly with the number of relapses during the study and with MRI disease activity and were negatively correlated with the total duration of the disease. 28.12% of patients in the study were nonresponders and 71.88% responders to IFN-beta1a treatment. Initially increased titers of IL-17 were significantly correlated with a Rio score of 3 (nonresponder). **Conclusions:** Early treatment with IFN-beta1a decreases the secretion of IL-17 at a level close to HS. IL-17 can be used as a predictive biomarker of MS evolution under treatment with IFN-beta1a. Acknowledgments: This study was supported by the internal research Grant of The University of Medicine and Pharmacy Targu Mures, Grant Number 18/2015

Keywords: multiple sclerosis, immunology, interleukin 17, treatment response

OBSTETRICS AND GYNECOLOGY

INFLAMMATORY MARKERS IN PREECLAMPSIA PREDICTION

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Background: Preeclampsia (PE) is a pregnancy-related disease characterized by high blood pressure (≥140/90 mmHg) and proteinuria after 20 weeks of gestation. PE is an important cause of maternal and perinatal morbidity and mortality. The purpose of our study was to determine serum inflammatory interleukins like IL-6 and IL-16 for predicting preeclampsia. **Material and methods:** The study was conducted in Obstetrics and Gynecology Clinic of the Tîrgu Mureş University of Medicine and Pharmacy between January 2014 and July 2015 and included 68 pregnant women: 47 preeclamptic and 21 with no pregnancy pathology. The gestational age at enrollment of our patients was between 16-20 weeks. Maternal venous blood samples were collected for determination of serum interleukins: IL-6 and IL-16 by ELISA (enzyme-linked immunosorbent assay). **Results:** We compared the values of IL-6 and IL-16 maternal serum levels in preeclamptic women and in controls in the second and the third trimester of pregnancy and we found an increase of the values. The sensitivity (S) of IL-6 was of 27.6%, specificity (Sp) :89.2%, diagnostic accuracy: 62.1%. The sensitivity for IL-16 was of 69.0%, Sp:67.6% and the diagnostic accuracy:68.2% . **Conclusions:** Our data suggest a generalized inflammatory response in patients with preeclampsia. The determination of IL-16 in maternal serum has a better capacity for prediction of preeclampsia than IL-6 but not sufficient to use these interleukins as a screening method for preeclampsia in order to decrease maternal and perinatal morbidity and mortality.

Keywords: preeclampsia, inflammatory markers, ELISA

OCCUPATIONAL HEALTH

BIOMARKERS FOR OCCUPATIONAL EXPOSURE TO NANOPARTICLES

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Background: Nanotechmology is one of the most recent industrial branch that use nano-sized particle for their purposes. Its exponential development on many economical fields like medicine, food industry, electronics, pharmaceutical industry, cosmetics, paints and solvent industry involve unknown effects on human health.The main purpose of our study is to find good statistical correlation between pathological modifications and certain biomarkers, as well as with the workers demographics and working conditions. **Material and methods:** We conducted a cross-sectional study, including 40 subjects, 20 of them exposed to nanoparticles at their workplace and 20 controls.The subjects were examined considering the next flowchart: physical examination, occupational anamnesis based on a specific questionnaire, smoking habits and alcohol intake.Blood and urine teste were performed for determining the level of CRP as a biomarker of biologic effect (of inflammation and tissue damage). **Results:** The blood levels and urinary levels of CRP in exposed workers was significant higher than in control group ($p<0.05$), which is highly suggestive for a biological effects of the nanopraticles at the workplace. **Conclusions:** CRP could be used as a biomarker for biological effects in workers exposed to nanoparticles. Further studies need to confirm the significance of the CRP titre in blood. **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, CRP

TOOLS FOR RISK STRATIFICATION IN EXPOSURE TO NANOPARTICLES

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Background: Recent research in the field of nanoparticles demonstrate the toxicity of those materials in vitro, but only a few studies were conducted in vivo. Oxidative stress on ipidic, protidic and nucleic acids seems to be influenced by occupational exposure to nanoparticles. **Material and methods:** We performed a cross-sectional study on 20 workers exposed to nanoparticles at their workplace. The aim of the study was to identify a sert of variables for risk stratification of exposure to nanoparticles, based on the the issues of the occupational anamnesis, in correlation to the clinical status. **Results:** The 22 items of the occupational anamnesis vary in a wide range form one worker to another, despite of their common occupational bacround. Despite of this aspect, a few items as total occupational exposure, current occupational exposure, the type of operations carried out by the worker, the use of the proper personal equipment and medical education of the worker are considerable correlated to the intensity of exposure to nanoparticles, as well to the severity of the clinical status of the workers ($p<0.001$). **Conclusions:** We concluded that a few items of the occupational anamnesis (total occupational exposure, current occupational exposure, the type of operations carried out by the worker, the use of the proper personal equipment and medical education of the worker) are qualified to be scaled as severity index and they are able to be quantified for a proper risk stratification in occupational exposure to nanoparticles.

Keywords: occupational exposure, nanoparticle, nanotoxicity, risk stratification

ORTHOPEDICS

ANATOMIC ALL – INSIDE ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION: RETURN TO SPORTS AT ONE-YEAR FOLLOW-UP

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Background: Anterior cruciate ligament (ACL) tear is a common injury among general population and athletes. Only a small number of studies sought to determine the outcomes and return to recreational activities after anatomic all-inside ACL reconstruction in general population. Our main objective was to assess the return to recreational sport in general population after anatomic all-inside ACL reconstruction surgery. **Material and methods:** A single center, prospective study was conducted on 44 patients that underwent ACL reconstruction surgery using hamstring autogenous grafts between 2014 and 2015. 28 males and 16 females with a mean age of 29 years (15-47) were included. An in house made questionnaire that included questions regarding the psychological readiness to return to sport and recreational activity, self-reported knee function and knee-related quality of life was completed by each individual. Knee injury and Osteoarthritis Outcome Score (KOOS) and International Knee Documentation Committee (IKDC) questionnaires were also completed before and at one-year follow-up. **Results:** 88.63% (n=39) of patients were playing sports before reconstruction and 61.53% (n=24) were competitive players. At 12 months follow-up 90.90% (n=40) returned to recreational activities. All competitive players were able to play again. At one year after surgery, the mean IKDC score was 73.1 ± 8.3 (before: 48.4 ± 9.1; 95% CI, $p<0.001$) points and the mean KOOS score was 74.3 ± 9.1 (before: 56.4 ± 8.4; 95% CI, $p<0.001$) points. Main reasons for not returning to recreational activities included: insecurity and instability feeling, fear of re-injury, stiffness and pain. **Conclusions:** Our study data suggest that anatomical all-inside ACL reconstruction was a promising technique with good subjective and objective results. Patients were able to retain almost full function of the knee in approximately twelve months from surgery, along with the ability to return to sports and recreational activities.

Keywords: all Inside, acl reconstruction, acl outcomes

ELBOW ARTHROPLASTY - AN OPTION IN TYPE IIIC OPEN FRACTURE OF THE UPPER LIMB

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Background: Elbow arthroplasty has several indication but the main goals are pain relief and increased range of motion. The first indication is osteoarthritis folowed by fractures around the elbow, post traumatic complications like pseudarthrotis and bone tumours. With the present article we present the case of a 50 year old patient who underwent total elbow arthroplasty following an automobile accident. **Material and methods:** On the 17th of August 2015 a 50 year old patient was admitted to the Mures County Clinical Emergency Hospital after a car crash with the following conditions: type IIIC elbow open fracture, thoracic contusion, multiple rbs fracture, minor pneumothorax. Immediate surgical care consisted of soft tissue debridement, primary wound correction and external fixation of the elbow. On 20th of August 2015 has been performed secondary wound correction, latissimus dorsi transplantation and radial nerve suture. On march 2016 the patient underwent total elbow arthroplasty. **Results:** One year after the accident, following rigorous physical therapy, the patient has regained 45% of nerve function, 70% of muscle function and now is able to lead a relatively normal life. The patient regained his arm function, he is able to drive a car and use his elbow in his daily activity. Overall we observed an increased range of motion and o good function after one and a half year. **Conclusions:** Elbow endoprosthesis are used in several post traumatic status like open fracture with massive bone loss of the elbow. In all the cases it is important to maintain the extensor mechanism of the joint and prevent risks like infections, mobility loss and other complications. The many complication that can occur, leads orthopaedic surgeon to develop more performant implants. This case is demonstrating that elbow arthroplasty is a good option in complicated open fractures if we have a

multidisciplinary team and the time of surgery is opportune.

Keywords: elbow arthroplasty, open fracture, nerve injury, muscle injury, external fixation

FUNCTIONAL ANATOMY OF THE ACETABULAR LABRUM AND ITS ROLE IN SYMPTOMATIC HIP DYSPLAZIA

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Background: The acetabular labrum is a ring of dense fibrocartilage, firmly attached surrounding the acetabulum of the hip. This structure confers greater hinge stability, allowing the almost spherical femoral head to penetrate deep into the joint. **Material and methods:** The goal of this review is to show the latest discoveries related to the labral functional anatomy and diagnostic evaluation of labral tears in hip dysplasia. **Results:** One main cause of hip pain is labral tearing. In healthy patients with normal hips, the labrum usualy bears between 1-2% of excerted weight across the hip joint. Compared to the healthy state, in dysplastic hip diagnoses tears were the main cause of pain and acute symptoms. Hip pain occurs due to free nerve endings that originated in the labrum. **Conclusions:** Labral abnormalities are commonly found in asymptomatic patients. Therefore, it is complicated for phisicians to diagnose labral tears in dysplastic hips.

Keywords: labrum acetabuli, labral tears, hip dysplazia

THE EFFICIENCY IN ORTHOPEDIC APPLICATION OF PLATELET-RICH PLASMA – A 2016 UPDATE

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Background: The platelet rich plasma (PRP) is obtained by centrifugation of blood, so it will contain more platelets than average plasma. PRP gained ground because it can stimulate healing of soft tissue, muscle and tendons. Several studies, however, point out that, in fact, the PRP has no curing effect on certain diseases.This study aims to analyze and compare the results of pre-clinical and clinical assessments, researches and achievements and clarify in case of what diseases can this treatment be successful and effective. **Material and methods:** We analyzed those papers from the specialized literature, that discuss PRP treatment successfully used to heal tendons and joints. **Results:** Recent studies show that the use of PRP in case of intra-articular joint damage and degeneration is effective and is (to a certain degree) accelerating the recovery process. Other authors draw attention to the importance of the placebo effect, which can be attributed to the popularity of PRP treatments in the public consciousness. In the case of tendon rupture, the PRP treatment is proven to be effective as it stimulates the scarring process. **Conclusions:** Although a high number of papers and researches on the use of PRP were published, it is difficult to compare the results, first, because the plasma used during the tests differs in quality and composition; on the other hand, many other external factors may affect the healing process. In order to optimize the efficiency of the PRP treatments it is crucial to define the standard parameters that shall be used in clinical researches.

Keywords: platelet rich plasma, PRP, condropathy

SHORT-TERM OUTCOMES AFTER ARTHROSCOPIC DECOMPRESSION FOR SUBACROMIAL PAIN SYNDROME

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Background: Rotator cuff tendinitis, impingement syndrome and rotator cuff disease are terms used synonymously with subacromial shoulder pain. The exact mechanism and source of the pain is unknown. Treatment of "subacromial impingement syndrome" of the shoulder has changed drastically in the past years. The purpose of this study was to evaluate the clinical outcome one year after arthroscopic subacromial decompression using the Constant Shoulder Score (CSS), Oxford Shoulder Score (OSS) and DASH Score (Disabilities of the Arm, Shoulder and Hand). **Material and methods:** We evaluated shoulder kinematics in 38 patients (21 were man, median age was 58 years) with shoulder impingement, undergoing arthroscopic subacromial decompression. All patients were evaluated one week preoperatively, at three months and one year after surgery, using the OSS, CSS and DASH score. Active range of motion (ROM) was measured preoperatively by the same examining physician and at one year after arthroscopic decompression. Before undergoing surgery they received conservative treatment for at least five months. Two patients were excluded for absenteeism at one year follow up. **Results:** OSS, CSS and DASH scores improved significantly from preoperatively to three months and one year after surgery ($p < 0.001$). The mean improvement of OSS after subacromial decompression was statistically greater ($P < 0.03$) for patients with partially torn rotator cuff (17.6 points) as compared to those with normal rotator cuff (13.4 points). The outcome was considered to be satisfactory if patient thought that the shoulder was better and no revision surgery was performed. **Conclusions:** Our study demonstrates significant improvements in short-term clinical outcomes and high patient satisfaction after arthroscopic subacromial decompression. Arthroscopic decompression seems effective in reduce symptoms in patients with subacromial impingement, who are not responsive to conservative treatment. Further studies are certified to evaluate mid and long-term outcomes and durability after this procedure.

Keywords: arthroscopy, shoulder, shoulder, arthroscopy, decompression, subacromial

EFFECT OF ROTATIONAL ALIGNMENT ON MID-TERM CLINICAL OUTCOME AFTER TKA WITH NEXGEN LEGACY KNEE SYSTEM

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Background: Malposition of femoral and/or tibial component is according to the literature one of the most important factors leading to revision of total knee arthroplasties (TKA). External and internal malrotation of the tibial and femoral components is related to poor functional outcomes after TKA. The purpose of our study was to determine the consequence of suboptimal components positioning and clinical results after knee replacement with at least 5 years follow-up. **Material and methods:** We established the degree of malrotation for both tibial and femoral components and whether this malposition jeopardize function. The study group consisted of a consecutive series of patients that underwent TKA (NexGen Legacy Knee System) between March 2009 and February 2011 in the Clinic of Orthopaedics and Traumatology of the Mureş County Hospital. Eighty-nine patients were followed at a mean of 5.4 years after surgery. Forty patients underwent computed tomography exploration. Clinical evaluation was based on the Knee Society Score (KSS) and Knee Injury and Osteoarthritis Outcome Score (KOOS) and was linked to suboptimal positioning of femoral and tibial components. **Results:** Our results proved that five patients (12.5%) were distinguish with malrotated femoral component, eleven (27,5%) were found to have tibial component rotational malalignment and in nine cases (22.5%) we faced with femorotibial mismatch. Clinical scores were comparable for patients with/ without femorotibial inadequacy or tibial component malrotation. All cases of femoral component malrotation were related with significantly worse KSS and KOOS scores. **Conclusions:** According to our findings, the mid-term subjective and objective outcomes are significantly poorer in case of both external and internal rotational femoral malalignment exceeding 3°. Femorotibial incongruity conditioned by suboptimal positioning of tibial plateau, was more accustomed, but without tremendous modification of clinical results.

Keywords: total knee arthroplasty, malrotation, total knee arthroplasty, malalignment

THE FEMURAL HEAD DIAMETER IN TOTAL HIP ARTHROPLASTY AS A FACTOR IN POSTOPERATIVE REABILITATION

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Background: Coxarthrosis is a very common disease nowadays and it shows a growing tendency because of the increased average age. The most cost-effective surgical procedure is the total hip arthroplasty which relieves pain and restores the functionality of the arthritic hip joint. Our study evaluates the impact of the femoral head size (28mm Ø / 36mm Ø) to the postoperative rehabilitation. **Material and methods:** We selected randomly two groups of 20-20 patients who had total hip replacement between 2013-2014 at the Clinic of Orthopedics and Traumatology Tg.Mures. The first group of patients had 28mm Ø femoral heads and the second group had 36mm Ø femoral heads. The average age of the two groups were the same 40-45 years. After surgery we evaluated every patient with the Visual Analog Scale (VAS), Harris Hip Score (HHS) and radiologically after 3, 6, 12, 24 moths. **Results:** The early results after surgery (3-6 moths) at the second group showed the next results compared to the first group: FL-15˚, EXT-3˚, RE-16˚, ABD-8˚. The late results (12-24 months) showed significant difference only at the external rotation (RE). The Harris Hip Score was significantly better at the group of patients with the large diameter femoral head (36mm Ø). **Conclusions:** At short term follow up the group of patients with large diameter femoral heads managed to achieve a higher range of motion (ROM) and according to this after a shorter rehabilitation they could return to their normal lives much faster.

Keywords: arthroplasty, range of motion, femoral head sizes, rehabilitation

THE INFLUENCE OF OBESITY ON PATIENT REPORTED OUTCOMES AFTER ARTHROSCOPIC PARTIAL MENISCECTOMY

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Background: As partial meniscectomies are amongst the most frequently performed arthroscopic interventions in the knee, the aim of this study was to assess the influence of overweight and obesity on the outcomes of the procedure. **Material and methods:** This retrospective study included 374 patients undergoing partial meniscectomy for isolated meniscal tears in our institution between 2011 and 2014. Patients were divided into two groups based on body mass index (BMI): group I - normal weight, BMI <25, and groups II - overweight and obese, BMI ≥25. The groups were compared based on the 6 months and 1 year postoperative values of the Tegner Lysholm Knee Scoring Scale and the Oxford Knee Score, as well as recorded postoperative complications. **Results:** The groups consisted of 213 normal weight patients and 161 overweight and obese patients. The medial meniscus was involved in 63.8% and 60.9% of patients from groups I and II, respectively. The Tegner Lysholm scale was in the good and excellent range (>84 points) for the majority of group I patients at both 6 and 12 months postoperatively, whilst only 63% of patient from group II had similar results, with a statistically significant difference between groups at both time points. The normal weight groups had better results according to the Oxford Knee Score as well, with a statistically significant difference at 1 year postoperatively ($p = 0.03$). There were no significant differences in overall complications rate between the groups. **Conclusions:** Short term patient reported outcomes after arthroscopic knee meniscectomy are inferior in overweight and obese compared to non-obese patients.

Keywords: partial meniscectomy, knee arthroscopy, obesity, overweight

GENDER DIFFERENCES IN KNEE CARTILAGE INJURIES – A RETROSPECTIVE STUDY OF 400 ARTHROSCOPIES

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Background: Recent studies have highlighted gender differences in knee joint cartilage volume and articular surface area, underlining the importance of gender in estimating articular cartilage loss. This study was aimed to assess the differences between male and female patients in terms of arthroscopically detected cartilage lesions of the knee. **Material and methods:** The data of 400 patients undergoing knee arthroscopy were retrospectively collected from patient files and operative records. Patients were divided into two groups based on gender, and their demographic and intraoperative information were compared. Cartilage lesions were classified based on location and International Cartilage Repair Society (ICRS) grades. **Results:** The cohort consisted of 128 female and 272 male patients, with an overall mean age of 36.7 years, and a majority of female patients in the >50 years group. Overall, there were 14.8% obese patients (of which 79.7% were female), and 40.3% had no history of knee trauma, while most of the patients (93.75%) were not involved in professional sports. The majority of patellar cartilage lesions were found in the female group, with grade IV lesions found exclusively in the female group. For the medial femoral condyle, the majority of lesions (especially grade III and above) were again found in women, except for osteochondritis dissecans. The same significant differences were found for the lateral condyle and the tibia, with a larger percentage of higher grade lesions in women. For the femoral trochlea, although 69.2% of lesions were in the female group, grade III-B and III-C were mostly identified in male patients. **Conclusions:** Overall, female patients present higher percentages of cartilage lesions in all locations of the knee, and these lesions were of a higher grade in the female compared to male group.

Keywords: knee arthroscopy, cartilage lesions, gender, ICRS

COXARTHROSIS ASSOCIATED WITH PORPHYRIA – PRESENTATION OF TWO CASES

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Background: The secondary coxarthrosis is one of most common orthopedic disorder in generally in young patients. The etiology can be various: congenital anomalies of pelvis and femur, avascular necrosis of the femoral head, infections, rheumatoid arthritis or trauma. In some case comorbidity could influence the natural history of osteoarthritis and postoperative evolution of the patients of the hip replacement. One of these is the porphyria a group of disorders characterized by an enzyme deficiency in the heme biosynthetic pathway, usually affecting the skin, viscera and the nervous system. We do not know any manifestation at the level of the joints. **Material and methods:** In this study we present two cases of female patients with coxarthrosis associated with porphyria. The acute porphyria were diagnosed at 3rd and 4th decades of the patients. The onset of osteoarthritis was at 62 respectively 64 years. **Results:** The radiographic findings shows the signs of primary coxarthrosis with no other lesions at the level of the hip joint. The patient s ages is typical for the manifestation of the primary coxarthrosis. There were no intraoperative and postoperative complications and they could fallow the rehabilitation protocol. Although the porphyria could exacerbate under the influence of certain drugs, usually administered treatment had no influence on patient s porphyria. **Conclusions:** The question arose that could be a relationship between the acute porphyria and the coxarthrosis. Based on our two cases we concluded that porphyria does not influence the course of treatment for primary osteoarthritis.

Keywords: coxarthrosis, porphyria, total hip replacement

THE THERMAL EFFECT OF BONE CEMENT POLYMERIZATION

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Background: The main reason for the aseptic loosening of the cemented total hip endoprosthesis could be the thermal necrosis on site of the host bone as an effect of the high temperature generated during the polymerization of the polimethyl methacrylate. This phenomenon could also be a major problem for the integration of the bone grafts in revision hip arthroplaty.Our goal was to develop a model that could help us to study the generated amount of heat and to determine the depth of the bone as far as the thermal effect is acting during the polymerization. **Material and methods:** In this ex vivo study we have measured and recorded the temperature on the surface and in different depth of a bovine origin bone tissue sunk in a 37 °C saline solution. The average thickness of the cement layer was 4 mm and the measurement were performed for the whole duration of polymerization until the cement reached the temperature of 37 °C. **Results:** The relatively high temperature on the bone-cement contact surface could cause a thermal necrosis, but in the depth is decreasing gradually and at 5 mm we have measured values that could not harm the osteocytes at this level. **Conclusions:** The changes in the bone temperature could be a major factor in the aseptic loosening of the endoprosthesis. This temperature rise could be limited by the use of cold saline solution.

Keywords: aseptic loosening, thermal necrosis, bone temperature, polymerization

SYNOVIAL FOLDS OF THE KNEE – RETROSPECTIVE DATA FROM 1,000 ARTHROSCOPIES

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Background: Synovial folds are present in the knee joint during embryological development, and in some cases they persist into adulthood. In normal conditions, these structures are not associated with any symptoms, but if inflammation occurs (usually due to trauma), synovial plicae can produce a painful condition called plica syndrome. This type of pathology mostly involves the plica mediopatelaris, but the most commonly encountered of the four plicae is the infrapatellar plica, or ligamentum mucosum. This study aimed to identify the synovial folds found in a series of knee arthroscopies. **Material and methods:** We retrospectively evaluated the data of 1,000 patients undergoing knee arthroscopy, focusing on their symptomatology and intraoperative records in order to identify the percentages of synovial folds found, their location and their implication in the patient s initial complaints. Other associated intra-articular lesions were also noted. **Results:** In the studied cases, synovial plicae were found in 29.4%: 25.6% were infrapatellar plicae, 2.3% were mediopatellar and 1.5% were suprapatellar. Clinical symptoms were non-specific: pain, instability, audible and tactile click, effusion, often occurring after knee injury. The majority of synovial folds were accidental finds during arthroscopy, with only 7.8% of them having been visible on preoperative magnetic resonance imaging. Most (91.9%) plicae were removed during the intervention. Synovial folds were the only observed intra-articular lesion in only 5.1% of the cases, while 22.5% had associated anterior cruciate ligament injuries, 13.3% were found combined with izolated meniscal lesions, and the majority (59.1%) were associated with a combination of meniscal and cartilage injuries. **Conclusions:** Synovial plicae of are relatively constant finds in knee arthroscopy, but they are usually hard to diagnose preoperatively, due to their frequent association and common symptomatology with other intra-articular lesions of the knee. Still, in some cases they can become clinically significant as single lesions, and necessitate speciality treatment.

Keywords: knee arthroscopy, synovial folds, symptomatology, intra-articular lesions

PATHOLOGY

CUTANEOUS ALK-NEGATIVE ANAPLASTIC LARGE CELL LYMPHOMA VERSUS PERIPHERAL T-CELL LYMPHOMA, NOT OTHERWISE SPECIFIED: A DIAGNOSTIC CHALLENGE RAISED BY A CASE

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Background: Cutaneous Anaplastic Large Cell Lymphoma, ALK- negative (ALCL, ALK-) is an aggressive lymphoma subtype, with worse prognosis than Classical Hodgkin Lymphoma (CHL), but with a better one than that of Peripheral T-Cell Lymphoma, Not Otherwise Specified (PTCL, NOS). These two lymphoma types are the main components of a thorough differential diagnosis of ALCL, ALK-, because of the similar morphology and phenotype. **Material and methods:** A 78-year-old male patient presented a clinical history of erythematous papules. An incomplete skin biopsy was performed, which was inconclusive for a proper histopathological diagnosis. Two month later the patient returned with multiple nodular skin lesions. This time a much consistent skin biopsy (42/30mm) was sampled. **Results:** Slides stained with hematoxylin and eosin showed an expansive proliferation with epidermal involvement, of small to medium-sized lymphocytes with irregular nuclei, inconspicuous nucleoli and scant cytoplasm. Also numerous pleomorphic giant multinucleated cells and Reed-Sternberg-like cells were present on an inflammatory background. The large cells were positive for LCA, CD2, CD25, CD4, EMA, Bcl-2 and CD30, and were negative for ALK-1, Pax-5, CD3, CD5, CD8 and CD20 markers. Ki67 proliferative index was 50-60%. **Conclusions:** This particular case raised considerable issues in order to establish the final histopathological diagnosis. With the aid of a complete immunophenotypic study ALCL, ALK- can be distinguished from CHL. By contrast, the distinction between PTCL, NOS, and ALCL, ALK-, is very difficult because of their overlapping immunophenotypic and molecular features. The importance of the differential diagnosis is emphasized by the different clinical outcome of ALCL, ALK- and PTCL, NOS, the latter having a much worse prognosis. Also the stage of the disease must be established, because primary cutaneous ALCL has a better prognosis than ALCL, ALK-. We consider that a complete phenotype and molecular analysis is required in order to reach a definitive histopathological diagnosis for this specific case.

Keywords: cutaneous anaplastic large cell lymphoma, ALK- neg, histopathological diagnosis

PRIMARY BURKITT'S LYMPHOMA OF THE APPENDIX: AN ENTITY WITH A CHALLENGING DIFFERENTIAL DIAGNOSIS

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Background: The objective is to report a case of an unusual presentation of Burkitt s Lymphoma, wich caused difficulties in diagnosis. It is differentiated from PBL by histologic and immunohistochemical characteristics, these two lymphoma having similar sites of involvement, morphology but different phenotype, prognosis and treatment. **Material and methods:** A 57-year-old patient with short history of the right lower quadrant localized abdominal pain, nausea and vomiting has been submitted to appendicectomy. **Results:** Macroscopically the appendix measured 12 cm in length, with an average diameter of 1,5 cm. Cut sections through the specimen revealed a white soft homogeneous tumorous tissue, wich totally replaced the appendiceal tissue. Microscopic examination revealed a diffuse growth pattern of medium sized tumor cells, with basophilic cytoplasm. The nuclei were round, and had 2-3 prominent nucleoli, with several mitotic figures. Numerous tingible body macrophages giving starry sky appearance were seen. Immunohistochemistry (IHC) was done to ascertain the origin of these cells: these express CD20, Pax-5, LCA, IgM and are negative at CD3, bcl-2, CD23. Ki67 proliferative index on malignant cells was above 90%. The diagnosis was Burkitt s Lymphoma of the appendix without involvement of other organs. **Conclusions:** We present the first case diagnosed in our institution, to remind the exceptional sites, patient's age to avoid misdiagnosis.

Keywords: Burkitt's lymphoma, appendix, antigen markers

UNCLASSIFIED LOW GRADE B-CELL NON-HODGKIN LYMPHOMA WITH MALT-TYPE MORPHOLOGY AND HIGHER PERCENTAGE OF LARGE TRANSFORMED CELLS

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Background: MALT-type B-cell lymphoma with increased number of large cells can be difficult to differentiate from diffuse large B-cell lymphoma (DLBCL), especially for the cases having a Ki67 index below 40%. **Material and methods:** A 67-year-old female was admitted to hospital for an ulcero-infiltrating tumor mass localized to the minor curvature of the stomach. Total gastrectomy was performed. **Results:** The microscopic appearance of the tumor showed a proliferation of lymphoid cells which consists of a mixture of small lymphocytes, monocytoid cells and an increased number of transformed cells. The tumoral process infiltrates the gastric wall up to the external muscle layer. Both the large and small cells strongly expressed CD20 and pax-5 antibodies. Ki67 was positive in about 10% of the small cells, and more than 50% of the large cells. **Conclusions:** In order to differentiate between these two malignancies several immunohistochemical markers are necessary, the most important being Ki67. In this particular case the Ki67 index has not exceeded 40%. What's your diagnosis?

Keywords: diffuse large B-cell lymphoma, MALT-type B-cell lymphoma, proliferation of lymphoid cells

COX-2 EXPRESSION IN CERVICAL SQUAMOUS INTRAEPITHELIAL LESIONS

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Background: Cox-2 is an inducible enzyme playing a role in prostaglandin synthesis during inflammation and tumorigenesis. In cervical carcinogenesis HPV proteins E5, E6 and E7 regulate cyclooxygenase 2 expression. **Material and methods:** In this study we assessed Cox-2 expression in a group of 55 samples: 50 samples with cervical squamous intraepithelial lesions and 5 control cases, without neoplasic lesions. In the immunohistochemical reactions assessment we looked for: reaction localisation (cytoplasmatic, nuclear), reaction intensity and the spread of the immunohistochemical staining. We studied these aspects for both kinds of intraepithelial lesions (low grade and high grade), divided into three age groups: below 40 years old, between 40 and 49 years old and over 50 years old. **Results:** Cox-2 expression in the studied cases was found to be in correlation with the grade of the lesion, but also with the age of the patients, respectively with their hormonal status. In H-SIL lesions, Cox-2 expression varied in intensity and staining spread in correlation with the age group studied. 83,3 % of the H-SIL lesions from the age group "over 50 years old", with menopause hormonal status presented intense cytoplasmatic and membrane expression, with a strip-like shape in dysplastic epithelia. In L-SIL lesions from the age group "below 40 years old" Cox-2 expression was found to be negative. **Conclusions:** Cox-2 expression in cervical pathology does not represent a routine test in practice, but in the case of the cervical squamous intraepithelial lesions it could highlight the cases with a high progression risk, considering that many studies claim that Cox-2 is a contributing factor for the development and progression of different types of malignancies.

Keywords: pathology, pathology, Cox-2, cervical squamous intraepithelial lesions,

OMEGA-3 POLYUNSATURATED FATTY ACIDS MODULATE INFLAMMATORY RESPONSES IN RAT BRAIN AFTER TRANSIENT FOCAL CEREBRAL ISCHEMIA: AN EXPERIMENTAL STUDY

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Background: The objective of this experimental study was to establish if omega-3 Polyunsaturated Fatty Acid Supplimentation

confers neuroprotection after transient acute cerebral ischemia through anti-inflammatoriy actions. **Material and methods:** Fifteen adult Wistar male rats were included in our study, randomly divided in three groups: control (n=5), ischemic (n=5) and ischemic Omega-3 protected (n=5). In the latter two groups transient focal cerebral ischemia was induced by intraluminal filament technique, left MCA (median cerebal artery) occlusion (MCAO) for 90 minutes, followed by a gentle removal of the filaments. Subjects were sacrificed after 24 hours to assess morphological and molecular changes. The distribution of neuronal damage was evaluated using Nissl stain in the ipsilateral cortex, striatum and hippocampus. A comparative study was performed in order to establish the immunological profile of various inflammatory cell types (neutrophil granulocytes, macrophages and different subtypes of T-cells) involved in focal cerebral ischemia and reperfusion, by evaluating the core (dead neurons) and surrounding penumbra (containing degenerated, but yet viable neurons), using leukocytes markers (MPO, CD68, CD3, CD4, CD8), and leukocytes released enzymes (MMP 9 and MMP 8). Positive cells were quantified using digital morphometry in order to determin positive cell count and the total area of these cells. We hypothesized a correlation between the inflammatory cell positive area (%) and neuronal viability in the core and the penumbra zone in Omega-3 protected group versus ischemic group. Descriptive and comparative statistics was performed using GraphPad Prism 7.0 software. **Results:** Comparing median staining intensity of the studied immunohistochemical markers in the core and penumbra of the ischemic and Omega -3 protected rat group, we found significant differences between expression of MMP-9, CD3, and CD68 positive cells ($p<0.05$). **Conclusions:** Our results suggest that omega-3 polyunsaturated fatty acids are able to modulate inflammatory responses.This work was supported by UMF internal grant (Project nr.17803/1/22.12.2015).

Keywords: transient focal cerebral ischemia, inflammation, omega-3 fatty acids

PECULIAR MEDIASTINAL TUMOR WITH PROMINENT ROSETTE FORMATION

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Background: There are several lesions that may cause the appearance of mediastinal masses, including, but not limited to, neoplastic lesions. Different parts and regions have different characteristic lesions, including tumors. These may have various, mostly non-specific, clinical presentation. **Material and methods:** We present the case of a 69-year old female patient presenting initially with dorsal pain with insidious onset of shortness of breath with occasional episodes of cough. Computer tomography revealed a relatively well demarcated anterior mediastinal mass. The mass has been removed by open thoracic surgery and sent for histopathological evaluation and diagnosis. **Results:** The surgical biopsy consisted of a well-demarcated, apparently encapsulated ovoid mass, measuring 85x70x40 mm, displaying a somewhat nodular, tan cut surface. Microscopic examination showed a neoplastic cellular proliferation with a biphasic pattern, having two distinct compartments, both composed of bland, elongated epithelial cells, one with a rich lymphocytic component. The tumor showed several fields of prominent rosette formation. A diagnosis of thymoma type AB was issued, based on morphology and immunohistochemistry profile. **Conclusions:** Primary mediastinal tumors (excluding bronchogenic neoplasms) are relatively rare tumors. Their identification is somewhat aided by localization and clinical presentation. Thymomas represent the most frequent group of mediastinal neoplasms in adults. Their histologic classification is based on their resemblance to the normal thymus and a diagnosis may be issued solely based on morphological criteria alone. More difficult cases require immunohistochemical assays. Despite having characteristic morphology, thymomas may contain uncommon features, such as prominent rosette formation that may raise additional differential diagnostic concerns.Project partially funded by the University of Medicine and Pharmacy of Tirgu Mures within Scientific research grants - Research groups (contract no. 20/23.12.2014).

Keywords: mediastinum, thymoma, rosettes

RARE HISTOLOGICAL VARIANTS OF GASTRIC CANCER: A DIAGNOSTIC CHALLENGE

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Background: Gastric cancer is a heterogenic tumor which diagnosis is sometimes difficult. Therapy guidelines mainly refer to carcinomas and do not include the rare histological variants. The aim of this paper was to present the most challenging gastric tumors encountered in the daily diagnosis. **Material and methods:** A retrospective analysis of more than 400 consecutive GCs diagnosed between 2003-2016 in the Department of Pathology of Clinical County Hospital of Tirgu-Mures was performed. The rare histological variants were selected and examined in detail. **Results:** Beside the adenocarcinomas, poorly cohesive carcinomas and primary gastric lymphomas, the following relatively rare variants of gastric tumors were identified: neuroendocrine tumors (n=20), lymphoepithelioma-like carcinoma (n=6), mixed neuroendocrine carcinoma (n=5), hepatoid adenocarcinoma (n=1) and post-chemotherapy histiocyte-like changes (n=1). In all of the cases the diagnosis was established after performing immunohistochemical stains. The individualized postoperative management was mainly based on the histopathological reports. **Conclusions:** The daily diagnosis of common tumors such those involving the stomach should be attentively established to identify the rare variants that might benefit by individualized therapy. This paper was partially supported by the University of Medicine and Pharmacy of Tirgu-Mures, Romania, team research projects frame: UMFTGM-PO-CC-02-F01 - No 19/2014.

Keywords: gastric cancer, histology, targeted therapy, pathology

BREAST CANCER METASTASIS, ERYSIPELOIDES FORM. CASE REPORT.

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Background: Cutaneous metastases represent 2% of all metastases, the most common primary tumor is breast cancer. Skin metastases of breast cancer are usually found near the original site of the tumor and there are varied clinical forms: nodular (97,5% of cases), erysipeloid, sclerotic, telangiectatic, en cuirasse and neoplastic alopecia. **Material and methods:** We report a 62-years-old lady with primary invasive ductal carcinoma, who had underwent breast-conserving surgery with left axillary lymph nodes enlarged in 2013. According to the protocol, the patient had been treated with chemotherapy (Farmarubicin 100mg/m2 si Cyclophosphamide 600 mg/m2, Taxotere 100 mg/m2) and radiotherapy(50 Gy/left breast). In march 2016, the patient presented to our department for a large fixed pruritic erythematous plaque on the left shoulder, covered with yellow papulo-vesicles and violet necrotic vessels, clinically mimicked lymphatic malformation. She had a four months history of pruritic erythematous patches on the left shoulder, treated as an erysipelas and eczema by her previous dermatologists, with ineffective treatment. We perform excisional skin biopsy and the histological exam showed tumor cells with nuclear pleomorphism and increased mitotic figures, emboli of carcinoma cells in dermal blood vessels, consistent with diagnosis of breast cancer metastasis. **Results:** Skin metastases can be the first sign of a neoplasm or an indication of tumoral relaps, implying poor prognosis. The first three years after diagnosis of the primary tumor is the interval more likely for the appearance of skin metastases. Erysipeloides metastases represents a diagnostic challenge and we should consider erysipelas, cellulitis and dermatitis for differential diagnoses. The treatment of the cutaneous lesions is linked to the treatment for primary tumor. **Conclusions:** Although rare in dermatology, our case highlights the importance of early diagnosis in cutaneous metastases, especially in dermatitis-like lesions, for the appropriate treatment and improving overall survival rate of the patients.

Keywords: breast cancer, cutaneous metastases, carcinoma erysipeloides

OUR SHORT TERM EXPERIENCES USING THE BETHESDA SYSTEM FOR REPORTING THYROID CYTOPATHOLOGY

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Background: The Bethesda System for Reporting Thyroid Cytopathology (TBSRTC) aims to offer standardized reporting based on cytological criteria in aspiration smears. The aim of our study was to analyze the thyroid cytology smears classified by TBSRTC and to determine diagnostic categories and subcategories distribution, we also analyzed correlation of cytopathology with histopathology, whenever surgery was done. We discuss some of our interesting cases as well. **Material and methods:** Current study includes 691 fine needle aspirations in a period of 3 years (2014-2016). Cytological diagnoses were grouped according to TBSRTC categories, as follows: I. Unsatisfactory (US); II. Benign (B); III. Atypia of undetermined significance (AUS), IV. Follicular neoplasm/suspicious of a follicular neoplasm (FN/SFN); V. Suspicious for malignancy (SFM) and VI. Malignant (M). Cytohistological correlation was done, whenever patients underwent surgery. **Results:** The distribution of Bethesda categories was as follows: 7.1% US, 73.5% B, 10.4% AUS, 3.2% FN, 2.9% SFM, and 2.9% M. Surgical intervention with histopathology reports were available in 29 cases. Some of our most interesting cases included: myxoid sarcoma, Hurthle-cell carcinoma, palpation thyroiditis and a metastatic lesion. **Conclusions:** Using TBSRTC the commonest diagnosis was benign (including benign follicular nodule and lymphocytic thyroiditis). Risk of malignancy and the proportion of TBSTRC category distribution is similar to other studies with some differences owing to low number of cases. The purpose of TBSTRC is to reduce inter-observer variability and provides optimal communication between endocrinologist, surgeon and pathologist. It also offers a guideline for cancer risk assessment and clinical management to avoid unnecessary surgery.Project partially funded by the University of Medicine and Pharmacy of Tirgu Mures within Scientific research grants – Research groups (contract no. 20/23.12.2014).

Keywords: thyroid, cytology, Bethesda system, fine needle aspiration cytology

HISTOLOGICAL EVALUATION OF THE PATHOLOGICAL RESPONSE OF GASTROINTESTINAL TUMORS TO PREOPERATIVE CHEMORADIOTHERAPY: A DIAGNOSTIC CLUE IN ONCOPATHOLOGY

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Background: The current therapy guidelines indicate preoperative radio-chemotherapy for rectal tumors and carcinomas of the upper gastrointestinal tract. The aim of this paper was to present the histological criteria of evaluation of the surgical specimens of these patients. **Material and methods:** A histological analysis of 40 consecutive carcinomas of the gastrointestinal tract that were preoperatively treated with radiotherapy and/or chemo-radiotherapy was performed. The research was focused on the identification of the therapy-induced histological modifications. **Results:** The benefits of the preoperative oncological therapy consisted on expanded areas of fibrosis, presence of the acellular mucin lakes, identification of capsuling acellular necrotic areas and replacement of the tumor cells by foamy cells. **Conclusions:** For a proper individualized therapy, the effects of the preoperative oncologic therapy should be evaluated and mentioned in the histopathological reports. This work was partially supported by the University of Medicine and Pharmacy of Tirgu-Mures, Romania, team research projects frame: UMFTGM-PO-CC-02-F01-19/2014.

Keywords: stomach, rectum, histology, radiotherapy, chemotherapy

EXPRESSION OF SOMATOSTATIN RECEPTORS TYPE 2A (SSTR2A) IN SILENT SOMATOTROPH TUMOURS

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Background: Somatotroph pituitary tumours have specific clinical and biochemical signs of acromegaly and on histology they are immunoreactive (IR) for growth hormone (GH). Some cases that are without clinical and biochemical signs of acromegaly and are positive for GH on immunohistochemistry are called "silent". Response to treatment of somatotroph tumors with somatostatin analogs (SA) is highly correlated with expression of SSTR2A. **Material and methods:** Fifty-nine pituitary tumours with acromegaly were compared with 21 tumours without acromegaly. The tumours were classified into monohormonal (GH) and plurihormonal (GH/prolactin-PRL), based on the membrane expression and on the percentage of SSTR-IR cells, they were divided into three groups (group 1: <25%; group 2: 25-75%; group 3: >75%). **Results:** The majority of silent somatotroph tumours were plurihormonal (76% vs. 36%, P<0.01), with a lower percentage of GH-IR cells compared to those with acromegaly (51.4 ± 31.2 vs. 79.4 ± 24.5, P<0.0001). Expression of SSTR2A was lower in silent somatotroph tumours compared with those with acromegaly (P<0.01), almost a half of them (43%) being part of group 3 and one third of them (33%) part of group 1. **Conclusions:** When taking into account the lower percentage of IR cells for GH and SSTR2A, silent somatotroph tumours seem to be less differentiated than those with acromegaly. The imunohistochemical study of SSTR expression may be useful to identify those tumours that are more likely to be susceptible to SA treatment.

Keywords: somatostatin receptors, pituitary, silent, growth hormone

NON-INVASIVE FOLLICULAR THYROID NEOPLASM WITH PAPILLARY-LIKE NUCLEAR FEATURES (NIFTP), A CHANGING PARADIGM IN THYROID SURGICAL PATHOLOGY: REPORT OF TWO CASES

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Background: Studies over the past decade have demonstrated that non-invasive encapsulated follicular variant of papillary thyroid carcinoma (EFVPTC) has an indolent behavior and is genetically distinct from infiltrative tumors. Considering these, reclassification of non-invasive EFVPTC as a non-malignant neoplasm has recently been proposed by an international group of thyroid gland specialists, using the term "non-invasive follicular thyroid neoplasm with papillary-like nuclear features" (NIFTP). Herein, we present the first two cases of NIFTP registered in the Department of Pathology, Tîrgu-Mureş County Hospital since April 2016, when the new terminology was first introduced. The differential diagnosis of NIFTP and difficulties regarding the new terminology, including changing the threshold of thyroid cancer diagnosis are also covered. **Material and methods:** Two female patients, 31 and 41 years-old, were admitted to the hospital for a cold nodule in their left thyroid lobes. Consecutivelly, left lobectomy was performed in both cases. **Results:** At macroscopy, two compact, gray-whitish nodules, sized 17 and 21 mm, respectively, were described. Microscopically, both tumors were encapsulated and revealed a dense, microfollicular growth pattern. In one case, the characteristic PTC's nuclear features were only focally present, while most of the nuclei revealed only discrete, incomplete changes. In the second case, however, most of the follicles were lined by cells with characteristic PTC s nuclear features. None of the two cases displayed capsular or vascular invasion, despite adequate sampling of both nodules and multiple sections evaluation. Both cases were consistent with a diagnosis of NIFTP. **Conclusions:** The diagnosis of NIFTP can only be rendered upon adequate or entire sampling of the tumor capsule in order to exclude invasive characteristics (capsular or vascular invasion). Considering the indolent behavior of NIFTP, clinical management of these cases can be reduced to conservative surgery alone and patients' follow-up.

Keywords: thyroid, non-invasive follicular neoplasm, papillary-like nuclear features

GLEASON SCORE VERSUS GLEASON GRADE GROUP CONCORDANCE ON PROSTATE NEEDLE BIOPSY AND RADICAL PROSTATECTOMY

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Background: Gleason score (GS) is one of the most important histoprognostic factors in prostate carcinoma (PCa). The limitations of the Gleason grading system determined the specialists to propose a new grading system which includes five grade groups (GG).The aim of our study was to present the new Gleason grade groups system and to assess the concordance between the GS and GG comparing prostate needle biopsies (PNBs) and radical prostatectomy (RP) specimens. **Material and methods:** The study included 29 patients with PCa submitted for RP in the Urology Department between January 2012 and July 2016 and histopathologically examined in the Pathology Department of the Emergency County Hospital Mureș. All PNBs and RP specimens were classified using GS and GG grading systems. **Results:** The median age of the patients was 63.5 years. The most frequent GS was 7 on both PNB (15 cases; 51.72%) and RP specimens (22 cases; 75.86%), while the most frequent GG was 2 on PNB (13 cases; 44.8%) and RP specimens (12 cases; 41.38%). Evaluating GS we found the same score on both PNB and RP in 14 cases (48.28%), in 5 cases (17.24%) the GS was higher on PNB and in 10 cases (34.48%) the score was lower on PNB. When the GG system was applied a concordance between PNB and RP was found in 9 cases (31.03%), 5 cases (17.24%) were up-graded and 15 cases (51.72%) were down-graded. **Conclusions:** Our study showed a lower concordance of GG than GS between PNB and RP. The difference might be explain by GS 7 which in the GG grading system is divided into two groups: GG2: 3+4=7 and GG3: 4+3 =7. This new grading system reflects more accurately prostate cancer behavior and must be used together with current Gleason grading system.

Keywords: Gleason score, prostate needle biopsy, radical prostatectomy

TECHNICAL CHALLENGES IN HISTOLOGIC DIAGNOSIS OF ACRAL LESIONS

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Background: Acral lesions (tumor and non-tumor), involves a number of challenges for technical processing, and hence their histologic diagnosis. The difficulty lies in the anatomical peculiarities of the acral region, especially fingers of the upper or lower limbs. Simultaneous processing of skin, soft tissue, phalange bones and nails requires a special technique from fixing, decalcification, sectioning to staining tissues. AIM To present a practical method of processing surgical specimens after partial or total amputation of fingers for histologic diagnosis. **Material and methods:** We present a series of 10 cases of tumor and non-tumor lesions localized in acral region (fingers of of the upper or lower limbs) that were excize at general or plastic surgery departments. Surgical specimens were processed through an original method in the Pathology Laboratory of Emergency and Clinical Mures County Hospital. **Results:** We processed and diagnosed six cases of necretomy from patients with diabetis or arteriopathy, two cases of fibro-bone pseudotumour of the finger, a case of subcutaneous soft tissue tumor and a case of melanocytic lesion localized at nail bed. In all cases, phalange bone decalcification was done with acid, and staining with hematoxylin and eosin. We used special stains as: PAS-Alcian Blue and van Gieson. In case of tumor lesions we performed immunohistochemistry too. **Conclusions:** The method we used generously meets the need for simultaneous processing of different tissue consistency (soft, "semi-hard and hard" tissues) and enables microscopic and immunohistochemical proper diagnosis.

Keywords: acral, lesions, fingers, melanocytic, immunohistochemistry

PEDIATRICS

RETROSPECTIVE STUDY REGARDING POST-SPLENECTOMY THROMBOCYTOSIS IN CHILDREN

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Background: Thrombocytosis in children is rarely essential, the most frequently encountered is the reactive form, secondary to other conditionssuch as infections, inflammations, trauma, malignancy or due to splenectomy. Thrombocytosis is benign and in most cases it is a self-limiting condition. Even though, severe thrombocytosis may determine trombotic events. The aim of this study is to assess the frequency, the duration and the severity of reactive thrombocytosis in pediatric patients who underwent splenectomy. **Material and methods:** The retrospective study included a number of 24 patients (aged 4-16 years) who were admitted in the I Pediatric Clinic of Tg-Mures, and underwent splenectomy between 2006-2016. We analised the platelet count after splenectomy, the moment when thrombocytosis appeared, its duration and also the therapeutic approach. **Results:** 13 out of 24 studied patients, underwent splenectomy due to chronic hematological conditions, and 11 patients due to a post-traumatic cause. 83% of the splenectomised patients developed post-splenectomy thrombocytosis, the onset of thrombocytosis was between 2-14 days following surgery. Severe thrombocytosis, with a platelet count > 1.000.000/mm^3, appeared in 25% of the studied patients. In most cases, thrombocytosis remitted in the first 30 days post-splenectomy, only in 3 patients the high platelet count lasted for more than 360 days. All patients benefited from thromboprophylaxis and hydration measures, and 2 cases needed associated treatment with Hydroxyurea. **Conclusions:** Reactive thrombocytosis is frequently encountered following splenectomy, but it is generally benign. Therapeutic platelet reduction is rarely needed for treating reactive post-splenectomy thrombocytosis.

Keywords: child, splenectomy, thrombocytosis

COLON CARCINOMA IN AN ADOLESCENT GIRL - CASE REPORT

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Background: The colorectal carcinoma is a rare gastrointestinal tumor in children and adolescents. Familial adenomatous polyposis coli (FAP), Gardner, Turcot, Bloom, Peutz-Jegher syndromes, ulcerative colitis are predisposing factors for the development of colo-rectal cancers. **Material and methods:** We report the case of a 14 year-old girl with type I neurofibromatosis who presented for weight loss, fatigue, fever, abdominal pain and bloody diarrhoe. The malnourished, pale female adolescent had many "café au lait" spots on her skin and a palpable 4-5 cm large tumor on the right side of the abdomen, with hard consistency. Vital signs were in normal range. Laboratory tests showed severe anemia (Hgb 6,2 g/dL) and signs of inflammation. Abdominal IRM investigation found a 66x60x88 mm large tumor on the descendent colon, retroperitoneal adenopathy, a solitary cyst in the liver and polycystic kidneys. The 120/60 mm colonic tumor was removed surgically together with 28 lymph nodes and an end to end colon anastomosis was performed. Histology of tumor was adenocarcinoma of the colon with 5 lymph nodes out of 28 presenting metastasis. The tumor was staged pT3N2a. Stage Dukes-Mac C2. No colon polyposis could have been found on the removed piece. The patient underwent 12 chemotherapy courses with FOLFOX 4 protocol. After 4 months from the completion of treatment, local relapse occurred with metastases in the lung, internal genitals, muscles and bones. Colonoscopy at this time showed colonic adenomatous polyps. Palliative chemotherapy with Douillard protocol was performed, later palliative care with focus on pain relief. Survival was 24 months. **Results:** Discussion: In the family no other cases of colo-rectal tumors were found. Adenomatous polyposis coli is a precancer stage which may undergo malignant transformation. **Conclusions:** Colon carcinoma is a rare malignancy in children with severe prognosis.

Keywords: oncology, histology, colo-rectal cancer, child

ULCERO-HEMORRHAGIC COLITIS, A CHALLENGE IN PEDIATRICS

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Background: Ulcerative colitis is a chronic inflammatory condition afflicting the rectum and the terminal part of the rectum. It consists in edema, ulcers and hemorrhage. It seems that genetic and environmental factors, immunity disorders, and more recently gut microbiota can represent and impact on the onset of this pathology. Most frequently is develops between the age of 15-25 years or in the 6th decade of life. The most important complication is represented by colorectal carcinoma after 10 years of evolution. **Material and methods:** We underline the particularities of ulcerative colitis in children by presenting two male patients, 14 years old, and 16 years old, respectively, diagnosed with this pathology in the Pediatrics Clinic 1 Tg. Mureş. **Results:** First patient, a 14-year-old male, presented with abdominal pain and inferior digestive hemorrhage. The personal pathological history revealed an episode of Henoch Schlonein purpura a year before. We mention that the patient was sustaining some exams when the symptoms appeared. The colonoscopy revealed multiple ulcerations and hemorrhagic lesions of the rectum and colon, and the histopathological exam confirmed the diagnosis of ulcerative colitis. The short-term evolution was good under corticosteroids and salasopyrin for a month, afterwards remaining only with salasopyrin. From the moment of diagnosis, the patient presented 2 flares with hemorrhage, abdominal pain and tenesmus, both under stressful conditions, with favorable evolution. The second patient, a 16-year-old male teenager, presenting with the same symptoms, which appeared also during stressful conditions, and the colonoscopy revealed the same aspect, the diagnosis being of ulcerative colitis. **Conclusions:** Ulcerative colitis is a chronic inflammatory bowel condition burdened by multiple recurrences. Psychological and emotional stress can lead to the acute episode of the disease. The prognosis depends mainly on the number of recurrences, the patient s education and compliance, but this is the real challenge in pediatrics.

Keywords: ulcero-hemorrhagic colitis, challenge, children

THE MOTHER'S DIET CAN INFLUENCE THE COLIC IN BREASTFED BABIES?

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Background: The etiology of infant colic remains unknown. Possible causes of colic are digestive, neurological or psychological. Colic occurs equally in boys and girls. breastfeedind is not a protective factor.The aim of the study is to evaluate the possible link between mothers diet while breastfeeding and colic in their infants. **Material and methods:** A retrospective observational study has been conducted on 110 breastfeeding mothers, members of an online breastfeeding support group. A survey of 30 questins - mother"s diet and lifestyle, information about the baby (birth, approach to feeding and other baby care habbits), colic information (characteristics, other symptoms) was carried out. We used GraphPad Prism 5 software, using Fisher"s exact test for statistical analysis. **Results:** The majority of mothers (80%) have exclusively breastfed their babies. more than 60% of the babies have sufferd from colic of varying intensity and duration. Significant associations have been found only in the cases of stimulating foods (p=0.0046), dairy (p=0.0064), vegetables (p=0.0249) and legumes (p= 0.0351). No significant correlations have been found between colic and use formula, type of birth, sex of the baby. **Conclusions:** An association between the mother"s diet and colic in their newborns is showed in our study but only in the case of 4 types of foods. Breastfeeding mothers should have a well balanced, varied diet, taking into account the individual reactions of their babies to certain foods.

Keywords: colic, infant, mother’s diet

ABDOMINAL TUMORS IN CHILDREN. CASE PRESENTATIONS.

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Background: As many of abdominal tumors may or not be observed by clinical examination, abdominal aultrasound in children is an important tool for practice.Considering the facts that it is non invasive, easy to perform and reproductible, abdominal ultrasound has a well-deserved place in the algoritm of abdominal mases in children. **Material and methods:** Authors present 5 cases of ultrasonographically discovered abdominal tumor in children and their correlation with more or less suggestive clinical features. **Results:** Cases presentations start with clinical findings, completed by imagistic examinations, abdominal ultrasonography being the first choice. We present 3 cases of malignant tumor and 2 non-malignant masses in adolescent and school-aged children.We focused on correlations between ultrasonographic results and those obtained by radiography, CT and MRI. **Conclusions:** Abdominal ultrasonography is the first choice for diagnosis in abdominal tumors in children, malignant and non-malignant, but needs to be completed with CT/MRI for a more accurate diagnosis. In tumors, only pathology report can give the final diagnosis.

Keywords: paediatrics, abdominal masses, ultrasonography

FROM SIGNS AND SIMPTOMS TO CONGENITAL RENOURINAR ANOMALIES

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Background: The clinical simptomatology of congenital anomalies of urinary system is poor and therefore the diagnosis is often delayed. However, some signs and simptoms like: low-set ears, preauricular pinna, single umbilical artery, hypospadias, supernumerary nipple, anorectal anomalies, oliguria and anuria of the newborn, vertebral malformations, can be suggestive for a congenital reno-urinar anomaly. **Material and methods:** The authors present several cases of congenital anomalies of the urinary tract diagnosed in neonates, in order to emphasize the importance of early diagnosis of these pathology. **Results:** The poor simptomatology of the congenital anomalies of the urinary system obligates the consultant to think of the possibility of these anomalies, even though the signs and simptoms are not specific. **Conclusions:** To proper treatment the early diagnosis is essential. In case of any of the listed sign or simptomes are present, further paraclinical examinations are needed to diagnose as early and as precise as possible the anomaly of the urinary system.

Keywords: neonate, congenital, urinary tract, specific, early

ASSOCIATION OF CHRONIC IMMUNE THROMBOCYTOPENIC PURPURA WITH AUTOIMMUNE THYROIDIAN PATHOLOGY

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Background: The Immune thrombocytopenic purpura (ITP) associated with autoimmune pathology is a relatively rare pediatric pathology. Acute ITP is characteristic at Children, chronic ITP is more frequent in aduls. Our aim is to present a case of chronic ITP associated with autoimmune thyroiditis at a 11-year-old female patient. **Material and methods:** The little girl was admitted in the pediatric hemato-oncology department of the Mures county Hospital presenting generalized echimosis and petechiae. 6 months earlier she was diagnosed with autoimmune thyroiditis and she began substitution therapy with Euthyrox. The bone marrow aspiration and other laboratory findings concluded thrombocytopenia with megakaryocytes hyperplasia which was strongly suggestive for ITP and after excluding malignant hemopathies we started corticotherapy. The response was favorable, the number of platelets was normalized. During Prednison dose withdrawal in September 2015 she had a relapse, we reintroduced corticotherapy, the hemathologic paramethers became stable. At the second attempt of dose withdrawal she relapsed again, we

decided for immunoglobulin treatment, she became stable with 40-50.000/mmc platelets value. The next two admissions were required for meno-metrorrhagia and gynecologic treatment, we introduced imunsupresive medication, platelet counts remain above 150.000/mmc. **Results: Conclusions:** We consider that it is a particular case because the rare association between two immune pathologies.

Keywords: case report, immune thrombocytopenic purpura, child, autoimmune

HEMOLYTIC-UREMIC SYNDROME IN A ONE YEAR OLD CHILD

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Background: Hemolytic-uremic syndrome (HUS) is a clinical syndrome characterized by progressive renal failure that is associated with microangiopathic (nonimmune) hemolytic anemia and thrombocytopenia. It predominantly occurs in infants and children after prodromal diarrhea. **Material and methods:** We present the clinical case of a patient admitted to Pediatric Clinic nr.2 in July 2014. Patient is a one year old child with an episode of acute enterocolitis three weeks before admission; showing signs of marked pallor, bruising (ecchymosis) around the navel, lumbar region and at the limbic level. **Results:** Laboratory tests conducted at the Pediatric Hospital in Gheorgheni detected anemia, thrombocytopenia, respectively microscopic hematuria and proteinuria, elevated levels of LDH, the reasons why the patient was sent to our clinic with suspected haematological malignancy. Performed MO excludes this diagnosis, and based on the case history, general clinical examination and laboratory examinations the new diagnosis is Hemolytic-uremic syndrome. Evolution of symptomatic treatment, platelet and red cell substitutes were favorable. **Conclusions:** Hemolytic-uremic syndrome is a serious complication that can evolve favorably if diagnosed in time and the treatment is quickly established.

Keywords: hemolytic-uremic syndrome, child, anemia, renal failure, thrombocytopenia

HAEMATOLOGIC STATUS IN A GROUP OF OBESE CHILDREN COMPARED WITH NORMAL WEIGHT CHILDREN

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Background: Hematological and biochemical tests represent the second line in the nutritional assessment of a patient, after clinical and anthropometric assessment. The most valuable nutritional status determinations for children are hemoglobin concentration and erythrocyte indices (mean corpuscular volume, mean corpuscular hemoglobin) as well as potassium, phosphorus and serum albumin. **Objective**: the study of hematologic status in a group of obese children, compared with normal-weight children. **Material and methods:** We conducted a prospective study (October 2012-October 2016) which included 151 overweight (30) or obese (121) and 168 normal-weight children. We defined overweight as a Body Mass Index above the 85th percentile(P) for-age and obesity over P95. We followed hematological parameters compared between groups, assessing the differences in statistical terms. **Results:** From Complete Blood Count,Student test identified a statistically significant difference between the average Red Blood Cell counts (4.84±0.44 in obese vs 4.75±0.43 in the control group, p=0.04); the mean hemoglobin value was significantly higher in obese (13.14±1.24 vs 12.71±1.35, p=0.004). Average of hematocrit was higher in obese (39.19%) compared with controls (37.86%) (p=0.0001). Platelet count did not differ significantly in obese children compared to controls (p=0.48). Regarding the erythrocyte indices, Mean Corpuscular Volume(MCV), Mean Corpuscular Hemoglobin(MCH), Mean Corpuscular Hemoglobin Concentration(MCHC), we found no significant differences between the median of their values in the two groups (Mann Whitney Test). The peripheral smear detected in normal weight more signs of iron deficiency than in obese children. **Conclusions:** Hematological analysis showed a lower rate of anemia in obese compared to normal-weight children.

Keywords: child, hemoglobin, overweight, obesity, red cell indices

PHARMACY

POLYPHENOLIC PROFILE AND ANTIOXIDANT ACTIVITY OF BLACKCURRANT (RIBES NIGRUM L.) FRUITS

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Background: Blackcurrant (*Ribes nigrum* L.) is a perennial shrub, known for the sour-tasting fruits. Can be consumed fresh or processed. According to the literature they contain vitamin C, anthocyanins, tannins, sugars, flavonoids etc.Our objective is to determine the antioxidant activity as related to their phenolic composition. **Material and methods:** We prepared extracts from the frozen fruits using methanol, methanol-water (1: 1) and water. The antioxidant activity was determined by DPPH method and by photochemiluminescens (PCL) method (Photochem®, Analytic Jena). The total polyphenols were determined using the Folin-Ciocalteu reaction, and results expressed in gallic acid equivalent (GAE). Total anthocyanins were determined by colorimetric method according to European Pharmacopoeia 7th Edition and expressed as cyanidin 3-O-glucoside (CG). Flavonoids were measured after complexation with AlCl3 and calculated from a calibration curve with quercetin (Q) as standard. **Results:** The DPPH radical scavenging activity decreased in the extracts as follows: methanol > methanol-water > water (IC50 = 1.77 mg/ml; IC50 = 1.9 mg/ml; IC50 = 3.67 mg/ml). Antioxidant activity determined by PCL decreased in the order methanol-water > water > methanol (2.66 µmol AAE/ml; 1.85 µmol AAE/ml; 1.68 µmol AAE/ml). Best extraction of polyphenols, anthocyanins and flavonoids was achieved with methanol-water (225 mg GAE/100 g fw; 327 mg CG/100 g fw; 75.9 mg Q/100 g fw) followed by methanol (169 mg GAE/100 g fw; 222 mg CG/100 g fw; 54.15 mg Q/100 mg fw). Water was found to be the last efficient extraction solvent (133 mg GAE/100 g fw; 187 mg CG/100 g fw; 20.27 mg Q/100 g fw). RP-HPLC-UV-VIS analysis revealed the presence of isoquercitrin and cyanidin 3-O-glucoside. **Conclusions:** Based on these results it appears that blackcurrants are a rich sourse of phenolic antioxidants, which are best extracted with methanol-water. **Acknowledgements**: We thank the Hungarian Academy of Sciences and Studium Prospero Fundation (0350/26.02.2016) for the financial support.

Keywords: Ribes nigrum, antioxidant, polyphenol

THE ACCEPTED DAILY INTAKE THEORY CAN LEAD TO ERRORS WHEN USED IN THE PHARMACEUTICAL INDUSTRY

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Background: The accepted daily intake was defined as the dose of a substance that would not harm an individual even if used through all his life. Errors of the permitted daily exposure calculation provided by European Medicine Agency procedure were searched during this work. **Material and methods:** Literature data was searched for good quality animal toxicological data for several pharmaceutical active ingredients and the methodologies provided by the European Medicine Agency and other literature sources were used to determine an permitted daily exposure. **Results:** In some cases, especially substances with low toxicological profile (ezetimibe, alprazolam, nitrazepam) or extraordinary high biological activities (carfentanyl), the three options to estimate the permitted daily intake (extrapolation of animal data, extrapolation of human clinical data, the concept of threshold of toxicological concern) can fail and lead to hazardous permitted doses. **Conclusions:** The methodology provided by the European regulatory agencies for the permitted daily intake calculation is very permissive and should be expanded with knowledge about the biological activity of the substances not only their toxic effects. Acknowledgement: the research was supported by the University of Medicine and Pharmacy of Tîrgu Mureş and Gedeon Richter Romania SA, internal research grant number 15221/02.11.2015.

Keywords: permitted daily exposure, permitted daily intake, biological activity

VACCINIUM SPECIES EXTRACTS AMELIORATE STREPTOZOTOCIN-INDUCED CATARACT IN RATS

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Background: Hyperglycemia is known to be responsible for the development of diabetic cataract because of the accumulation of sorbitol in lens. Several studies have indicated that antioxidants such as anthocyanins and polyphenols may inhibit aldose reductase, a key enzyme that catalyzes the reduction of glucose to sorbitol. The aim of this study was to evaluate the effect of two extracts obtained from the leaves and fruits of Vaccinium myrtillus or Vaccinium corymbosum collected from our country, on the development of cataract in diabetic rats. **Material and methods:** The study was made on 4 groups of animals: Group 1 (healthy rats) and Group 2 (diabetic untreated rats) received only vehicle; Group 3 (diabetic rats) were treated with 10 ml / kg bw VMLF extract prepared from Vaccinium myrtillus leaves and fruits (containing 43 mg total polyphenols expressed as gallic acid equivalents and 6,41 mg anthocyanins expressed as cyanidin-3-glucoside equivalents); Group 4 (diabetic rats) were treated with 10 ml / kg bw VCLF extract prepared from Vaccinium corymbosum leaves and fruits (containing 68 mg total polyphenols expressed as gallic acid equivalents and 2 mg anthocyanins expressed as cyanidin-3-glucoside equivalents. The rats received the treatment for 8 weeks, three times a week. On the sixth week cataract formation was evident and could be evaluated with an ophthalmoscope. After eight weeks the rats were sacrificed, the eyes were enucleated and lenses were excised. Lens opacification was evaluated by examination under a microscope. **Results:** Hyperglycemia caused by the administration of Streptozotocin lead to the development of cataract in Group 2. Administration of combined extracts VMLF or VCLF inhibited lens opacification compared with Group 2. The effect was more evident on Group 3 treated with VMLF. **Conclusions:** Our results suggest that anthocyanins and polyphenols found in these species may have a beneficial effect on the cataract formation caused by hyperglycemia.

Keywords: Vaccinium, anthocyanins, polyphenols, cataract, diabetes

PRE-SCREENING OF CYTOCHROME P450 ENZYME ACTIVITY. ALTERNATIVE ANALYTICAL METHODS TO PHARMACOGENETIC STUDIES

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Background: Individualized therapy for population groups including poor, fast and ultra rapid metabolisers, is based on pharmacogenetic tests. Determination of metabolism products of various non-toxic substrates of cytochrome P450 isoforms may be a simple alternative for selecting patients who require further genetic investigations. **Material and methods:** The N1-methyl uric acid / caffeine ratio was determined in a group of 20 subjects after administration of a standard amount of caffeine to discriminate the CYP1A2 poor / fast metaboliser status. Simultaneously, the presence of cotinine was determined as a marker of smoking habits that induce CYP1A2. A similar method was used for a substrate of CYP3A4 (Testosterone). **Results:** The subjects number did not permit identification of poor metabolisers but emphasized the inducing effect of cigarette smoke on CYP1A2 reflected in the significant changes of N1-methyl uric acid / caffeine ratio. **Conclusions:** The analytical methods are cheap alternatives to choosing personalized treatment. In addition, enzyme induction and inhibition phenomenon can be identified even if the concomitenet intake of drugs / xenobiotics is denied by the patient. Acknowledgement. This study was financed by The University of Medicine and Pharmacy of Tîrgu Mureş by internal research grant no. 17/2014.

Keywords: cytochrome P450, analytical method, Individualized therapy, CYP1A2, N1-methyl uric acid / caffeine ratio

CORRELATION OF EXPERIMENTAL DATA TO EVALUATE THE MECHANICAL PROPERTIES AND POROSITY OF DERMAL FILMS

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Background: The mechanical properties and porosity represent factors that affect the bioavailability of the active ingredient formulated as bioadhesive films. The aim of this study is to present some graphical and mathematical methods that could be useful to evaluate the dermal film properties by correlation of experimental data obtained in the film developing process. **Material and methods:** Experimental data previously obtained by the following tests: resistance to breaking and elongation (behavior under mechanical stretch), water absorption capacity, water loss by desiccation, water vapor permeability (behavior toward vapor humidity). Correlation of experimental data by: Pearson test, Anova test. Software: GraphPad Prism. **Results:** There were obtained graphical and mathematical interpretations related to the correlation of the mechanical properties and porosity in the case of some dermal films formulated with four nonsteroidal anti-inflammatory drugs and an antifungal agent. **Conclusions:** Information obtained by the correlated analysis of experimental data are essential for making decisions in the development process of the dermal film formulations. Part of this research was carried out with the support of the University of Medicine and Pharmacy of Tirgu Mures Romania and the financial support of the Andofarm S.R.L. Company, through the internal grant 234/06.01.2016.

Keywords: dermal films, mechanical properties, film porosity, correlation analysis

DESIGN, SYNTHESIS AND STRUCTURAL ANALYSIS OF SOME SPIRANS WITH POLYETHYLENE GLYCOL ARMS

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Background: Development of new electronic devices with applications in computer science as well as new medical devices pushed the researcher to find new technologies. Therefore, especially in devices with medical applications, chemical systems (controlled by so-called "logic gates") with chemical inputs were developed. Based on those new techniques we have designed and synthesized new compounds with possible application in the field of advanced materials. **Material and methods:** Solvents and reagents were used without any further purification. Compounds were analyzed by TLC, IR and NMR. Routine 1H NMR (300 MHz) spectra were recorded at room temperature (r.t.) in CDCl3, unless stated otherwise. Chemical shifts (d) are reported in parts per million (ppm) values using residual solvent peak as internal reference and the coupling constants (J) are in Hertz (Hz). Thin-layer chromatography (TLC) was carried out on aluminum sheets coated with silicagel 60 F254 Merck TLC plates. **Results:** Starting from commercial available compounds intermediates were obtained in a good yield. 4,4'-(2,4,8,10-tetraoxaspiro[5.5]undecane-3,9-diyl)diphenol was obtained starting from pentaerythritol and p-hydroxy-benzaldehyde in the presence of catalytic amounts of APTS (paratoluensulfonic acid). The product was purified by recrystallization and characterized by NMR spectroscopy. The structure exhibit 2 different signals for equatorial and axial position. Also, heterocycles prefer a chair conformation. Furthermore di, tri and tetra ethylene glycol were obtained by microwave assisted synthesis in a matter of minutes. Compounds were separated by recrystallization. **Conclusions:** In conclusion, several intermediates were synthesized and characterized from spectroscopic point of view. Further analyses should be carried out and the compounds should be tested as advanced materials.

Keywords: spirans, chair conformation, crown ether, polyethylene glycol, trans-cis isomerization

QUANTITATIVE ASSAY OF PLASMA CARBAMAZEPINE AND 10,11-EPOXYCARBAMAZEPINE BASED ON A LC-MS METHOD

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Background: Performing a bioanalytical study to assess plasma concentrations of carbamazepine and its 10,11-epoxy active metabolite outstands as the cornerstone for monitoring therapeutic efficacy and patient safety. **Material and methods:** Sigma® standards of carbamazepine and 10,11-epoxy carbamazepine were used for assaying the respective analytes from plasma. In order to obtain the analytical calibration curves, blank human plasma harvested and processed at the Blood Collection Centre of Târgu Mureş was used to prepare the samples. Rabbit and rat blank plasma of blood collected from animals raised in the University s experimental animals breeding station was also used to prepare the samples for generating the respective calibration curves in these species. MassHunter® software for Triple Quad LC/MS by Agilent Technologies® was used to process chromatogram data. **Results:** The calibration curves ranged from 1.1 to 17.6 mg/ml for carbamazepine and from 0.228 to 5.472 mg/ml for the 10,11-epoxy metabolite respectively. The calibration curves were accurate and precise for the whole calibration interval and the calculated coefficient of determination (R2) was higher than 0.994. **Conclusions:** The developed analytical method hereby described may be used for the determination of plasma carbamazepine and its 10,11-epoxy metabolite in plasma, and is suitable for performing preclinical and clinical bioanalyitical studies.

Keywords: carbamazepine, analytical method, rabbits, rats

PNEUMOLOGY

LUPUS ERYTHEMATOSUS APPARENTLY ACUTE ONSET WITH SEVERE RESPIRATORY FAILURE AND PLEURISY-CASE PRESENTATION

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Background: A 50 years old patient (male, smoker), with a history of a benign parotid tumor, chronic glomerulonephritis (cause unknown), hypertension, obesity and dyslipidemia was hospitalized in Pulmonology Clinic for rest dyspnea, wheezing, facial and peripheral leg edema, pallor with malar rush, fever, oliguria, tachycardia. **Material and methods:** Chest-x-ray and thoracic CT highlights acute lung injury with multiple "ground glass" areas, bilateral pleural effusion, minimal pericarditis. Echocardiography: pericarditis, dilated right ventricle and medium/severe pulmonary hypertension. Spirometry: severe mixed ventilatory dysfunction; SaO2-88% in ambient air. Laboratory investigation: anemia (Hb-7.7g%; Hct-24%, leukocytosis, low blood proteins (4.6g%), fibrinogen 540mg%, cholesterol 356mg%, triglycerides 244 mg% GOT 108U/L, uric ac. 9.1mg%, blood urea 95mg%, creatinine 5,3mg%. Other immunological investigations were negative (antinuclear antibody Ab (ANA), rheumatoid factor, anti-cardiolipin Ab, antiglomerular basement membrane Ab, anti-HIV Ab, anti-HCV Ab and HBS Ag). **Results:** Urine: proteinuria 2,19g/24 hours, 50 erythrocytes/µl. The patient refused kidney or lung biopsy. Bronchoscopy: exacerbated chronic bronchitis, bronchoalveolar lavage (BAL): Ab ANA positive, the presence of Candida, G negative bacteria, cysts of Pneumocystis jiroveci. We established on the basis of specific criteria the diagnostic of a major collagen disease (systemic lupus erythematous - SLE) in acute episode with bilateral pleural effusion and pericarditis, anemia, positive ANA in LBA, nephropathy with impure nephrotic/nephritic syndrome, malar rush, superinfected interstitial pneumonitis, respiratory failure, cor pulmonale in a patient with hypertension, dyslipidemia and obesity. We started oral and inhaled corticoids, antibiotics, bronchodilators, anti-fungal and anti-parasitic drugs, statins, antihypertensive and anticoagulants. The evolution was rapidly favorable. **Conclusions:** Only by corroboration of suggestive clinical features and the special laboratory criteria (ANA in LBA) we managed the diagnosis in conditions of a seronegative type of the SLE.

Keywords: chronic glomerulonephritis, lupus erhythematosus, case presentation

PLEURAL ULTRASOUND - MODERN DIAGNOSTIC AND GUIDING TOOL IN TREATMENT OF PLEURITIS (EXPERIENCE IN PNEUMOLOGY CLINIC TG. MURES)

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Background: Pleural fluid collections are often found in patients hospitalized in Pneumology Clinic Tg. Mures. We have studied the diagnostical contribution of the pleural ultrasound in 96 patients with pleuritis hospitalized in Pneumology Clinic Tg. Mures during 12 months. **Material and methods:** The total number of pleuritis hospitalized/year (2015/2016) represented an important rate of all hospitalized cases (188 cases - 7,23%). The dominant symptoms leading to hospitalization were the following: dyspnoea, thoracic discomfort or cramping, general signs (fever, asthenia, sweating, weakness). The clinical examination and the thoracic X-ray raised the suspicion of fluid collection and the chest ultrasound (effectuated in over 50% of the hospitalized cases) confirmed the presence of fluid in the pleural space. **Results:** The ultrasound permitted the positive diagnosis of pleural fluid collection, fluid localization, guidance of thoracocentesis and puncture of the pleural biopsy and screening of the treatment as well in all 96 patients. The parapneumonic pleuritises have dominated followed by the paraneoplastic ones caused by TB, cardiac insufficiency and collagenosis. The complications of the echoguided post-thoracocentesis (repeated for 2-5 times in 23% of the cases) had been very reduced - 1 case (lower than 1% pneumothorax) which only required resting and screening, 0% hemothorax, 0% hematoma of the wall or superinfection, 3% pain, 1% vagal reactions, 0% fever. **Conclusions:** Using the ultrasound for diagnosis and guidance of thoracocentesis in real time (sometimes in "bed side" mode - in critically ill patients) and for treatment screening, is cheap,

comfortable, non-invasive and conferes safety for the currant physician and benefits for the patient through minimization of the complications and increasing the efficiency of the medical process.

Keywords: pleural fluid collections, ultrasound, thoracocentesis

PSYCHIATRY

DEPRESSION IN CHILDREN: PROGRESSIVE CLINICAL AND THERAPEUTICAL SINGULARITIES

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Background: Depression in children and teenagers refers to temper disorder such as: sadness, guilt and lack of hope, petulance, indolence , focus problems, the lack of self-esteem, bad grades and bad school behaviour, suicidal thoughts, vagrancy and aggressiveness. For girls the risk of depression is twice as strong, making this a huge public health problem which seems to be increasing. **Material and methods:** A case study made on 39 patients that where hospitalized at the Neurology and Psychiatry Clinic in Tg.Mures in 2015 showed DSM-5 and ICD-10 diagnoses in children with ages betwee 10.4 and17,7 years old. There were taken into account all epidemiological data, clinical symptoms and treatments and have been used specific scales: Bender, Beck, Hamilton. **Results:** Depression was frequently encountered in girls (82%), in urban environment (72%). Genetic predisposition was emphasized on 18% of patients. The scales have shown a severe depression score in 69% of cases. Anxiety was present in 51% of depressed teenagers with a suicidal rate of 38%. **Conclusions:** The risk of depression grows with age, reaching its highest point in adolescence. The gravity of this form of disease is influenced by the psychiatric comorbidity having as a main cause anxiety. Depression in teenagers leads to the deterioration of school performances and social behaviour. Suicide is a very serious problem regarding public health by being the third cause for mortality in pediatrics. Social factors as muchs as genetical predispositions are the main risk factors of the teenager's depression.

Keywords: child, depression, clinical peculiarities

PUBLIC HEALTH

SMOKE FREE UNIVERSITY PROJECT AT THE UNIVERSITY OF MEDICINE AND PHARMACY TIRGU MURES – EFFECTS ON TRAINING AFTER TWO YEARS OF IMPLEMENTATION.

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Background: In the year 2014 the University of Medicine and Pharmacy Tirgu Mures started the first smoke free medical university project from Romania. Aims: to determine de effects of the project activities on the quality of training in the field of tobaccology. **Material and methods:** In the first year of implementation we started an optional course of tobaccology. Medical students were also involved in extracurricular activities, research activities as part of the project. Baseline data was collected in march 2014 (3203 participants), repeated evaluations were made in march 2015 (3001 participants) and march 2016 (2995 participants). We analyzed the answers given to the Global Health Professions Student Survey questionnaire - training related questions. We used the IBM-SPSS program for descriptive statistical evaluation. Chi square test was used to test statistical significance. **Results:** Students declared more frequently that they were taught about the dangers of smoking (76.4% in 2014 vs 80.7% in 2016 $p<0.0001$). Discussions about the reasons why people smoke were more frequent (32.6% in 2014 vs 44.2% in 2016 $p<0.0001$). Students received more frequently formal training in smoking cessation approaches to use with patients (18.5% in 2014 vs. 31.8% in 2016 $p<0.0001$). The importance of providing educational materials to support smoking cessation to patients was discussed more frequently (24.9% in 2014 vs. 36.0% in 2016 $p<0.0001$). More students were informed about current treatment possibilities of the tobacco dependence Varenicline/Zyban (28.0% in 2014 vs. 36.9% in 2016 $p<0.0001$). **Conclusions:** Our study indicates an improvement of the quality of training in the first two years of the project, but the number of students who receive training remains low. Further efforts should be made to increase the number of trained students in this essential field.

Keywords: training, smoking, health profession students

FROM THE “SMOKE FREE MEDICAL UNIVERSITY” PROJECT TO THE “FIRST SMOKE FREE GENERATION BY 2035” PROJECT

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Background: In Europe especially in Eastern Europe smoking has a very high prevalence with serious social and individual consequences. In Romania 52% of children aged under 16 have tried smoking and 29% of children over 16 are constant smokers, therefore the "First smoke free generation by 2035" project was initiated in 2016. **Material and methods:** We developed the smoke free university strategy in order to develop the smoke free culture among medical students. The target are the students of the UMPh Targu Mures 4224 in 2014, 4479 in 2015, 4538 in 2016 using evaluation and reevaluation by questionnaire and various intervention programs. The 2016 evaluation was made one month after the introduction of the smoke free law in public spaces. Data analysis was performed with the SPSS V22. Data was presented at national and international level and was made available to the policymakers. **Results:** Our evaluation revealed that 74.8% in 2014 and 76.6% in 2016 of the students believe healthcare professionals serve as role models, and that they have a role in giving advice and information in cessation 93.6% in 2014 and 92.9% in 2016. Receiving advice from a professional would increase the patients chance to quit smoking 78.9% in 2014 80.5% in 2016. In 2014, 91.5% of students and 90.8% in 2016 agree that health professionals should receive training in smoking cessation. In 2014 18.5% of students declared to have received such training increasing to 31.8% in 2016. Educational efforts increased the students confidence to give cessation advice 80.3% in 2014 to 82% in 2016. **Conclusions:** The smoke free university project

strategy, its experience and results are offering data for the implementation of the long term national project. The smoke free university project will provide health care specialists for the implementation of the "First smoke free generation by 2035" project.

Keywords: smoke free, universty, students

DYNAMICS OF PM2.5 POLLUTION IN THE CAMPUS OF UMPH TÎRGU MUREŞ (MAIN EDUCATIONAL BUILDING AND STUDENT DORMITORIES) DURING 2015-2016

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Background: The concentration of PM2.5 particles in the air positively correlates with smoking. The aim of our study was to evaluate air quality in the main building and in student dormitories between 2015-2016, revealing the dynamics of exposure to second-hand smoking in our university campus. **Material and methods:** We determined PM2.5 pollution in the upper floor of the central building of the UMPh Tîrgu Mureş and in four student dormitories of the campus using the Aerosol Monitor Side Pak AM 510 between January 2015-October 2016. The particle concentration values were compared to the North Carolina Air Quality Standard revised in 2013. SPSS version 22 was used for statistical processing of the experimental data. **Results:** Air quality has been significantly improved during this period, in the central building of the university the average PM2.5 concentration was 23.7 µg/m3 during 2015 (corresponds to moderate pollution), this value decreased to 10.2 µg/m3 in 2016, which is in the range of good air quality ($p<0.0001$). A similar dynamics could be observed also in case of the students dormitories, the mean PM2.5 concentration decreased from 160,0 µg/m3 measured during 2015 (which is in the very unhealthy range) to 12.9 µg/m3 in 2016 (corresponds to moderate air pollution), the difference is significant ($p<0.0001$). The highest values during 2016 were measured in the male students dormitory (20.9 µg/m3). **Conclusions:** Decreasing evolution of PM2.5 pollution could be observed in all the buildings of our university campus where our research team determined the fine particles concentration. This improvement in the air quality lowers the exposure to second-hand smoking in our university campus, which was the aim of the interventions included in the smoke-free medical university project and it is also the consequence of applying the new strict smoking ban legislation. Funding from project: Building capacity for tobacco research in Romania (R01TW009280).

Keywords: second-hand smoking, air quality, particle pollution, university campus

EVOLUTION OF DENTAL STUDENTS' TOBACCO SMOKING HABITS, ATTITUDES, SECOND-HAND SMOKE EXPOSURE, AND TRAINING IN CESSATION COUNSELLING AT THE UNIVERSITY OF MEDICINE AND PHARMACY TÎRGU-MURES

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Background: Health professionals can and should play an important role in curbing the tobacco epidemic. The University of Medicine and Pharmacy from Tirgu-Mures (UMPhTM) is the first Romanian university to implement a Smoke Free University Project. **Material and methods:** A cross-sectional survey was administered in 2014 (581 respondents), 2015 (577 respondents) and 2016 (491 respondents) among dental students at UMPhTM. We used core questions of the Global Health Professions Student Survey (GHPSS) and added specific items related to the Smoke Free University Project. We analyzed the evolution of smoking habits, attitudes, second-hand smoke exposure, and training in cessation counselling during the two years interval. Data were analysed by SPSS v22 software. Statistical significance was tested with the chi square test. **Results:** The prevalence of smoking was unchanged: (38.7% in 2014 vs 37.6% in 2016 $p=0.15$) The prevalence of use of other, non-cigarette tobacco products was unchanged (15,5% in 2014 vs 12.6% in 2016 , $p=0.18$). Awareness of the existing smoking ban in university buildings increased

significantly (82.6% in 2014 vs 92.6% in 2016 p<0.0001) and significantly more students consider that the existing policy is enforced (60.2% in 2014 vs 74.9% in 2016 p<0.0001). The exposure to second hand smoke inside university buildings during the 7 days preceeding the survey decreased significantly (25.9% in 2014 vs 20.5% in 2016 p=0.037). The number of students who received any formal training on approaches to help future patients quit increased significantly (21.2% in 2014 versus 29.0% in 2016 p=0.0032). The majority (71.8% in 2014 vs 75.6% in 2016 p=0.16) also agreed that health professionals should be role models for patients and the general public, respectively. **Conclusions:** Although there are promising trends, further changes in dental school education are needed to promote personal smoking cessation, as well as more knowledge about how to support their future patients quitting.

Keywords: smoking, dental students, training, changes

FAMILY HARMONY: PROTECTIVE AGAINST SMOKING?

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Background: A pattern of dynamic interaction exists between developing adolescents and their social and interpersonal (e.g., family) environments. Neither specific kind of socialization experiences, such as those within the family or school, nor specific biological factors, can be isolated as sole factors that drive development of a teenager. Isolation or auto-isolation, lack of a vision and perspectives, disparity of the traditional models may contribute to an increased vulnerability for smoking. The purpose of this paper was to explore the psycho-social background differences between smoker and non-smoker teenagers. **Material and methods:** The randomized multistage stratified cluster sampling included 1249, seventh and eighth grade students in 3 Romanian districts. Anonymous, confidential, self-administered questionnaires were used with 61 questions and 210 variables. **Results:** The regression model has shown high degree of multicollinearity with the following correlated predictors: low school performance, superficial relations with parents, more fights between them, frequent depressed periods and less comfort at school. **Conclusions:** These differences emphasize the importance of identifying causality, discovering the mechanisms of the complex network of psycho-social influences for better addressing the issue.

Keywords: psychosocial factors, smoking, family

RADIOLOGY

CT FINDINGS IN A 75 YEAR OLD FEMALE PATIENT WITH HEMATURIA

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Background: Renal cancer associated with horseshoe kidney is uncommon. It seems that the incidence of renal cancer in horseshoe kidney is no higher than in general population. So far, there have been reported 196 cases of renal cancer occurred within a horseshoe kidney. Surgical treatment is conditioned by tumor location and imaging studies are essential. **Material and methods:** A contrast-enhanced CT scan was performed on a 75 year old female patient referred to our Department of Radiology and Imaging. The study included the unenhanced sequence followed by intravenous administration of 100 ml of Visipaque (3 ml/sec flow rate). Contrast-enhanced sequences were performed with bolus tracking technique (100 HU density of superior abdominal aorta as treshold). Arterial phase was followed by venous phase with a delay of 35 seconds. Multiplanar reconstructions (MPR) and maximum intensity projection (MIP) were used for the assessment of patient pathology. **Results:** Examination of the images revealed the presence of a horseshoe kidney and a solid mass (52/56 mm) which infiltrated the isthmus and the left inferior renal pole. Contrast-enhanced sequences showed the hypervascular character of the mass with central low attenuated areas of necrosis. Many precaval and preaortic enlarged lymph nodes were observed. Another enhancing solid mass of 31 mm has been observed in the right upper lobe of the lung and a mass of 33 mm in the right psoas muscle with lysis in the adjacent vertebral body. The aspect was highly suggestive for renal cell carcinoma with retroperitoneal metastatic adenopathies and two distant metastases. **Conclusions:** CT scan is a very useful imaging method for renal tumor diagnosis and staging. It is also necessary before planning the surgery.

Keywords: horseshoe kidney, renal cell carcinoma, CT

THE ROLE OF COMPUTED TOMOGRAPHY IN ECTOPIC URETER DIAGNOSIS AS A CAUSE OF URINARY INCONTINENCE, IN A YOUNG GIRL

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Background: Urinary incontinence is characterized by involuntary leakage of urine and is a common complaint in female pediatric patients. A minority of cases are secondary to structural abnormalities of the urinary tract and represent a diagnostic challenge for the radiologist. **Material and methods:** In this report we present the case of a 5-year-old girl with lifelong history of urinary incontinence. The patient didn`t present associated urinary symptoms and there was no history of pelvic trauma or surgery. Physical examination didn`t reveal distended urinary bladder or any evidence of neurological deficits. The diagnostic imaging work-up includes: ultrasound and intravenous urography, but these may not be diagnostic and further evaluation may be necessary. We performed an abdominal and pelvic MDCT examination using a 64-slices device at parameters of 120 kV, 400 mA and 64x0.6 mm slice collimation. First, unenhanced sequences were acquired, followed by contrast enhaced acquision in delayed pyelogram phase. **Results:** CT scan revealed in the pyelogram phase left ureter extending to the vagina, with dilatation associated in the distal part. Right ureter presented drainage in the urinary bladder and both kidneys had normal CT aspect. **Conclusions:** Patients with urinary incontinence due to underlying abnormalities of the urinary tract may present nondiagnostic initial studies. Contrast enhanced CT scan with aquisitions in delayed phases pays an important role not only in diagnosis of ectopic ureter but is also useful in guiding therapeutic procedures.

Keywords: computed tomography, ectopic ureter, urinary incontinence

SOCIAL SCIENCES

PSYCHO PASTORAL APPROACH OF THE CONCEPT OF CURE

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Background: Psycho pastoral approach of the concept of cure, a new benchmark in what can be identified be a resource of human knowledge, including both inter and intra personal relationship between cure and healing, versus, healing and cure. In this context, cure is, generally speaking, a way to regain health, body returning to a normal state, while in the Christian acceptation, man is cured if it has both the body and especially soul cured. Attitude, between cure and healing can perceive a graduality in addressing both the terminology and the concept itself from the triad: body - mind - soul, reaching essence of the process. Thus, we get to answer the psycho-pastoral perspective: what, when, where, what, how and why we cure, not forgetting and starting invariably approach from that soul is always curable. **Material and methods: Results: Conclusions:**

Keywords: cure, healing, soul, body, approach

PROJECT BASED STRATEGIES FOR MEDICAL VOCABULARY ACQUISITION

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Background: Vocabulary acquisition in a foreign language is a never-ending process for a motivated learner. English is nowadays the language of science and communication in international academic environments. For medical professionals, their research work provides great exposure to specific English terminology, which facilitates the incidental vocabulary development. A similar strategy can be effective with students when they are stimulated to use English for research purposes. **Material and methods:** The 2nd year medical students were assigned to develop a project about new horizons and discoveries in the field of medicine and present their findings on a certain topic in an academic manner. **Results:** In general, students had strong motivation to select one topic or another, in connection with their interests, and were pleased to expose their scientific and linguistic skills in front of their colleagues. So the preparation of their presentations also implied giving special attention to the correct usage of new scientific vocabulary (meaning, spelling and pronunciation). **Conclusions:** Project based learning provides the medical students with many opportunities of both intentional and incidental vocabulary aquisition, leading to significant progress in their English skills. For adult learners, the combination of their professional interests with their linguistic (English) needs always proves to be the best way of teaching/learning new vocabulary.

Keywords: project work, English for medical purposes, vocabulary acquisition

SMARTPHONE USE AND ADDICTION VULNERABILITY RELATED TO SPECIFICITIES OF PHYSICAL ACTIVITY IN SCHOOL-AGED CHILDREN

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Background: Smartphone uses, mobility and connectivity experienced a fast growth worldwide. WHO studies reveal that children spend 3.3 hours daily with their smartphone, and 85% of them treat smartphone as the most important thing in their lives. Nowadays, seems that smart devices became a part of our lifestyle, yet in case of children might have negative consequences. **Material and methods:** Participants were 256 school-aged children (126 boys, 132 girls), with age between 9-16 year. The used questionnaire revealed demographic data, self-report regarding free-time modality, physical activity, smartphone-use related habits

(Brief Addiction to Smartphone Scale, BASS), application preferences and a deprivation measurement (Deprivation Sensations, DS). Both scales proved good reliability in our study (BASS Cronbach alpha = 0.82, DS Cronbach alpha = 0.90). **Results:** The most frequently utilized applications were Facebook (51,3%), Messenger (33,4%), Instagramm (16,2%) and Youtube (37,7%). Children with a high value on smartphone-use scale reported more deprivation related symptoms (p=0.001). Younger children proved higher risk for smartphone-habits then those from older age group (p=0.026). Results prove that children characterized by a high smartphone-use report significantly lower involvement in physical activity (p=0.042). Higher levels of deprivation symptoms show significant association with fewer exercises (p=0.034) and lower intensity of physical activity (p=0.037). We found significant association between the free-time spent on watching TV and both BASS and DS data (p=0.001 and p=0.016). Children reporting predominance of internet based relationships proved more deprivation-related symptoms (p=0.025). **Conclusions:** Children own a smartphone and utilize them from an increasingly early age for relationships, movie watching, and playing. Smartphone-use became a rapidly increasing habit raising even the level of addiction among children, backing such components of healthy lifestyle as physical activity and different forms of sports. Our study track attention on the excessive misuse of smartphone might became permanent and represent a risk behavior among school-aged children.

Keywords: smartphone use, behavioural addiction, deprivation sensations, lifestyle

SURGERY

INTESTINAL OBSTRUCTION THROUGH A STRANGULATED MORGAGNI-LARREY (RETRO-COSTO-XIPHOIDIAN) HERNIA

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Background: The Morgagni-Larrey (retro-costo-xyphoidian) hernia is a rare diaphragmatic defect **Material and methods:** We present a 70 years old female patient, afirmatively diagnosed with a diaphragmatic henia 15 years ago, who was emergency admitted in our unit with the signs of a 3 days old intestinal obstruction. The CT scan showed a large strangulated retro-costo-xyphoidian hernia, with dilated bowels and hydro-aeric levels located both in the abdomen and chest. After a median laparotomy we found a strangulated Morgagni-Larrey hernia with necrosis of the transverse colon and diastatic cecal perforation. We performed the reduction of the hernia and excision of the sac, closure of the diaphragmatic defect using separate stitches and a right hemicolectomy with ileo-transverse anastomosis. **Results:** The postoperative course was difficult but eventually favourable, with discharge after 12 days. At 6 months follow-up the patient presents no signs of recurrence and has no abdominal or thoracic complaints. **Conclusions:** The case is interesting due to the rarity and the development of a life-endangering complication which required emergency surgery.

Keywords: diaphragmatic hernia, complication, intestinal obstruction

SURGICAL APPROACH OF RENAL CANCERS WITH INFERIOR VENA CAVA INVASION - REPORT OF 4 CASES

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Background: Inferior vena cava (IVC) involvement by renal tumors is no longer considered an absolute contraindication for surgery. **Material and methods:** We report our innitial experience on 4 cases with renal cancers that invaded the IVC which were sucessfully resected. In all the cases only the infrahepatic part of the IVC was involved. In 3 cases (primary renal cancers) we performed mobilisation of the tumoral thrombus from the IVC lumen which allowed simple lateral suture of the IVC. In one case of local recurrence after right nephrectomy an en-bloque excision of the tumor and IVC with interposition of a Dacron graft was required. All the procedures were performed using standard general and vascular surgery instruments, without using shunts. **Results:** We achieved a macroscopic R0 resection in 3 cases (massive posterior parietal invasion in one case). We have encountered no postoperative mortality and one major complication represented by upper digestive bleeding (duodenal ulcer) that was managed conservatively. All the patients are alive at a follow-up interval between 5-12 months. **Conclusions:** Surgical approach of renal cancers with invasion of the infrahepatic portion of the IVC can be safely performed in a multidisciplinary team with good immediate results.

Keywords: renal cancer, inferior vena cava, multidisciplinary approach

EXPERIMENTAL STUDY ON THE RESISTANCE TO PRESSURE BETWEEN THE HANDSEWN AND MECHANICAL SUTURES

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Background: The aim of the study was to compare the resistance to pressure of the mechanical and manual intestinal sutures on in

vitro pig intestine model. **Material and methods:** We performed different types of mechanical and manual sutures on a standard dimension (10 cm) of pig intestines. After performing the intestinal anastomoses or intestinal stump closure, a blue dye saline was introduced into the lumen under a controlled gradually ascending pressure using a volumetric infusion pump and the pressure level was measured using a special differential pressure manometer. The value of the pressure at which the blue dye crossed the anastomosis was recorded in every instance. All measured values were recorded in a database. Statistical analysis was performed using GraphPad 6.1 for Windows (ANOVA test). We considered statistically significant the value of $p<0.05$. **Results:** Four types of end-to-end anastomoses were performed (3 and 1 stapled). Although the handsewn end-to-end suture turned out to be the most resistant to pressure, statistical analysis revealed no significant differences compared to stapled suture. ($p=0.49$). Out of the eleven types of stump closure techniques (5 manual and 6 stapled), we observed a statistically strong significance, as resistance to pressure, in the favor of manual, a la Schiasi type, stump closure ($p=0.004$). We performed four types of side-to-side sutures (3 handsewn and 1 stapled) and we did not find any statistically significant differences in resistance to pressure between techniques ($p=0.06$). **Conclusions:** We can conclude that regarding the stump closure, the most resistant to pressure is the handsewn (a la Schiasi) type procedure. Regarding the other types of anastomoses, end-to-end and side-to-side, we did not find any significative differences between the stapled and handsewn technique.

Keywords: anastomosis, handsewn, staplers, resistance to pressure

UROLOGY

SINGLE-SESSION NEPHRON-SPARING SURGERY FOR MULTIPLE SYNCHRONOUS BILATERAL RENAL TUMORS IN VON HIPPEL LINDAU DISEASE: A SURGICAL CHALLENGE

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Background: Von Hippel-Lindau (VHL) disease is a relatively rare autosomal dominant disorder (1:36000) responsible for the early onset of multiple renal clear cell carcinomas (RCC) as well as other neoplasias. As RCCs in VHL tend to be more aggressive, resection of all solid and cystic lesions using nephron-sparing surgery (NSS) should be deployed whenever possible. Single-session NSS can be a good option providing that the number of tumors and their topography is not an obstacle. We aim to present a complex case of VHL successfully treated in our department using single-session NSS. **Material and methods:** We present the case of a 43-year old female VHL patient referred to our department with gross hematuria. CT scan revealed a globally enlarged right kindney, with a 50 mm upper pole mass of and two midrenal and lower pole masses of 80 and 56 mm respectively, suggestive for malignancy. In the right kidney a 59 mm upper pole tumor was found, together with several cortical tumors, the largest having 16 mm in diameter. No signs of venous or lymph node involvement were present. Radical nephrectomy was performed on the left side. On the right, partial nephrectomy was used for the upper pole mass and enucleation was successfully performed for the others. In the same operative session, a large abdominal hernioplasty was performed. Recovery from surgery was uneventful. **Results:** The final pathology report revealed one T3a Fuhrman 4 and two T1b RCCs in the left kidney. For the right kidney, all four resected masses were Fuhrman 2 T1a RCCs. Negative surgical margins were obtained for all tumors. At 6 months no recurrence was found on echography. The patient had normal creatinine levels. **Conclusions:** NSS is the treatment of choice in familial RCC diseases like VHL. Still, single-session surgeries can be particularly challenging, especially in multiple tumors with poor surgical access.

Keywords: von Hippel-Lindau, nephron-sparing surgery, radical nephrectomy, oncology, synchronous tumors

EASY AVAILABLE BLOOD TEST NEUTROPHIL-TO-LYMPHOCYTES RATIO PREDICTS PROGRESION IN HIGH RISK NON MUSCLE INVASSIVE BLADDER CANCER

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Background: The inflammatory response surrounding the tumour has a major importance in the oncologic outcome of bladder cancers. One particular marker proved to be very useful and accessible is NLR (neutrophil-to-lymphocyte ratio). The objective of the study was the analysis of NLR as prognostic factor for recurrence and progression in pT1a and pT1b bladder cancers. **Material and methods:** Retrospective study, with 44 T1a/T1b bladder cancer patients from the Urology Clinic. Each patient underwent transurethral resection between 2011 and 2013. NLR was considered altered if higher than 3, mean follow-up was 18 months. **Results:** Median age of the patients included was 73 years (IQR 64 - 77). Most of patients had NLR<3 (30 patients). In total 29/44 (65.9 %) patients presented recurrence and 15/44 (34.1 %) patients were identified with T2 or higher staging progression during follow-up period (mean 18 months). There was a statistically significant association between NLR>3 and tumor diameter>3 cm. Progression-free survival (PFS) Kaplan-Meier analysis showed a lower PFS in the NLR>3 group, with a p=0.001 value. A total of 64.3 % of patients had progression in the NLR>3 group and 20 % in the NLR<3 group. Mean NLR was 2.67 (IQR 1.88-3.5); 2.50 (IQR 1.89-2.87-) in patients that did not have progression during follow-up and 3.20 (IQR 1.73-5.80) in those with progression (p=0.09), ROC 0.655. Mean NLR was 2.14 (IQR 1.61-2.77) in patients that did not experience recurrence during follow-up and 2.76 (IQR 2.1-4.31) in those with recurrence, ROC 0.671 (p=0.06). Cox regression multivariable analysis showed that stage T1b and NLR are independent prognostic factors for PFS. **Conclusions:** High Neutrophil-to-Lymphocyte ratio retained

a statistical significant value, as an independent prognostic factor for bad prognosis of T1 bladder tumors. NLR represents reliable biomarker that should be included as could assure a proper clinical decision in case of high risk non muscle invasive bladder cancer.

Keywords: neutrophil-to-lymphocytes ratio, prognostic factors, bladder cancer, microinvasive

THE LOWER URINARY TRACT SYMPTOMS INFLUENCE ON ERECTILE FUNCTION IN MEN WITH BENIGN PROSTATIC HYPERPLASIA

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Background: Patients over 50 years old may present symptomatic BPH objectivized with IPSS. Many of the aging male could complain about some grade of erectile function loss too. These symptoms have negative effect on the quality of life. **Material and methods:** This retrospective study evaluates data of 127 (100%) man aged over 50 years in order to find correlations between erectile, mictional dysfunctions and risk factors. LUTS and ED were evaluated by self completed questionnaires (IPSS, SHIM). The probability of a correlation between these two conditions was evaluated with determination of relative risk or odds ratio. **Results:** The mean age of the 127 (100%) patients was 64.12 years (50-76 years), the studied parameters showed the following mean values: PSAt 2.54 ng/dl (0.22- 34.88 ng/dl), IPSS and SHIM 11 (0-29), 16 (5-25), BMI 28.3 kg/m2 (20.76-41.17 kg/m2). Regarding correlation between age, prostate volume, BMI, PSAt we certified an acceptable association between age and prostate volume (r=0.27/p=0.002), age and PSAt values (r=0.37/p=0.003). The association and the relationship between IPSS and SHIM values showed a negative correlation, and a statistically significant value between the two variables evaluated (r= -0.28/p=0.0015). ED was present in 92 (72.44%) questioned men, and it was evaluated as mild in 38 (41.3%), moderate in 33 (35.86%) and severe in 20 (21.73%) patients. Significant correlation was found in the risk determination of the ED related to LUTS in the studied group (OR- 3.51, CI- 95%: 1.65- 7.45, p- 0.001). **Conclusions:** The incidence of LUTS and ED is increasing with age. There are negative statistical correlations between LUTS and ED. The younger patients have a strong positive correlation between severity of ED and LUTS. The lack of correlation in case of elder men (over 70 years) is due to other age related associated pathological conditions that influence erectile function.

Keywords: prostate, erectile disfunction, LUTS, SHIM

POSTERS

HEART TRANSPLANT: PROTOCOL FOR MONITORING POSTTRANSPLANT COMPLICATIONS

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Background: Endomyocardial biopsy, first introduced in the posttransplant monitoring protocol by Billingham from Standford University, has become a necessity in the histological diagnosis, especially after the introduction of immunosuppressive treatment. **Material and methods:** The histological monitoring protocol was applied in 63 patients with heart transplant performed at the Emergency Institute for Cardiovascular Diseases and Transplant of Targu Mures, between 1999 and the present time. Six of these interventions were performed in 2016. All patients underwent biopsy at various intervals of time, either following a standardized protocol or driven by the lesion pattern revealed by the pathological report. Three to six tissue samples were fixed in 10% buffered formaldehyde prior to paraffin embedding. Paraffin blocks were sectioned at three or four levels. Hematoxyllin-eosin, trichrome Masson and methyl-pyronin green staining were used. **Results:** Twenty-two of the 63 patients deceased during follow-up due to various complications, whereas 32 were diagnosed with cytomegalovirus infection, based on clinical and histological findings.Rejection is histologically illustrated by the occurrence of an interstitial and / or perivascular lymphocytic inflammatory infiltrate which, in severe cases, is associated with significant myocyte damage. In certain situations, the acute rejection is followed by irreversible damage, leading to patient's death. **Conclusions:** Endomyocardical biopsy monitoring of heart transplant recipients is still the nost important tool for the complex diagnosis of post-transplant complications, facilitating the adoption of timely and targeted therapeutic intervention, and the permanent improvement of immunosuppressive therapeutic protocols, with the goal of increasing survival time.

Keywords: cardiac transplantation, acute rejection, chronic rejection, intramyocardial biopsy

THE BUDD-CHIARI SYNDROME, CASE OVERVIEW

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Background: The Budd-Chiari syndrome is the partial or total thrombotic or non-thrombotic obstruction of 1, 2 or 3 suprahepatic veins and/or the inferior vena cava (IVC) with possible primary or secondary causes. **Material and methods:** We present the case of a 67-year-old patient living in a rural area, operated 3 months ago for a acute phlegmonous cholecystitis. The patient has a type C chronic viral hepatopathy not properly monitored and an outpatient CT test uncovers a thrombosis in the suprahepatic vein and the initial portion of the IVC without specific alterations pertaining to a hepatic neoplastic process, or located somewhere else. The patient appears for physical fatigue, upper abdominal pain, bloating.On clinical examination, we find: sensitivity upon palpation in the epigastrium and right hypochondrium, hepatomegaly. **Results:** Biologically, we notice a slight anemic syndrome, leukocytosis of 10100/mmc, moderate cytolysis, positive anti-HCV antibodies, positive CRP. Abdominal ultrasound prescribed non-homogeneous echogenic image, without Doppler signal, dimensioned 35/28 mm, located at the confluence of the suprahepatic vein in the IVC; Upper digestive endoscopy does not detect esophageal varices, but only Erythematous antral gastritis. Abdominal Doppler ultrasound confirms the presence of suprahepatic and IVC thrombosis. We did not have the possibility to perform viremia. Corroborating the clinical and laboratory data, we considered that the Budd-Chiari syndrome can be interpreted in an inflammatory, post cholecystectomy context, in absence of any relevant data for a diagnosis of hepatic cirrhosis or neoplasm. We started anticoagulant therapy with LMWH (Enoxaparin) and subsequently with acenocoumarol, monitoring prothrombin index (PI), the short 7-day therapy with a beta-lactam antibiotic, infusible L-arginine, continued with silymarin antispasmodic as needed. **Conclusions:** The evolution was favorable, the patient being discharged without subjective complaints. We should biologically reevaluate the patient after 3 months, as well as performing ultrasound, tomography, viremia

tests and, if necessary, also a liver biopsy.

Keywords: suprahepatic veins thrombosis, hepatomegaly, liver cirrhosis, Budd Chiari inflammatory syndrome, neoplasm

KRUKENBERG GASTRIC ORIGIN TUMOR - CLINICAL CASE PRESENTATION

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Background: Krukenberg tumor represents an uncommon metastatic involvement of the ovaries from adenocarcinoma of the gastrointestinal (GI) tract, particularly from stomach, first described by Friederich Krukenberg in 1896. Usually it is discovered in the fifth decade of life, patients present nonspecific gastrointestinal symptoms or are asymptomatic. **Material and methods:** We present the case of an 87-year-old woman, without any prior medical history, who was referred to us from a gynecology department, with ascites, right sided pleural effusion and with bilateral ovarian tumor described on pelvic ultrasound examination. The patient presents asthenia, malaise, diffuse abdominal pain and distension, loss of appetite with a progressive increase in abdominal volume over the last weeks. **Results:** Clinical examination revealed hirsutism, ascites, hepatomegaly. Complete blood count showed anemia, elevated ESR, positive PCR and CA-125 of 617.5U/ml. Ultrasound examination and contrast enhanced abdominal CT described the presence of a 2.5x3cm cystic bilateral adnexal mass. Upper GI endoscopy showed a giant ulcerated lesion on gastric antrum with omental penetration. Ascites fluid cytology and histopathology of biopsy specimen confirmed the presence of signet ring cells, thus being a case of gastric adenocarcinoma with synchronous Krukenberg tumor. Throughout the course of investigations the patient presented two episodes of upper GI bleeding. Despite receiving high doses of proton pump inhibitors and haematologic substitution, her condition gradually worsened and deceased shortly. **Conclusions:** Although Krukenberg tumor is a rare ovarian manifestation, it must be considered in every case of ovarian tumor with associated ascites. Accurate diagnosis is made by upper GI endoscopy, ascites fluid cytology and high levels of CA-125, thus avoiding improper clinical management.

Keywords: signet ring cell gastric carcinoma, ascities, Krukenberg tumor, CA-125

INDOLENT LYMPHOMA WITH UNUSUAL PULMONARY PRESENTATION - CASE STUDY

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Background: Primary pulmonary non-Hodgkin s lymphoma is a very rare neoplasm, represented most commonly by marginal zone B-cell lymphoma (MZL) of mucosal-associated lymphoid tissue (MALT) type. The clinical manifestations of such entity is non-specific and misdiagnosis frequently occurs. The present study describes the presentation, diagnosis of one patient with pulmonary MALT-MZL, aiming to provide evidence for the necessity of accurate diagnosis. **Material and methods:** A 63-ys-old, non-smoker female was referred to our clinic with a pulmonary lesion in the right lower lobe observed on a chest radiography. We record a history of type 2 diabetes, hypothyroidism and hypertension, also a chronic exposure to asbestos, glass- and inorganic powders in her previous work place. Clinically she presented fatigue, weight loss, fevers and night sweats. Subsequently she underwent bronchoscopy, blood tests, CT and PET-CT scans, and ultimately histological examination via thoracotomy. The tissue was found to be positive for CD20, bcl-2, but negative for CD3, CD5, CD10, CD23, EBV, exhibiting the characteristics of MALT-MZL. The patient categorised for stage IB by the Ann-Arbor staging criteria, with a good ECOG performance status. She received chemotherapy, a total of 6 R-CVP cycles, with clinical and paraclinical remission, confirmed by CT and PET-CT scans. **Results: Conclusions:** Chronic antigenic stimulation, especially by toxic pollutants, might have led to the development of this particular case. Any radiological abnormality of the lung parenchima could hide the possibility of a lymphoma, and since bronchoscopy did not yield any diagnostic value, direct lung biopsy was paramount. PET-CT scans for detecting occult extranodal sites was of great importance. There are no lymphoma characteristics which associate with worse survival rate, therefore our pacient has a good long-term prognosis, thus regular follow-ups are still recommanded.

Keywords: lymphoma, MALT-MZL type, toxic agents, chemotherapy

MYELODISPLASTIC SYNDROME AND TRANSFUSION HEMOCHROMATOSIS – CASE REPORT

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Background: Myelodysplastic syndrome (MDS) refers to a heterogeneous group of closely related clonal hematopoietic disorders commonly found in the aging population. All are characterized by one or more peripheral blood cytopenias. Bone marrow cells display aberrant morphology and maturation (dysmyelopoiesis), resulting in ineffective blood cell production. **Material and methods:** We present the case of a 69-year-old man who was admitted to our hospital in April 2012 with a history of weakness, shortness of breath, fatigue and dizziness. His past medical history is: arterial hypertension, atrial fibrillation and congestive heart failure. **Results:** We performed blood tests and we found severe macrocytic anemia (5.6 g/dl) with slight leucopenia 3100/mmc, normal platelets count of 235000/mmc, elevated ferritin and serum iron. The bone marrow biopsy highlighted normoblastic, hypoplastic, erythropoiesis, myeloblasts under 5% and megakaryocytes with advence signs of dysplazia, which arise suspicion of 5q deletion syndrome.The patinet s kydney function was impaired, with a creatinine clearence of 48,61ml/min and with normal hepatic function. He received blood substitutive treatment monthly and iron chelators (in lower dose because of the renal function) for transfusion hemochromatosis. The disease was not converted in acute leukemia but the ferritin value became higher despite of the treatment. In course of time the hepatic and cardiac function was more affected and the patient died after 52 months of evolution. **Conclusions:** Progression to acute myeloid leukemia occurs less commonly in people with 5q- syndrome than in those with other forms of MDS and the prognosis is more favorable. In our case the disease was not transformed in AML but the hemochromatosis impaired the heart failure and the hepatic function which led to a shorter survival.

Keywords: myelodysplastic, syndrome, hemochromatosis

MANAGEMENT OF MULTIPLE BRAIN ABSCESSES BY STEREOTAXIC ASPIRATION – CASE REPORT

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Background: The management of multiple brain abscesses is still a matter of debate in the neurosurgical community. Treatment is done by open craniotomy or by stereotaxic aspiration, the latter being used especially in deep seated lesions. **Material and methods:** We here present the case of a 9 y.o. boy, known with spinal amyotrophic diseases type III, presenting with signs of increased intracranial pressure. CT and MRI presented 5 distinct lesions seated exclusively in the left cerebral hemisphere (frontal parasagittal, temporal, thalamic, adjacent to left lateral ventricular atrium, parietal) **Results:** 2 staged multiple stereotaxic aspirations of all lesions were performed, this was coupled with large spectrum antibiotherapy for 3 weeks. Complete remission of all cerebral abscesses was obtained after 5 weeks from the beginning of treatment. **Conclusions:** Stereotaxic aspiration of multiple brain abscesses is an adequate alternative to open craniotomy and is the only viable treatment in the case of deep seated lesions. This procedure can be used with success also in pediatric patients.

Keywords: brain abcess, stereotaxic aspiration, pediatric, neurosurgery

IMAGE INJECTION TECHNOLOGY – A NEUROSURGICAL ROMANIAN PREMIERE

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Background: Neurosurgical pathology is one of the most complex and demanding in surgical field. Risk levels during and after surgery are very high and the consequences of improper judgment or bad surgical techniques can be devastating for lives of the patient and his relatives. These are the reasons why safe preservation or improvement of neurological condition of t patients has

become a priority in the neurosurgical field. Modern neurosurgery is deeply dependent today of state of the art intraoperative technology: high performance microscopes, neuronavigation systems, even intraoperative MRI, in order to obtain a high quality pathological process resection in maximal safety conditions. The neuronavigation system is used like a "GPS" during surgery, helping the neurosurgeon to define the very important neurovascular structures that need to be preserved during surgery, the trajectory, the shape, and the limits of the neurosurgical pathology. The neurosurgeon is able to prepare in depth the surgery in virtual reality directly on neuronavigation system. All this preselected information can be transparently injected directly into the microscope eyepieces by using a fully integrated image injection module. **Material and methods:** Between 3-7 of October 2016, a total of 5 patients with brain tumors and vascular malformations had been operated in Neurosurgical Department of Emergency Clinical County Hospital of Targu- Mures by using CaptiView the new image injection system from Leica in conjunction with a Brain Lab neuronavigation solution. **Results:** In all of cases we have obtained total resection of the pathology without adding new neurological deficits **Conclusions:** These are the first cases operated in Romania by using an image injection technique and is the first time in Europe when the CaptiView system has been used in clinical practice. In conclusion, this technology allows us to obtain a very safe and complete surgical resection with preservation of all important neurovascular structures.

Keywords: modern neurosurgery, microneurosurgey, neuronavigation, image injection

RETRACTORLESS BRAIN SURGERY USING DYNAMIC RETRACTION

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Background: In the last thirty years, neurosurgery has been developed based on advanced imaging techniques in parallel with microsurgical techniques and deeper understanding of different nervous system pathology. **Material and methods:** In this era, macroscopic neurosurgery is no longer accepted and the neurosurgical community continually searches for new microsurgical and anesthesiologic methods to obtain the best clinical result with minimal aggression to the normal brain or spinal cord tissue. A new concept that has been developed in the last years is the minimal invasive microneurosurgery. In this concept the pathology must be reached not only by using small cranial opening but also most importanty is to maintain the normal function of the brain and spinal cord. **Results:** Using good anesthesiological techniques and CSF release we are now able to avoid normal brain tissue lesions secondary to spatula retraction. Dynamic retraction uses only the moving suction cannula to avoid long lasting pressure over the brain tissue. **Conclusions:** Dynamic retraction is part of minimal invasive surgery concept and in this presentation, we will review our techniques trying to obtain "spotless brain results" in a broad spectrum of difficult neurosurgical pathology.

Keywords: modern neurosurgery, microneurosurgey, retractorless brain disection

COMMON VARIABLE IMMUNODEFICIENCY IN A YOUNG FEMALE PATIENT

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Background: Common variable immunodeficiency (CVID) is a disorder that involves low levels of most or all of the immunoglobulin (Ig) classes, lack of B lymphocytes or plasma cells that are capable of producing antibodies and frequent bacterial infections. **Material and methods:** We present the case of a 36 years old Caucasian female patient, who was admitted to hospital with symptoms of a respiratory infection. **Results:** Initial investigations revealed severe pneumonia. From the patients history are important chronic giardia infection and repeated sinus and lung infections. Because of severe evolution and the lack of response to combined antibiotic therapy, bacteriological investigations were performed, revealing a extensiv drug resistant (XDR) Klebsiella pneumoniae infection, sensitive only to Imipenem- Cilastin and Colistin. Hypoproteinamia and iron deficient anaemia were suggestive for malabsorbtion. Upper digestive endoscopy revealed nodular lymphoid hyperplasia of the duodenum. Computed tomography of the chest revealed multiple bronhiectasias. Immunoglobulin levels were very low. Diagnose of CVID was made. Under treatment with Imipenem- Cilastin and human immunoglobulin substitution the clinical outcome was favorable, but Klebsiella p. colonization of the pharynx persisted for months. Under substitutive treatment with human immunoglobulins the patient is stable, she does not manifest clinical symptoms anymore. **Conclusions:** CVID can be the cause of severe respiratory tract

infections. Patients can be colonized with nosocomial germs, those can become the causative agent of any life threatening infection. Adequate microbiological and immunological diagnostic measures are required, in order to save those patients life.

Keywords: common variable immunodeciency, XDR Klebsiella pneumoniae, pneumonia,

COGNITIVE FUNCTION IN PATIENTS WITH SCHIZOPHRENIA

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Background: Schizophrenia is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. Cognitive deficit in schizophrenic patients is a significant mental health problem having a negative impact on overall functionality, and on therapeutic compliance. It is an important issue to patients with mental disorders, which has not been sufficiently exploited and has given rise to many controversies. The deficit may be present both at the onset and during periods of exacerbation or as part of residual symptoms. **Material and methods:** The study outlined in its plan to move as objectively as cognitive deficits of patients with schizophrenia. An observational study held in May 2015- May 2016. The study included 13 female and male patients diagnosed with schizophrenia (DSM -IV) . Patients Were outpatients of Mental Health Center. This study was appreciated over a 12 month period. They were evaluated both during and in the relapse, remission using BACS scale (Brief Assessment of Cognition in Schizophrenia). Versions of the BACS were tested on subjects by trained psychiatrist. The relationship among the BACS measures was determined by calculating correlations among the scores. Therapeutic level of satisfaction was determined by using MSQ (Medication Satisfaction Questionar). **Results:** A wide range of cognitive abilities are impaired in schizophrenia, including memory, attention, speed of processing, verbal learning, executive functioning. Characteristic profile in schizophrenia: the maximum level of dysfunction include memory, attention, and executive function. The relative preservation of verbal and visual learning and memory. Cognitive performances had higher values with statistical signifiance ($P < 0.05$) in remission compared to those during relapse. Cognitive deficit in schizophrenia is in a close relationship with both the symptoms and satisfaction with therapy. **Conclusions:** The present study indicates that the BACS is a promising tool useful to assess the major constructs of cognitive function in schizophrenia patient's.

Keywords: schizophrenia, cognitive functions, relapse

ALTERNATIVES OF TREATMENT IN REFRACTORY SCHIZOPHRENIA. CASE REPORT

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Background: The incidence of treatment resistance in schizophrenia (failure to respond to therapy with antipsychotisc) is about 20%. (Rob W. Kerwin, at all 2005). Factors that may contribute to this include: non-adherence to treatment, comorbid conditions, side effects of medication. Guidance on the duration of administration of a particular treatment, range from 2-4 weeks to several months. Some authors suggest that the absence of any decrease in the severity of symptoms within the first two weeks of therapy indicates that the patient will not relieve. **Material and methods:** Evaluation of alternative methods of treatment in obtaining a therapeutic response in cases considered resistant to treatment. This case study was conducted in september 2016, at one of patient with Paranoid Schizophrenia, admitted to Psychiatric Clinic, Tirgu Mures. The diagnosis was in accordance with the criteria DSM IV TR. Existential approach focused by the race of the person, the relationship between the person and the world, mental status. The collected data was clinical analysed and interpretated. **Results:** In the course of the disease were more treatment options with both atypical and conventional antipsychotics and: haloperidol, flupentixol, quetiapine, risperidone, aripiprazole, olanzapine, clozapine, last of them causing a remission during the last several months. Of these perspectives, treatment refractory Schizophrenia, in terms of onset reveals: resistance to treatment can exist from the onset of symptoms, can develop within five years of initiation of treatment (early onset of resistance to treatment), can develop late in the disease (late onset of treatment resistance). **Conclusions:** The treatment of this group of patients, resistant to treatment, remains a challenge with significant implications on

public health. Augmentation of clozapine with ECT is a safe and effective method to treat refractory patients with schizophrenia.

Keywords: refractory schizophrenia, public health, therapeutic response

TREATMENT OPTIONS FOR OBLITERATED ROOT CANALS IN TRAUMATIZED TEETH: AN ENDODONTIC CASE REPORT

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Background: Teeth with calcified root canals referred for endodontic treatment pose particular diagnostic and treatment challenges. Usually these are intact traumatized anterior teeth without symptoms except of slight discoloration, without apical radiolucency. We aim to present a case of obliterated root canal in a central upper incisor, by using gold standard equipment as the operating microscope and the cone beam computed tomography (CBCT). **Material and methods:** A long shank carbide bur at low speed was used to align the access cavity to the long axis of the tooth and the dentin was moistened with EDTA gel. The first instrument was a K-file # 10 (Dentsply, Maillefer, Tulsa, USA) that established the glide-path to the working length and then rotary files MTwo (VDW GmbH, Munich, Germany) were used in the sequence indicated by the manufacturer. The root canal was irrigated with 25-30 ml of sodium hypochlorite 5, 25% heated at 500C. Both the root canal and the false canal were filled with 25/.06 tapered guttapercha cones and Adseal (Meta Biomed Co. Ltd., Korea) **Results:** The use of gold standard instruments and imaging techniques, represented by the operating microscope and CBCT imaging system are prerequisite of modern endodontic therapy, which proved the efficacy in such difficult cases. **Conclusions:** CBCT images offered superior information in comparison to conventional radiographs but it must be taken into consideration only for difficult cases, due to higher radiation dose and costs.

Keywords: obliterated root canals, CBCT, endodontic treatment, pulpal dystrophic calcification

PSYCHIATRIC APPROACH IN PATIENTS WITH NEOPLASIA

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Background: According to the literature, more than 47% of cancer patients develop psychiatric disorders, approximately 90% of these being reactions to diagnosis and treatment of the disease. The emergence of these disorders is often in relation to disease stage or treatment administered and are highly variable between individuals. **Material and methods:** The study outlined in its plan to identify as objectively major moments of stress, to identify and reduce the most common psychiatric manifestations and to make an individualized treatment plan. **Results:** The most common psychiatric manifestations are adaptative disorders with depressive and anxiety symptoms, depression and anxiety disorder, delirium, suicide. Disease emergence is not accepted in the same way by all individuals. Some individuals, emotionally balanced and satisfactory level of medical culture, recognize and accept rationally disease and develop a prosanogenic behavior. Other individuals with emphasized personality traits - anxious, suspicious, obsessive, depressive, although accepting the disease, they do it with a disproportionately way. The psychiatric impact of diagnosis of cancer can be characterized by hopelessness, ideas of guilt, fear of death, addiction, modification of personal image, lowering of social support, discomfort and pain in the final stages of the disease. **Conclusions:** Addressing patients with malignancies is an extremely delicate and complex mission that requires an individualized intervention plan, creative and flexible, focused on specific needs and priorities, conducted in several stages and multidisciplinary team.

Keywords: neoplasia, psychiatric disorders, multidisciplinary team

THE USE OF DISINFECTION TECHNIQUES IN ENDODONTIC PRACTICE: A SURVEY BASED ON A QUESTIONNAIRE

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Background: Diagnosis, instrumentation and obturation of the endodontic system are the main steps involved in the correct treatment of teeth with pulpal and periapical diseases. The aim of our study was to determine the use of rubber-dam for complete isolation and the irrigating solutions considered most important during instrumentation of root canals, among specialists and post-graduate students from our dental faculty. **Material and methods:** We delivered 139 questionnaires with a set of 20 questions which consisted of numeric rankings, multiple choices and multiple selections with options for write-in answers, where appropriate; 96 fully filled forms were received back. The data were collected and analyzed using SPSS software version 17. **Results:** The results showed that 90,2% of endodontic specialists use rubber-dam during all phases of endodontic treatment, compared to only 72,8% of post-graduate students. Regarding the best irrigating solution used, 95,8% of specialists considered sodium hypochlorite 3% as the best choice in removing tissue debris compared to 81,4% of post-graduate students. **Conclusions:** The conclusions of our survey were that the majority of specialists and post-graduate students in Endodontics use rubber-dam for complete isolation during all treatment phases and sodium hypochlorite 3% as the primary irrigating solution. This is in accordance with the recommendations made by the American Association of Endodontists.

Keywords: endodontic disinfection, natrium hypochlorite, rubber-dam, root canal treatment

MTHFR – C677T POLYMORPHISM (RS8192678) AND THE METABOLIC SYNDROME

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Background: Methylenetetrahydrofolate reductase (MTHFR) is a key enzyme of folate metabolism that intervenes in nucleic acid synthesis and methylation reactions. The common gene polymorphism C677T (rs 8192678) is associated with a reduction of enzyme activity, and has been reported in association with various metabolic disturbances comprising the metabolic syndrome, as well as an increased risk for disease development, mainly in Asian populations. We proposed to study the MTHFR - C677T in relationship with the metabolic syndrome in the local population, given the inconclusive results of association studies with apparently important ethnic differences of a potential genetic risk factor that can be influenced by dietary changes and the administration of vitamin supplements. **Material and methods:** We carried out a case-control study on 294 metabolic syndrome patients diagnosed according to the IDF proposed criteria and 147 middle-aged control subjects. Genotyping has been carried out by PCR-RFLP using the 5-CATCCCTATTGGCAGCTTAC-3/5-GACGGTGCGGTGAGAGTG-3 primer pair and Hinf1 restriction enzyme. **Results:** The C an T allele frequencies in the two groups were 69.51 and 30.48 respectively 65.82 an 34.17 %, while the genotype distribution for CC, CT an TT was 50.52, 37.97 and 11.49 % vs. 45.56, 40.5, 13.92 %, showing no statistically significant risk being associated with the presence of the minor allele ($p>0.05$). According to the genotypes no significant differences were seen in metabolic parameters reported to be influenced by the polymorphism (body mass index, triglyceride, blood pressure) in neither the metabolic syndrome or control group. **Conclusions:** In conclusion, similar to other populations of Caucasian origin, rs 8192678 does not appear to associate with an increased risk for developing the metabolic syndrome, though the identification of a very small effect would need investigation on a larger sample size.

Keywords: MTHFR polymorphism, metabolic syndrome, risk factor

SURFACE MODIFICATION AND MECHANICAL PROPERTIES OF ORTHODONTIC MICRO-IMPLANTS FOLLOWING SANDBLASTING AND AUTOCLAVE STERILIZATION

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Background: Reusing orthodontic mini-implants could reduce treatment cost and lead to improvement of orthodontic treatments. Different chemical and physical sterilization methods of mini-implants are available. The present study aimed to compare the surface morphology and mechanical properties (maximum insertion torque) of as-received and sandblasted and sterilized mini-implants. **Material and methods:** Forty micro-implants from two different manufacturers (Link from MIS and Yesanchor from OrlusTM) were used in the study. From each manufacturer the implants were divided in 2 groups: G1 (n=10) new, unused, G2 (n=10) mini-implants inserted in pig bone and removed, followed by sandblasting and autoclave sterilization. Scanning Electronic Microscopic and optical microscopic analyses of the head, transmucosal neck, threaded body, and tip were performed. Maximum insertion torque was recorded and subjected to statistical testing. **Results:** Maximum insertion torque for G2 Link mini-implants was 26,94 Ncm and 36,46 Ncm for G2 Yesanchor. No statistically significant maximum torque insertion values were recorded between G1 and G2 groups of the two types of mini-implants. Microscopic analysis showed surface manufacturing imperfections of G1 category, and abrasive mechanical stripping of the screw surface of the G2 category. **Conclusions:** Sandblasting and autoclave sterilization does not affect the maximum insertion torque of the mini-implants, but they modify their surface topography.

Keywords: micro-implants, sterilization, scanning electronic microscopy

STUDY OF THE CORRELATION BETWEEN THE RHYTHM DISORDERS, BLOOD PRESSURE VARIATION AND SLEEP APNEA IN HYPERTENSION PATIENTS

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Background: Obstructive sleep apnea (OSA) is a common disorder characterized by repetitive interruption of ventillation during sleep caused by recurrent upper airway collapse, which leads to intermittent hypoxia. This sleep apnea-hypopnea syndrome (SAHS) is a prevalent condition that has several cardiovascular repercussions.Our objective was to evaluate circadian variation of blood pressure and prevalence of arrhythmias on these patients. **Material and methods:** A total 52 hypertensive patients were evaluated using their clinical histories, blood analysis, performed polisomnography, Holter ECG and ABPM, which were carried out from 1st of January to 30th of September at the IVth Medical Hospital Tirgu-Mures. An analytical, experimental, prospective analysis was applied to identify the significant variables. **Results:** The patients` mean age was 56+/-6 years, their body mass index 32+/-3, 61% had comorbidities and 72,6% were male.Using the ABPM results, the analysis of the patients circadian patterns revealed that 69.5% of the patients were dippers. Most of them had a preserved circadian pattern. Patients with severe SAHS had 85% non-dipper circadian rhythm and more freqvent arrhythmias.The prevalence of NSVT(non sustained ventricular tachycardia), SVE`s(supraventricular extrasystole) and paroxysmal AF(atrial fibrillation) have a night time-dominant pattern. **Conclusions:** Patients with severe SAHS have non-dipper type hypertension and a lot of different type of tachyarrhythmia.

Keywords: hypertension, sleep apnea syndrome, Holter ECG, ABPM

REDUCED ANALGESICS CONSUMPTION AND PAIN INTENSITY AFTER INJECTIONS WITH A NEW LOW-MOLECULAR HYALURONIC ACID IN PATIENTS WITH KNEE OSTEOARTHRITIS

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Background: Primary knee osteoarthritis (OA) is commonly occurring after transformations in biomechanical and biochemical properties of the articular cartilage. According to guidelines from 2014 Osteoarthritis Research Society International (OARSI) all patients diagnosed with OA should be prescribed analgesics as a first line treatment. Given the side-effects of common analgesics used in knee osteoarthritis (paracetamol, ibuprofen, naproxen, codein, tramadol etc.) their consumption is of great interest for clinicians. Our aim was to determine the influence of intra-articular low-molecular weight HA (Hymovis®) injections on the amount of analgesics consumption in patients diagnosed with primary knee OA. **Material and methods:** A prospective, single-center study that included 50 patients, aged 45-80 years was conducted in our orthopaedics department. Patients received two intra-articular injections of hyaluronic acid (24 mg/3 ml; 500-730 kDa; Hymovis®) at one week apart. Follow-up was scheduled at 2 and 6 months after the injections. Assessment tools included Visual Analogue Scale (VAS) and an in-house designed questionnaire regarding analgesic consumption (quantity, period and product) during the follow-up. **Results:** 46% (n=26) of the patients reduced their total analgesic consumption at two months after the injections. At final follow-up, the analgesic intake was reduced by more than 50% in almost every case. Compared to baseline, a significant amelioration in VAS was observed at six months follow-up (7.42 ± 1.17 vs. 5.73 ± 1.21; $p < .0001$). **Conclusions:** Intra-articulary administered injections with a novel hydrogel hyaluronan-based product (Hymovis®) may reduce the amount of analgesic consumption and self-reported pain intensity in patients with knee OA.

Keywords: novel hyaluronan;, knee osteoarthritis;, analgesics consumption;, intraarticular injections;

PREVALENCE OF HELICOBACTER PYLORI INFECTION IN CHILDREN FROM SIBIU AREA

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Background: Helicobacter pylori is a gram negative bacterium capable of infecting gastric and duodenal mucosae, being responsible for chronic gastritis, gastric and duodenal ulcers and gastric adenocarcinoma. In children with gastroduodenal disorders, Helicobacter pylori infection is an important pathogenetic link. Almost half the world's population is colonized with this bacterium. Infection prevalence is higher in the developing countries than in the developed ones, these differences being related to socioeconomic disparities hygienic and sanitary conditions. **Material and methods:** It is a retrospective study aiming at determining the prevalence of Helicobacter pylori infection in children and adolescents. There are included 734 results from the archives of the Pediatric Hospital of Sibiu. The findings come from inpatients or outpatients during one year. For the determination of Helicobacter pylori, there were used rapid, immunochromatographic tests. **Results:** The prevalence of Helicobacter pylori infection in children and adolescents from Sibiu area, in the period 2014-2015, was of 26.70%. The method of diagnostic had increased sensitivity and specificity. Helicobacter pylori infection prevalence was higher in females, 17.16% compared with males, of 9.54%. The most affected were children aged 12 years and 17 years old. **Conclusions:** Prevalence of Helicobacter pylori infection was slightly lower compared to the US population, according to the study of William D. Chey al. in 2007, who estimated that 30-40% of the population was infected with Helicobacter pylori. Eradication of Helicobacter pylori has the potential to reduce the risk of developing gastric cancer.

Keywords: Helicobacter pylori, children, gastric cancer

ROTAVIRUS / ADENOVIRUS INFECTION IN CHILDREN OF SIBIU AREA

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Background: Worldwide, rotavirus/ adenovirus gastroenteritis is widespread (30-70% of infectious diarrhea) and affects small children of 4 months - 3 years old. Infants younger than 3 months had lower rates of infection. Rotavirus/ adenovirus infection is higher in winter and spring months. Aim: The purpose of the paper is to assess rotavirus/ adenovirus infection in children aged 1 month to 18 years old for a period of 12 months. Patients were divided by age groups, 1-2 years old, 2-7 years old and 7-18 years old. In the studied group, there were considered the correlation of cases with the age at which the disease occurred, as well as seasonal variation of acute diarrheal disease cases by age groups. **Material and methods:** We performed a retrospective study on a group of 960 patients who experienced episodes of acute diarrheal disease and other symptoms, to determine the viral involvement in the emergence of severe diarrhea, hospitalized within the Pediatric Clinic of Sibiu, between January 2015 and December 2015. **Results:** In the group studied, the presence of rotavirus was identified in 7.4% of cases and the presence of adenovirus was identified in 1.35% of cases. The most cases were recorded in the months of January to March, in the age groups of 1-2 years old (45% of all patients infected with rotavirus/ adenovirus). **Conclusions:** Rotavirus prophylaxis by vaccination will decrease the number of tests and examinations in children with acute diarrheal disease.

Keywords: infection, Rotavirus, Adenovirus, children

CHEMOMETRIC METHODS USED IN CLINICAL DATA ANALYSIS FOR DISEASES IDENTIFICATION

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Background: Two chemometric methods, Cluster Analysis and Principal Component Analysis, were used for the study of some clinical data of several patients. High correlation could be observed between some clinical parameters. **Material and methods:** A spectrophotometric method was used, sample type: SER, to investigate organic compounds of clinical interest in human blood (glucose, cholesterol, triglycerides, urea, creatinine), inorganic compounds (Ca, Mg, Fe), enzymes (Transaminase) and ERS (erytrocyte sedimentation rate). **Results:** The patients were separated into groups according to their sex, age or disease and correlation among different clinical parameters have been studied. A high correlation could be observed between the studied clinical parameters. According to clinical analytical data concentration level the following diseases should be studied: hepatic diseases, lipid disorders, diabetes, renal disorders, etc. **Conclusions:** The results confirm that clinical analysis combined with the chemometric methods are useful for disease correlations and interpretations. Our results showed a high correlation between some clinical parameters.

Keywords: clinical data, cluster analysis, principal component analysis

PREVALENCE OF VITAMIN D DEFICIENCY IN CHILDREN UNDER 5 YEARS OLD IN SIBIU AREA

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Background: In the recent years, it has been demonstrated the importance of vitamin D not only in the pathophysiology of rickets, but also in the autoimmune, cardiovascular diseases and cancer. Vitamin D deficiency is an important public health problem worldwide, reason for which we aimed at studying the extent of this phenomenon at the level of the area ascribed to Sibiu Pediatric Hospital. **Material and methods:** We measured the 25 hydroxy vitamin D level in the children of Sibiu area, hospitalized for various pathologies within the Sibiu Pediatric Hospital, between January 2015 and May 2016. The study included 265 children aged 1 month - 5 years old. 25 (OH) vitamin D was measured using the ELFA method on the Vidas PC, BioMerieux analyzer, the cut-off level being of 30 ng / ml. **Results:** Children were classified into 2 groups: group 1, with vitamin D levels less than or equal to 30 ng / ml, and Group 2, with vitamin D levels above 30 ng / ml. **Conclusions:** In the children of Sibiu area, levels lower than 30 ng /mL of 25 (OH) vitamin D were found in 61.6% of the study children. Vitamin D deficiency in children from Sibiu County is much higher compared to vitamin D deficiency in children from Valencia, Spain, 24.3% (study conducted in 2015). In Austria, prevalence of vitamin D deficiency was 26.4% (study by Koenig & Elmfada, 2000). In Great Britain, vitamin D deficiency was 7.1% -15.3 and in the months from January to March, the deficit increased to 37.4% (National Diet and Nutrition Survey 2008-2012). Our results highlight the importance of vitamin D prophylaxis in children aged between 1 month - 5 years old.

Keywords: 25 hydroxy vitamin D, vitamin D deficiency, children

COMPARATIVE STUDY BETWEEN ISOMETRIC TECHNIQUE AND PARALLELING TECHNIQUE USED IN PERIAPICAL RADIOGRAPHY

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Background: Dental radiographs are an essential step in dental diagnosis being used in order to identify certain details that complement the clinical exam, details related to structure, certain lesions, tumors etc. Aim: To compare the quality of radiographs of some teeth with different structural defects obtained by different techniques. This work is part of a research project of the "Lucian Blaga" University of Sibiu, called: Evaluation of the contribution brought to the diagnosis of chronic oral diseases by panoramic radiographs and the study of their influence on patient radioprotection. **Material and methods:** We performed a retrospective study on 327 periapical radiographs stored in the electronic archives of S.C. X Dent SRL Sibiu. There have been compared the results obtained after the use of the two radiographic techniques: isometric (bisecting) and paralleling technique. Radiographs evaluation in terms of technical execution aimed at the following aspects: tooth positioning on the radiographic film, density, contrast, smoothness, distortion. **Results:** Bisecting technique is used in performing intra-oral, retroalveolar radiographs, and supposes to comply with the principle of isometry and orthoradiality. The paralleling technique requires that Rx film to be positioned parallel to the long axes of the teeth. Of 113 radiographs performed with the isometric technique, 24 needed to be rebuilt because of distortions occurred on the film and penumbra effect, and of the 214 performed with the paralleling technique, 12 were restored. 40% of doctors prefer the paralleling technique and 26% the isometric technique, the rest preferring both techniques, being unable to distinguish between the two. **Conclusions:** Isometric technique has the following advantages: it is comfortable for the patient, does not require disinfection and positioning is simple and fast. Distortionary effect disappears due to film / image receptor bending. Using the paralleling technique with beam alignment tools with the film holder allows the operator to obtain reproducible and standardized images.

Keywords: radiography, isometric, paralleling, periapical

MEDIATORS OF INFLAMMATION AND PERIODONTAL BREAKDOWN IN SUBJECTS WITH TYPE 2 DIABETES MELLITUS

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Background: Our objective was to investigate immunological changes that occur in saliva of subjects with type 2 diabetes mellitus (T2DM) withouth signas of periodontal disease and to establish if salivary cytokines are a possible link between T2DM and periodontal breakdown. **Material and methods:** Twenty T2DM subjects withouth periodontal disease and twenty healthy controls were enrolled in the study. Saliva and serum TNF-alpha and IL-6 were reported. Periodontal tissue samples were examined. **Results:** TNF-alpha and IL-6 levels were higher in T2DM subjects compared with controls, with an extremely significant difference in saliva ($p<0.001$). Significant inflammation, affecting both epithelial and connective tissues was present in periodontal biopsies. **Conclusions:** Our study showed elevated levels of TNF-alpha and IL-6 in serum, but especially in saliva of diabetics without signs of periodontal disease, confirming the hypothesis of immunological implication, as a correclation between periodontal disease incidence and T2DM. Histologic alterations, suggesting a local inflammatory state, were present in periodontal tissue of diabetics, confirming the above hypothesis. The results of our study allow us to conclude that saliva analisys is an efficient and safely enough tool for evaluation of periodontal breakdown progression in T2DM subjects.

Keywords: diabetes mellitus, periodontal disease, saliva

POTENTIAL SOURCES OF OMEGA 3 POLYUNSATURATED FATTY ACIDS IN VEGETARIANS

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Background: Humans do not possess the enzymatic equipment necessary for polyunsaturated acids (PUFA) synthesis, thus for maintaining the biological functions dietary intake is necessary. Because of the differences in the affinity of delta-6 desaturase enzyme, even with diets rich in alpha linolenic acid (ALA) the formation omega-6 PUFA is preferred. This is a potential problem for vegetarians and vegans where the main source of omega-3 PUFA is ALA. **Material and methods:** A bibliographic study was made to identify the sources and to compare the plasma levels of PUFA in vegetarians, vegans and omnivores. **Results:** In plants, omega-3 and omega-6 PUFA precursors (ALA and linoleic acid (LIN)) are synthesized form stearic acid under the action of delta 9 and delta 12 desaturases, but additional elongation and desaturation processes no longer occur. In mammals stearic acid conversion into ALA and LIN does not take place as they do not possess the enzymatic equipment, but the precursors are converted in arachidonic acid (AA), eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). ALA concentration required to reduce by 50% AA precursor formation (gamma linolenic acid) is about 10 times higher than the concentration LIN. Moreover, there are sex differences in ALA metabolism - in young healthy men, approximately 8% of ALA is converted into EPA and only 0-4% in DHA, while in young, healthy, before menopause women, 21% of ALA is converted into EPA and 9% into DHA. **Conclusions:** Although the highest amount of omega-3 PUFA can be found in fish (salmon, sardines, tuna, mackerel), vegetarians have blood levels of omega-3 PUFA compared to people who eat small quantities of fish meat because of the plant sources of ALA.

Keywords: polyunsaturated acids (PUFA), PUFA precursors, vegetarian diet, linoleic acid (LIN), alpha linolenic acid (ALA)

THE RELATIONSHIP BETWEEN DEEP VEIN THROMBOSIS, HOMOCYSTEINE AND ANTIPHOSPHOLIPID SYNDROME - CASE REPORT

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Background: Deep venous thrombosis (DVT) is a common condition characterized by a high morbidity and mortality rate. Hyperhomocysteinemia has been considered as a potential risk factor for deep venous thrombosis (DVT) but it is still controversy. The antiphospholipid-antibody syndrome is a thrombophilic disorder, in which venous thrombosis may occur and occasionally can be associated obstetric events. **Material and methods:** We present the case of a 51-year-old smoker woman, with hysterectomy and right ovariectomy, which has been presented to emergency accusing right calf swelling and pain, accompanied by functional impotence. Venous Doppler ultrasound reveals popliteal vein thrombosis, posterior tibial and right fibular, which anticoagulant therapy was initiated.Because the patient was a great smoker, at first thrombotic event, we considered perform homocysteine dosage and evaluate the risk factors, in order to secondary prevention. Also due to recent obstetrical event shortly accompanied by the appearance of deep vein thrombosis, it raises suspicion of antiphospholipid syndrome, reason for we dosed IgG and IgM anticardiolipin antibodies, and lupus anticoagulant. **Results:** In this case homocysteine dosage has been shown to be an important risk factor because it was high (18.6µmol/L). Lupus anticoagulant showed weak positive values (1.08), IgM anticardiolipin antibodies (41.4U ML / ml) and IgG anticardiolipin antibodies (<2 GPL U / ml) and IgG Anti-2-glycoprotein I showed an equivocal result (4.7 U/ml). To exclude a malignancy, abdominal computed tomography was performed which revealed no pathological changes. **Conclusions:** The peculiarity of the case is the increased value of homocysteine, which is proving to be a proatherogenic risk factor by inducing endothelial dysfunction. Because IgG and IgM anticardiolipin antibodies and lupus anticoagulant shows weak positive values, confirmation of antifoslipidic syndrome remains ambiguous, requiring further investigation.

Keywords: deep vein thrombosis, homocysteine, antiphospholipid syndrome

THE INTERPLAY OF CYP2C19*2, CYP2C19*3 AND MDR1 C3435T GENE POLYMORPHISMS AND HISTOLOGICAL FINDINGS IN SEVERE UPPER DIGESTIVE ENDOSCOPIC LESIONS OCCURRENCE

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Background: Genetic polymorphisms have been studied as possible risk factors for gastro-duodenal lesions occurrence or treatment. The aim of our study was to investigate the possible influence of MDR1 C3435T, CYP2C19*2 and CYP2C19*3 gene polymorphisms on the severity of gastro-duodenal endoscopic lesions. **Material and methods:** A case-control study was conducted on 279 consecutive patients divided into two groups according to the severity of lesions: patients without severe mucosal lesions (n=234) and patients with severe mucosal lesions (n=45). Clinical, endoscopic and histological parameter were registered in all recruited patients successfully genotyped. **Results:** MDR1 C3435 and CYP2C19*2 genotypes were in Hardy-Weinberg equilibrium, while CYP2C19*3 was not, due to the scarce frequency in our population. MDR1 C3435T hetero or homozygous variant genotypes (CT or TT) were not correlated with severe gastro-duodenal lesions (57.8% vs. 51.3%, respective 17.8%, vs. 17.5%, p=0.64). CYP2C19*2 hetero or homozygous variant genotypes (1*/2* or 2*/2*) did not differ significantly in the severe lesions group compared to the no-lesion group (22.2% vs. 23.9%, respective 73.3% vs. 71.8%, p=0.98) on univariate analysis. H. pylori infection (46.7% vs. 30.3%, p=0.3) in the biopsy samples were the most important factors related to severe endoscopic lesions, while reactive gastropathy (22.2 vs. 38.9% , p=0.03) was conversely associated with severe endoscopic lesions in our studied population. **Conclusions:** Our data suggest that the MDR1 C3435T, CYP2C19*2 and CYP2C19*3 gene polymorphisms do not influence the frequencies of severe endoscopic lesions in consecutive patients investigated on endoscopy.

Keywords: CYP2C19*2, CYP2C19*3,MDR1 C3435T, gene polymorphisms, gastro-duodenal, mucosal lesions

MICROPROCESSOR-CONTROLLED THERMOSTAT FOR ORGAN BATHS

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Background: Temperature-controlled baths are widely used in medico-biological laboratories and there is a wide offer of these equipments on the market. The price can vary, depending mainly on the thermostat precision. Our aim was to build a high precision thermostat with hysteresis capability at a very low cost. **Material and methods:** The thermostat was developed using PIC16F84 8-bit microcontroller, produced by Microchip Inc., using an DS8B20 high precision temperature sensor produced by Dallas Semiconductors. The software was developed in C language and the device memory is 82% full. To control the heater, the device uses a 10 A relay, able to handle 2200W maximum. To display the parameters, a 4 digit LED device is used. **Results:** Our thermostat is compact (7X8 cm) and it has a low power consumption (3W). The resolution is 0.1° C for temperature reading and 1 °C for hysteresis settings. The range of the controller is between -30 and +100°C, depending mainly on the heater capabilities. **Conclusions:** The device has good precision and the price is very low, so it can be used in a wide range of laboratory temperature control devices (heaters, organ baths, culture incubators). The LED display ensures a good readability and low power consumption. This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CNCS - UEFISCDI, project number PN-II-RU-TE-2014-4-1544.

Keywords: thermostat, microcontroller, organ bath, hysteresis, PIC16F84

PCNL EFFECTIVENESS IN PATIENTS WITH VOLUMINOUS KIDNEY STONES ON SINGLE KIDNEY

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Background: PCNL is standard surgical intervention for patients with medium and large size kidney stones. The aim of this paper is to asses efficency of this technique in patients with lithyasis on single kidney. **Material and methods:** Group I:14 patients with PCNL for voluminous kidney stones(over 20 mm diameter) on single kidney, admitted during January 2013- April 2016. Group II: 14 patients randomly selected witch we perform PCNL for kidney stones(over 20mm diameter), but with normal function on both kydneys. All this patients underwent a single PCNL procedure. **Results:** Preoperative average lenght was 1.4 days for the first group and 1.1 days for the second group. Postoperative care duration and hospitalisation period was 4.3 days for group I and 3.4 days for group II. No transfusion was required. All patients was stone free at the end of the surgery. Statistical analysis of this 2 groups (GraphPad) did not show a statisticaly representative difference(p=0.45) between the 2 groups over the period of hospitalization or risk, risk of bleeding or stone free rate. **Conclusions:** Even if the PCNL on single kidney can be a potencial anxious intervention for the surgeon, the resilts are similar with the intervention when both kidneys are functional

Keywords: PCNL, single kidney, stone free rate, bleeding risk, kidney stones

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