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Days of the University of Medicine and Pharmacy of Târgu Mureș
7-11 December 2015

The 8th Conference of PhD Students

The 5th Conference of Postdoc Fellows in Medicine and Pharmacy

9-10 December 2015

BOOK OF ABSTRACTS

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FARMACIE (PHARMACY)

NEW METHODS OF OBTAINING NEW SILVER COMPLEXES OF OFLOXACIN AND LEVOFLOXACIN

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Background: The aim of our study was to identify suitable methods in order to obtain silver complexes with fluoroquinolones with potential broad spectrum antibacterial and antifungal activity. We studied several types of methods for obtaining silver complexes with ofloxacin (OFL), and levofloxacin (LEV) using various silver salts, solvents and different experimental conditions. **Material and methods:** In the synthesis process we used different silver salts such as silver nitrate, silver triflate and silver citrate. The preliminary study of the synthesized compounds was carried out by FT-IR spectrometry, MS determination and DSC analysis. **Results:** Ag complexation with OFL. In an ammonia medium using silver nitrate and in a methanolic medium using silver triflate we obtained metal complexes; for the two compounds IR spectra show changes in band positions which suggest that silver ion is bounded to the N4'-piperazine atom. Ag complexation with LEV. Using silver nitrate and an ammonia medium we obtained a compound whose IR spectrum suggests the formation of a silver complex. A complex formation is also possible even without ammonia medium using silver nitrate or silver citrate. All the obtained compounds present a particular coordination of LEV to the formation of the silver complexes, as monodentate ligand through N4'-piperazine nitrogen. DSC curves present different behavior of all obtained compounds versus ligands. MS spectra analysis of the compounds present mass ions which correspond to a ligand (OFL or LEV) - silver ratio of 2:1. **Conclusions:** In order to obtain new silver complexes with OFL and LEV the important parameters proved to be the correct metal:ligand ratio and the experimental conditions. In similar circumstances, OFL and LEV may react differently to silver ion due to stereochemistry of molecules. Using the optimum parameters it is possible to obtain silver complexes that require further investigations.

Keywords: silver complexes, fluoroquinolones, ofloxacin, levofloxacin, synthesis methods

PRELIMINARY CHROMATOGRAPHIC STUDY OF POLYPHENOLIC COMPOUNDS EXTRACTED FROM VACCINIUM CORYMBOSUM LEAVES

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Background: Blueberry leaves, a waste product from cultures, are a great source of polyphenols, some compounds having remarkable properties on human health. The complex composition of leaves and fruits from different *Vaccinium* species was intensively studied, but important data are still missing, including further correlations between environment, altitude and latitude cultivation area and phenolic composition in leaves. The aim of this study was a preliminary qualitative analysis of *Vaccinium corymbosum* leaves composition, cultivated in Mures county area. **Material and methods:** Blueberry leaves were collected from Trei sate village area, Mureş county, România in 2014 when the leaves were red. First type of extraction was made with methanol on an ultrasound water-bath, and after the concentration with a rotary evaporator, the extract was applied on a Sephadex LH-20 column. The second type of extraction was performed directly in a glass column using a mixture of quartz sand and ground leaves. Small portions of methanol and acetone-water were used for elution in each case. The fractions were then analysed by analytical TLC. Preparative TLC was performed and the eluted fractions were further analysed by HPLC-UV-Vis on an Agilent 1100 series HPLC system equipped with a reversed C18 column. Cyanidin and quercetin glycosides, polyphenolic acids standards were used for identification. **Results:** TLC analysis revealed that the acetonic fraction contained mostly tannin polymers which remained at the start and became red after spraying with vanillin reagent. The methanolic fraction contains flavonoids, chlorogenic acids and anthocyanins, identified on TLC after spraying with vanillin reagent, ferric chloride reagent and Neu reagent. The HPLC analysis of whole and TLC extracts revealed several compounds, among them cyanidin and quercetin glycosides. Small qualitative differences between the two types of extracts were observed. **Conclusions:** This preliminary study confirmed that blueberry leaves contain important polyphenolic compounds, which could be further used in the development of new drugs.

Keywords: Blueberry, Polyphenols, TLC, Sephadex LH-20, HPLC

DIET, SMOKING AND FAMILY HISTORY AS POTENTIAL RISK FACTORS IN ACNE VULGARIS – A COMMUNITY BASED STUDY.

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Background: It is well-known that the mainly cause of acne vulgaris are hormonal factors, but there are lifestyle risk factors including: diet, smoking, hygienic habits, as well as lack of knowledge regarding the importance of diet in skin health, that are still controversial. The aim of this study was to assess the practices and attitudes towards lifestyle risk factors in a high school students community from Tîrgu Mureş. **Material and methods:** We conducted a cross-sectional study, using a self-reported questionnaire, on 148 students from eleventh and twelfth grade of a high school from Tg-Mures, between October 2014-January 2015. Were evaluated acne prevalence and severity, demographic and anthropometric characteristics, the family history of acne vulgaris, smoking behavior and the weekly intake of certain food categories supposed to increase the risk of acne vulgaris. **Results:** In the community investigated, acne prevalence was 47.30%, while 78 subjects (control group) had no facial acne lesions. In acne group 57.1% had family history of acne, 62.9% were smokers, 22.9% were overweight or obese and 84.3% did not receive any dietary informations from specialists. 41.4% were not consuming at all fish meat, while 74.3% were consumig rarely or never fruits and vegetables. Data collected were analysed with SPSS 21 for OS X Program, Chi-square test, finding a statistically significant difference between the two groups, in terms of weekly intake of sweets, carbonated drinks, dietary fat, white bread, fish, fruits and vegetables ($p<0.05$). **Conclusions:** Our results suggest that family history, smoking behavior, dietary fat, sweets, carbonated drinks, white bread could be considered as risk factors in acne vulgaris. An increased weekly intake of fish, vegetables and fruits, may have a protective effect in acne vulgaris. ACKNOWLEDGMENTS. This paper is supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number POSDRU/159/1.5/S/137390/

Keywords: acne vulgaris, diet, smoking, family history

MEDICINĂ CLINICĂ (CLINICAL MEDICINE)

ANTITHROMBIN DEBRECEN (P.LEU173PRO) – CLINICAL AND MOLECULAR CHARACTERIZATION OF A NOVEL MUTATION ASSOCIATED WITH SEVERE THROMBOTIC TENDENCY IN A LARGE PEDIGREE

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Background: Hereditary AT deficiency is a rare but major risk factor for venous thromboembolism. The genetic background is heterogeneous.Our goal was to characterize the molecular features of a novel mutation. We determined the severity of the mutation's clinical consequences by conducting a family investigation. **Material and methods:** Thirty-one family members were included in the family study. The age at the first thrombotic event, the type and location of the thrombosis, the recurrencies, and the co-existing provoking factors were determined. The mutation was identified with sequencing of the SERPINC1 gene. HEK293 cells were transfected with constructs containing wild type and mutant SERPINC1 plasmids. Immunoprecipitation followed by Western blotting was used to visualize the presence or absence of the mutant AT in the cell lysates and in the conditioned media. The quantity of the expressed AT protein was measured by ELISA. Chromogenic test was used to measure the activity of the expressed AT. **Results:** We found twelve affected patients in the family. Except for two young boys, all of them suffered from early age thrombosis. In six cases the thrombosis was recurrent. Two of the patients died of PE, one of them at the age of 19. Genetic analysis revealed a novel AT mutation (p.Leu173Pro). Wild type and mutant AT were expressed in HEK293 cells and it was demonstrated that after synthesis a small amount of mutant AT (28% of wild type) was secreted by the cells. The majority of the mutant protein was trapped intracellularly. Activity of the secreted mutant AT was somewhat decreased. **Conclusions:** Studying a large AT deficient family, a novel mutation was found. Clinical data suggested that the mutation was associated with severe thrombotic tendency. The p.Leu173Pro mutation leads to secretion defect. Characterizing AT gene mutations and the consequential molecular mechanisms together with the clinical manifestation can provide valuable information to assess individual risks.

Keywords: hereditary antithrombin deficiency, thrombophilia, venous thromboembolism

THE RELATIONSHIP BETWEEN LOW DIETARY FIBER INTAKE AND THE OCCURRENCE OF HEART DISEASES

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Background: Many studies have examined the relationship between dietary fiber and heart diseases risk factors. An apparently protective effect of dietary fiber intake against coronary heart disease has been observed in several prospective studies.Dietary fiber refers to a variety of plant-based non-starch polysaccharides and lignins that are resistant to human digestion. Epidemiologic studies have shown that consumption of cereals,vegetables and fruits may lower the risk of coronary heart disease mortality.This study objective was to investigate the frequency of dietary fibre intake and prevalence of cardiovascular disease and diabetes in a sample of Mures adult population. **Material and methods:** The study was based on a questionnaire consisting of 106 questions completed by 2504 people from Tirgu Mures, through which we examined the consumption frequency of whole grains, whole food, fresh fruits and vegetables.We also watched on the subjects diet pattern, blood sugar values and the presence of one or more chronic diseases. **Results:** Concerning diet pattern, 78.15% declared that they are omnivores and 3.78% vegetarians. 10.58% of respondents declared the presence of hypertension, also obesity was found at 4.15% of respondents and 28.27% of them suffers from multiple chronic diseases.A share of 4.35% reported blood glucose levels over 126 mg/dl and 21.44% had waist circumference greater than 100 cm. Regarding the consumption frequency of fiber rich foods, only 3.75% of subjects had the habit to frequently consume whole grains and 19.52% tended to consume at least once/day vegetables and 10.46% of the respondents consumed at least one fruit/day, but not enough for prevention. **Conclusions:** We observed that in the studied group there is a high proportion of subjects who are not used to consume whole foods and vegetables every day, in relation with cardiovascular diseases and obesity.Dietitians need to develop a proper community intervention in order to educate population about the importance of fibers in the menus.

Keywords: dietary fiber,, heart disease,, chronic diseases,, prevention

THE IMPORTANCE OF HOME VERSUS 24- HOUR AMBULATORY BLOOD PRESSURE MONITORING IN THE ASSESSMENT OF BLOOD PRESSURE VARIABILITY IN ADULT HYPERTENSIVE PATIENTS

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Background: A number of studies reveal that home blood pressure variability (HBPV) is associated with cardiovascular risk factors. Although, we do not have a consensus regarding the variability index and the frequency of measurements. The aim was to assess HBPV for a period of 7 consecutive days and 24-hour ambulatory blood pressure variability (ABPV) using the average real variability index (ARV) and to test whether home blood pressure variability represents a suitable parameter for long-term monitoring of the hypertensive patients.A number of studies reveal that home blood pressure variability (HBPV) is associated with cardiovascular risk factors. Although, we do not have a consensus regarding the variability index and the frequency of measurements. **Material and methods:** A number of 31 hypertensive patients were included in the study, 8 male, 23 female, mean age 60.19±7.35 years. At the inclusion ABPM was performed, HBP monitoring was carried out for 7 consecutive days -2 measurements/day. We compared ABP and HBP values, as well as blood pressure (BP) variability. **Results:** ABPM derived mean BP versus HBP was 131,7±15,4 versus 131,8±8,37, p=0.95. Ambulatory derived variability was 10,7±2,08 versus HBPV 10,24±4,55, p=0.57. Home pulse pressure (PP) was 51.48± 8.7 mmHg versus ambulatory PP 54.83±11.7 mmHg, p=0.034. We found positive correlation between HBPV and home BP values, p=0.027, r2=0.1577, (CI:0.04967 to 0.6588). HBPV as well as ABPV were positively correlated to age p=0.043, r2=0.1377 (CI: 0.01234 to 0.6451) versus p<0.0001, CI: 0.3870 to 0.8220, r2=0.4302. **Conclusions:** Although, ABPM and ABPV represent the gold standard for diagnosis and treatment respons of hypertensive patients, HBP monitoring performed for at least 7 days and the assessment of its variability could represent a well tolerated alternative for long-term follow-up of hypertension management. **Acknowledgemen**t: *The financial support for this study was offered by the Internal Research Grant of the University of Medicine and Pharmacy Targu-Mures, contract number 16/23.12.2014.*

Keywords: ambulatory blood pressure variability, home blood pressure variability, hypertension

THE ROLE OF SMOKING IN THE DEVELOPMENT OF COLORECTAL CANCER

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Background: Smoking is an important public health issue nowadays. It causes a lot of diseases and represents also a source of carcinogenic substances. Recent studies showed an increased incidence of colorectal cancer in smokers. The aim of our study is to assess the association between smoking and colorectal cancer and to establish the prevalence of heavy smokers among the patients operated on for colorectal cancer. **Material and methods:** We run a retrospective study of the charts belonging to the patients diagnosed with colorectal cancer and operated on in our department between 2004and 2013. The patients were classified in smokers, former smokers and nonsmokers. The amount of tobacco was evaluated according to the number of smoked cigarettes per day, the number of years of smoking, respectively the number of pack-years.The data were corroborated with the location of the tumor and analyzed using the online version of Graphpad. **Results:** From total of 982 patients diagnosed with colorectal cancer, we found 297 smokers (30,24%). Among these, 106 patients (35,69%) have smoked for over 30 years, at least 20 cigarettes per day, more than 30 pack-years. The number of heavy smokers was significantly greater (p=0.001) in the group with rectal cancer compared to the group with colon cancer. The association of smoking with rectal cancer was also important (p=0.0340) among the former smokers **Conclusions:** Smoking is related to higher incidence of colorectal cancer. Our data sustain the hypothesis of increased risk of developing rectal cancer in heavy smokers. That is wy we recommend the screening for colorectal cancer among the heavy smoker population.

Keywords: smoking, colorectal cancer, screening

CLINICAL, PARACLINICAL AND HISTOLOGICAL ASPECTS OF GASTRITIS IN CHILDREN

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Background: Gastritis represents an inflammation of the gastric mucosa, determined or not by the infection with Helicobacter pylori, having an increased incidence in children. The aim of the study was to evaluate the children admitted with gastrointestinal symptoms, regarding their frequency, the macroscopic aspect of the gastric mucosa, the histopathologic changes of it and the rapid urease test for Helicobacter pylori detection. **Material and methods:** We performed a prospective study on 100 children admitted in the Pediatrics Clinic I Tg. Mureş, whom we divided depending on the histopathologic changes in 3 groups: group 1 (control) - 45 children without histopathologic changes, group 2 - 36 children with gastritis without Helicobacter pylori and group 3 - 19 children with gastritis with Helicobacter pylori. **Results:** Abdominal pain was more frequent in patients with Helicobacter pylori infection and control group, versus those with histopathologic changes without Helicobacter pylori (94.73% and 97.77% versus 75%). Nausea and vomiting were more frequent in patients with gastritis without Helicobacter pylori infection versus the other two groups (p = 0.06/ p =0.07). The macroscopic changes were underlined in 66.66% of the children from group 1; 97.22% of the children from group 2 and 94.73% from group 3, only 36.84% presenting the typical aspect of `pavement stone`. The rapid urease test was positive in 11 from the 19th from the third group (57.89%). The correlations between the aspect of `pavement stone` and the positive rapid urease test was present in 31.25% from the cases, p = 0.2. **Conclusions:** Abdominal pain was the most frequent symptom, followed by nausea and vomiting. The macroscopic changes were present similarly in all the three groups. The rapid urease test is better correlated with the histopathologic exam than with the macroscopic aspect.

Keywords: gastritis, Helicobacter pylori, child, symptoms

URINARY OROSOMUCOID – AUTOMATED IMMUNOTURBIDIMETRIC TEST AND ITS CLINICAL RELEVANCE

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Background: Orosomucoid (ORM) is an extensively glycosylated, 41-43 kDa molecular weight acute phase protein. Its plasma concentration rises during infection and inflammation. Urine levels of ORM in healthy individuals are low, but in acute inflammation urinary ORM may increase. The major goal of our study was to determine urinary orosomucoid in healthy individuals and in patients diagnosed with sepsis, hypothesizing that u-ORM serves as a reliable severity marker of this major healthcare problem. **Material and methods:** During our follow up study urine samples were obtained from patients with systemic inflammatory response syndrome (SIRS, n=13) and patients diagnosed with severe sepsis (n=37) at our ICU. Healthy individuals were recruited as controls. For the determination of urinary orosomucoid, a high sensitivity turbidimetric assay was adapted and validated on Cobas 8000 (Roche) analyzer using microparticle bound antibodies (Dako A/S). The u-ORM concentrations were referred to u-creatinine in mg/mmol. **Results:** The new turbidimetric approach was set up to be sensitive, precise and accurate: LOD was found to be 0.025 mg/L, intra-assay imprecision CV was <2% and inter-assay imprecision CV was <5%. We measured extremely elevated u-ORM excretion in ICU patients ($p<0.001$). The median u-ORM/u-CREAT (mg/mmol) was 0.2 (0.1-0.3) in controls, 4.6 (0.9-9.5) in SIRS and 17.9 (9.9-32.8) in severe sepsis. Those patients who developed acute kidney injury (AKI) had more elevated orosomucoid excretion than non AKI patients ($p<0.05$). However, no correlation could be verified between u-ORM and serum inflammatory markers, neither serum creatinine levels. We found no significant change in u-ORM levels during the 5 day follow up period. **Conclusions:** This high sensitive particle enhanced turbidimetric immunoassay is ideal for routine urinary orosomucoid measurements. It seems to be a potential urinary biomarker in sepsis even if the cause of such dramatic elevation of u-ORM is not well clarified. Assessing the predictive value of urinary ORM in sepsis needs further examination.

Keywords: Sepsis, Biomarker, Urine, Orosomucoid, Immunoturbidimetry

THE CLINICAL ASSESS OF PATIENTS WITH MULTIPLE SCLEROSIS TREATED WITH INTERFERON ?-1B FOR MORE THAN 10 YEARS

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Background: Interferon ?-1b (IFN ?-1b) was the first Disease Modifying Therapy drug used in our country for the treatment of relapsing-remitting Multiple Sclerosis (RRMS). **Material and methods:** We conducted a retrospective study on 52 patients that had at least 10 years of continuous treatment with IFN ?-1b in the First Neurology Clinic of Targu Mures. The MS patients were assessed twice each year mainly regarding the Expanded Disability Status Scale(EDSS), focusing on the scores that depict limitation of walking distance (between 4.0 and 6.0 points) and relapse rates. According to initial EDSS score, we divided our patients into two groups: G1(EDSS<4) and G2(EDSS≥4). **Results:** The female:male ratio was 2.46 (37:15), with a mean age of MS onset of 29.86 years. The affected functional systems at the onset were brainstem 13(25%), optic nerve 13(25%), pyramidal system 10(19.2%), peripheral sensory 7(13.4%), cerebellar 3(5.7%) and a combination of the abovementioned in 6(11.5%) of the cases. From 52 patients included, 41(78.8%) were in G1 and 11(21.1%) in G2, with a mean EDSS of 2.4. In G1, 25(60.9%) did not progress and 16(39%) reached a score ≥4.0, with a mean time duration to an EDSS≥4.0 of 6.5±9.4 years, and to an EDSS≥6.0 of 7.87±3.2 years. From G2, 3(27.2%) improved and 8(72.7%) progressed ≥4.0. After a mean time of 12.5±2.1 years of continuous treatment, 28(53.8%) patients remained at an EDSS Conclusions: IFN ?-1b treatment has a long term favorable effect on RRMS clinical evolution by reducing the relapse rate in 25% of treated patients. Acknowledgments This study was supported by the internal research Grant of The University of Medicine and Pharmacy Targu Mures, Grant Number 18/2015.

Keywords: Continuous treatment, Relapsing Remitting, Multiple Sclerosis, Interferon ?-1b, Relapses

RISK FACTORS FOR HEPATIC ENCEPHALOPATHY: AN OBSERVATIONAL STUDY IN A COHORT OF PATIENTS WITH LIVER CIRRHOSIS

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Background: Hepatic encephalopathy represents the impairment of intellectual functioning, personality changes, altered level of consciousness and neuromuscular dysfunction. There is a large amount of patients with liver cirrhosis which develop hepatic encephalopathy. Consequently, the assessment of precipitating factors for this complication is of clinical importance. The aim of our study was to determine the risk factors for this serious complication. **Material and methods:** A total of 283 patients diagnosed with liver cirrhosis hospitalized in Gastroenterology Department during January 2013-July 2014 were included in the present study. Data from patient history, physical exams, laboratory tests and abdominal ultrasound were collected and analyzed using statistical tests. **Results:** Hepatic encephalopathy was diagnosed based on clinical assessment and it was documented in 85 cases (30%), with a median age of 61 and a male/female ratio of 1.74/1. Of 85 patients, in 57 cases (67%) alcohol consumption was found to be the etiology of cirrhosis. Using Fisher exact test, a significant statistical association was found between alcohol consumption and hepatic encephalopathy (P value 0.023; OR: 1.864). Only 16 (18.82%) patients of those with hepatic encephalopathy presented hyponatremia. A negative association between low level of serum sodium and encephalopathy was found, with P value <0.0001, OR: 0.405, 95% CI (0.193 to 0.846). According to laboratory data, patients with hepatic encephalopathy presented leucopenia (60), anemia (54) and hypoalbuminemia (63); all of these values were statistically associated with the development of hepatic encephalopathy (P value: 0.001, 0.019, and 0.0001 respectively). **Conclusions:** Laboratory changes like leucopenia, anemia and hypoalbuminemia were found to be risk factors for the development of hepatic encephalopathy. Also, alcohol consumption represents a risk for this serious complication.

Keywords: Department of Gastroenterology, Department of Gastroenterology, hepatic encephalopathy, liver cirrhosis, risk factors

THE ROLE OF HEALTH-RELATED QUALITY OF LIFE RESEARCH IN THE NATIONAL AND INTERNATIONAL HEALTH POLICIES

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Background: The present study analyses the role of health-related quality of life research in the national and international health policies. We provide a short historical overview of quality of life research, take into consideration the importance of objective and subjective indicators, with emphasis on subjective well-being and assess the different methods to obtain these. We describe how this interdisciplinary concept entered the medical sciences and contributed to improving and planning medical services offering valuable information regarding the health status of the population. **Material and methods:** We have studied and overviewed the existing scientific literature on quality of life research, subjective well-being as well as reports and national and international databases (TEMPO, Eurostat, Trans MONEE, Hungarostudy, etc.). **Results:** In the United States and Europe the importance of quality of life in health policy can be traced back to the beginning of the 20th century, during World War I and World War II. National health goals were developed, but the national statistics couldn□□□□provide the necessary information about all the aspects of the health status of the population, therefore the importance of representative surveys regarding quality of life and subjective well-being came into attention. These surveys make it possible to expose relationships between the health status of the population and social, economic, and psychological factors. In the present day we have periodical assessments like the European Quality of Life Survey (EQLS), the European Health report of the WHO, the National Health Interview Survey summarized in the annual Health: United States, or the Hungarostudy in Hungary. **Conclusions:** The studies applying survey methodology are effective in assessing the general health status of the population and provide a strong base for the development of health policies.

Keywords: Quality Of Life, Subjective Well-Being, health status

ULTRASOUND GUIDANCE VERSUS PERIPHERAL NEUROSTIMULATION FOR BRACHIAL PLEXUS ANESTHESIA

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Background: Science advances allow us to make medical procedures more precise and faster to execute. But speed and precision are combined with safety? **Material and methods:** In this study we compared two techniques of executing the brachial plexus block. One method comprises the classic use of neurostimulation and the other the ultrasound guidance for nerve location. We enrolled 161 patients who had brachial plexus block by axillary approach anesthesia, for hand surgery. The patients were randomized in two groups. The neurostimulation group, where the patients were anesthetized with the help of peripheral neurostimulation. This group comprises 79 patients. A second group- the ultrasound group- where the patients received anesthesia with the help of ultrasound guidance. This group comprises 82 patients. We compared the two groups for execution time differences, anesthesia success and intra-anesthetic complications- vascular punctures. **Results:** we found no statistical significant differences between the two groups regarding the execution time and the success of the anesthetic procedure. In regard to anesthetic complications, the results showed a significantly ($p< 0.05$) lower rate in the ultrasound group. **Conclusions:** Although using the ultrasounds for this procedure may complicate the procedure and it requires supplementary skills, the lower risk of vascular punctures recommends its use for everyday practice.

Keywords: BRACHIAL PLEXUS BLOCK, PERIPHERAL NEUROSTIMULATON, ANESTHESIA, ULTRASOUND GUIDANCE

THE EFFECT OF SPECIAL GYMNASTICS ON SLEEP CHARACTERISTICS IN PREGNANT WOMEN

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Background: Sleep disorders represent an important health issue in pregnant women. Pregnancy is associated with significant changes in sleep architecture and sleep patterns,which can lead to sleep disorders, such as insomnia, restless legs syndrome and obstructive sleep apnea. Our aim was to investigate the effect of a regular, specific physical training on sleep characteristics in healthy pregnant women, focusing on sleep patterns,sleeping habits, sleep quality, quantity and sleep disorders. **Material and methods:** In our prospective study 132 pregnant women were enrolled, with the gestational age at inclusion between 18 and 22 weeks. The first group consisted of 79 pregnant women (average age 29.48), who performed a special gymnastic program of 10 weeks. In the second group 53 healthy pregnant women (average age 27.91) were included, who do not partcipate in the gymnastic program. The subjects completed a complex questionaire regarding sleep charactersitics before and after the observation period. We compared the variation of the main sleep parameters in the two groups using chi-square test and t-test(significant $p<0.05$). **Results:** Sleep quality decreased in both groups, but more significantly in the pregnant women with regular physical training($p= 0.02$). Nightime awakenings also increased in both groups, in average the awakening number was 2.7 times/night in the inactive group, and it was 2.2 times/night in active group. The incidence of sleep disorders (sleep apnea, insomnia,restless leg syndrome) reported by pregnant women significantly increased during the observation period in both groups, $p= 0.021$ and $p= 0.002$ respectively. **Conclusions:** Our results suggest that the special gymnastics applied in our study had no effect on the quality and quantity of sleep of pregnant women, also did not influence positively the occurrence of sleep disorders. The role of such a regular exercise program in pregnant women is to improve general and psychical spiritual well-being, and to reduce anxiety and stress related to pregnancy.

Keywords: physical training, pregnancy, sleep disorders

AN IDIOPATHIC SHORT STATURE PATIENT CONFIRMED BY MUTATION ANALYSIS OF SHOX GENE, RELATION BETWEEN GENOTYPE AND PHENOTYPE

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Background: Isolated SHOX gene haploinsufficiency is one of the most important monogenic causes of short stature. Heterozygote SHOX mutations were described in 2-15% of individuals with idiopathic short stature, in 50-90% with Leri-Weill dyschondrosteosis, and almost 100% of girls with Turner syndrome. SHOX deficiency leads to a variety of different skeletal phenotypes and clinical conditions. **Material and methods:** This case study presents a case of a 10 year old girl who was initially investigated for short stature but no evidence was found. The patients height was below the normal range -2.35 SD of national height standards. After excluding every potential known factor influencing stature, we have analyzed the SHOX gene. Multiplex ligation-dependent probe amplification (MLPA) technique was employed to determine the short stature homeobox containing (SHOX) gene deletions. We have assessed the molecular, clinical and radiological findings. **Results:** Our data suggest an involvement of SHOX gene in idiopathic growth retardation. The patient, similar to that described by the literature in the children with SHOX deficiency, has a mesomelic shortening of extremities. Increased sitting height-to-height ratio and decreased extremities-to-trunk ratio described as the best positive and negative predictive value to identify SHOX deficiency was true in our case as well. **Conclusions:** The human sex chromosomes play a key role in height determination. It is well established that complete or partial loss of the human X chromosome is directly implicated in the development of short stature together with a number of other skeletal abnormalities.

Keywords: Endocrinology, Internal medicine, SHOX gene, idiopathic short stature, MLPA

MUTATIONS OF HNF1B IN CHILDREN WITH CYSTIC DYSPLASTIC KIDNEY

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Background: Renal hypodysplasia is among the most common causes of end-stage renal diseae (ESRD) in childhood. Heterozygous mutations of HNF1B (17q12), encoding the transcription factor hepatocyte nuclear factor-1 beta, are responsible for its 10-30% and are also known to cause maturity-onset diabetes of the young (type 5). The most common HNF1B mutation is a heterozygous deletion involving the whole gene. **Material and methods:** Sixty-eight patients from 55 families were screened for heterozygous deletion by QMPSF and 22 unrelated patients were sequenced for nucleotide changes. Heterozygous deletions were confirmed by demonstrating allelic loss. The nine exons and flanking intronic sections were Sanger sequenced. Segregation of the identified mutations was verified in the parents. **Results:** Heterozygous deletion was found in ten unrelated children from 55 families (18%). Seven of them carried a de novo deletion, two inherited it from the mother and one from the father. A new truncating (c.257_258delAT, p.Y86 *) and a missense (c.883 C> T p.R295C) mutation were identified in two of 22 unrelated patients (9%). Most of the children with HNF1B mutations were diagnosed with hyperechogenic kidney in the perinatal period. The kidneys were typically normal sized with cortical cysts. The child with the heterozygous p.Y86 * mutation had the most severe renal phenotype, she progressed to ESRD at the age of three years, and presented with diabetes mellitus after renal transplantation. None of the other children, nor the three parents progressed to ESRD or presented with diabetes mellitus at the median age of 9 years (range 0.5-44.5 years). **Conclusions:** In accordance with the literature, mutations of HNF1B are a frequent cause of renal cystic hypodysplasia. As the deletions often appear de novo, a negative family does not exclude its causal role. The associated phenotype is mild in most of the cases.

Keywords: nephrology, genetics, pediatrics, chronic renal failure, renal hypoplasia

BIVENTRICULAR HYPERTROPHIC CARDIOMYOPATHY IN A CHILD WITH LEOPARD SYNDROME: A CASE REPORT

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Background: Leopard syndrome is a complex dysmorphogenetic disorder of variable penetrance and expressivity. It is an autosomal dominant disorder characterized by multiple lentigines, electrocardiographic abnormalities, ocular hypertelorism, pulmonary valve stenosis or hypertrophic cardiomyopathy, genital abnormalities, constitutional growth delay, and deafness. It can be correlated with rapidly progressive severe biventricular obstructive hypertrophic cardiomyopathy. Leopard syndrome is often underdiagnosed as many of its features are mild. No epidemiologic data are available, but the syndrome seems to be rare. **Material and methods:** We present the case of a 10 years old girl, diagnosed with obstructive hypertrophic cardiomyopathy at the age of 3 months, and recently diagnosed with Leopard syndrome. **Results:** She first presented for a cardiologic exam at the age of 3 months, due to a murmur. She presented failure to thrive and psychomotor retardation; no other abnormalities were noted at that time. She had a positive familial history for hypertrophic cardiomyopathy: an aunt diagnosed with this disease, which died suddenly at the age of 35 years. She was diagnosed with biventricular obstructive hypertrophic cardiomyopathy and received high-dose beta-blocker therapy. She underwent a biventricular myectomy for relieving of outflow tract obstruction at the age of 7 years, but due to progressive increase of pressure gradient in the left ventricular outflow tract, another myectomy became necessary after 2 years. Prior the second surgical intervention, multiple lentigines appeared on her skin, and genetic testing revealed the presence of Leopard syndrome. After the second surgical intervention, echocardiography shows a residual peak systolic gradient of 25mmHg in the left ventricular outflow tract, and of 16mmHg in the right ventricular outflow tract, respectively. **Conclusions:** Identifying Leopard syndrome can represent a challenge, especially when diagnosis needs to be made from features other than lentigines. Cardiac disease in Leopard syndrome can be progressive, needing multiple medical and surgical interventions.

Keywords: Leopard syndrome, hypertrophic cardiomyopathy, child

MULTIPLE SCLEROSIS PRESENTING WITH RAPIDLY EVOLVING BRAIN LESIONS AND RELAPSES UNDER TREATMENT

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Background: Multiple sclerosis (MS) is a central nervous system disorder, characterized by inflammation, demyelination and neurodegeneration. **Material and methods:** A 24-year-old male with a past medical history of surgery for bilateral congenital cataracts, and right retinal detachment, was diagnosed with relapsing-remitting MS according to the McDonald criteria (2010 revision) in April 2015. His initial symptoms were perioral paresthesias five years ago, transient left central scotoma, three years later and sudden visual loss in his left eye in January 2015. Brain magnetic resonance imaging (MRI) revealed a left paraventricular demyelinating lesion and a right temporal lesion with surrounding edema and peripheral enhancement. Brain biopsy ruled out a cerebral tumor. Following the next eight months he presented three relapses. Serial brain MRI revealed that the demyelinating lesions had increased in number, with infratentorial involvement as well. He was given a five-day course of methylprednisolone during each clinical relapse with partial recovery. In august he began treatment with interferon β-1a. It took one month before experiencing his third relapse in the same year. The attack presented with brainstem symptoms, with an increase in his Expanded Disability Status Scale by 3.5 points. **Results:** Because of the highly active form of MS, therapy was going to be switched to natalizumab, a monoclonal antibody, although there is no class one recommendation to guide alternative treatment in this kind of patients. **Conclusions:** Early diagnosis and treatment of patients with aggressive MS is challenging. Currently we cannot predict which patients will have a high frequency of MRI lesions and clinical relapses. Standardised algorithms are required regarding the timing and indications for escalation therapy. Acknowledgements: 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, highly active, natalizumab, escalation therapy

ROLE OF BRAIN NATRIURETIC PEPTIDE IN MANAGING PEDIATRIC PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION

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Background: Background: Pulmonary arterial hypertension (PAH) is a chronic, progressive disease. B- type natriuretic peptide (BNP) levels have been shown to correlate with right ventricular dysfunction and suggest poor prognosis in patients with PAH. Objectives: To assess the relation between serum BNP levels and functional and echocardiographic parameters, and their ability to predict unfavorable results in pediatric patients with PAH. **Material and methods:** Serum BNP was correlated with functional class (FC), 6-minute walk test (6MWT) and echocardiographic parameters in 34 children with PAH. **Results:** BNP levels were significantly elevated in patients with PAH compared with control subjects (p=0.001). BNP have a negatively correlation with 6MWT (p=0.0094, r=-0.4661). High serum BNP levels according to median value (29.25pg/ml) was found to show a statistically significant positive correlation with some echocardiographic variables which illustrated the degree of RV overload such ACT (p=0.03) and the RV function such FAC (p=0.02). The risk of worsening right heart failure estimated by the Kaplan-Meier method was significantly higher at 12 months when the initial BNP level was <31.2pg/ml. **Conclusions:** BNP level is related to functional and echocardiographic parameters that reflect disease severity. A serum BNP level of 32.1pg/ml was found to be useful in identifying unfavourable outcomes in pediatric patients with severe PAH. Acknowledgement:This paper is supported by the Sectoral Operational Programme Human Resources Development (SOP HRD), financed from the European Social Fund and by the Romanian Government under the contract number POSDRU/159/1.5/S/137390/.

Keywords: pulmonary arterial hypertension, children, B-type natriuretic peptide

RETROSPECTIVE STUDY ON MORPHOLOGIC AND ENDOSCOPIC FEATURES OF SERRATED COLON POLYPS - A TERTIARY GASTROENTEROLOGY CENTER EXPERIENCE

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Background: In with the new endoscopic technologies, an increasing importance has been given recently to the optical diagnosis of sessile serrated adenomas and polyps (SSA/Ps). The aim of this study was to determine the prevalence of SSA/Ps, the colonic distribution, to assess their morphologic features and their endoscopic predictors of histology. **Material and methods:** We retrospectively analyzed all the colonoscopies with biopsies for colonic polyps performed in our clinic between January 1, 2015 - October 1, 2015. Data regarding age, gender, endoscopic description and histopathology results were collected. Stored endoscopic images were reassessed for optic diagnosis, using the following 4 criteria: clouded surface, indistinct borders, irregular shape, dark spots inside crypts. **Results:** A total of 137 sessile serrated lesions were identified: 93 hyperplastic polyps, 39 SSA/Ps, 5 traditional serrated adenomas (TSA). 35 patients (18 male), with a mean age of 61 years (±12.85) were included in the study. Serrated prevalence was 24.09% for hyperplastic, 11.39% for SSA/Ps and 1.29% for TSAs. 9 patients presented two simultaneous SSA/Ps. SSA/Ps sizes ranged between 2- 20 mm, with a median of 7 mm, 19 of them being diminutive. 59.09% of the polyps were situated on the left colon. High grade dysplasia was found in two cases, located distal to the splenic flexure. Endoscopic captured images were available for 20 of the 44 histologicaly confirmed SSA/Ps. In these polyps the optical diagnostic criteria was as it follows: 2 polyps(10%) presented only 1 criteria, 7 polyps(35%) accomplished 2 criteria, 6 polyps(30%) presented 3 criteria and only 4 polyps (20%) fulfilled all the criteria. **Conclusions:** Our study registered a 11,39% prevalence for the SSA/Ps. More than half of the SSA/Ps were located on the left side of the colon. Real time optical diagnosis of SSA/Ps can spare time and financial resources, but depends on colon cleansing and the endoscopist's experience.

Keywords: sessile serrated polyps, sessile serrated adenoma, traditional serrated adenoma, prevalence, optic diagnosis

CORRELATIONS BETWEEN ENDOSCOPIC AND HISTOPATHOLOGICAL DIAGNOSIS IN INFLAMMATORY BOWEL DISEASES IN OUR AREA

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Background: In inflammatory bowel disease, colonoscopy represents the "gold standard" of diagnosis, being crucial in defining the disease. The histopathological examination comes to complete the clinical and endoscopical findings but doesn□□□□always offer clear diagnostic elements. Thus, we wanted to establish, if any, correlations between clinical suspicion, endoscopic and histopathological diagnosis. **Material and methods:** We conducted a retrospective study by accessing the database of the Pathology Departament of the Tîrgu Mureş County Emergency Clinical Hospital, between 2010 and 2014. We included biopsies taken endoscopically and surgically, examined by pathologists following a presumtive diagnosis of ulcerative colitis, Crohn□□□□disease or unspecified IBD. 402 biopsies were included, following clinical diagnosis, age, gender, location of lesions and histopathological conclusion. **Results:** Out of the total number of cases we identified 213 males respectively 189 female patients, with a mean age of 44,2 yo for men and 47,2 yo for women. 49% of presumptive clinical diagnosis were of ulcerative colitis, 25% of Crohn□□□□disease and 26% of unspecified colitis. A diagnosis of ulcerative colitis was established in 32% of cases, Crohn□□□□disease in 17% of cases and in 34% of cases other diagnoses were concluded. Out of the total number of cases reffered with the suspicion of ulcerative colitis, 55% were confirmed through pathology, whilst 37% of Crohn□□□□disease suspicions got confirmation. Diffusely active chronic colitis was present in 129 cases, focally active chronic colitis in 67 cases, while 206 cases were attributed to other lesions and diagnoses. **Conclusions:** Only half of colitis suspicions were confirmed, with a male predominance, while only 37% of Crohn's suspicions were sustained by pathology. Half of the included biopsies proved to be lesions different than those typical for IBDs. The confirmation rates of clinical diagnoses prove the polymorphism of lesions in inflammatory bowel diseases and underline the need of taking biopsies according to current protocols.

Keywords: Inflammatory bowel disease, Ulcerative colitis, Crohn's disease, Pathological diagnosis

PERCUTANEOUS NEPHROLITOTOMY EFFICACY AND SAFETY IN PATIENTS OVER 70 YEARS WITH KIDNEY STONES.

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Background: Percutaneous nephrolithotomy represents the mmain indication for patients with kidney stones, even in the presence of various comorbidities. In our clinic the open surgery for this pathology is less than o,5% of all procedures for renal stones. The objective of this paper is to assess the safty and efficacy of this procedure in patients over 70 years old. **Material and methods:** A retrospective study was performed for a period of 16 years (1997-2012). Atotally of 323 patients entered in this study (162 women, 161, men) aged over 70 with renal stones. They were treated endoscopically by percutaneous nephrolithotomy and anterograde ureteroscopy. 85 patients (26,31%) had comorbidities that were preoperatively dignosed and treated if was necessary. **Results:** Overall status of "stone free" at the and of surgery was presented in 263 patients (81,42 %). 60 patients (18,58%) had residual fragments. Residual stones were solved by a new percutaneous nephrolithotomy session, spontaneous elimination or extracorporeal shock wave lithotripsy. The most commun complications were bleeding and infections. We had no deaths. No hemostasis nephrectomy was necessary. **Conclusions:** Recognised preoperative comorbidities do not represent risck factors in eldery patients but it requires a rigorous evaluation in the preoperative period. The number, size and complexity of stones directly influence the state of "stone free" at the end of surgery.

Keywords: kidney, percutaneous nephrolithotomy, comorbidities, stone free, stones

CORRELATIONS BETWEEN CALCIUM SCORE AND SYNTAX SCORE IN THE COMPLEX MULTISLICE COMPUTED TOMOGRAPHIC ASSESSMENT OF CORONARY ARTERY DISEASE

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Background: Noninvasive characterization of coronary artery disease remains a challenging topic. Coronary computed tomography angiography (CCTA) is a method that may become in the future a standard test used to select patients who undergo invasive treatment. The aim of our study is to evaluate the role of two markers for a complex characterization of coronary artery disease: calcium score and SYNTAX score, assessed by CCTA. **Material and methods:** We evaluated retrospectively 20 patients who underwent CCTA and presented at least two stenotic lesions in the coronary arteries. Images were acquired using a 64 Multidetector Computed Tomography (MDCT) and were processed to obtain 3D reconstructions. Using post-processed images we determined for each patient two CT deviated scores: calcium score and SYNTAX score. Based on the SYNTAX score we divided the patients in three risk subgroups: high - Syntax score more than 32, medium Syntax score between 22 and 32, and low - Syntax score below 22. **Results:** Seventeen percent of study lot (85%) were male patients, with a mean age of 65 years. Right dominance was found in 17 patients and there were not significant differences in terms of risk factors.The average values were: 211 for calcium score and 27 for SYNTAX score. Statistical analysis indicated a good and statistically significant correlation between the two scores for the whole group (r=0.42, p=0.04) and for the low Syntax subgroup (r=0.49, p=0.03<0.05). However, this correlation was less significant in the high Syntax subgroup(r=0.29, p=0.51) or the medium Syntax group(r=0.49, p=0.32). **Conclusions:** CCTA derivated markers can provide relevant information to characterize the complexity of the coronary lesions. Calcium and SYNTAX scores should be determined before invasive procedures to obtain relevant information about the complexity of stenotic lesions. According to these findings CCTA could represent in the future a noninvasive preoperative evaluation method useful in the therapeutic decision.

Keywords: Radiology, Cardiology, MDCT, calcium score, SYNTAX score

WHICH FACTORS HAVE IMPACT ON THE PREVALENCE OF RAGWEED POLLEN ALLERGY? CROSS SECTIONAL STUDY IN THE 3RD GRADE SCHOOLCHILDREN IN HUNGARY

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Background: Ragweed pollen allergy (RPA) has become an important health problem in Hungary with large differences in the prevalence by regions that may be caused by inequality in socioeconomic status (SES) and related indicators. The aim of this analysis was to assess the association between some socioeconomic factors and prevalence of RPA and impact of other possible risk or protective factors on the outcome among the third grade schoolchildren by a questionnaire survey run in 2005. **Material and methods:** The standardised questionnaires of the National Children Health Respiratory Survey, based on the International Study of Asthma and Allergies in Childhood, were filled in by parents anonymously. Descriptive and analytical (mixed logistic regression) methods were applied to identify possible risk factors of RPA by Stata 10.0 software. **Results:** 82,082 questionnaires were sent to almost all schools in Hungary. The response rate was 73.1%. 81-86% vs 63-74% of RPA stated by parents was confirmed by a doctor in different (affluent vs deprived) regions. In the models (parents signed and doctor diagnosed RPA) the outcome was positively associated with the increasing population size of settlements. Significant risk factors were male sex (OR=1.31, 95% CI=1.23-1.40 and OR=1.39, 95% CI=1.29-1.50), lower respiratory symptoms in the first 2 years of life (OR=1.85, 95% CI=1.72-1.98 and OR=2.02, 95% CI=1.87-2.19), Roma ethnicity (OR=1.43, 95% CI=1.24-1.63 and OR=1.20, 95% CI=1.02-1.41) and dissatisfaction with housing conditions (OR=1.15, 95% CI=1.06-1.25 and OR=1.15, 95% CI=1.05-1.26). Getting social aid had negative associations with prevalence (OR=0.92, 95% CI=0.84-0.99 and OR=0.90, 95% CI=0.82-0.99). **Conclusions:** We suggest the prevalence of RPA would be higher in deprived areas if parents had correct knowledge about symptoms and correct attitude for compliance with physicians. Inequalities in SES may explain a part of differences in prevalence of RPA but further analyses are necessary to assess the impact of environmental factors e.g. exposure to ragweed pollen load.

Keywords: ragweed pollen allergy, inequality, prevalence, socioeconomic status

DRIVER MUTATIONS IN THE RAS/MAPK SIGNALING PATHWAY: MATCHED PRIMARY MELANOMAS VERSUS VISCERAL METASTASES

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Background: Malignant melanoma is among the most aggressive malignancies with increasing incidence and high mortality rate. It is well-known that RAS/MAPK pathway is frequently altered in this tumour type. The signaling cascade mediates multiple cellular processes. Its constant activation due to BRAF mutations is characteristic for malignant melanomas. Besides, mutations affected the NRAS gene are also observed. However, these alterations are usually mutually exclusive. Modification of the C-KIT oncogene are also proven to be therapeutically relevant. **Material and methods:** The aim of our study was to investigate driver mutations of BRAF, NRAS and C-KIT genes in matched primary melanoma samples (N=50) and visceral metastases (N=125). Before DNA extraction, a section stained with H&E was made from FFPE tissues to evaluate tumor content. Appropriate areas were then labelled and macrodissected. We followed a logical and cost reducing scheme in mutation analysis. All samples underwent RFLP using a specific enzyme for BRAF codon 600 mutation screening. BRAF exon 15 mutant samples were than Sanger sequenced. BRAF wild type cases were subjected to NRAS exon 2 and 3 sequencing, whereas double wild-type cases C-KIT exon 11 and 13 direct sequencing. **Results:** Overall, in our cohort the following mutations were observed: BRAF V600E, V600K, K601Eand NRAS G12C, Q61K, Q61L, Q61R. Whereas any C-KIT mutation cannot be found, but triple-wild type samples were detected. Regarding concordance of matched samples, the most of them (76%) were concordant molecularly. However, discordant pairs (24%) were also detected. Discordant pairs can be further divided into two groups: BRAF/NRAS mutant primary melanoma with wild type metastasis (the majority of patients), wild type primary lesion with BRAF or NRAS mutant metastasis. **Conclusions:** In conclusion, the relatively high discordance rate between primary melanomas and their visceral metastases suggests clonal selection during tumor progression. Therefore, targeted therapy should based on the molecular genetic analyzis of the metastasis.

Keywords: malignant melanoma, RAS/MAPK signaling pathway, tumour heterogeneity, BRAF, NRAS

THE PREVALENCE OF DYSPHOTOPSIA IN PATIENT WITH RECENT CATARACT SURGERY

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Background: Pseudophakic dysphotopsia are becoming increasingly important as undesirable side effect of cataract surgery. The aim of this study is to determine the incidence and risk factors of dysphotopsia in patients following cataract surgery. The objective is to examine factors that influence patient satisfaction after uncomplicated surgery, and spectacle freedom. **Material and methods:** Prospective study that analyzed postoperative data of 58 eyes undergoing phacoemulsification and implantation performed by two surgeons, between June 2015 and August 2015. Postoperative refractive target was emmetropia. Postoperative examinations at two weeks included subjective refractions; visual acuities and subjective survey. Patients without ocular co-morbidity completed a questionnaire that was designed to assess subjectively perceived visual complaints and identify predisposition for dysphotopsia. Photographic images where used to describe possible photic phenomena. The questionnaires evaluated spectacle use, presence of positive and negative dysphotopsia on a 5-point scale, additionally, the facility of performing common activities. **Results:** The mean age ± SD of patient age was 68,9 years. 87% of questionnaire respondents were satisfied post-operatively. Implantation of AcrySof® IQ was performed in 68% consecutive routine cataract procedures, and AcrySof® SA60AT/SA30AL, in 20% of cases. 39% of respondents experienced dysphotopsia symptoms (both positive and negative) out of which 16% reported clinically meaningful negative dysphotopsia. Patients gained a good UCVA monocularly (0.7) **Conclusions:** Although satisfaction with cataract removal and IOL placement is high, dysphotopsia is relatively common. It represents the most important contributor to patient dissatisfaction after uncomplicated surgery. The incidence and significance should not be overlooked. There is a consensus regarding IOL role in inducing dysphotopsia, incidence is reduced in hydrophobic lenses, followed by the hydrophilic one.

Keywords: dysphotopsia, cataract surgery, IOL, glare, pseudofak

ASSOCIATION BETWEEN SLEEP DISORDER AND INCREASED BODY MASS INDEX IN ADULT PATIENTS

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Background: Obesity is a public health issue, with increasing prevalence and incidence all over the world. Diet and exercise applied in obesity treatment are not always as effective as expected, as there are many other determining factors which can lead to obesity. One of these modifiable factors seem to be sleep disorder. The objective of our study was to test the association between the presence of sleep disorder and increased body mass index (BMI). **Material and methods:** 84 patients were screened in a descriptive cross-sectional study. Each patient completed the adjusted 7 items University of Toronto Sleep Assessment Questionnaire (SAQ©). Each affirmative answer was accounted 1 point. The total score was calculated. Mild sleep disorder was considered at 4 - 5 points, severe sleep disorder at 6 - 7 points. Body mass index (BMI) was calculated for each patient by the formula weight (Kg) / squared height (m2). We considered increased BMI values greater than 25 kg/m2. The association between the sleep disorder and increased BMI was tested using Chi square Fisher exact test. **Results:** We interviewed 84 patients, 32 (38%) men (average age 54 +/- 6.63 years) and 52 (62%) women (average age 50 +/- 5.26 years). Mild sleep disorder was present in 36 patients, and severe sleep disorder in 25 patients. We noticed association between sleep disorder and increased BMI (p=0.0064, RR=2.925, 95% CI 1.16-7.36). We observed the risk for increased BMI dependent on the sleep disorder severity. **Conclusions:** Sleep disorder is a potentially modifiable risk factor which can be included in obesity therapeutic approach and management. Early diagnosis and treatment of sleep disorder is important in obesity prevention.

Keywords: sleep disorder, body mass index, obesity, risk, prevention

CORRELATIONS BETWEEN EPICARDIAL FAT VOLUME, SYNTAX SCORE AND CALCIUM SCORE IN THE COMPLEX ASSESSMENT OF THE SEVERITY OF CORONARY ARTERY DISEASE

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Background: Epicardial fat volume (EFV) represents a new marker useful for the assessment of the severity of coronary artery disease and of the progression of the atherosclerotic process. Our aim was to determine the correlation between EFV and markers which express the severity of coronary heart diseases such as the Syntax score. **Material and methods:** We enrolled 54 patients with stabile angina, in whom we determined the EFV and the calcium scoring using multislice angio computed tomography. At the same time, Syntax score was calculated based on Angio CT for the evaluation of the coronary artery disease's complexity. **Results:** From the 54 patients 85.19% were males and 35.19% females. The most frequent risk factors were hypertension (85.19%) and dyslipidemia (59.29%). Univascular disease was present in 46.3% of patients, bivascular disease in 18.52% trivascular disease in 25.93% of patients. There was no statistically significant correlation between the EFV and Syntax score (p = 0,2234, r = 0.05247), however we found statistically significant correlation between Syntax and Ca-Score (p = 0.0007, r = 0.3415) and between Syntax score and ejection fraction (p = 0.0494, r = 0.1309). **Conclusions:** Noninvasive evaluation of the epicardial fat volume (angio CT) and determination of the Syntax score based on Angio CT results can represent a new risk factor for the assessment of the complexity of coronary heart diseases.

Keywords: Epicardial Fat Volumen, Ca score, Syntax score, multislice angio computed tomography, coronary artery disease

CORRELATIONS BETWEEN THE SEVERITY OF PERIPHERAL ARTERY DISEASE AND SYNTAX SCORE

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Background: Peripheral artery disease is one of the most important consequence of atherosclerosis, patients with critical limb ischaemia presenting in most of the cases associated coronary artery disease too. **Material and methods:** The study population consisted in 24 patients with peripheral artery disease who underwent angio CT of the lower limbs and Coronary CT too. **Results:** The study population consisted in 24 patients. Assesment of the severity of peripheral arterial disease showed that 12% of patients presented TASC class A, 33 % TASC class B, and 55 % TASC class C. We found low calcium scores in the coronary arteries in 15 %, intermediate calcium score in 45 %, and high calcium score in 40 %. SYNTAX score was low in 54 % of patients, intermediate in 36%, and high in 9%. Only 3 of the patients presented no significant coronary lesions, while 21 presented peripheral artery disease and associated significant coronary lesions too. We found a significant correlation between coronary calcium score and SYNTAX score (p=0,03), and correlation between TASC classification and SYNTAX score (p=0,05). **Conclusions:** The severity of peripheral artery disease, characterized by TASC classification, presents a good correlation with the severity of coronary artery disease determined by the SYNTAX score (p=0,05).

Keywords: peripheral artery disease, coronary artery disease, Syntax score, TASC classification, Calcium score

ASSESSMENT OF MYOCARDIAL VIABILITY FOLLOWING AN ACUTE MYOCARDIAL INFARCTION USING PERFUSION ANGIO COMPUTED TOMOGRAPHY

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Background: To study the role of a new technique, Perfusion Angio Computed Tomography, in the complex assessment of myocardial viability following an acute myocardial infarction. **Material and methods:** Ten patients admitted for a first acute myocardial infarction had a coronary angiography and revascularisation early after admission, followed by perfusion contrast angio CT for assessment of myocardial viability in the post-infarction period. **Results:** We succeeded to identify the presence of viable myocardium after an acute myocardial infarction using perfusion Angio CT. In 90% of patients, the contrast material perfused the akinetic area on an extent larger than 50%, indicating the presence of myocardial viability. The perfusion deffect was larger than 50% of the akinetic area in 50% of patients with an ejection fraction below 45%, compared to 33.33% in patients with ejection fraction above 45%. **Conclusions:** Perfusion Angio Computed Tomography is a new technique that can be used for visual estimation of the preservation of myocardial perfusion in the infarcted area, indicating the presence of viable myocardium that can recover its function after revascularization.

Keywords: viability, myocardial infarction, perfusion angio CT

FACTORS ASSOCIATED WITH SIGNIFICANT THROMBOTIC LOAD IN PATIENTS WITH ACUTE CORONARY SYNDROMES

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Background: Thrombotic load in acute coronary syndromes is commonly assessed by classical angiography, sometimes associated with more sensitive techniques such as OCT, IVUS or noninvasively by Cardiac Computed Tomography (CCT). **Material and methods:** We retrospectively evaluated all consecutive patients with acute coronary syndrome (ACS): STEMI, nonSTEMI or unstable angina, hospitalized in the Cardiology Clinic in october 2015, who underwent urgent coronarography. We assessed the correlations between cardiac risk factors, blood count, blood glucose, myocardial ischemia time, left ventricular ejection fraction and type of ACS and trombotic load (assessed by TIMI flow). **Results:** We retrospectively evaluated 42 patients with ACS. Thrombotic load was higher (flow TIMI 0) in patients with glucose above 140 mg/dL (56% vs 34%), left ventricular ejection fraction below 49% (52% vs 25%). The degree of thrombosis was also higher in patients with more than 240 minutes from the onset of symptoms in STEMI cases (66% vs 50%). In ACS patients who presented leukocytosis>10.000 /mm³ TIMI flow was significantly decreased (TIMI flow 0), compared to those with leukocyte levels below 10.000 / mm³ (65% vs 16%). It was revealed that leukocytosis >10,000 /mm³ correlates with the type of acute coronary syndrome. Thus patients with leukocytes over 10,000/dl are identified in 78% of STEMI cases, 13% NON STEMI and 8,6 % in unstable angina, while patients with leukocytes below 10,000 / mm³ were 36% in STEMI cases, 21% in nSTEMI and 42.1% in unstable angina. **Conclusions:** The degree of thrombotic load was significantly correlated with different factor that can be routinely based assessed during the initial evaluation of the patient with ACS, such as glucose levels or leukocyte levels. It also correlates with the decrease in ejection fraction, the type of ACS and the time interval from the onset of symptoms to presentation.

Keywords: Internal Medicine, Cardiology, thrombotic load, cardiac computer tomography, acut

NEW EXPERIENCE IN PULMONARY VEIN ISOLATION IN ATRIAL FIBRILLATION

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Background: Pulmonary veins (PVs) play an important role in genesis of atrial fibrillation (AF). The purpose of this study was to determine the safety and efficacy of PVs isolation in patients with AF. **Material and methods:** In 13 patients (mean age, 56.61±14.24 years) with paroxysmal (61.53%) and persistent (38.46%) AF, PVs isolation was performed using EnSite NavX three-dimensional electroanatomic (EA) mapping system. To improve the intra-operative image we performed *fusion* of 64 Multislice Computed Tomography and *EA map of the left atrium (LA)*. **Results:** Among the 52 targeted PVs, 49 (94.23%) were completely isolated, with a mean of 11.75±3.96 minutes of radiofrequency energy applied at a maximum power of 35 W. We found positive correlation between AF recurrence and the LA volume (P<0.05). At 6 months of follow-up, 87.5% of patients with paroxysmal and 80% of patients with persistent AF were free from any new episode of AF. There were no complications. **Conclusions:** In the experience of Cardiology Clinic the ablation of AF associates a success rate comparable with data from literature. Patients with paroxysmal AF (mostly young patients with normal LA volume) present superior results after PVs isolation as compared to patients with persistent AF (older and with larger LA volume).

Keywords: atrial fibrillation, pulmonary vein isolation, left atrial volume, electroanatomic mapping, 64 Multislice Computed Tomography

THE RESULTS OF AUTOLOGOUS STEM CELL TRANSPLANTATION IN MULTIPLE MYELOMA AT THE BMT UNIT TARGU MURES

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Background: Multiple myeloma (MM) is a clonal B-cell malignancy characterized by the proliferation of plasma cells. The median survival with standard therapy in 2003 was 3,5 years and with high dose therapy followed by autologous stem cell transplantation was 4,5 years. In the recent 2 decades this hematological malignancy appears in younger patients under the 65 years. Multiple studies are demonstrated that the autologous stem cell transplantation (ASCT) is the standard care in MM and is the frontline therapy among novel agents, proteasome inhibitors, immunomodulating agents. Our purpose is to achieve the complete response as soon as possible with our therapeutic strategies. **Material and methods:** We present data for 139 patients diagnosed with multiple myeloma/ plasmocytoma who received ASCT in Clinical Hematology and BMT Unit Targu Mures from 2005-2015. The patients were classified in two groups: MM in relapse and in progression. As soon as possible we perform the mobilization and collection of SC. For the mobilization we utilized Cyclophosphamide and granulocyte growth factors. Before the transplantation we administrated high dose Melphalan. **Results:** Medium age is 52.3 years, 22,14% are younger than 60 years. The most frequently occurring type of MM is the IgG myeloma. We have 11 double transplantations. The medium time of remission between the two transplantations is 43.54 month. In 4.31% patients the collected stem cell number was insufficient, in 27.33% patients it was enough for only one transplantation. 27 patients died from the presented groups. **Conclusions:** The aim of treatment is to control the disease, to maximize the quality of life and to prolog survival. The ASCT, with the new agents and targeted treatment remains recommended to patients in first response. ASCT is an efficient and necessary method of treatment in MM and can result in a long remission.

Keywords: myeloma multiplex, plasmocytoma, autologous stem cell transplantation, mobilization and collection of stem cell

FACTORS ASSOCIATED WITH IN- HOSPITAL MORTALITY IN PATIENTS WITH ACUTE CORONARY SYNDROME

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Background: The aim of the study was to analyze the correlation between several factors associated with in-hospital mortality at patients admitted with acute coronary syndrome. **Material and methods:** The study lot consisted in 78 deceased patients with acute coronary syndrome admitted in our department over 1 year period (January 2014-december 2014). Emergency coronarography and stent implantation was performed in 66 cases. The other 12 patients received only conservative therapy, as they presented out of the therapeutic window (more than 12 hours from the onset of symptoms). **Results:** We noticed the predominance of female gender (44 females vs 34 males). Medium age was 70,82 years old. The initiation of BLS(basic life support) and ALS(advanced life support) was mostly increased in the hospital environment (64,1% of the cases). Most of the patients had trivascular lesions or severe left main disease. Electromechanic dissociation (DEM) was the arrhythmia causing the cardiac arrest (60,3%) followed by ventricular fibrillation (23.1%). It is noticeable that most of the deaths occurred in intensive care units (64,28%), followed by the coronary care units (23,8%). **Conclusions:** In-hospital mortality was positively correlated with the female gender, initiation of BLS and ALS in the hospital environment, increased times from the first medical contact to balloon, the presence of trivascular lesions, admission in ICU and extracardiac complications

Keywords: Internal Medicine, Cardiology, in hospital mortality, cardiac arrest, trivascula

PREDICTABILITY OF GASTRIC INTESTINAL METAPLASIA BY LIGHT BLUE CREST AND VILLOUS PATTERN SIGNS SEEN ON MAGNIFYING NARROW -BAND IMAGING ENDOSCOPY

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Background: Gastric intestinal metaplasia (GIM) is regarded as a risk factor for intestinal type of gastric cancer. Currently the diagnosis of GIM is based on the histological assessment of biopsy specimens. NBI-ME may enhance the diagnostic accuracy of GIM. The aim of this study was to evaluate the performance of NBI-ME in detection and characterization of GIM. **Material and methods:** 37 patients with previously identified GIM were enrolled in this prospective study and underwent a surveillance endoscopy. NBI-ME with targeted biopsies was performed in all patients. Two criteria: Light Blue Crest and Villous Pattern were selected as positive readings for GIM. The sensitivity of NBI-ME for the detection of GIM was calculated by correlating endoscopic findings to histological diagnosis. **Results:** 37 patients (14 male and 23 female, mean age 59 years) were included in the study. Twenty nine of 37 patients (78,3%) were found to have GIM. A similar distribution between gender was observed with an increase of gastric intestinal metaplasia with age. An significant association between mucosal patterns and histologic findings was observed (p=0,0331, p=0,0113). The overall sensitivity, specificity, PPV, NPV and LR+ of these two endoscopic signs in diagnosis of GIM were 79,62%, 81,25%, 77,06%, 82,9%, and 4,26 respectively. **Conclusions:** NBI-ME allows recognizing of specific mucosal patterns and thus represents a promising technique that can facilitate diagnosis of GIM by targeted biopsies.

Keywords: Gastroenterologie, Medicina Interna, Narrow-Band Imaging, Magnifying Endoscopy, Gastric Intestinal Metaplasia

FACTORS ASSOCIATED WITH SURVIVAL AFTER A REVASCULARIZED MYOCARDIAL INFARCTION

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Background: The main therapeutic goal in acute myocardial infarction (AMI) is the fast restoration of coronary flow and shortening of the total ischemic time. Primary percutaneous coronary intervention is the standard of care reperfusion therapy for patients with ST-segment elevation myocardial infarction. The aim of this study was to identify the predictors of survival in patients undergoing primary PCI. **Material and methods:** The study population consisted of 267 patients treated by primary angioplasty admitted in Cardiology Clinic, Tirgu Mures, in 2013. Patients were divided in two groups. Group A: 227 patients that were alive at the 1 year follow-up and group B, with 40 patients that were dead at follow-up. We analyzed: gender, mean age, time to balloon, localization of culprit lesion, postprocedural TIMI flow grade and cardiovascular risk factors prevalence, correlated with in-hospital and 1-year mortality rates. **Results:** The mean age of patients who died was 72 years vs 60 years of patient who survived. The prevalence of DM type 2 was 42,5% in patients who died vs 24% patients alive. We found that culprit lesion localization was more frequent on LAD in patients who died in the 1 year follow up period vs patients who remained alive (72,5% vs 41%). Post-PCI TIMI flow grades <3 were present in 22,5% of patients who died during the follow up period vs 10% in patients who remain alive. The peak CK registered was 2806 U/I in patients who died vs 2260 U/I in patients alive. The ischemic time among patients who died in hospital was 456 min, compared with those alive at 1 year after MI in whom ischemic time was 352 min (p=0.0001). **Conclusions:** The most important predictors of survival in STEMI patients were the presence of a postprocedural TIMI III flow, a low peak CK value and a short ischemic time.

Keywords: STEMI, survival, TIMI flow, primary PCI, peak CK

CELIAC DISEASE IN CHILDREN-CLINICAL AND PARACLINICAL CORRELATIONS.

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Background: Celiac disease is a systemic immune-mediated disorder caused by gluten and other prolamins manifested in genetically susceptible individuals. The primary aim of our study was to determine the clinical and laboratory characteristics of patients admitted to our department with the suspicion of celiac disease. The secondary goals were to assess the diagnostic value of the combined anti- transglutaminase 2 antibodies (TG2)/deamidated gliadin peptide antibodies (DGP) and antiendomisium antibodies (EMA) and to determine the distribution of HLA DQ2/DQ8 for the tested patients. **Material and methods:** We included in the study children with the clinical suspicion of celiac disease and divided them into 3 groups: patients with celiac disease (23 children), patients with potential celiac disease (20 children) and the control group (29 children). Standard laboratory data, the level of TG2/DGP and EMA antibodies as well as the distribution of HLA molecules were assesed. Histopathological examination of duodenal biopsies was considered the gold standard for diagnosis. **Results:** The main signs and symptoms at diagnosis of celiac disease were : diarrhea, distended abdomen, weight-stature deficit. The most frequent secondary diagnoses for celiac patients were anemia and increased liver enzymes. TG2/DGP determination had a sensitivity of 80% and a specificity of 86.9%. EMA showed a sensitivity of 78.9% and a specificity of 96.1%. The majority of celiac patients were either HLA DQ2.5 positive or HLA DQ8 positive. We obtained statistically significant differences between groups regarding the iron levels, the erythrocytes parameters, the number of erythrocytes and thrombocytes. Statistically significant differences were obtained on comparing the hemoglobin and erythrocytes parameters on the first evaluation and on reevaluation of patients with celiac disease. **Conclusions:** TG2/DGP and EMA are excellent diagnostic tools. Genetic testing is of great value for the diagnosis of celiac disease. Diagnosis and treatment of celiac disease has favorable clinical and paraclinical outcomes.

Keywords: Celiac disease, Children, Genetic testing, TG2/DGP, EMA

CORRELATIONS BETWEEN QUALITY OF LIFE AND TYPE OF REVASCULARIZATION IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION

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Background: We aimed to investigate the differences between improved quality of life after acute myocardial infarction and revascularization type chosen. **Material and methods:** Fifty-four patients who suffered an acute myocardial infarction were included in the study. Patients were divided into 2 groups: group 1 - patients without any intervention of coronary revascularisation, and group 2 - patients who underwent a coronary revascularization procedure. All patients were monitored at one year after the heart attack and the quality of life was assessed using the EQ-5D questionnaire. **Results:** From the patients included in the study, 14 (25.92%) were males and 40 (74.08%) women, with a mean age of 66.53 years. The average mark awarded by patients at the health status at 1 year was 82.25%. Mobility problems were present in 14.28% of patients without coronary revascularisation compared to only 4.25% in the group with revascularisation. Similarly, daily living activity problems were present in 14.28% in group 1 vs 2.12% in group 2, pain or discomfort was present in 14.28% of cases in group 1 compared to only 2.27% in group 2. **Conclusions:** Patients with coronary revascularization reported improving life quality score after 1 year from the acute myocardial infarction.

Keywords: myocardial infarction, quality of life, revascularization, EQ-5D questionnaire, heart attack

ASSESSMENT OF THE QUALITY OF LIFE AND DIGITAL ULCERS IN PATIENTS WITH SCLERODERMA RECEIVING VASODILATOR THERAPY

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Background: Scleroderma is a rare condition associated with increased rates of morbidity and mortality, and digital ulcers are a common complication affecting up to 60% of patients. Bosentan therapy is recommended in patients with Pulmonary Artery Hypertension (PAH) and scleroderma. Objectives: We aimed to analyze the evolution of digital ulcerations and quality of life scores (HAQ, VAS) in patients with sclerodermia on Bosentan therapy after 6 months of treatment. **Material and methods:** Ten patients from Tirgu Mures Rheumatology Clinic were included in the study and digital ulcerations, HAQ_DI score, VAS score for ulcers and VAS score for Raynaud phenomenon were assessed in patients with and without PAH, at baseline and at 3 and 6 months follow-up. **Results:** The study included 9 women and 1 man aged between 28 and 72 years, three of them having HAP. All patients showed both Raynaud's phenomenon and digital ulcers. When initiated 44.44% of fingers presented ulcers, with a decline to 23.33% at 6 months. VAS score for ulcers at initiation averaged 84.44, decreasing at 6 months to 48.89, and the digital ulcers cure rate increased by 11.11%. In patients with PAH initial VAS for Raynaud's phenomenon was 76.66 and VAS for ulcers was 90 (23.33% fingers had ulcers), decreasing to 53.33 and 46.66, respectively. In PAH patients mean baseline VAS for Raynaud's phenomenon is 85 and VAS for ulcers is 81.66, decreasing at 6 months to 61.66 and 50, respectively. HAQ_DI score was 1.81 at initiation (1.55 in PAH patients and 1.93 in those without PAH) deecreasing at 6 months to 1.35, being 1.08 in PAH patients and 1.49 in those without PAH. **Conclusions:** Bosentan therapy has proven efficiency in the 2 groups, the number of ulcers and HAQ index, visual analog scale for the ulcers and Raynaud's phenomenon gradually improving in subsequent evaluations.

Keywords: clinical medicine, clinical medicine, sclerodermia, pulmonary artery hypertension, vasod

CCTA AND ANGIOGRAPHIC DERIVED PREDICTORS OF COMPLEX PCI PROCEDURES IN SIGNIFICANT LM STENOSES

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Background: The aim of our study was to identify the most important predictors of complex PCI procedures in significant left main (LM) stenoses, determined using Cardiac computed tomographic angiography (CCTA) and conventional coronarography. **Material and methods:** We enrolled in the study thirty-six patients with significant LM stenosis (>50% stenosis). Each subject underwent cardiac CT followed by coronarography and percutaneous intervention. Syntax score was assesed using both angiographic and CCTA analysis. **Results:** Both angiographic and CCTA Syntax score were significantly higher in cases which required complex PCI procedures vs. those who did not require complex revascularization procedures (24.5 +/– 11.5 vs 32.2 +/– 14.6, p = 0.09 for Angio Syntax, 35.3 +/– 11.5 vs 25.2 +/– 11.3, p = 0.01 for CCTA). In cases requiring complex revascularization procedures Ca scoring was significantly higher and plaque volumes were significantly larger (299.5 +/– 359.6 vs 917.3 +/– 495.4, p = 0.04 for calcium score, 79.7 +/– 28.5 vs 108.7 +/– 25.3 mm3, p = 0.002 for plaque volumes). Multivariate analysis identified the following CCTA parameters as the most important predictors for complex intervention in LM lesions: plaque volume (OR 8.00, p = 0.008), Ca scoring (OR 6.37, p = 0.02) and CCTA Syntax score (OR 6.87, p = 0.01). **Conclusions:** The CCTA derived parameters lead to a complex characterization of the culprit lesion and identifies the subgroup of patients who will be more exposed to procedural complications during PCI.

Keywords: left main coronary artery, CCTA, Syntax score, calcium score, plaque volume

THE EVALUATION OF RISK FACTORS AND THE MANAGEMENT OF CLOSTRIDIUM DIFFICILE INFECTIONS IN CENTRAL ROMANIAN HOSPITALS

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Background: According to the recent studies, Clostridium difficile infections present an increasing incidence in our country. We considered important to describe and analyse the risk factors and to present the clinical and paraclinical features of this infection. **Material and methods:** We performed a retrospective study of 67 patients admitted to the Mures County Hospital Gastroenterology Department and to the Nr.1 Infectious Diseases Clinic in Tg. Mures between January 1, 2013 and March 30, 2015. Data on demographics characteristics, patients` history, physical exam, laboratory tests were collected. Clostridium difficile infections were diagnosed based on stool enzyme-linked immunosorbent assay (ELISA, Toxins A and B) matched to toxigenic culture. **Results:** We studied 67 patients diagnosed with Clostridium difficile infection. The median age was 71 years, 55,22% of the patients were female and the median hospitalisation length was 9 days. Besides diarrhea, the clinical symptoms of the infection were fever (> 37.5 at 18 patients and abdominal pain at 41 patients. Risk factors for CDI were antibiotic therapy [including third-generation cephalosporins or fluoroquinolones, P< 0.001], use of proton pump inhibitors (P < 0.001), previous H2 antagonists treatment (P < 0.001), while previous surgical intervention in history was present in 26 cases. 45 patients (67,16%) received a combination of 2 medications (Metronidazol and Vancomycin) in the course of treatment. Metronidazole was administered as a single agent at 13 patients (19,40%) and vancomycin at 9 (13,44%). Treatment of recurrent cases was different from primary infections and antibiotic therapy duration was longer. **Conclusions:** CDI represents an important and increasing health burden in Romanian hospitals. Antibiotics and PPIs should be used with caution in case of elderly patients.

Keywords: Clostridium difficile infection, Proton pump inhibitors, Antibiotics

CORRELATIONS BETWEEN FEMORAL INTIMA-MEDIA THICKNESS, CARDIOVASCULAR RISK FACTORS AND LEFT VENTRICULAR DYSFUNCTION IN PATIENTS WITH ATHEROSCLEROTIC DISEASE

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Background: Cardiovascular diseases are the main cause of global mortality, due mostly to atherosclerosis. There is a lot of emphasis on identifying factors that contribute to this process; also, it is crucial to develop techniques that allow detection of atherosclerotical lesions in as early stage as possible. Ecography is a tool that allows quantification of both left ventricular dysfunction as a marker of coronary atherosclerosis, and femoral intima-media thickness as marker for peripheral atherosclerosis. **Material and methods:** 24 consecutive patients diagnosed with both ischemic heart disease and peripheral arterial disease were enrolled in a prospective study. Demographical data and blood pressures were recorded and metabolic profiles were assessed (glycaemia, cholesterol, triglyceride, uric acid levels); ankle brachial index, femoral intima-media thickness and LVEF and was calculated. **Results:** Out of the 24 patients (mean age 65 years, 6 female/18 male) 6 were diabetic, 10 had high cholesterol and 6 had high triglyceride levels, 10 of them had hyperuricaemia. Average parameters were as follows: ejection fraction 50%, BMI 27,79 kg/m2, waist circumference 103,75 cm, systolic BP 125 mmHg and femoral intima-media thickness 0.633 cm. Pearson correlation coefficient was calculated for the above-mentioned parameters, with the following results: there was a positive correlation of femoral intima-media thickness to age (R=0.758, p=0.004), cholesterol (R=0.299, p=0.34) and triglyceride (R=0.042, p=0.89) levels and glycaemia (R=0.225, p=0.48). LVEF, BMI and abdominal circumference negatively correlated to femoral intima-media thickness (R=-0.117, p=0.71; R=-0.521, p=0.08; R=0.3746, p=0.23 respectively). **Conclusions:** Femoral intima-media thickness increases with age and though not statistically significant, it is influenced by blood sugar and lipid levels. Left ventricular systolic function impairment also correlates with this marker of peripheral atherosclerosis. Thus, measurement of femoral intima-media thickness can be a tool in assessing the degree of systemic atherosclerosis and cardiovascular risk.

Keywords: ischemic heart disease, peripheral arterial disease, femoral intima-media thickness, cardiovascular risk factors

ULIPRISTAL ACETATE IN PREOPERATIVE TREATMENT OF UTERINE FIBROIDS

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Background: Uterine fibroids are benign , hormon-sensitive tumors of the muscular layer of the uterus, condition whitch affects 20-40% of fertile women. Ulipristal acetate is a selective modelator of progesterone receptor, by its inhibiting effect uterine fibroids are reduced in size and simptoms like excessive uterine bleeding, anaemia, abdominal pain and compressive simptoms. Due to treatment with ulipristal acetate patienst with uterine fibroids may undergo a less invasive or more conservative surgical procedure compared to their status before treatment. The aim of this study is to evaluate the rate of a less sever surgical treatment performed due to treatment. **Material and methods:** We compared the data of patients who recieved ulipristal acetate before and after treatment following the volume of fibroid, presence and measure of simptoms like uterine bleeding, anaemia, compressive simptoms and the type of surgical treatment proposed before and performed after using ulipristal acetate. **Results:** After a three month use uf ulipristal acetate uterin bleeding was controlled in 90% of cases, in over 70% of cases amenorrhea occured and anaemia was controlled. The medium rate of fibroid volume reduction is between 10% and 20% which caused de decrease of compressive simptoms as well, this reduction leading to change of surgical therapy depending on pre-treatment status of patients. **Conclusions:** A three-month long treatment with ulipristal acetate can reduce significantly the simptomatology of women with uterine fibroids and can change surgical theapeutic possibilities in a more advantageous way.

Keywords: uterine fibroid, ulipristal acetate, surgical treatment, theraphy, efficacy

FACTORS WHICH INFLUENCE THE CASE MANAGEMENT OF CHILDREN WITH INSULIN-DEPENDENT DIABETES MELLITUS

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Background: Insulin-dependent diabetes mellitus (DZID) is a chronic disease with high incidence, especially in children. The case management of DZID requires a continuous monitoring of blood glucose, insulin injections, other specialist examinations and, sometimes, hospital admissions. In these conditions the patient and his family can experience different levels of anxiety, with negative effects on disease evolution and prognosis. There are clear differences between children with DZID in terms of adherence to treatment, coping mechanisms, participating in activities of medical and psychological counseling. Operational objectives: identify relevant factors that may influence treatment adherence and elaborate an eficient method of intervention. **Material and methods:** A semi-structured interview was applied to a group of experts (10) in diabetology for collecting their opinion concerning relevant factors that may influence treatment adherence and what are the characteristics of an eficient method of intervention. **Results:** The response rate was 80%. The main factor was considered doctor-patient relationship. The need of child to feel that it is understood and protected, was considered that can directly motivate a better self-management and a good evolution of his disease. The increase of importance of individual resources of children with DZID and accent on the quality of life of those children could be considered a starting point forcreating a psychological clinic intervention in this field. The results will be compare with literature data and in a future study with a retrospective study on treatment adherence of children with DZID. **Conclusions:** Understanding of the causes which have interfered negatively with therapeutic plan is a starting point for develop a clinical psichological protocol for children with DZID.

Keywords: Diabet and metabolic disease, Pediatric, DZID in children, adherence to treatment, psycholo

SUBJECTIVE OPINION ON WORK-STRESS IMPACT ON HEALTH – A UK AND ROMANIA COMPARATIVE STUDY

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Background: Stress is not an illness but a state. However if stress becomes prolonged and excessive, consequences such as mental and physical illness may start to appear. It is the adverse reaction that people may experience when excessive pressures and demands are placed upon them. The study aim was to evaluate the differences between subjective opinion on work-stress impact on health between UK and Romania. The main hypothesis was than the attitude toward work-stress is much more tolerant in Romania than in UK. **Material and methods:** A mixed method (qualitative - quantitative) comparative cross sectional study on two different countries and on 5 different work sectors was done. A number of 200 participants were included (100 from UK and 100 from Romania). We used a questionnaire which included socio-demographic risk factors for stress and for obtaining of results for work related stress, a patient health questionnaire and a burnout specific questionnaire was used. The study was done by enrolment on voluntary basis until the achievement of the calculated size of each cluster; answered questionnaires were collected anonymously. The data were statistically analysed with SPPS program and a qualitative description of data was done. **Results:** The data were presented in two ways: quantitative and qualitative. The quantitative analysis compared UK and Romanian group and also on 5 pairs of sub-clusters, searching correlation between the items evaluated. The qualitative part presents a comparison between UK and Romanian reflected by verbatim of subjective opinion on work-stress impact on health. **Conclusions:** The attitudes on work-stress impact on health differ from UK and Romania with important impact on prevention of different disorders.

Keywords: Psychiatry, work-stress,, health,, burnout,, professional stress

INTRA AND INTER-OBSERVER VARIABILITY IN MEASURING PULMONARY ARTERIES ON CT ANGIOGRAPHY

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Background: Measuring the diameters of main pulmonary artery and its branches is part of a radiological report in CT angiography. Depending on the site of the measurement and on the radiologists' experience it is possible to expect differences between separate measurements. **Material and methods:** A prospective study has been carried on 100 consecutive thoracic CT angiography performed in Clinical Emergency Hospital Tirgu Mures. Successive measurements, at one month, have been done by three radiologists in different stages of training. Recorded variables were age, sex, MPA, RPA and LPA. Statistical analysis has been performed using MedCalc with a statistical significance level of 0.05. **Results:** Our sample had a M:F ratio of 0.74, with ages ranging 0 to 96 years, most of the patients being in the 60 to 69 age group (30.93%). There is an excellent correlation of intraobserver measurements, with a correlation coefficient for main pulmonary artery ranging from 0.8737 up to 0.9609. Depending on the experience of the reader we found statistically significant differences (p=0.0001) for the intraobserver measurements; however the absolute values are 0.76 mm and with no clinical impact. **Conclusions:** Pulmonary arteries are reliably measured by CT angiography.Partly financed by University of Medicine and Pharmacy of Tirgu Mures through Internal Research Grant 5/23.12.2014

Keywords: Computed tomography, Intraobserver agreement, Interobserver agreement

THE ASSESSMENT OF CORONARY ATHEROSCLEROSIS BY CORONARY CALCIUM SCORE EVALUATION AFTHER THERAPY WITH NANOPARTICLES IN PATIENTS WITH IN STENT RESTENOSIS

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Background: The assessment of the calcium content of the atheromatous plaques in the coronary arteries is usually performed using classical methods such as fluoroscopy or cardiac computed tomography. This study aims to evaluate the impact of nanoparticles therapy in atherosclerosis progresion,assesed by the increase global and regional calcium scoring in patients with in-stent restenosis. **Material and methods:** We retrospectively analyzed a number of 21 patients who presented after revascularization for significant in stent restenosis with drug eluting baloon at one year follow-up. The assesment of calcium scoring was performed using angio CT 64 multislice, before the nanoparticle-based therapy and at 1 year. **Results:** The evaluation of the distal calcium scoring measured in coronary segment located distal to the site of nanoparticle delivery demonstrateda significantly lower increase in comparison with the proximal coronary segment (mean Ca scoring increase was 7.2 Agatson units in nanoparticle-treated area group versus 24.5 Agaston units in the proximal segment, p<0,001), showing no significant difference in relation to the location of restenosis. **Conclusions:** Our study shows a significantly lower increase of calcium accumulation in the coronary segments treated with nanoparticle-based therapy, in comparison with the segments not infused with nanoparticles.

Keywords: nanoparticles, calcium scoring, stent restenosis

MEDICINĂ PRE-CLINICĂ (PRE-CLINICAL MEDICINE)

IDENTIFICATION OF STEM CELL-DERIVED CARDIOMYOCYTES USING CARDIAC SPECIFIC MARKERS AND ADDITIONAL TESTING OF THESE CELLS IN SIMULATED ISCHEMIA/REPERFUSION SYSTEM

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Background: Cardiovascular diseases mean an extraordinary burden into society. Stem cell derived cardiomyocytes provide a reliable and convenient cell source that can be used for study cardiac cellular pathophysiology as well as for disease modeling, cardiac cell replacement therapy and for pharmaceutical investigations. In this project, we aimed to identify cardiomyocytes in embryonic bodies via detection of the cell surface antigen VCAM-1 and intracellular cardiac specific marker Troponin I. Furthermore we tested these cells in simulated ischemia/reperfusion test system. **Material and methods:** Two stages of embryonic bodies (8 and 16 days) were seeded onto gelatin coated coverslips. After the cells digested into a single cell suspension, the identification of cardiac cells was performed by using flow cytometry method.For another group of the cells, we used simulated ischemia/reperfusion system to model the effects of a heart attack and evaluate the rate of cell survival. Mouse EBs (from HM1 embryonic cells and induced pluripotent stem cells iPS_3.4, iPS_4.1) were subjected to a 150 min ischemic period, which was followed by a 120 min reperfusion. Cell viability of EBs was tested using propidium iodine viability assay. **Results:** The results showed, that VCAM-1 positive population resulted as 52.9%, while cTnI is 43.4% and VCAM-1+cTnI costaining is 36.1% in 8 day-old stem cells. Meanwhile the VCAM-1 positive population resulted as 78.6%, while cTnI is 82% and VCAM-1+cTnI costaining is 70.5% in 16 days old stage. All cell lines were sensitive for hypoxic injury, and NO-donor protected full EBs of HM1 cell line from SI/R, but not iPS cell lines. **Conclusions:** We conclude, that the cardiocytoprotective NO donor protects full EBs of HM1 cells against SI/R injury, but not iPS line EBs, suggesting that iPS-derived cardiac myocytes at the current development stage are not suitable for testing cardiocytoprotective mechanisms.

Keywords: induced pluripotent stem cells, NO-donor, simulated ischemia/reperfusion

EVALUATION OF POPULATION ATTITUDES AND KNOWLEDGE ABOUT FOOD QUALITY AND NUTRITION LABELING

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Background: Nutrition information on food labels is considered as an important means of encouraging consumers to make healthier food choices. The purpose of food labeling is to give consumers information that may influence their purchasing decisions Detailed and precise labeling is essential to inform the consumer about the exact nature and characteristics of the food, enabling them to make a more informed choice. The objective of this study was to assess population attitudes and knowledge about quality and food label. **Material and methods:** Through our descriptive transversal study we watched the habit frequency of reading food labels and population influential factors in terms of buying food. The study was based on an online questionnaire, completed by 222 people from Tirgu Mures, the questionnaire was voluntary and anonymous. **Results:** In the study group, 17.6% of subjects used to make their shopping daily and 45.9% of them about 3 times/week, most of them preferring super/hypermarkets (75.1%). More than half of respondents have the habit to read the label (64%), only 8.1% of them seeking shelf life, and 72.5% are aware of what letter E represents on the package. Our results showed that most respondents had minor difficulty understanding the information from the label. It is also important to note that a high percentage of consumers believe that nutrition information is not very reliable. **Conclusions:** Based on the observed data, we concluded that the community intervention to educate the population in the assessment of proper labeling and food quality is important and should be well supported.

Keywords: food labelling,, shelf life,, food additives

SMOKING CESSATION FAILURE DURING THE POSTPARTUM PERIOD – RISK FACTORS

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Background: Pregnancy is described as a favorable event for the change of attitude towards smoking, owed to the high rate of spontaneous smoking cessation with pregnant women. However, less than a third of these pregnant women manage to remain abstinent within a year after childbirth. **Material and methods:** In our cross-section study, we aimed to identify the smoking relapse rate of abstinent pregnant women and the factors associated with smoking relapse in the first three months following postpartum. The study was accomplished by phone interview of 119 women selected from a database, the recruitment criterion being their assertion to stop smoking during pregnancy. **Results:** The smoking resumption rate, three months after childbirth, was of 61,34%. The reasons for taking up smoking again were: the influence of the smoking partner and of the smoking members of the familiy in the case of 16,87% of these women, and smoking for pleasure (31,09%). 10,08% resumed smoking only occasionally, with a lower but factual frequency. **Conclusions:** Providing support and information about the decrease of pregnancy and postpartum risks owing to tobacco use cessation must become a mandatory component of the medical services provided principally to pregnant women who smoke, but also to their partners or other smoking members of their families.

Keywords: pregnancy, smoking, postpartum relapse, partner, risk factors

DECELLULARIZED EXTRACELLULAR MATRIX (ECM) DERIVED BIOMATERIAL REDUCES INFARCT SIZE AFTER ISCHEMIA-REPERFUSION INJURY IN EX VIVO RAT HEART

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Background: Injectable biomaterials are potential new therapeutical tools in treatment of myocardial infarction. Therefore, here we examined the acute cardioprotective effect of decellularized extracellular matrix (ECM) derived complex biomaterial in two different models. **Material and methods:** Isolated hearts of male Wistar rats were subjected to 30 min of global ischemia followed by 120 min reperfusion. ECM was prepared by in separate experiment by decellularization and enzymatic degradation of grey cattle ventricular tissue. ECM was intracoronary administered in a concentration of 6 mg/mL before and 25 min of ischemia, respectively. In separate experiments, ECM prepared from grey cattle and rat ventricles in different concentrations (0.04-5mg/ml) was also tested against doxorubicin-induced injury in primary neonatal rat cardiomyocyte culture. Two days after isolation cardiomyocytes were treated with doxorubicin (300ng/mL final concentration). ECM was administered for 20 hour pre-treatment followed by 24 hour co-treatment with doxorubicin and cell viability was measured. **Results:** Administration of ECM significantly reduced infarct size both administered before onset (from 20,2±1,6% to 14,0±2%, $p<0.05$) and the 25th min of ischemia (from 24,5±1,8% to 14,5±3,8%, $p<0.05$) when compared to the ECM-free control group. ECM dose dependently affected successfulness preparation of primary neonatal rat cardiomyocyte culture, however, cardioprotective effect of ECM prepared from either rat or cattle ventricle was not observed at any concentrations against doxorubicin-induced injury in this model. **Conclusions:** This study demonstrated first the cardioprotective effect of ECM against acute ischemia/reperfusion injury.

Keywords: Experimental, cardiology, decellularization, extracellular matrix, heart, is

THE ROLE OF BRAIN-DERIVED NEUROTROPHIC FACTOR (BDNF) IN DIABETES ASSOCIATED NEPHROPATHY AND COMORBID DEPRESSION

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Background: Comorbid depression occurring both in diabetes (DM) and chronic kidney disease (CKD) contributes to the progression of diabetic nephropathy. The level of BDNF and sigma-1 receptor (S1R) decrease in depression. Recent findings suggest a common BDNF-Sigma-1R signalling pathway in the comorbidity of depression and CKD. This pathway in the kidney has not been investigated yet. **Material and methods:** After 5 weeks of streptozotocin induced diabetes, male Wistar rats (n=8/group) were treated diabetes po. with non-pressor dose of enalapril, ramipril, losartan, spironolactone or eplerenone. Untreated diabetic and healthy rats served as controls. Blood pressure and renal parameters were measured and the depressive behavior was evaluated. Renal S1R and BDNF levels were analysed. **Results:** Neither DM, nor renin-angiotensine-aldosterone-system (RAAS) inhibitors influenced the blood pressure. Impairment of renal function and depressive behavior was observed in DM, which was improved by all RAAS-blockers. BDNF was succesfully detected in the rat kidney. Different renal expressions of the precursor and mature forms was measured in DM. S1R and mature BDNF increased, while immature BDNF did not change. All RAAS inhibitors decreased both the level of S1R and mature BDNF. **Conclusions:** These results suggest the potential role of a common, RAAS regulated S1R-BDNF pathway in the development of DM □□□CKD- comorbid depression, thus exploring a new therapeutic horizon for RAAS inhibitors in the treatment of depression in DM and CKD.

Keywords: Diabetes, Depression, BDNF

SODIUM GLUCOSE COTRANSPORTERS AS NEW TARGETS OF RENIN-ANGIONTENSIN-ALDOSTERONE SYSTEM (RAAS) INHIBITORS IN DIABETIC NEPHROPATHY

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Background: Chronic hyperglycemia and glucose toxicity are the leading causative factors of diabetic nephropathy (DN). In the kidney proximal tubules sodium glucose cotransporter (SGLT)-2 is the main mediator of glucose reabsorption, while SGLT1 is responsible for glucose uptake in the gut. RAAS inhibitors are the gold standard therapy in DN, but their effect on SGLT mediated glucose transport has not been tested yet. Here we investigated the effect of various RAAS blockers on renal and intestinal glucose uptake mediated by SGLTs in type 1 diabetic rats. **Material and methods:** Diabetes was induced by streptozotocin in male Wistar rats. After 5 weeks of diabetes, animals (n=6/group) were treated either with vehicle, or enalapril or ramipril, or losartan or eplerenone or spironolactone. Healthy rats served as controls. Blood pressure and decline in renal functions were measured. Mesangial matrix expansion was evaluated on Periodic acid-Schiff stained kidney sections. SGLT1 and SGLT2 protein levels were determined by Western-blot. **Results:** Development of DN was confirmed by increased BUN and a significant decline in GFR. Parallel to functional deterioration renal histology also showed typical structural damage of DN. RAAS inhibitors improved renal function and ameliorated mesangial matrix expansion without any effect on blood pressure. Both in the kidney and in the gut diabetes increased the protein level of SGLTs. After RAAS inhibition renal SGLT2 level significantly decreased, and also SGLT1 in the gut tended to decline versus diabetic animals. **Conclusions:** RAAS inhibitors are renoprotective independently of their action on blood pressure. This renoprotection could be exerted partly through the inhibition of glucose reabsorption mediated by SGLTs.

Keywords: diabetes, RAAS, SGLT, diabetic nephropathy

NOBEZITATE - A NEW TOOL TO ADVANCE NUTRITION RESEARCH

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Background: Technological support took over an important role in society and became essential for advancing nutrition research in the 21st century. Considered as the most convenient source of information and education in the area of nutrition, the website NOBEZITATE is important to document all those involved in research and innovation as the Internet has become a fast and efficient manner in various areas of life. **Material and methods:** The website - NOBEZITATE, was created in order to enhance the level of knowledge in population from the Republic of Moldova. The website is linked to social platform-facebook and is appreciated by over 1370 persons from different countries (Republic of Moldova-1095, Romania-47, Italy-34, etc.). **Results:** According to the National Program on food and nutrition for 2014-2020, in the Republic of Moldova was created and launched the website NOBEZITATE. Through this website we can appreciate the public interest for the content of the articles that is useful for developing a national campaign to promote healthy eating habits among population.In this context, NOBEZITATE becomes a significant tool that contributes to development of knowledge based society, direct accesibility and flexibility for the researcher, no need information storage facilities, real time access to data when and where it is needed, lower maintanence costs, etc. **Conclusions:** NOBEZITATE filled a need for an easy to use website that addressed the issues of diet and eating habits. Based on the number of visits and number of likes from facebook page, the site was well received and became an important tool for research area in nutrition.

Keywords: Sănătate Publică, Igiena, website, nutrition, research

REGULATION OF ENERGY BALANCE: THE ROLE OF CHOLECYSTOKININ IN FUNCTION OF AGE AND NUTRITIONAL STATE

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Background: Middle-aged obesity and aging anorexia or their combination i.e. sarcopenic obesity present health-related risks. In their background, complex age-related alterations in the orexigenic and catabolic anorexigenic regulatory peptide systems may be assumed. One of the most important anorexigenic mediator is cholecystokinin (CCK). According to our earlier data, age related changes in melanocortin system may be involved in the long term alterations of body composition. We hypothesized that changes in the anorexigenic effect of CCK contribute to middle-aged obesity while obesity-induced regulatory alterations and CCK promote aging anorexia and sarcopenia. **Material and methods:** The dependence of anorexigenic effects of peripheral mediator CCK (5 μg) on age and body composition was studied. Male Wistar rats aged 2-, 4-, 6 - or 12- and 18-24 months (juvenile, young adult, early or late middle-aged and aging-old, respectively) were injected by CCK intraperitoneally prior to 3-h re-feeding following 48-h fasting in FeedScale system. Food intake of 12-month old calorie-restricted and 6- and 12-month old diet-induced obese groups were also tested. **Results:** The efficacy of CCK varied with age: strong anorexia in 4 and 6-month and again in old 18-24-month rats, but resistance in middle-aged (12-month) ones. CCK-resistance of middle-aged rats was prevented by life-long calorie-restriction. Diet-induced obesity accelerated the appearance of CCK-resistance as well as the return of high sensitivity to CCK in further aging. **Conclusions:** Alterations in CCK effect may contribute to explanation of both age-related obesity and aging anorexia. The speed of age-related regulatory changes appeared to be altered by the nutritional state.

Keywords: aging, cholecystokinin, obesity, sarcopenia

GENETIC ANALYSIS OF LIPOPOLYSACCHARIDE BIOSYNTHESIS IN SHIGELLA SONNEI

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Background: *Shigella spp.* are Gram-negative, rod-shaped, non-motile and non-sporulating intracellular pathogenic bacteria belong to the family *Enterobacteriaceae*. Shigellosis is a severe diarrheal disease associated with high morbidity and mortality rates, particulary in young children. Pathogenicity of these bacteria is related to the molecular structure and length of surface lipopolysaccharides. An interesting *S. sonnei* strain supports new insights into the genetic basis of lipopolysaccharide biosynthesis and *Shigella* virulence. **Material and methods:** Whole-genome sequencing technology with a next generation sequencer (IonTorrent PGM) and comparative genomics was applied to characterize two *S. sonnei* strains with different lipopolysaccharide structures. To get insights to the gene expression in our two *S. sonnei* strains, RNA sequencing was also applied complementary to the structural genomics. **Results:** After assembly and annotation of the draft genome, genes were identified that play pivotal roles in the lipopolysaccharide biosynthetic pathway. The resulted genome data indicated a silent mutation, several point mutations, and a missing hypothetic gene in the pathway. These observations, however, do not justify clearly the previously described pathway deviations (downregulation of *rfaD*). **Conclusions:** The previously known and the identified mutations do not explain clearly the phenotypic changes of the *S. sonnei* strain mutant, but the results highlights a relationship between the structure of the lypopolysaccharides and a two-component regulation pathway through the *ntrB/ntrC* system.The research was supported by the the Hungarian National Scientific Research Foundation:OTKA 100667; and TÁMOP-4.2.2/A/A-11/1KONV-2012-0017 and TÁMOP 4.2.2/B-10/1-2010-0029

Keywords: Microbiology, Genetics, lipopolysaccharide, Shigella sonnei, genomics

INHIBITION OF RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM (RAAS) IN DIABETIC NEPHROPATHY: THE ROLE OF EPITHELIAL TO MESENCHYMAL TRANSITION

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Background: Diabetic nephropathy is the leading cause of chronic kidney disease. In diabetes (DM) the activated local RAAS triggers epithelial-mesenchymal-transition (EMT) contributing to renal fibrosis. We investigated the effect of RAAS inhibition in the prevention of the DM induced kidney damage. **Material and methods:** After 5 weeks of streptozotocin induced DM, male Wistar rats (n=6/group) were treated (p.o.) for two weeks (either with enalapril or ramipril or losartan or eplerenone or spironolactone. Healthy and untreated DM rats were also enrolled. Interstitial fibrosis and mesangial-matrix expansion were evaluated on Masson and Periodic acid- Schiff stained kidney sections. As molecular markers of fibrosis α-SMA protein level and localization were determined and CTGF and MMP-2 mRNA expression were measured. **Results:** DM induced massive interstitial fibrosis and mesangial-matrix expansion were ameliorated by all RAAS inhibitors. DM elevated α-SMA protein level that was remarkably diminished by RAAS treatments. In controls αSMA was only visible around the vessels, while in DM kidneys prominent intraepithelial and glomerular localization were observed. DM increased the mRNA expression of both CTGF and MMP-2. CTGF mRNA was lowered by aldosterone antagonists, but MMP-2 mRNA was decreased by all of RAAS blockers. **Conclusions:** EMT contributes to diabetes induced renal fibrosis. The various RAAS inhibitors affects EMT to a different degree. The inhibition of this process could serve as a new therapeutic target of RAAS inhibitors in DN.

Keywords: chronic kidney disease, epithelial-mesenchymal-transition, fibrosis, RAAS inhibition, diabetes induced kidney damage

INVOLVEMENT OF PARK7 IN THE PATHOMECHANISM OF INFLAMMATORY BOWEL DISEASES

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Background: The incidence of inflammatory bowel disease (IBD), including Crohn disease (CD) and ulcerative colitis (UC) is almost doubled during the last two decades. Recently, the immunoregulatory, antioxidant role of Parkinson's disease 7 (PARK7) was suggested, however its role in the pathogenesis of IBD is completely unknown. **Material and methods:** mRNA expression, protein level and localization of PARK7 were determined in colon biopsies of children with IBD, in colon of wild type and IL-17 KO mice with dextran sodium sulphate (DSS)-induced colitis and in IL-17-treated HT-29 colonic epithelial cells by real-time PCR, western blot, flow cytometry and immunofluorescence staining, respectively. **Results:** The expression of PARK7 increased in the colonic mucosa of children with IBD, and in the colon of wild type mice with DSS-induced colitis. The expression of PARK7 remained unchanged in DSS treated IL-17KO mice. IL-17 treatment of colon epithelial cells increased the amount of PARK7 in vitro. **Conclusions:** Increased expression of PARK7 in the mucosa of children with IBD suggests its involvement in the disease pathogenesis. Our data also suggest that IL-17 is an important inducer of PARK7 production in the colon. Although further studies are needed to elucidate the exact role of PARK7 in IBD, our results suggest that it may be an important element of the IL-17 mediated signalling in IBD.

Keywords: PARK7, IL-17, IBD

INVOLVEMENT OF IL-20 SUBFAMILY OF CYTOKINES IN THE PATHOGENESIS OF COELIAC DISEASE

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Background: Immunoregulatory role of interleukin (IL)-20 subfamily of cytokines, IL-19, IL-20 and IL-24 was suggested, however their role in the pathogenesis of coeliac disease (CD) is completely unknown. **Material and methods:** Expression of IL-19, IL-20, IL-24 and their IL-20R2 receptor were investigated by real-time PCR in the duodenal biopsy samples of children with coeliac disease and controls. Localization of IL-24 and IL-20R2 was also investigated by immunofluorescence staining. The effect of IL-1ß, IL-17, TGFß, TNF and LPS treatment on the mRNA expression of the IL-19, IL-20, IL-24 and IL-20R2 was investigated in duodenal epithelial (CCL241) and primer human fibroblast cells. Effect of IL-24 on the mRNA expression of VEGF, MMP2 and MUC1 in the CCL241 and primer fibroblast cells were measured by real-time PCR. **Results:** We found elevated expression of IL-24 in the duodenal mucosa of children with coeliac disease compared to controls. IL-1ß increased the mRNA expression of IL-19, IL-20, IL-24 and IL-20R2 and also the IL-24 protein secretion in both cell type. IL-24 induced VEGF, MMP2, MUC1 mRNA expression in primer duodenal fibroblast cells and MUC1 mRNA expression in CCL241 cells. **Conclusions:** Increased presence of the members of the IL-20 subfamily in the duodenal mucosa of children with coeliac disease suggests their role in disease pathophysiology. Based on the results of the cell culture experiments we suggest that IL-20 subfamily of cytokines have a potential role in maintenance of mucosal integrity.

Keywords: coeliac disease, IL-20 subfamily of cytokines, IL-24

ALTERED MUCOSAL EXPRESSION OF MICRORNAS IN PEDIATRIC PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: Non-coding small RNA-s, called microRNAs (miRs) came recently into focus as promising novel research targets offering possible new insights into the pathogenesis of inflammatory bowel disease (IBD). Since the diagnosis of IBD is reasonably challenging, there is an urgent need to identify new disease biomarkers. Thus the aim of the present study was to identify a pediatric IBD specific miR profile serving as potential Crohn disease (CD) and ulcerative colitis (UC) specific diagnostic pattern. **Material and methods:** Illumina small RNA sequencing was performed on fresh-frozen macroscopically inflamed (CD inflamed: n=4) and intact, non-inflamed (CD intact: n=4) colonic biopsies of therapy-naïve children with CD, UC and control patients (C: n=4). Selected miRNAs were further investigated by real-time reverse transcription PCR using an extended number of patients (CD inflamed: n=15, CD intact: n=10, UC: n=10, C: n=10). **Results:** MiR profiling of colonic samples identified 148 miRs that were frequently dysregulated in the inflamed mucosa compared to the intact mucosa of IBD patients. 22 miRs were differently expressed in the intact mucosa of CD patients compared to controls. 18 were selected for further validation. The expression of miR-18a, -21, -31, -99a, -99b, -125a, -126, -142-5p, -146a and -223 was elevated in both CD and UC samples compared to the controls. Expression of miR-100, -150, -142-3p and -185 was elevated in the inflamed mucosa of CD patients compared to the controls, but not in UC. Moreover the expression of miR-20a, -100, -221, -204 and -185 was elevated in the intact mucosa of CD patients compared to controls. Expression of miR-141 and -204 was decreased in the inflamed intestinal regions compared to the intact mucosa of CD patients and controls. **Conclusions:** We demonstrated a pediatric CD and UC specific colonic miR pattern, which may serve as a diagnostic marker panel of IBD in childhood.

Keywords: inflammatory bowel disease, microRNA, Crohn's diseae

SKIN INTERSTITAL GLYCOSMINOGLYCANS – SODIUM HOMEOSTASIS

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Background: In case of Na+ overload reversible changes in the ratio of free/bound Na+ in subcutaneous tissue serve as a volume buffer and protect against volume expansion and the rise of blood pressure. The system consists of the negatively charged glycosaminoglycan (GAG) molecules of the skin, the macrophages sensing hypertonicity and the VEGFC protein secreted by macrophages. VEGFC secretion results in hyperplasia of the existing lymph capillary system draining liberated Na+ back to circulation. The weakness of the theory is that it does not explain the mechanism of release of the bound Na+. To address this question we measured the changes of VEGFA-levels in the skin, a signaling protein that might decrease charge density of interstitial GAGs thus playing a key role in the release of bound Na+. **Material and methods:** Normotensive female rats were assigned to three groups (n=8) each receiving either high salt diet (HS), low salt diet (LS) for 4 weeks or high salt diet followed by low salt diet for 8 weeks (HS/LS). Na+ content of the skin was measured by flame photometry, skin hyaluronic acid and chondroitin 4,6 sulphate content was measured by high performance liquid chromatography, skin VEGFA and VEGFC mRNA levels were measured by PCR. **Results:** Our results confirm that the changes in dietary sodium intake have a strong influence on skin GAG levels. Significant correlation has been found between skin sodium and GAG content. The changes in VEGFA-levels corroborate our hypothesis. **Conclusions:** We have confirmed the buffer function of GAG- Na+ binding in normotensive rats, a phenomenon that may have general biological significance. The changes in VEGFA-level suggest a regulatory role of VEGFA in the GAG- tissue sodium interaction.(The research was supported by the the Hungarian National Scientific Research Foundation OTKA K-108688)

Keywords: blood volume regulation,, bound water,, Na+ homeostasis

NEEDLE IN A HAYSTACK: PROTEIN COMPLEX PURIFICATION FROM THERMOPLASMA ACIDOPHILUM USING A PHAGE DISPLAY LIBRARY

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Background: Thermoplasma acidophilum is a thermoacidophilic archaeon that has become an attractive model organism for visual proteomics approaches aiming to provide a comprehensive cellular atlas of macromolecular complexes with the aid of cryo-electron tomography. T. acidophilum exhibits a colourful protein complex inventory, amongst which there are assemblies that look like simple variations of their eukaryotic counterparts. To get an insight into the molecular architecture of protein complexes, an effective purification process is needed, which can keep all the complexes in their intact and active state for biochemical and structural analyses. **Material and methods:** In this study, a single chain variable fragment (scFv) based phage display library was developed against a T. acidophilum protein mixture containing about 300 proteins. T. acidophilum protein specific phages were selected by using plastic-immobilized target antigens and corresponding scFvs were expressed in Escherichia coli. E. coli cell lysate containing the expressed scFv and T. acidophilum crude cell lysate containing intact target protein complexes were mixed, incubated and subjected to protein purification using affinity and size exclusion chromatography steps. The structure of purified complexes was studied by single particle EM. **Results:** We adapted the mono-antigen targeted phage display technology to a multi-antigen targeted version and generated a combinatorial scFv-library against the high molecular weight protein fraction of T. acidophilum. The scFv-displaying phage selection followed by a two-step chromatography based purification was confirmed to isolate intact particles of thermosome and proteasome suitable for electron microscopy analysis and provides a novel protein complex isolation strategy applicable to organisms where no genetic tools are available. **Conclusions:** This study aids the discovery of structurally unknown, putative protein complexes by finding then isolating them with specific antibodies to provide a feasible purification procedure for single particle EM studies. Our phage display library-based protein complex purification strategy can serve as a platform for studies on visual proteomics approaches.

Keywords: protein complex,, Thermoplasma acidophilum,, phage display library,, electron microscopy,, scFv

IMMUNOHISTOCHEMICAL FEATURES AND MUTATIONAL STATUS OF THE GASTROINTESTINAL STROMAL TUMORS

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Background: Gastrointestinal stromal tumor (GIST) is the most common mesenchymal neoplasm of the gastrointestinal tract. Mutated KIT and platelet-derived growth factor alpha gene (PDGFRA) drive GIST oncogenesis. Objectives: To present our preliminary data regarding the genetic status of GISTs. **Material and methods:** In 23 consecutive cases with GISTs diagnosed at the Department of Pathology of Tirgu-Mures (Romania), PCR and bidirectional DNA sequencing was performed for two common exons of c-KIT (9,11) and PDGFRA (12,18) genes, at the National Institute of Oncology, Budapest. The clinicopathologic features, including sex, age, location, tumor size, histology, mitotic rate, immunohistochemical features, and genetic status were analyzed. **Results:** The median age was 66.34±28.15 years (range: 34-79 years), with a male:female ratio of 1:1.18. The most common location was the stomach (n=9) followed by the small intestine (n=8) retroperitoneum (n=4), and colon (n=2). The median tumor size was 5.32±2.12 cm (range: 0.60-15.5 cm) and the median mitotic rate was 3±1.23/50HPF (range 0-25). Immunohistochemically, DOG1 and CD117 were positive in 18 (78.2%) respectively 20 (86.9%) cases. From the 23 cases, 11 were c-KIT wild-type, 11 cases presented mutations for the exon 11, and one for the exon 9. Only one case displayed PDGFRA mutation (exon 18) and presented a synchronous deletion in exon 11 of the c-KIT gene. **Conclusions:** The PDGFRA mutations are extremely rare emphasized by the gastrointestinal stromal tumors but about half of them are driven by c-KIT genes.

Keywords: GIST, c-KIT, PDGFRA, DOG1

STRUCTURAL BASIS OF ENHANCED REACTIVE OXYGEN SPECIES GENERATION BY THE D444V DISEASE-CAUSING MUTANT OF HUMAN DIHYDROLIPOAMIDE DEHYDROGENASE

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Background: We initiated a structure-based drug design project on targeting the reactive oxygen species (ROS) generation by the human dihydrolipoamide dehydrogenase (hLADH) enzyme, the third subunit component (E3) of the human alpha-ketoglutarate dehydrogenase complex (hKGDHc), a rate-limiting enzyme in the Krebs cycle. The main objective currently is to define the three-dimensional structures of selected disease-causing hLADH mutant proteins which generate ROS at a significantly higher rate relative to the wild-type (wt) enzyme under pathologically relevant conditions; pathogenic mutations of hLADH are frequently accompanied by severe neurological and/or cardiological symptoms. **Material and methods:** Crystallization and diffraction data collection were carried out at the Helmholtz-Zentrum Berlin in the BESSY II electron storage ring. After extensive crystallization trials using commercially available screens and further optimization the successful crystallization conditions were 0.2 M MgCl2, 0.1 M bis-Tris-HCl, 25(w/v)% PEG 3350, pH 7.13, 20 °C, hanging drop technique for the wt-hLADH whereas 1.6 M NaH2PO4/K2HPO4, pH 8.1 (1.6 M K2HPO4 titrated with 1.6 M NaH2PO4), 20 °C, sitting drop technique for the D444V mutant form of hLADH. **Results:** Hitherto, we have determined the atomic resolution structures by x-ray crystallography of the wild-type and the D444V mutant forms of hLADH at 2.5 and 1.8 Å resolutions, respectively. **Conclusions:** In light of the above structures, here we propose a structure-based mechanistic explanation for the greatly compromised physiological activity (E3 dysfunction/deficiency) as well as for the enhanced ROS-generating capacity of hLADH-D444V.

Keywords: dihydrolipoamide dehydrogenase,, E3-deficiency,, reactive oxygen species,, x-ray crystallography,, crystal structure

HISTOPATHOLOGICAL AND IMMUNOHISTOCHEMICAL DIAGNOSTIC CRITERIA FOR ATRIAL MYXOMA

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Background: The differential diagnoses of intraatrial masses include atrial myxoma, thrombus, vegetation, metastatic tumors and primary benign or malignant tumors. Atrial myxomas are the most common cardiac tumors. Thrombi that originate within the heart generally occur in the left and seldom in the right heart cavities. **Material and methods:** We present two cases of intraatrial masses, one located in the left and one in the right atrium. The findings on echocardiography as well as the macroscopic appearance after surgical excision led to a diagnosis of atrial myxoma in both cases. **Results:** The obtained tumor tissues were histologically evaluated. Case 1: The microscopic evaluation showed benign tumor proliferation formed by abundant myxoid stroma composed of proteoglycans, collagen and elastic fibers. Acellular areas and areas of increased cellularity were present. Tumor cells had a variable shape, fusiform, round, oval or stellate, with reduced eosinophilic cytoplasm, round-oval or elongated nuclei. No mitoses were observed. Tumor cells were either isolated or clustered, in some areas with a pseudovascular aspect. In the stroma there were rare small thin-walled vessels with no pericytes. The histological diagnosis was atrial myxoma. Case 2: Examined tissue fragments were represented by fibrous connective tissue which noted a marked vascular proliferation and mesenchymal tissue with myxoid stroma, positive in the Alcian Pas staining. On immunohistochemistry, desmin was positive in normal vessel walls, SMA was positive in neoformed vessels and CD34 was strongly positive. The histopathological findings led to the diagnosis of organized thrombus. **Conclusions:** Echocardiography plays a key role in establishing the diagnosis of cardiac myxomas and thrombi. In our case the thrombus had similar features to those of a myxoma. Although organized thrombus presents common characteristics with those of a myxoma, a careful histopathological analysis allows a positive diagnosis of certainty and an appropriate therapeutic approach.

Keywords: atrial myxoma, atrial thrombus, histopathology

MONITORING AIR QUALITY IN ROMANIAN HIGH-SCHOOLS

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Background: Multiple studies have shown that airborne particulates (PM) are a great risk factor for pulmonary andcardiovascular diseases. Cigarette smoke is complex mixture, whose chemical constituents, throughcombustion, produce aerosols in the form of smoke of chemical compounds. Toxicological evaluations of cigarette smoke often measure the PM concentration through a variety ofmethods. Passive exposure to cigarette smoke (SHS) is very dangerous, given that cigarette smoke containsmore than 170 toxic substances that contribute to health problems, chronic and acute.Aim of the study is to assess the exposure to cigarette smoke of adolescents in Târgu Mureş by monitoringthe PM2.5 pollution levels from their environment. **Material and methods:** For the determination of PM2.5 pollution levels we used the handheld TSI SidePak personal aerosol monitorAM510. We monitored 4 high-schools from Târgu Mureş (Pedagogical high-school "Mihai Eminescu" - Site1, Technological high-school Electromureş - Site 2, Sports high-school "Szasz Adalbert" - Site 3, Agriculturalcollege "Traian Săvulescu" - Site 4), performing 3 evaluations in each one: 1st in November 2014, 2nd inDecember 2014 and the 3rd in May 2015. The measurements were made in closed locations inside the highschools, where smoking is prohibited. **Results:** The measured PM2.5 levels often exceeded the maximum allowable by WHO/24h. In the first evaluation ,the threshold was exceeded at Site 1, 2 and 4. Second evaluation found exceeding concentrations at Site 2,3 and 4. At the third evaluation, during spring, the measured concentrations were within the allowed limits. The increased concentration of particles seems to be influenced by the presence of the students inside thebuildings. **Conclusions:** The concentration of fine particles inside the monitored high schools is high, although the main sources ofpollution are missing, smoking is prohibited. Measured pollution levels are directly correlated with thenumber of students inside the buildings.

Keywords: PM 2.5, smoke, pollution

TUBULIN POLYMERIZATION PROMOTING PROTEIN TPPP/P25 IS SELECTIVELY EXPRESSED IN NEUROPIL AREAS OF HUMAN AND MOUSE RETINAS

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Background: Tubulin Polymerization Promoting Protein TPPP/p25 is a brain specific protein that has been identified in oligodendrocytes and neuropil areas of the hippocampal region. It is essential for the differentiation of oligodendrocytes and formation and stability of projections. In certain conditions, TPPP/p25 displays neomorphic-moonlighting features which confer additional function for this protein, according to the intracellular localization, interacting molecules or enriched cell type. In this study, we investigated the neuropil areas of retinas for a hypothetic new player in retinal physiology. **Material and methods:** Standard immunostaining was performed on paraffin embedded human and mice eyes using TPPP/p25, alpha-synaptophysin, calbindin and acetylated-tubulin specific antibodies. The obtainment and experimentation on retinas were executed with Institutional Ethics Committee approval at University College London- Institute of Ophthalmology. Labelling was visualized by confocal microscopy using fluorescently labelled secondary antibodies. **Results:** In the optic nerve, TPPP/p25 was highly expressed in the oligodendrocyte rich mielinated region, providing an internal control. The neuropil areas in both human and mouse retinas were selectively labelled with TPPP/p25, respecting the sublaminal organisation of these synaptic layers. Co-staining with laminar and synaptic- specific antibodies showed that TPPP/p25 is most highly associated with S1, S3 and S5 sublaminas. In various occasions, we found interplexyform projections between the two synaptic layers. Few retinal neurons were TPPP/p25 enriched, highlighting the importance of this protein in the neurites. TPPP/p25 immunolabeling showed punctate pattern across the neuropil. **Conclusions:** TPPP/p25 is selectively expressed in the neuropil areas of human and mouse retina, mostly restricted to S1, S3 and S5 sublaminas and some interplexyform projections. The precise expression suggests a well-defined role of TPPP/p25 in the retinal physiology which for now remains unclear. If related to the microtubular system, TPPP/p25 may confer stability for the synaptic network. However, through the moonlighting property of TPPP/p25, new roles should be considered and further investigations are needed.

Keywords: Tubulin Polymerization Promoting Protein TPPP/p25, retina, neuropil

SMOKING HABITS AMONG FOSTER CARE PARENTS IN FIVE ROMANIAN COUNTIES

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Background: Globally, tobacco consumption kills nearly six million people a year through both direct use and the deadly effects of second-hand smoke - more than 70% of whom reside in low- and middle-income countries. Smoking is considered worldwide to be the most important risk factor causing death, that can be prevented. The study aim was to determine the prevalence of tobacco smoking, factors associated with and knowledge about the harmful effects of smoking among the adults who are employed as foster care parents in Romanian child protection residential facilities. **Material and methods:** The target population was 684 adults, who are employed as foster care parents and educational instructors in 153 residential services. In our cross-sectional study, trained data collectors conducted in-person surveys, anonymous questionnaire contained 30 questions with single or multiple answer. **Results:** Half of employees are smokers or have tried to smoke, a quarter of them are considered smokers and a fifth of them are daily smokers, both men and women. **Conclusions:** Half of the respondents never participated in a specific training to learn about dangers of smoking, but also a large part of them would be interested in such training, which justify the need and importance of research on smoking, widening cessation and prevention activities.

Keywords: smoking habits, foster care parents, prevention programs, risk factor

SMOKING BEHAVIOR RELATED WITH COTININE LEVELS IN A GROUP OF PREGNANTS FROM MURES COUNTY

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Background: Tobacco smoking before, during and after pregnancy has several impacts on fetal development and may cause maternal, fetal, and infant morbidity and mortality. The purpose of this study is to correlate the self-reported smoking behavior and the level of cotinine in saliva of pregnant women. **Material and methods:** We used a cross-sectional study design, 137 pregnants were selected according to their smoking status : 37 current smokers,33 passive smokers and 67 non-smokers. First we applied a questionnaire for self reported on smoking behavior and after that we applied a cotinine test on pregnants saliva to determine its level. **Results:** After we applied this cotinine tests, with different testing area by the level of cotinine (ng/ml) we found that 16.92% had a value beetween 1-10ng/ml (no tabacco exposure); 40.5 % with a value between 10-33 ng/ml (heavy passive exposure); Smokers are : 4.59% with a cotinine level between 30-100ng/ml; 7.33% had between 100-200ng/ml; 5.96% had a value between 200-500 ng/ml; 12.81% had a level of saliva cotinine over 500 ng/ml ; 11.89% had no significant value of cotinine level). **Conclusions:** These findings suggest that tabacco smoking during pregnancy is a social risk behavior affecting both non-smokers through passive smoking, witch according to other studies influence fetal development even worse than active smoking.This behavioral risk have to be followed closely by all health systems that come into contact with pregnants.ACKNOWLEDGEMENT: This publication was made possible by Grant Number 1R01TW009280-01 from the Fogarty Inter-national Center, the National Cancer Institute, and the National Institutes on Drug Abuse, within the National Institutes of Health (NIH). Its contents are solely the responsibility of the authors and do not necessarily represent the official view of the NIH.

Keywords: pregnancy, tabacco smoking, cotinine level, saliva

INTERACTIONS BETWEEN CYCLIC ADENOSINE MONOPHOSPHATE (CAMP) SIGNALING AND STORE OPERATED CA2+ ENTRY

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Background: cAMP signaling plays central role in the regulation of the secretory functions of epithelial cells. The synergism and interactions of cAMP and Ca2+ signaling is known for several decades, however the exact mechanisms and molecular details are not characterized. The store operated Ca2+ channel Orai1 have been reported to physically interact with adenylyl cyclase 8 (AC8), the plasma membrane expressed AC isoform and increase its activity, however this interaction have not been characterized further. **Material and methods:** In this project we wanted to characterize further the interactions of cAMP and Ca2+ signaling and identify its molecular components. Human embrional kidney (HEK) cells have been used in this study. The plasmids encoding the proteins of interest were transfected by Lipofectamin2000. Cellular cAMP production was measured by fluorescence resonance energy transfer (FRET) using the cAMP reporter Epac1. **Results:** The stimulation of the cells with a stimulation cocktail, that contained 5µM Forskolin and 100µM 3-isobutyl-1-methylxanthine (IBMX- a nonselective phosphodiesterase inhibitor) resulted in elevated cAMP production. The overexpression of AC8 significantly elevated the cAMP response. Whereas, the overexpression of Orai1 induced spontaneous cAMP production and a massive increase in the cAMP production. Extended synaptotagmin 1 (E-Syt1), a recently described endoplasmic reticulum-plasma membrane tethering protein, increased the stimulated cAMP response, similarly to Orai1. **Conclusions:** In this project we showed that Orai1 plays an important role in the regulation of cAMP production, and identified that E-Syt1 is a novel molecular component of cAMP production. The mechanisms and components of the interaction require further study.

Keywords: cAMP signaling, Orai1, E-Syt1

STOMATOLOGIE (DENTISTRY)

COMPARATIVE IMAGING EVALUATION OF IMPACTED WISDOM TEETH

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Background: The purpose of this study is to assess the role of CBCT investigation for patients with impacted third molars and comparative determination of the dental follicle size by panoramic radiography and CBCT evaluation.Another aspect is to identify for the impacted teeth the relations with the mandibular canal, the second molar, maxillary sinus and the surrounding bone. **Material and methods:** We included In this study a number of 28 patients with a number of 40 impacted teeth. Both the panoramic radiography and CBCT investigations were carried out for diagnostic. Radiological examinations were performed with the same device. We evaluated the dental follicle dimension and the relations between the impacted teeth and mandibular canal, maxillary sinus, surrounding bone and second molar. After this all the date were subjected to statistical analysis. **Results:** We obtained statistically significant results between panoramic and CBCT evaluation for the relation of the impacted third molar with mandibular canal and maxilary sinus. **Conclusions:** CBCT imaging has an important role in the management of the impacted third molar.Acknowledgement: This paper was partially sustained by the Project Nr. 912/2015 financed by S.C. OPTOMED SRL in colaboration with UMF TG. MURES.

Keywords: Dental Medicine, Dental follicles, impacted third molar, CBCT, Dental follicles, impacted third molar, CBCT

PRELIMINARY STUDY REGARDING PAROTID GLAND TUMORS

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Background: Parotid glands tumors (PGTs) are relatively rare. They display a wide variety of histopathological subtypes and different pathophysiological behavior. Salivary glands neoplasms accounts for less than 3% of human cancers, and about 6% of head and neck neoplasms. The purpose of this paper is to present a retrospective study on multiple features regarding PGTs, such as: incidence, age, sex ratio, histopathological and immunohistochemical type, in order to provide further insights on this pathology. **Material and methods:** The retrospective study comprises 89 cases of parotid glands tumors, and was performed in Oral and Maxillo-Facial Surgery Clinic and Histopathology Department of Emergency County Hospital Targu Mures, during 4 years, between January 2010 and December 2013. Twenty-four cases were excluded from the study, those weren□□□ arising in salivary glands tissue. In 65 cases, data regarding the above mentioned features concerning PGT, were collected, analyzed using descriptive statistics and compared with the literature. **Results:** PGTs are most common in: 50-60 years, males (53.3%); on the right side (55.38%). Their occurrence is higher in urban areas (61.53%); but no relation can be found between area of origin and PGT (p=0.8041). Pleomorphic adenoma is the most frequent benign PGT, affecting mostly female, 40-59 years old, followed by Warthin tumor, more frequent in male, 50-69 years old. Mucoepidermoid carcinoma prevails among malignant PGTs, followed by squamous cell carcinoma, adenoid cystic carcinoma and acinar cell carcinoma; other histopatological types are less common in parotid glands. Malignant PGTs are found usually in males, over 50 years, with a peak incidence between 60-69 years. Immunohistochemical studies are still in progress and in order to obtain conclusive results, an increased number of cases will be necessary. **Conclusions:** Our results are in accordance with the literature: PGT is a rare pathology; adult males are most affected by; pleomorhic adenoma is the commonest tumor.

Keywords: Oral and Maxillofacial surgery, UMF Targu Mures, parotid, histopathology, retrospective study

MAXILLARY BONE RECONSTRUCTION WITH AUTOGENOUS BONE GRAFT IN CASE OF LARGE POSTEXTRACTIONAL DEFECTS

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Background: Bone resorption after teeth extraction is the most common clinical situation in dental practice. Evolves more aggressive maxillary and mandibular slow and uneven. Vestibular side is usually affected and results in progressive decrease the size resulting from the cross bone healing. Impaired bone may include large areas with decreased of vertical and sagittal dimension of the middle face. The result is a mandibular false prognatism. **Material and methods:** We report a case of 45 years old male, good general status, with the need for functional rehabilitation of the upper jaw. After clinical and CBCT investigations, we finds important bone defects of the alveolar ridge in bilateral quadrants. The patient refused the conventional removable partial dentures. This situation called for reconstruction of bone deffect and bone grafts harvested from the chin. The first phase of treatment consisted of harvesting bone graft, receptor site preparation and bone graft fixation with monocortical screws on the vestibular side of the jaw. They have been given broad-spectrum antibiotics. At three and four months from the bone defect was harvested and analyzed histochemically to assess the quality of newly formed bone. Subsequently, the patient was again radiologicaly evaluated. Then, it was established implantological treatment plan. **Results:** Bone remodeling occurs after extraction inevitably lead to atrophic changes of the ridge and made in our case, insertion of implants complicated. Bone quality obtained by grafting depended on the duration of healing. This was confirmed to be favorable, both histologically and radiographically at 4 months. Antibiotics administered prevented infections in both sites. The implants were inserted successfully after five months. **Conclusions:** The usage of mandibular block grafts is a simple and effective treatment modality for reconstruction of different types of alveolar defects. Acknowledgement: This paper was partially sustained by CIGCS-CC 2013, UMPh Tîrgu Mureş, contract 18/2013.

Keywords: bone graft, bone resorption, alveolar defect

SHAPE OPTIMIZATION OF THE BONE AUGMENTED MANDIBLE USING GENETIC ALGORITHMS

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Background: For edentulous patients, bone augmentation is a solution assuring a proper substrate for tooth implants or prosthesis mounting. Although the subject of bone augmentation with the purpose of placing implants is well covered in the literature, along with recommendations regarding the final alveolar height, there are no in-depth studies to address the issue of the best performing mandible lateral body geometry, when acted by physiological oclusal forces. **Material and methods:** We aim to investigate the ideal cross-section of the alveolar ridge with respect to its performance as the support for prosthesis mounting. The geometry of the cross-section is expressed in terms of 11 parameters and it models the bone as a linear elastic composite material, with a cortical layer of 2mm (E = 18GPa) surrounding the trabecular bone (E = 6GPa). On top of the bone, the oral mucosa and the denture base are also modeled. The ideal shape is expressed in terms of an objective function represented by the stress distribution standard deviation, a measure of the uniformity of stresses inside the bone, a more uniform distribution being considered better. The investigation of stresses was performed using the Finite Elements Analysis while the ideal set of parameters was obtained by employing the Genetic Algorithm optimization technique. **Results:** The results indicate the geometry with the best performance is the one with almost median values of the considered parameters, with respect to their considered bounding intervals. The general shape of the cross-section can be roughly expressed as trapezoidal, but the fine details can make a lot of difference. **Conclusions:** The use of Genetic Algorithms has given the solution to a problem difficult to tackle otherwise. The tabulated values of the parameters expressing the ideal alveolar cross-section are great aids for any clinician looking to obtain well-performing reconstructed alveolar ridges.Sustained by the CIGCS-CC2013 UMPh Tirgu-Mures project, 18/2013.

Keywords: mandible parametric modeling, bone augmentation, occlusal force, finite element analysis, genetic algorithm

COMPARISON OF CBCT IMAGING WITH CONVENTIONAL RADIOGRAPHY IN THE EVALUATION OF ALVEOLAR BONE LOSS.

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Background: The evaluation of the alveolar bone resorption, which characterises the periodontal disease depends mostly on the conventional intraoral radiography which in most cases provides sufficient information in establishing a periodontal diagnosis. CBCT (Cone Beam Computed Tomography) offers multiple 3D images of the alveolar bone at a lower cost and radiation dose, compared to the conventional CT, and provides an accurate and detailed tridimestional image which can in some cases change the diagnostic and the treatment plan. The aim of our study was to evaluate the differences between the level of alveolar bone loss observed on the CBCT images compared to the conventional radiography, and prove the benefit of the CBCT scans for establishing the correct periodontal diagnosis. **Material and methods:** A total of 37 patients with ages between 40-55 years old, with a minimum of 8 teeth per dental arcade, presenting peridontal clinical simptomatology were selected. We used a modified periodontal chart that included the measurment of the gingival recession and the pocket depth in 6 points for all cases. For the radiographic evaluation we used conventional retroalveolar radiography and CBCT imaging. **Results:** The clinical assesment of the specific parameters suggested a periodontal inflamation, and the radiological evaluation presented significant difference between the measurment of the bone defect on the conventional radiography compared to the CBCT imaging. **Conclusions:** A correct periodontal diagnosis using conventional radiography is not possible beacause of the superimposition of the anatomical structures. The importance of CBCT imaging is no longer disputed, at the present time it is the best radiographic investigation available.

Keywords: CBCT, periodontal disease, bone loss, imaging techniques

NONSURGICAL PERIODONTAL THERAPY, ANOTHER APPROACH OF LOCAL ANTISEPTIC TREATMENT - CASE REPORT

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Background: This case report describes the success of a chronic periodontitis case by nonsurgical therapy and a strict maintenance program over a six year period. **Material and methods:** A 43 year old woman was referred for management of gingival bleeding. Clinical examination revealed a generalized chronic periodontitis with severe gingivitis and periodontal abcess at 2.6. At the time of her first examination she had not received any periodontal treatment. After a physical investigation and a complex anamnesis she received nonsurgical treatment therapy via scaling and root planing combined with systemic antibiotics. She received a special attention and a new approach in local antiseptic therapy. Periodontal maintenance including subgingival instrumentation, was performed four times per year. **Results:** Six years later, the results revealed a stationery state of bone resorbtion and a good health, function and aesthetic of the soft tissues were maintained. **Conclusions:** The outcome presented in this case report may only have been possible because of patient compliance, professional experience and supervision throughout the course of treatment. Further investigation is required to determine the etiology of periodontitis in this patient. Further studies are required about local antiseptic therapy.

Keywords: maintenance, nonsurgical therapy, periodontitis, antiseptic, gingivitis

COMPARING PREMEDICATION STRATEGIES IN DENTAL CARE FOR DISABLED PATIENTS

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Background: Dental care for physically and mentally disabled patients in general anaesthesia started at our University in 2013. As these patients are difficult to handle, tolerate environmental changes and anaesthetic or dental interventions poorly, premedication is crucial for them. We decided to find the best preanaesthetic agent for our patients. In our double-blind, randomized study, we use either oral midazolam or a new sedative drug, dexmedetomidine (Dex.) applied intranasally (IN) in two different dosages. The former has been used for premedication for decades, the latter has mainly been used for intravenous sedation. Besides, recently performed studies reported the safe use of it for IN premedication. The intranasal usage of dexmedetomidine has not been yet tested in disabled patients. **Material and methods:** We randomize 150 dental patients into 3 groups, with different types of premedication applied, followed by balanced anaesthesia. In group A we use oral midazolam, in group B IN Dex., in group C also IN Dex. in a higher dose. Premedication is followed by an observation period, vital parameters, side effects and sedation-agitation scales are recorded. After dental treatment and the extubation of the patient, we continue observation for 2 hours with same parameters being monitored. We also record how these agents influence the length of postoperative period and recovery of vital functions. **Results:** Our data are currently being analysed statistically with Anova method, so our results and conclusions are expected to be ready by the time of the PhD conference. **Conclusions:**

Keywords: dental care, preanaesthetic agent, intranasally premedication

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