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Poster Session IV

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Internal Medicine
Poster Session I

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Surgery
Oral Session II

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Surgery
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Surgery
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Public Health
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Public Health
Poster Session I

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Preclinical Sciences
Oral
Session I
(PSOS1)

INFLUENCE OF GENETIC VARIABILITY OF PKM2 GENE ON PYRUVATE KINASE M2 ACTIVITY AND THE COURSE OF COLORECTAL CANCER

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Introduction: Pyruvate kinase is a transferase enzyme that catalyzes the transfer of a phosphate group to ADP, forming one pyruvate and one ATP molecule as a final step of the glycolysis. Due to its properties a potential role of pyruvate kinase in carcinogenesis was previously suggested.

Aim: In this study we explore whether pyruvate kinase activity differs between patients with colorectal cancer and healthy controls. We also analyze genetic variability within PKM2 gene in order to elucidate the potential connection between detected polymorphisms, pyruvate kinase activity and the course of colorectal cancer including the age of onset as well as sex of the patients.

Materials and methods: 30 patients with histologically proven colorectal cancer were included in the study group while 30 age and sex-matched healthy adults were included in the control group. Total pyruvate kinase activity was determined using the Pyruvate Colorimetric/Fluorometric assay kit according to manufacturer's instructions. Sanger sequencing of PKM2 gene was also performed.

Results: Pyruvate kinase activity in colorectal cancer group was significantly lower (8.94 vs 10,58 mU/mL) than in healthy controls. The genotyping of PKM2 gene revealed 4 single nucleotide polymorphisms - rs1052177, rs1052176, rs778164541, rs1431767339. Subgroup analysis revealed no connections between detected polymorphisms and the age of onset, sex or the measured pyruvate kinase activity.

Conclusion: Contrary to other studies, measured citrate plasma pyruvate kinase metabolic activity was lower in colorectal cancer group when compared to controls. Genetic variability within PKM2 gene seems not to have influence on the activity of pyruvate kinase M2 isozyme. Further studies are needed to reveal the molecular mechanism behind the described discrepancies.

Keywords: Pyruvate kinase M2, colorectal cancer

THE ENDOGENOUS CANNABINOID SYSTEM AND PEPTIDES FROM THE TYR-MIF-1 FAMILY INTERACT IN THE MODULATION OF HEAT STRESS-INDUCED ANALGESIA

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Introduction: Stress-induced analgesia (SIA) consists of two anatomically distinguished components that mutually influence each other – an opioid and a non-opioid one. The endocannabinoid system (ECS) is associated with the non-opioid SIA component, while Tyr-MIF-1 and Tyr-K-MIF-1 are known to interact with opioid and non-opioid receptors. Our assumption was that by interacting together, the cannabinoids and peptides affect heat stress-induced analgesia.

Aim: Evaluating the effect that the interaction between cannabinoids and Tyr-MIF-1 peptides has on heat stress-induced analgesia.

Materials and methods: Male Wistar rats were injected in different combinations with the CB1-receptors agonist anandamide (AEA), CB1-receptors antagonist AM251, and the two peptides (Tyr-MIF-1 and Tyr-K-MIF-1). Opioid receptors engagement was established by opioid receptors antagonist naloxone (Nal) administration. Pain perception was evaluated by Paw pressure (PP) test.

Results: Compared to the 1h HS+AEA-group, Tyr-MIF-1-administration along with both AEA and AM251 led to an initial increase of PP-thresholds, followed by a decrease. Nal-pretreatment increased PP-thresholds in the 1h HS+AEA+Tyr-MIF-1-group, however it decreased them in the 1h HS+AM251+Tyr-MIF-1-group. Compared to the 1h HS+AEA-group, Tyr-K-MIF-1-administration along with AEA initially decreased PP-thresholds, but an increase followed at the 20min mark. AM251-administration abolished the above-mentioned analgesic effect. When compared to the control group, Nal-pretreatment led to an increase in PP-thresholds in the 1h HS+Nal+AEA+Tyr-K-MIF-1-group, while a tendency towards hyperalgesia was observed in the 1h HS+Nal+AM251+Tyr-K-MIF-1-group.

Conclusion: It seems that Tyr-K-MIF-1 interacts with the endocannabinoid system and increases heat SIA, while Tyr-MIF-1 exerts an anti-opiate effect along with anandamide.

Keywords: stress-induced analgesia, endocannabinoid system, Tyr-MIF-1 peptides, Paw pressure test, nociception

Acknowledgements: This study was supported by Grant № 27/2013 from the Medical Science Council of Medical University of Sofia.

BIOCHEMICAL CHANGES IN PROTEIN METABOLISM IN DEXAMETHASONE-INDUCED INSULIN RESISTANT RATS UNDER THE INFLUENCE OF SOME HERBAL MIXTURE

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Introduction: Diabetes mellitus is one of WHO's priority issues. It requires immediate resolution as the epidemiological situation is gaining alarming proportions – the number of diabetic patients is increasing every year along with the number of deaths and disabilities due to the development of angiopathies [1]. Therefore, the optimization of pharmacotherapy, search and study of new drugs with antidiabetic activity for the prevention and treatment of this disease and its complications is a top issue of medicine.

Aim: Aim of our research was to study the influence of the herbal mixture on the protein metabolism in dexamethasone-induced insulin resistant rats.

Materials and methods: It was selected the aqueous extract (1:10) of the herbal mixture (AEHM) (Arctium lappa roots, Elymus repens rhizome, Zea mays columns with stigmas, Helichrysum arenarium flowers, Rosa majalis fruits), with reliable antihyperglycemic activity established during the screening tests [2]. The study was performed on male albino rats of the Wistar strain weighing 180- 200 g [3]. Throughout the experimental period, the animals received standard rat diet and water ad libitum. Induction of insulin resistance was performed by daily intramuscular (i.m.) injection of dexamethasone (1 mg/kg/day). Intact group received per os (p.o) distilled water (12 mL/kg/day) and injection of NaCl 0.9% (1 mL/kg/day, i.m.). Research group received dexamethasone (1 mg/kg/day, i.m.) and AEHM (12 mL/kg/day, p.o.) [4].

Results: The administration of dexamethasone to linear rats caused the disorders of protein metabolism due to decrease in total serum protein by 17% relative to the intact group ($p<0.05$). The introduction of AEHM increased the total protein content by 11% in insulin resistant rats ($p<0.05$).

Conclusion: The results from the present study showed that AEHM exhibits the ability to regulate protein metabolism on the background of insulin resistance in rats.

Keywords: herbal mixture, insulin resistant, serum protein

References: 1. American Diabetes Association (2020). Standards of Medical Care in Diabetes. Diabetes care 43,1212. 2. Savych, A., Marchyshyn, M., Basaraba, R. (2020). Screening study of hypoglycemic activity of the herbal mixtures (Message 1). Scientific J «ScienceRise: Pharma Science» 4(26), 40-46.

Acknowledgements: There are no conflicts of interest regarding this study.

ASTROGLIA-MEDIATED REGULATION OF CELL DEVELOPMENT IN THE MODEL OF NEUROGENIC NICHE IN VITRO TREATED WITH ABETA1-42

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Introduction: Postnatal neurogenesis occurs in neurogenic niches where glial and endothelial cells are key regulators. In the model of a neurogenic niche in vitro, we showed the effects of astrocytic activation on markers of neurogenic proliferation and differentiation: NeuroD1, Pax6, Nestin, and PCNA.

Aim: This study aimed to determine astrocyte-mediated regulatory mechanisms of the neurogenic niche development in vitro both under physiological conditions and under Abeta1-42 exposure.

Materials and methods: The model of a neurogenic niche in vitro was reconstructed according to the protocol of Liu et al. Four experimental groups were formed: 1) control - neurospheres/endothelial cells/astrocytes, n = 7; 2) control - with photoactivated astrocytes, n = 7; 3) Abeta1-42 - with neurospheres, exposed to Abeta, n = 7; 4) Abeta1-42 - with photoactivated astrocytes, n = 7. Adenovirus vector was used to activate ChR2 expression in astrocytes. Photoactivation was conducted on day 4 after infection at time points: 6 h, 12 h, and 18 h. Registration of Pax6, NeuroD1, Nestin and PCNA expression was carried out by immunocytochemistry. To assess the effects of amyloid and photoactivation on proliferation we used xCelligence. Statistical processing was carried out using nonparametric methods (Wilcoxon test).

Results: In the control group, NeuroD1 and Pax6 expression increased by 48 h ($p < 0.01$). Under Abeta exposure, Pax6 expression increased by 24 h, while Nestin was not sensitive to Abeta. In the control group with photoactivation, Nestin expression increased. Under Abeta exposure, photoactivation corresponded to the recovery of suppressed NeuroD1. Photoactivation increased the proliferative activity of neurospheres: cell index was 1.1435 +- 0.006 conventional units (cu), while in the control group - 1.0919 +- 0.007 cu ($p < 0.01$). Under Abeta exposure, proliferative activity decreased: cell index - 0.6256 +- 0.006 cu ($p < 0.01$). However, photoactivation led to an increase in the cell index up to 0.6644 +- 0.006 cu. In both intact and experimental neurogenic niches, PCNA expression increased due to photoactivation.

Conclusion: The activation of astrocytes caused the mobilization of cells with high proliferative potential both in control and experimental groups. So, optogenetic stimulation demonstrated its efficiency in reducing the effect of Abeta1-42 to hippocampal stem and progenitor cells.

Keywords: Neurogenesis, Optogenetics, Astrocytes, Neurogenic niche, Neural stem cells

References: Liu Y., Xue Q., Tang Q., Hou M., Qi H., Chen G., Chen W., Zhang J., Chen Y., Xu X.(2013) Microvasc. Res., 90, 199-205.

Acknowledgements: This study was supported by the Ministry of Public Health of Russian Federation (State Assignment for Research “New technologies for managing neurogenesis and brain angiogenesis", 2018-2020).

NETWORK BIOLOGY ANALYSIS OF THE SURFACEOME IN HUMAN MELANOCYTES AND MELANOMA CELLS

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Introduction: The complement of cell surface proteins is collectively referred to as the surfaceome. The composition of the surfaceome undergoes significant alterations during pathological conditions. Therefore, proteomic analysis of the surfaceome during the development of diseases such as malignant melanoma can provide valuable information for therapy, diagnosis, or prognosis. However, the surfaceome of human pigment cells is currently unexplored.

Aim: The aim of our study was to characterize the surfaceome of human cutaneous melanocytes and melanoma cells and to explore signalling pathways related to cell surface proteins. This in silico approach may give us a global picture on possible relationships between the identified proteins and networks involved in melanoma evolution.

Materials and methods: Three pigment cell cultures were used in our experiments. Epidermal melanocytes were isolated from human skin samples. WM35 melanoma cell line was established from in situ melanoma, while A2058 is derived from metastatic melanoma. Cell surface proteins were labelled with aminooxy-biotinylation, followed by mass spectrometry to define the surfaceome. Gene ontology (GO) annotations of the identified proteins were obtained from the UniProt database.

Results: According to the proteomic analysis, 70-84% of the identified proteins were found to be cell surface proteins. A total of 416 (melanocytes), 256 (WM35) and 567 (A2058) surface proteins were discovered in the cell cultures. The next step was to further examine the identified surfaceome proteins by the Reactome database. The analysis revealed that signalling pathways present in melanocytes with the highest possibility are not related to surface proteins. In WM35 cells MET, RAP1, MAPK and B-Raf signalling was significantly over-represented amongst the identified pathways. In A2058 cells the Rho-GTP-ase, Slit-Robo and L1CAM signalling cascades were detected to be the most possible pathways in correlation with the surfaceome.

Conclusion: Our results identified new molecular targets that may serve as potential biomarkers in melanoma treatment. The differences found in the surfaceome and related pathways of healthy vs. malignant pigment cells can lead to the discovery of highly selective biomarkers on disease onset and progression .

Keywords: melanocyte, melanoma, proteomics, surfaceome

HYPOTENSIVE DRUGS INFLUENCE INDUCTION OF HUMORAL AND CELL-MEDIATED IMMUNITY IN MICE FED WITH STANDARD OR HIGH-SALT DIET

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Introduction: Nowadays, altered reactivity of immune cells is believed to be involved in the pathogenesis of hypertension. However, little is known about possible immune modulatory effects of clinically relevant hypotensive drugs, especially in individuals at risk of hypertension, e.g. due to high-salt-intake. Since hypertension is considered an inflammation-correlated disorder, hypotensive drugs could achieve additional positive effects through immune modulation.

Aim: Our studies aimed to examine the effect of clinically relevant hypotensive drugs on humoral and contact sensitivity (CS) responses in mice fed with standard or high-salt diet.

Materials and methods: Mice were constantly fed with either standard or high-salt diet, and treated with one of the following drugs: propranolol (10mg/kg), carvedilol, captopril, verapamil (5mg/kg), amlodipine (3mg/kg) or olmesartan (1mg/kg) for 8 days. On the third day of drug administration, mice were sensitized with hapten. Five days later mice were challenged with hapten to elicit CS ear swelling, measured 24 hours later. Otherwise, oil-induced peritoneal macrophages of drug-treated mice were pulsed with sheep erythrocytes (SRBC) and transferred intraperitoneally into naive recipients, from which spleens have been individually collected a week later for measurement of humoral immune response.

Results: Type of diet failed to impact both, humoral and CS reaction. However, treatment of mice with amlodipine, captopril or carvedilol significantly suppressed CS response in mice fed with high-salt diet. Interestingly, captopril and carvedilol exerted opposite effect in mice fed with standard chow. Administration of captopril and propranolol significantly increased the number of B cells releasing SRBC-specific antibodies, while verapamil-induced effect depended on the type of diet.

Conclusion: These studies demonstrate that hypotensive drugs differently modulate the immune response in healthy mice and in mice prone to hypertension. Further research should be conducted to examine the clinical effects of these changes.

Keywords: high-salt diet, hypertension, hypotensive drugs, immune response modulation

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ESTROGEN AND PROGESTERONE RECEPTOR EXPRESSION IN RAT LYMPHOID CELLS

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Introduction: Estrogen and progesterone play a major role in the body's regulative and metabolic processes. This is achieved by interaction with its vastly distributed estrogen (ERα, ERβ) and progesterone (PR-A, PR-B) receptors. It is known that in places where receptors are highly expressed, such as in reproductive, gastrointestinal and central nervous system, these steroid hormones exert various effects. The role that these hormones have on many immunological processes has been speculated but not fully investigated nor understood.

Aim: The aim of the present study was to examine the expression of estrogen and progesterone receptors in the rat lymphoid cells and therefore presume with more certainty their effects on various immunological processes.

Materials and methods: The study was conducted on 6, 3-month old sexually naive male Wistar rats from which spleen, thymus, and gastrointestinal lymph node cells were isolated. Additionally, blood smears were prepared from the blood samples taken from the same rats. Tissue was processed routinely and after undergoing centrifugation, primary cell cultures with cell density adjusted to 2.5 *106/ml were made. All cell suspensions (adhered to slides) and blood smears were stained with either primary estrogen or progesterone receptor antibodies, followed by a secondary antibody. The final visualization was performed using DAB and counterstained with hematoxylin. Lastly, using a light microscopy ER/PR positive cells were counted on twenty different 1000x magnification fields.

Results: Our results demonstrate that rat spleen cell suspension has approximately 3.59±0.02% positive and 2.85±0.005% positive progesterone and estrogen cells, respectively. In the gastrointestinal lymph node cells progesterone and estrogen positivity was 0.45±0.75% and 0.22±0.38%, respectively. Blood smear lymphocyte positive for progesterone and estrogen receptors was 0.56±0.96% and 1.75±2.0%, respectively. At the end there were no positive cells on these hormone receptors in the thymus cell suspension.

Conclusion: These results indicate that estrogen and progesterone receptors have minute expression in various lymphoid cells of spleen, mesenteric lymph nodes and blood, but not in thymus. The results suggest that the female sex hormones could have immunomodulatory properties in male lymphoid cells.

Keywords: estrogen receptors, progesterone receptors, lymphocytes, spleen, thymus

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SERUM XANTHINE OXIDASE ACTIVITY IN SUBJECTS WITH DIFFERENT BODY MASS INDEX

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Introduction: Xanthine oxidase (XO) is an enzyme involved in purine catabolism in humans. It catalyzes the oxidation of hypoxanthine to xanthine and xanthine to uric acid. Xanthine oxidase-catalyzed reactions produce the superoxide anion radical and Hydrogen peroxide, making XO an important source of reactive oxygen species (ROS), which can cause oxidative tissue damage.

Aim: The aim of the study was to examine the activity of xanthine oxidase and an inflammation marker in subjects with different body mass index.

Materials and methods: The study included 175 volunteer subjects (aged 19-24), classified according to BMI, into three groups. Anthropometric, blood pressure, enzymes activity (xanthine oxidase, myeloperoxidase) and biochemical parameters were obtained. The following were determined: uric acid, fasting blood glucose (FBG), insulin resistance (HOMA-IR), high-sensitivity C-reactive protein (hsCRP), total cholesterol (TC), high-density lipoprotein cholesterol (HDL), low-density lipoprotein cholesterol (LDL), very low-density lipoprotein-cholesterol (VLDL-C), triglycerides (TG).

Results: By testing the results, we found significant differences ($p < 0.001$) of xanthine oxidase and myeloperoxidase activity, uric acid concentration and hs-CRP among the studied groups. The increase in BMI in the subjects was followed by higher activity of XO and MPO, followed by concentration of uric acid, fibrinogen, hsCRP and homa index value. The relationship between XO activity and anthropometric (BMI, waist and hip circumference, waist / hip ratio, blood pressure) and biochemical (hsCRP, TC, HDL-C, LDL-C, VLDL-C, TG, FBG) parameters were examined. XO activity showed a positive association with BMI, waist circumference, uric acid concentration, insulin resistance and hs-CRP ($p < 0.001$).

Conclusion: Xanthine oxidase, as a prooxidant enzyme may be a potential participant in chronic inflammation in obese individuals and may play a role in the pathophysiological mechanisms of complications in these subjects.

Keywords: Xanthine oxidase, Obesity, Inflammation, Oxidative stress

ACTIVITY OF THE TRANSVERSE ABDOMINAL MUSCLE IN PATIENTS WITH A SCAR AFTER APPENDECTOMY

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Introduction: Transversus abdominis muscle (TrA) plays a major role in a stabilization of the lumbar spine. Scars may cause functional soft tissue disorders among patients after appendectomy (AAP). Many authors point out, that pain after surgical intervention causes impairment of the function of muscles in the area of the operation field.

Aim: The aim of this study was to investigate TrA activation in patients AAP and among patients with pain in the right inguinal area (RIA) with no scars in this region.

Materials and methods: Pilot studies were carried out on a group of 12 men with low back pain (LBP) (24-37 years old) using ultrasound. The study group was divided into two subgroups: Group A - Five patients with a scar AAP and pain in RIA, and group B - Seven patients without scarring and any surgical intervention in the area of anterior abdominal wall (AAW). The patients had to learn how to activate TrA correctly. Examination was repeated twice, first USG transducer was placed in typical place of TrA's activation, second the transducer was put obliquely to the TrA fibers. The thickness of TrA was examined at the rest and in the activation mode.

Results: Analysis showed that there is a difference in the correct activation of TrA between the groups. In group A, in the second place of ultrasound examination, none of the patients activated TrA correctly (the correct TrA activation was assumed to be an increased thickness of TrA by ≥ 30%), and in group B in 7 cases.

Conclusion: Other authors' studies of muscle electroactivity (EMG) showed a decreased EMG activity of the AAW in patients on the scared side. This phenomenon may suggest a problem in the abnormal function of the muscles that are cut during the surgical procedure, and post-operative pain may impair the motor innervation of this area. We hope that our the results of our study will help to pay a greater attention to the treatment of postoperative scars, due to the possible complications, such as LBP.

Keywords: active scars, transversus abdominis muscle, post-operative pain, appendectomy, low back pain

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Abstracts
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LEMUR TYROSINE KINASE 2 LEVEL INVERSELY CORRELATES WITH P35/P25 IN NEUROPATHOLOGICAL STAGES OF ALZHEIMER'S DISEASE

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Introduction: Lemur tyrosine kinase 2 (LMTK2) is implicated in several physiological and pathological conditions such as Alzheimer's disease (AD). However, the connection between LMTK2 and p35/p25 the cofactors of upstream regulator cyclin-dependent kinase 5 (CDK5) has not yet been investigated in AD.

Aim: Our aim was the immunohistochemical (IHC) characterization of LMTK2 and p35/p25 in different neuropathological stages of AD.

Materials and methods: We selected 10-10 post-mortem samples of patients with early (Braak I-III.) and late (Braak VI) neuropathological stages of AD. The investigated brain regions were anterior hippocampus (aHPC) and middle frontal gyrus (MFG). The latter region in early stage was our 'endogenous control' as it is not affected by tau-pathology. LMTK2-p35/p25 fluorescent double labelling (FDL) IHC was performed. We took 5-5 high magnification photos/cases. Using digital image analysis we measured the fluorescent signals of the protein on every image. Then values were calculated to each group. Spearman's test was executed to determine the correlation between the proteins.

Results: LMTK2 and p35/p25 signals overlapped in the endogenous control without significant quantitative difference. In the tau-affected regions (MFG in late stage and aHPC in both stages) we detected decreased LMTK2 and preserved p35/25 expressions with minimal overlaps. Spearmen's test showed strong negative correlations between proteins in these groups.

Conclusion: According to our results decreased LMTK2 level accompanies by relatively preserved p35/p25 expression and minimal overlap between the proteins. These findings may serve as a potential explanation on the previously suggested reduced LMTK2 enzymatic activity in AD.

Keywords: Alzheimer's disease; LMTK2; neurodegeneration, CDK5/p35

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EVALUATION OF VITAMIN D3 AND METHYLPREDNISOLONE INFLUENCE ON PODOCALYXIN EXPRESSION WITHIN PODOCYTES IN IN VITRO MODEL OF MINIMAL CHANGE DISEASE

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Introduction: Minimal change disease (MCD), the most common idiopathic nephrotic syndrome in children is characterized by proteinuria and loss of podocyte ultrastructure. Podocalyxin is a key molecule in podocytes development and the main component of their foot processes responsible for formation of the filtrating membrane. Therefore, disturbances in podocalyxin have been reported as a possible factor contributing to glomeruli dysfunction. However, despite various reports the direct role of podocalyxin in MCD and how it responds to commonly applied steroid treatment is unknown.

Aim: The aim of the current project was to evaluate changes of podocalyxin within podocytes cell line in minimal change disease (MCD) in vitro model. Moreover, the influence of steroids and another immunomodulator - vitamin D3, on podocalyxin levels within podocytes was also assessed.

Materials and methods: Podocyte cell line (CIHP-1; University of Bristol) was incubated with LPS+PAN to induce selective cell damage to reflect the morphology of podocytes in MCD. Obtained podocytes were treated with different concentrations of vitamin D3 (VIT.D3) and methylprednisolone (MP). Podocalyxin expression was measured on protein and mRNA level using flow cytometry and RT-PCR respectively.

Results: We found that the induction of MCD model through LPS+PAN stimulation led to significantly higher expression of podocalyxin on mRNA level. In addition, the frequency of podocytes expressing podocalyxin was reduced in LPS+PAN-stimulated podocytes. Among studied drugs, only a high concentration of vitamin D3 led to further decrease in podocalyxin frequency. Similarly, high VIT.D3 concentration led to the reduction of podocalyxin expression also on mRNA level.

Conclusion: Here we demonstrated for the first time, the effects of in vitro MCD model induction on podocalyxin expression within podocytes. Selective effects on podocyte morphology were followed by significant changes in expression on the protein and mRNA level. In addition, these changes were modulated by high concentrations of vitamin D3. Subsequent studies are of great importance for the evaluation of the role of applied drugs in podocytes function through podocalyxin modulation in the course of minimal change disease.

Keywords: Podocytes, Minimal change disease, Podocalyxin

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SEROTONIN SYNDROME IN RATS

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Introduction: The serotonin syndrome is a potentially life-threatening adverse drug reaction that can occur on the basis of either serotoninergic drug overdose or the combined administration of two or more drugs that increase the intrasynaptic concentration of serotonin.

Aim: The aim of this study is to investigate the development of the serotonin syndrome in rats after administration of serotonergic drugs with different pharmacological mechanisms.

Materials and methods: The experiments were conducted with male Wistar rats with average weight 200-220g, which were kept at ambient temperature 22+/-11ºC with 12h light/dark cycle and given food and water ad libitum. In the present study, we used animal model of serotonin syndrome prepared by co-administration of the serotonin precursor 5-hydroxy-L-tryptophan /5-HTP/ (100 mg/kg i.p.) and tranylcypromine (3.5 mg/kg, i.p.) – a nonselective monoamine oxidase (MAO) inhibitor. Being recorded at 30 min intervals following the injection of serotonergic drugs, the body temperature of the animals was measured with thermistor probes (TX-8), and monitored on multichannel recorder Iso-Thermex 16. In the handling and care of all animals, the International Guiding Principles for Animal Research were strictly followed.

Results: The manifestations of serotonin toxicity observed in the serotonin syndrome models, used in the study include hyperactivity, Straub phenomenon, low body posture, tremor, wet dog shake, head weaves, hind limb abduction and hyperthermia.

Conclusion: In our experimental study in rats, typical symptoms of drug-induced serotonin syndrome have been identified. This can serve as a base to further understand serotonin toxicity and its treatment and test drugs which might possibly prevent the occurrence of some of its symptoms.

Keywords: serotonin syndrome, rats, hyperthermia, Straub phenomenon

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GORHAM-STOUT DISEASE - A VERY RARE ENTITY WITH NO SPECIFIED TREATMENT PROTOCOLS

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[1]Ss,,Cyril and Methodius"

Introduction: Gorham-Stout or vanishing bone disease is a very rare entity where only around 200 hundred cases are reported up to date, and no treatment protocols exist for these patients. The disease is characterized with episodic bone loss which has no age, gender, familial or race predisposition . It can be monostotic or polyostotic, affecting mostly the spine, pelvis, shoulder or the skull, but it can potentially affect every bone in the body. Here we will present a case of Gorham-Stout disease with individualized treatment protocol.

Clinical case: We here present a case of a eight year old girl with Gorham-Stout disease whose symptoms started at the age of two years, with involvement of the skull, presenting as swelling in the parotid area, which proved to be liquorrhea. Imaging techniques revealed outsized defects on the skull to be the reason for the abnormal liquor localization.The patient was surgically treated with patch insertion on the skull. In the next years the disease progressed beyond the region of the inserted patch. MRI showed massive skull involvement with areas of complete bone disappearance and initial lesions on the first vertebrae. Histological examination of a sample reveals global bone loss replaced with fibrous tissue where blood and lymphatic vessels were settled. After exclusion of other possible etiologies such as infectious, malignant and endocrinological diseases, the diagnosis of Gorham-Stout was established. Due to the involvement of the cervical vertebrae and the threatening paralysis, pharmacological treatment was implemented, including bisphosphonates and immunomodulation therapy. Initial cessation of bone loss was observed within the last months.

Conclusion: Since the condition of vanishing bone disease is extremely rare, there are no standard protocols for treatment. Additional reports of such cases are valuable to establish treatment guidelines in future.

Keywords: Gorham-stout disease, vanishing bone disease, phantom bone disease, lymphatic vessel anomalies.

FORMULATION, OPTIMIZATION & IN-VITRO CHARACTERIZATION OF SUSTAINED RELEASE TERBUTALINE MICROPARTICLES

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Introduction: Terbutaline is frequently prescribed for treatment regimen of Bronchial Asthma. Terbutaline sulfate is an adrenergic agonist and its half-life (t1/2) is 3-4 hours. Terbutaline daily dose is between 2.5 mg to 15 mg, taken in divided doses with interval of 6 hours. Immediate or rapid release delivery systems show the possibility for dose dumping and frequent drug administration can cause devastating side effects.

Aim: The objective was formulation, optimization & in-vitro characterization of sustained released Terbutaline loaded microparticles.

Materials and methods: Terbutaline loaded microparticles (TLM) were prepared using W/O (water in oil) or O/O (oil in oil) E.S.E (Emulsion solvent Evaporation) technique. Box-Behnken design (B.B.D) was applied using Design Expert 11 and 17 formulations were formulated by changing the concentration of independent variables i.e. Polymer concentration, stirring speed & concentration of emulsifier (span 80).

Results: Formulations were evaluated for their entrapment efficiency (E.E), percentage yield (%), particle size & drug release pattern for 24 hrs. Scanning electron microscopy & optical imaging validated a smooth spherical surface of microparticles i.e. microspheres. The size distribution was also uniform according to examination. Percentage yield (%) of all the formulations was found existing in range of 67.8% - 92.8%. No interaction was found) in the FT-IR studies between the drug (Terbutaline) & Polymer (Eudragit L-100). Particle Size (PZ) of Terbutaline Sulfate formulations were found to be in range of 22.44 to 86.74 µm. Entrapment Efficiency varied from 53.66 to 86.44 %. Sustained release behavior was observed as the percentage release of drug from microparticles were in the range of 71.4 % to 93.54% after 24 hrs. The drug release from the microparticles followed first-order release kinetics with diffusion mechanism as non-fickian from Korsmeyer-Peppas kinetic model.

Conclusion: The present study concluded that Terbutaline loaded microparticles of Eudragit L100 results in prolonged and extended release. This will increase the duration of active drug concentration in plasma and is desired to improve patient compliance for the treatment of Asthma.

Keywords: Terbutaline, Eudragit L100, Microparticles, Sustained Release, Asthma

ULTRASTRUCTURE OF THE BIOMINERAL OF THE HIPBONES IN ADULT RATS WITH STREPTOZOTOCIN-INDUCED DIABETES

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Introduction: Bone is a complex organ with numerous processes running in it. There are a lot of factors that can influence on bone during its life and one of them is insulin dependent diabetes. It can cause a lot of complications and even lead to disability.

Aim: The aim of the present study was to examine ultrastructure of the biomineral of the hipbones with streptozotocin-induced diabetes in adult rats.

Materials and methods: The experiment involved 70 3-month old rats with body weight of 135-150 g. All animals were divided into 2 groups: 1 group – control animals, 2nd group – animals with diabetes caused by intraperitoneal injection of streptozotocin in dosage of 55 mg/kg. After 72 hours we chose animals with blood sugar level of 12 mmole/l or above. Upon expiration of observation terms (7, 15, 30, 60 and 90 days from the moment of model verification), the animals were killed by decapitation under ether anesthesia, and the hipbones were isolated. To study ultrastructure of the mineral component of the bone, we used an X-ray diffraction analysis. X-ray crystal studies included measurements of the elementary cells and the crystallites, and calculation of microtexture coefficient.

Results: In the control animals dimensions of the elementary cells and crystallites in all observation terms exhibited insignificant growth, which is rather an aging feature. Microtexture coefficient, which is a characteristic of crystal lattice order also increased. In the experimental group crystallization processes exhibited marked derangement. Dimensions of the elementary cells (along a-axis) increased by 0.14%, 0.16%, 0.20%, and 0.21% in the period from the 15th to the 90th days. Dimensions along c-axis also changed in the same period – increase by 0.15%, 0.21%, 0.22%, and 0.24% was observed. Crystallites enlarged by 4.86%, 5.68%, 7.12%, 6.59%, and 7.80% with respect to all observation terms. Microtexture coefficient in this case decreased also starting from the 15th day by 8.26%, 10.72%, 9.42%, and 8.34% with respect to observation terms.

Conclusion: Streptozotocin-induced diabetes results in instability of ultrastructure of the bone mineral that can cause disturbance of remodeling processes.

Keywords: Rats, bone mineral, diabetes, ultrastructure.

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ABILITY OF STAPHYLOCOCCUS AUREUS STRAINS TO FORM BIOFIM AND TO PERFORM SPECIFIC MOTILITY TYPES

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Introduction: Staphylococcus aureus is Gram positive bacteria, which causes wide range of community-acquired and hospital-acquired infections. Some isolates of this bacterium have ability to form a biofilm and show resistance to beta lactams (designed as methicillin resistant S. aureus) and other antibiotics. Although this bacterium is regarded as non-motile, because it does not possess flagella and type IV pili, some previous experiments proved it`s movement. Those movements are characterized as twitching, spreading and comet formation.

Aim: The aim of this study was to compare the capacity of the biofilm production between methicillin sensitive (MSSA) and methicillin resistant isolates of S. aureus (MRSA) and to determine their ability of comet formation, spreading and twitching types of motility.

Materials and methods: A total of 30 MSSA and 30 MRSA strains isolated from nares and wound swabs were used in this study. Ability of biofilm production was examined in microtiter plate during 24 hours on 37 degrees Celsius. Semi-solid agar (0.8% trypticase soy broth) was used for twitching motility test. Spreading and comet formation were tested in semi-solid agar (0.4% trypticase soy broth) and solid agar. After incubation during 24 hours at 37 degrees Celsius diameter of twitching colonies was measured and difference in diameter of colony grown on semi-solid and solid agar for spreading and comet formation colonies was calculated. According to the shape of motile colonies, isolates were marked as spreading isolates or dendrites.

Results: In our experiment we noticed significantly better biofilm production of MSSA isolates in relation to MRSA isolates.(p=0,0105) Fifty of sixty isolates showed ability of twitching motility. Spreading and comet formation was noticed in 34 (56.67%) isolates. Only three isolates formed dendrites. There was no significant correlation between biofilm formation and all types of examined motility. (p>0,5)

Conclusion: Our results indicate that increasing ability of biofilm production in MSSA strains could be their avoiding mode to interfere with antibiotic action without presence of specific resistance gene. Twitching results point that type IV pili are not necessary for twitching of S. aureus. Spreading results prove that S. aureus is capable to spread over semisolid agar and that shape of the colony is strain specific.

Keywords: Staphylococcus aureus, biofilm, spreading, twitching

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3D VISUALIZATION OF A SOFT TISSUE ABSCESS WITH OPEN-SOURCE SOFTWARE

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Introduction: Skin and soft tissue infections (STI) may occur when the organism's defense mechanisms are compromised, especially the integrity of stratum corneum due to trauma, inflammation, maceration caused by excessive moisture, poor blood perfusion, etc. Skin and STI classify into 3 groups: primary pyoderma, skin condition infections, and necrotizing infections. Primary infections include cellulitis, ecthyma, impetigo, folliculitis, furunculosis, and erysipelas, while secondary infections are the result of preexisting lesions, which serve as a gateway for the entry of various microorganisms.

Aim: This project aims to produce a solid 3D model of a case of STI by using an anonymous computed tomography dataset of the head of an adult male.

Materials and methods: The program 3DSlicer was used to perform a 3D segmentation. Two thresholds ranged 150 to 1400 and -127 to 106 Hounsfield units were set, selecting respectively high-density structures such as bones and low-density structures such as soft tissues or exudate. The “Grow from seeds” command was used to specify further the selection, which was then converted into a 3D model. The result was smoothened and then exported as Standard Triangle Language file, which was loaded into the program Autodesk Meshmixer. Lastly, the model was manually cleared of artefacts and the polygon count was further reduced.

Results: The model can be used as 3D visualization or 3D printed for surgical planning, as phantom model or for educational purposes. 3D reconstructions of various conditions are useful to plan a treatment such as surgery. Models from CT scans provide detailed 3D reconstructions without high radiation doses.

Conclusion: This paper, in support of numerous recent works, shows that 3D reconstruction is reliable and easy to perform technique, that could be useful for educational, diagnostic or therapeutic purposes.

Keywords: Soft tissue infection, 3D model, reconstruction, abscess

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THE SIGNIFICANCE OF DNA DAMAGE ON COURSE AND PROGNOSIS OF ENDOMETRIAL CANCER

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Introduction: Endometrial cancer is the most common cancer in women, which develops from the uterine mucosa. Its development is a multistage process, and its etiology is still not fully understood. In recent years, the role of free radicals inducing DNA destruction as a potential factor leading to carcinogenesis has been pointed out.

Aim: The aim of this study was to assess the extent of oxidative DNA damage in endometrial cancer. Different histopathological stages of endometrial cancer based on FIGO classification were examined in 4 different types of samples - peripheral blood, uterine blood, cancerous tissue and non-cancerous surrounding tissue. The prognostic relevance and role of oxidative base lesion (8-OHdG) in the etiology of endometrial cancer was investigated by attempting to establish a correlation between the level of DNA damage in relation to the progression of the cancer.

Materials and methods: 90 patients, aged 40–75, who were interviewed for their medical history and who had histologically proven endometrial cancer were included in the endometrial cancer group. The control group consisted of 23 healthy women aged 40–65 years. Peripheral blood was collected in EDTA from patients and control group. Venous uterine blood was collected during surgical procedure of hysterectomy. The level of 8-OHdG was measured using DNA damage quantification kit according to the manufacturer's instructions.

Results: Highest 8-OHdG levels were observed in both peripheral and uterine blood samples, followed closely by site surrounding non-cancerous tissue. Concentrations of 8-OHdG were two-fold higher in patients with FIGO III endometrial cancer in comparison to FIGO I endometrial cancer samples. Strangely, the lowest levels of 8-OHdG were observed in cancerous tissue samples. tissue. 8-OHdG levels observed in peripheral and uterine blood samples closely correlated with each other.

Conclusion: This is the first study showing the DNA instability in four different sample types. Observed correlation between DNA damage and the progression of endometrial cancer, in addition to higher DNA damage detected in both peripheral and uterine blood show need for future studies that would explore measurement of DNA instability as both diagnostic and prognostic factor for endometrial cancer.

Keywords: endometrial cancer, DNA damage

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Abstracts
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ANTINOCICEPTIVE EFFECTS OF NEWLY SYNTHETIZED VV-HEMORPHIN-7 ANALOGUES IN MICE

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Introduction: Introduction : Despite the availability of several analgesic options, the effective treatment of acute and inflammatory pain is still a challenge for clinicians. Currently used steroidal and non- steroidal anti-inflammatory drugs displayed various aversive side effects that raise the question of finding new molecules with antinociceptive and analgesic action. The endogenous peptides such as the hemorphins, as well as the synthesis of their new analogues with better biologically activities are perspective direction in the neurobiological and medical research. These peptides are representatives of "atypical" opioid peptides which have afinity to both opioid receptors and insulin regulated aminopeptidase. Their biological activities are related to antinociception, inflammation, intestinal peristalsis, blood-pressure control, and cognitive function.

Aim: Aim : The objective of the present study was to characterize the antinociceptive profile of natural containing arginylglycillaspartic acid (RGD), in an experimental model of acute and inflammatory pain.

Materials and methods: Materials and methods : The experiments were carried out on adult male ICR mice. Three doses of peptides (50, 25 and 12,5 ug/mouse), dissolved in artificial cerebrospinal fluid as vehicle, were administered intracerebroventricularly (ICV) before the local intraplantar injection of irritant, 10 ul 5% formalin. Time of licking or shaking the injected hind paw was measured during two phases of pain reaction: acute from 0 to 20th minute and inflammatory from 20th to 4th after the injection of the formalin. ANOVA was used to analyze the results.

Results: Results : The referent peptide VV-H7 showed a significant dose-dependent analgesic effect in all three doses used during the second phase of the test and inhibition of the acute phase only in the highest dose used. Its analogues - RDG1 and RDG2 exerted significant dose-dependent analgesic effects both in the acute and inflammatory phases with more pronounced activity of RGD2. occurring nonapeptide VV-Hemorphin-7 (VV-H7) and its newly synthetized analogues.

Conclusion: Conclusion : Present data showed that modification of VV-H7 with RDG did not diminished but change its analgesic profile increasing its effects on the acute nociception.

Keywords: Keywords: VV-Hemorphin-7 analogues, Analgesic activity, Formalin test, Mice

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ARTERIAL WALL STIFFENING IS A DETERMINANT OF LEFT VENTRICULAR LOAD

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Introduction: Left ventricular load is an essential underlying mechanism in the pathogenesis of cardiovascular diseases. Recently arterial wall stiffening with aging is identified as an important factor determining pulse pressure amplification, decreased oxygen supply to the cardiac muscle and impaired ventricular-arterial coupling – all of which affect central hemodynamics and thus left ventricular load.

Aim: The aim of the study was to assess the impact of arterial wall stiffening on left ventricular load and myocardial oxygen supply.

Materials and methods: Sixty-five people were divided into two groups according to their age: Group 50 with mean age 50 years (21 females, 12 males) and Group 20 with mean age 20 years (14 females, 18 males). All the subjects were clinically healthy. Arterial wall characteristics were examined with applanation tonometry (Sphygmocor, AtCor Medical, Sidney, Australia) applying the method of pulse wave analysis. The main parameters studied were central systolic blood pressure, pulse pressure, augmentation index normalized to heart rate 75 (AIx75). The subendocardial viability ratio (SEVR) indicative for the balance between myocardial oxygen supply and consumption and the Rate-Pressure Product (RPP) as a measure of left ventricular load were evaluated. The correlation between AIx75 on the one hand and RPP and SEVR on the other was tested. Data Analysis ToolPak of the Excel software and Vassar Statistics Software were used for statistical analysis of the data. ANOVA, regression analysis and Wilcoxon- Mann-Whitney test were applied for comparison and evidencing correlation between the studied indices.

Results: Central systolic, pulse pressures and AIx75 were significantly higher in Group 50 compared to Group 20 ($p<0.01$, $p<0.05$ and $p<0.01$ respectively). RPP was significantly higher ($p<0.01$), while SEVR was lower in Group 50 ($p<0.05$). Positive correlation between AIx75 and RPP and negative correlation between AIx75 and SEVR ($p<0.01$) were found.

Conclusion: The observed differences could only be attributed to arterial wall stiffening since the examined individuals were clinically healthy. That implies that the naturally occurring age-related changes in the arterial wall have a negative impact on central hemodynamics.

Keywords: left ventricular load, pulse wave analysis, applanation tonometry

VITAMIN D IMPROVES WORKING MEMORY IN RATS WITH SCOPOLAMINE-INDUCED AMNESIA

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Introduction: Vitamin D (cholecalciferol) is a secosteroid hormone with well-established role in calcium-phosphate homeostasis and bone metabolism. Its receptors are expressed throughout the brain, where the active form of the hormone is synthesized – thus vitamin D may improve brain functions. Vitamin D involvement in memory remains obscure; scopolamine induced-amnesia model is well-known for investigating drugs' effects on memory, enlightening the role of cholinergic transmission on memory enhancing effect of cholecalciferol.

Aim: The objective of this research was to investigate whether Vitamin D could aid the memory and learning in rats with scopolamine induced memory impairment.

Materials and methods: Male Wistar rats were divided in 4 groups as follows: control with olive oil; Scopolamine (1mg/kg bw intraperitoneally), and two experimental groups with scopolamine and vitamin D3 in doses of 500 and 1000 IU/kg bw orally. The animals were treated with vitamin D3 for 2 weeks prior to performing memory tasks. Scopolamine was administered 30 minutes before testing. Learning and memory was assessed using step-down passive avoidance and Y-maze. The observed parameters were latent time and spontaneous alternations, respectively.

Results: During step-down passive avoidance test, rats treated with scopolamine showed a significant decrease in latency during the long-term memory test when compared to saline ($p<0,05$). The two experimental groups with cholecalciferol showed significant increase in latency during both retention tests ($p<0,05$) when compared to both controls. During Y-maze, the animals with scopolamine decreased spontaneous altercations in comparison to the vehicle group ($p<0,05$). The rats with a lower dose of cholecalciferol significantly increased the percentage of the observed parameter compared to the model group ($p<0,05$). Animals with higher dose vitamin D3 showed such tendency but did not reach significance.

Conclusion: The results suggest that vitamin D3 improves working and spatial memory in rats; perhaps by antagonising scopolamine. Since scopolamine is a cholinergic antagonist we may speculate vitamin D plays a vital role in CNS cholinergic transmission; further research is needed.

Keywords: memory, scopolamine, vitamin D, rats

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A CASE OF ACQUIRED GENERALIZED CYTOMEGALOVIRUS INFECTION WITH LETHAL OUTCOME. CLINICO-PATHOLOGICAL ASPECTS

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Introduction: Human cytomegalovirus (CMV) is one of the most common causes for morbidity and mortality during the fetal and neonatal period. CMV infection can be congenital or transmitted to newborns in the perinatal or postnatal period. Postnatal CMV infection occurs in the second or third month of life and can be a challenge, since the manifestation mimics other viru-bacterial or fungal causes and ranges from asymptomatic forms to life-threatening multiorgan failure, and in 0 – 13.8% manifests with sepsis-like symptoms.

Clinical case: We present a 2-month-old female infant delivered per vias naturales from second normal pregnancy, breastfed for 6 days, after which began being fed infant formula. In the second month of life, the mother noticed that the infant was febrile, lethargic, with preserved appetite. She was hospitalized in a pediatric department in a regional hospital where antibiotics were administered, but due to unimprovement in the general state, she was redirected to the Department of Pediatrics of University Hospital - Pleven. The status at admission included severe hypotrophy, pallor, abundant oral thrush, diminished vesicular breathing, tachycardia, and hepatomegaly. The paraclinical and instrumental examinations showed an anemic syndrome, elevated lactate-dehydrogenase, normal bilirubin, liver failure with hypoproteinemia, elevated cardiac enzymes, myopericarditis, and lung infection. The clinical picture corresponded to a severe CMV infection, which was proven serologically. Despite the combined therapy, 7 days after admission the infant exited and the corpse was redirected to the Department of Pathoanatomy for autopsy. The pathomorphological examination found acquired CMV infection with the following organ involvement: lungs - interstitial viral pneumonia; heart – CMV myocarditis; liver and pancreas – CMV hepatitis and pancreatitis; kidneys – CMV interstitial nephritis and glomerulonephritis; adrenal glands – CMV adrenalitis; central nervous system – CMV panencephalitis; salivary glands – CMV sialadenitis.

Conclusion: The infection with CMV is socially significant due to the severity of the clinical presentation and risk for permanent disability in infants. Early diagnostics and patient screening in risk groups are the keys to prevention and adequate measures against systemic complications in the postnatal period.

Keywords: cytomegalovirus infection, postnatal CMV infection, pathology

ARTIFICIAL INTELLIGENCE DIAGNOSIS OF COVID-19 USING CHEST X-RAYS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction: The COVID-19 pandemic is spreading across the world, with PCR as the diagnostic gold standard. However, radioimaging plays a role for early stage diagnosis. Chest X-rays (CXR), although less sensitive than CT scans, might be preferred since it uses less radiation, is cheaper and more available in resource-constrained settings. Artificial intelligence (AI) may strengthen diagnostic tools, reduce increasing workforce burden and assist physician decision-making, as it is fatigue-resistant and less subjective.

Aim: This review evaluates diagnostic performances of AI for CXR COVID-19 diagnosis.

Materials and methods: This meta-analysis was reported according to the PRISMA checklist from Scopus, PubMed, EBSCOhost and CENTRAL. Only articles classifying the CXR into COVID-19 and non-COVID-19 classes with complete confusion matrices were included. Risk of bias was assessed with QUADAS-2.

Results: From 27 studies included, 15 studies were analyzed quantitatively resulting in an area under curve 0.992, pooled sensitivity 84.8% (CI95%;84-85.6%) and specificity 96.1% (CI95%;95.6-96.4%). Most deep learning methods use convolutional neural networks with various classifications, labeling, training processes, dataset sizes and algorithms. Subsequent analyses of COVID-19 vs Pneumonia (12 studies) concluded a pooled sensitivity 86.8% (CI 95%;85.9-87.6%) and specificity 93.9% (CI95%;93.4-94.5%), while COVID-19 vs healthy (14 studies) concluded a pooled sensitivity 94.2% (CI95%;93.6-94.8%) and specificity 97.7% (CI95%;97.3-98%).

Conclusion: Diagnosis of COVID-19 using deep learning algorithms holds enormous potential with comparable accuracy to health-care professionals. Better designed studies, such as randomized trials, before clinical practice integration is needed.

Keywords: Artificial Intelligence, COVID-19, Deep learning, X-ray

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Acknowledgements: We would like to acknowledge the tremendous help from Department of Medical Physics, Medical Technology IMERI, Faculty of Medicine, Universitas Indonesia

MOLECULAR PHENOTYPING OF PROSTATE CANCER MICROENVIRONMENT

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Introduction: Prostate Cancer (PCa) is the most common cancer and the second leading cause of death by cancer in males. Around 90% of PCa related mortality is due to development of metastatic disease after the failure of a combination of therapeutic regimens. Recently, it has been demonstrated that tumour microenvironment (TME) and the metabolic changes associated to the cells that compose it play an important role in tumorigenesis. During the performance of a genetic screen to identify alterations in gene expression associated with poor prognosis and higher capacity of metastasis, the Aspartoacylase (ASPA) gene was identified as a possible candidate involved in this process.

Aim: The main goal of this project is to study a selected panel of TME components, which may lead to a better understanding of the TME metabolic alterations and elucidate biomarker signatures helpful to define patient prognosis and personalized treatment.

Materials and methods: A group of 120 samples from PCa patients with different Gleason Scores, are immunophenotypically characterized by means of Multiplex Immunofluorescence using a panel of 5 biomarkers (ASPA, CD31, CD68, Cytokeratin 18, Desmin) to identify a signature which can predict metastatic potential in the diagnostic biopsy.

Results: The first results of the study show that ASPA expression is lower in PCa specimens from individuals with worst prognosis. Future approaches aim to study the possible influence of this downregulation in the correlation between fibroblasts and macrophages and PCa metastatic potential.

Conclusion: By adopting a biomarker-driven precision therapy approach and using prognostic and predictive treatment biomarkers, physicians could more accurately assign patients to the best available standard of care that offering the maximal benefit for each patient.

Keywords: Prostate Cancer, Metastasis, Tumour microenvironment, Molecular Biomarkers, Multiplex Immunofluorescence

STREPTOMYCES HYGROSCOPICUS SUBSP. HYGROSCOPICUS ETHYL ACETATE EXTRACT FRACTION DECREASES THE EXPRESSION OF DLD-1 CELL LINE NUCLEUS DNA IN COLORECTAL CANCER

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Introduction: Colorectal cancer occupy the 3rd rank for the highest occurrence number and the 2nd leading cause of death in the world in 2018.
Many anticancer drugs have been developed from various natural agents, including microorganisms.

Aim: This study aimed to prove the effect of Streptomyces hygroscopicus Subsp. Hygroscopicus Ethyl Acetate Extract Fraction in decreasing the expression of DLD-1 cell line nucleus DNA in Colorectal Cancer.

Materials and methods: The fractionation was using Flash Column Chromatography (BUCHI Reveleris PREP Purification System) while the DNA expression was measured using immunofluorescence (DAPI). Thirty fractions was obtained. The Cell Line was cultured and was given the fraction with 80, 8 and 0.8 ppm dose within 2x24 hours.

Results: From the immunofluorescence analysis, it was found that fraction 13, 15, 16, 18, and 19 can decrease the DNA expression of the Cell Line below 100%. Statistical Analysis shown the difference of the DNA expression percentage between various dose of the 5 mentioned fractions and control ($p=0.000$). Post Hoc Tukey HSD result has shown a DNA expression percentage difference between various dose of the 5 mentioned fractions and control ($p<0.005$). Correlation test has shown a correlation between the increasing dose of the 5 fractions and the nucleus DNA expression with a very strong correlation coefficient score ($p<0.05$).

Conclusion: The 5 fractions of S. hygroscopicus Ethyl Acetate Extract can decrease the proliferation ability which is measured by Nucleus DNA expression percentage of The DLD-1 Cell Line in Colorectal Cancer.

Keywords: Colorectal cancer, Streptomyces hygroscopicus, DLD-1 Cell line

CYTOTOXIC AND ANTITUMOR ACTIVITY OF ZN(II)/AU(I) AND ZN(II)/AG(I) WITH SHCIFF BASES DERIVED FROM 2,6-DIFORMYL CRESOL IN HUMAN BREAST CANCER CELLS

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Introduction: Despite the significant advanced in early diagnosis and treatment of breast cancer in recent decades, its complex nature determines the existence of numerous challenges that have not yet been overcome. It still remains one of the most common and deadly cancers in women worldwide.

Aim: The aim of the present study was to evaluate the activity of 9 complexes of Zn(II)/Ag(I) and Zn(II)/Au(I) with Schiff bases derived from 2,6-diformyl cresol (diald) -Aepy, Ampy and Dmen, on viability and proliferation of human breast cancer cells.

Materials and methods: Permanent cell lines established from estrogen responsive (MCF-7) and triple negative (MDA-MB-231) human breast cancer were used as model systems. The investigations were performed using MTT test, neutral red uptake cytotoxicity assay, crystal violet staining, hematoxylin/eosin staining, acridine orange/propidium iodide staining and immunocytochemical detection of proliferation marker Ki-67.

Results: The results obtained show that applied at concentrations of 0.1-100 μg/ml for 24, 48 and 72h the compounds investigated decrease viability and proliferation of treated cells in varying degrees. The cytotoxic effect is a time-and concentration-dependent.

Conclusion: Three of the complexes – Zn-dmen-Au, Zn-ampy-Au and Zn-aepy-Ag, exhibit promising antitumor potential in cultured human breast cancer cells. Their cytotoxic activity is similar to or even higher than those of the clinically used anticancer agents cisplatin, oxaliplatin and epirubicin.

Keywords: breast cancer, antitumor activity, metal complexes, Schiff bases

Acknowledgements: This study was supported by Grant КП-06-М41/1 from 27.11.2020, National Science Fund, Bulgarian Ministry of Education and Science and by joint project between Bulgarian Academy of Sciences and Romanian Academy.

FUNCTIONAL STATE OF THE BRAIN ENDOTHELIUM AND ENERGY METABOLISM IN RATS WITH DEMENTIA OF THE ALZHEIMER TYPE INDUCED BY DIFFERENT WAYS

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Introduction: The role of brain endothelial dysfunction and energy metabolism in development of dementia of the Alzheimer type induced by completely different triggers is poorly known. Effect of stem cells on conditions of scopolamine and sodium nitrite - induced dementia models was not investigated.

Aim: To determine the role of state of brain vascular endothelial and energy metabolism in rats with experimental models of dementia of the Alzheimer type induced by scopolamine and sodium nitrite before and after stem cell correction.

Materials and methods: The experiment was performed on 72 male WAG rats weighing 180-250 g, which were divided into 9 groups. 1-4 groups were injected intraperitoneally by an aqueous solution of sodium nitrite (50 mg/kg of body mass) during 14 (groups 1-2) and 28 days (3-4). Groups 5-6, 7-8 were injected intraperitoneally by scopolamine (1 mg/kg of body mass) during the same periods. Groups 2, 4, 6, 8 were received intravenously mesenchymal stem cells transformed by GFP at a dose of 500000 cells per rat. Group 9 was control. Endothelin-1 (ET-1), endothelial Nitric Oxide Synthase (eNOS) were determined in a blood serum by the immuno-enzymatic method. Spectrophotometric analysis was used for determination of ATP concentration in brain homogenate. Cardiolipin was identified in mitochondria of brain cells by thin layer chromatography.

Results: Animals of 1-8 groups showed increasing of the ET1/eNOS ratio 2 times at group 1 and 4 times at groups 3, 7. The endothelial dysfunction with a predominance of vasoconstriction was observed in groups 3, 7. After stem cells correction all indicators of endothelial function of rats from groups 4, 8 almost reached the control level. The level of cardiolipin of group 3 is 2.4 times lower compared to control group and 1.2 times lower than at the group 7. The brain cell energy metabolism after stem cells correction was more recovered at groups 4, 8.

Conclusion: The vessel injury plays important role in damage of nervous tissue for various triggers of dementia of the Alzheimer type development. More effective regeneration of vascular function and energy metabolism of brain after stem cells correction was observed in groups after 28 days injections.

Keywords: dementia of the Alzheimer type, scopolamine, sodium nitrite, stem cells, brain endothelium, brain energy metabolism

ASSESSMENT OF VITAMIN D3 AND METHYLTRIENOLONE EFFECTS ON THE PODOCYTES IN THE IN VITRO MODEL OF MINIMAL CHANGES DISEASE

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Introduction: Minimal change disease (MCD) is the most common idiopathic nephrotic syndrome in children, which is characterized by proteinuria and loss of podocyte ultrastructure. The pathogenesis of MCD is still poorly understood, however, it is considered a significant cause contributing to the nephrotic syndrome. Most recent studies are focused on structural changes in podocytes as a result of their interaction with immune cells, suggested to be crucial immunological-related factor leading to disturbances in the integrity of the glomerular membrane in MCD and subsequently proteinuria.

Aim: Our study focused on the assessment of changes in apoptosis and viability within the podocytes cell line in response to application of steroids and vitamin D3 in a minimal change disease (MCD) in vitro model.

Materials and methods: Podocyte cell line (CIHP-1; University of Bristol) was incubated with LPS+PAN to induce selective cell damage to reflect the morphology of podocytes observed in MCD. Next, cells were treated with different concentrations of vitamin D3 (VIT.D3) and methylprednisolone (MP). Percentage of viable and apoptotic cells was assessed by means of flow cytometry.

Results: Application of steroids or vitamin D3 seemed not to cause any significant cytotoxic effect on the podocytes in MCD model. Interestingly, reduction of early apoptotic cells was observed at lower concentration of steroids and application of VIT.D3 at 1000nM. Noteworthy, induction of MCD model podocytes cause significant changes in annexin binding, presumably through affecting membrane properties of these cells.

Conclusion: Here, we demonstrated that steroids and vitamin D3 does not affect viability of podocytes in MCD in vitro model. In addition, selected concentrations of studied drugs can even improve survival of podocytes. Further research will be required for in-depth evaluation of vitamin d3 and steroids effects on podocytes function and survival in the course of minimal change disease.

Keywords: Podocytes, Minimal change disease, immune cells

References: Srivastava T, Sharma M, Yew KH, Sharma R, Duncan RS, Saleem MA, et al. LPS and PAN-induced podocyte injury in an in vitro
model of minimal change disease: changes in TLR profile. J Cell Commun Signal. 2013 Mar;7(1): 49–60.

ABSTRACTS OF ICMS SOFIA 2021

Abstracts Preclinical Sciences Poster

Session I (PSPS1)

THE IMPACT OF THE MICROBE DIRECTORY ON UNDERGRADUATES IN MEDICAL AND SCIENCE FIELDS

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Introduction: The Microbe Directory (TMD) is a database of annotations on microbial species. TMD is composed of 300+ undergraduate students who provide annotations on microbes on a weekly basis. This study aims to assess the impact of TMD on volunteer researchers' scientific skillset, career development, and post-graduate studies.

Aim: Undergraduates pursuing careers in science and medicine require research experience in order to matriculate to graduate programs within their chosen field. The results of this study will determine the impact of TMD on volunteers' ability to acquire the necessary experiences for these programs. These results will also demonstrate the pandemic's impact on volunteers' access to other volunteer opportunities, as well as the impact participating in TMD has had on participants' anticipated major, and changes to postgraduate plans.

Materials and methods: Researchers will distribute an online survey produced by the lab to both current undergraduate student volunteers and former volunteers within TMD, in order to gain quantitative data on TMD's impact on them. The survey will span 50 questions regarding the pandemic's impact on their academics, socio-economic situation, and post-graduate educational plans. It will include a variety of question styles including multiple choice, rating on a scale of 1-5, and numerical answers. The survey will first be distributed to a sample of 20 students in order to ensure the validity of the questions. Researchers will then conduct a statistical analysis utilizing the T-test and regression analysis on this data by aggregating the responses and comparing the participants' responses before and after joining TMD, while also comparing variances between cohorts.

Results: Due to pending institutional review board approval, results have not yet been obtained.

Conclusion: This study will showcase the influence of global science on undergraduates' professional and academic development. By providing remote research opportunities to undergraduates, research teams can include students from different geographic locations who can contribute various ideas that would otherwise not be incorporated. This moves research in a more modern, accessible, and equitable direction.

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CANNABINOIDS AND NITRIC OXIDE-ERGIC SYSTEM IN PATHOGENESIS OF COLD STRESS-INDUCED ANALGESIA

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Introduction: Stress is among the widely recognized causes for a number of diseases - a result of the altered interactions between the endocrine, the immune and the central nervous systems. The modulation of several behavioral responses during stress is altered, as well as some physiological parameters change, including pain perception. Reduced pain perception is a well-known phenomenon, called stress-induced analgesia (SIA). The mechanism of its development includes two interacting components: opioid and non-opioid. The latter includes various neurotransmitter systems: adrenergic, serotonergic, endocannabinoid (ECS), nitric oxide (NOS). Recent literature data show that the ECC plays a key role in the mediation and / or the modulation of behavioral, neurochemical, neuroendocrine, neuroimmune and molecular stress responses. NOS participates in the modulation of nociception in acute and chronic pain at central and peripheral levels.

Aim: The aim of our study was to investigate the interaction between cannabinoid and nitric oxide systems on cold-SIA pathogenesis.

Materials and methods: The experiments were carried out on male Wistar rats, housed at room temperature 21 ± 3 °C under 12:12 h light/dark cycle. The animals were intraperitoneally injected with CB1-receptor agonist (anandamide, AEA) and the nitric oxide precursor L-arg before one hour of cold stress exposure. CB1 antagonist AM251 and the nitric oxide synthase inhibitor L-NAME were additionally applied in order to further elucidate the interaction between the two systems. Pain thresholds were estimated through Paw pressure (PP) test.

Results: Administration of the CB1 agonist AEA increased cold-SIA during the first 20 min of the experiment. Administration of L-arg decreased paw-pressure thresholds. CB1 antagonist AM251 prevented cold-SIA potentiation, while the nitric oxide synthase inhibitor L-NAME led to a prominent long-lasting increase of paw-pressure thresholds. Administration of NO-donor SIN-1 after nitric oxide synthase inhibition decreased paw-pressure thresholds resembling the effect of L-arg.

Conclusion: The results suggest that cannabinoids administration before cold exposure potentiates cold stress-induced analgesia, while NO has a suppressive effect.

Keywords: Cannabinoids system, nitric oxide-ergic system, pathogenesis, cold stress-induced analgesia,

References: Butler, R. K. & Finn, D.P. (2009). Stress-induced analgesia. Progress in Neurobiology, 88, 184-202 ; Hui-Chen Lu, Ken Mackie, An introduction to the endogenous cannabinoid system, Biological Psychiatry, http://dx.doi.org/10.1016/j. biopsych.2015.07.028

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ENDOCANNABINOID AND SEROTONERGIC SYSTEM IN MEDIATION OF COLD STRESS-INDUCED ANALGESIA

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Introduction: During stress-reaction, several physiological parameters of the body change, pain perception among them. Stress-induced analgesia (SIA) is a well-documented phenomenon; changes in pain threshold could be regarded as indicator for stress-reaction modulation..

Aim: The aim of study is modulation of cold stress-induced analgesia by the endogenous cannabinoid and the serotonergic systems. Understanding the mechanisms could give practical clues to the attempts to counteract stress in order to restrict or even prevent its unwanted impact on the organism.

Materials and methods: Male Wistar rats (180-200g) were housed individually in polypropylene boxes with free access to food and water, maintained in a constant temperature environment (22 ±2oC) on a 12 h light/dark cycle. Experiments were carried out between 10:00 a.m. and 1:00 p.m. One Hour of cold stress (1h CS): the animals were placed in refrigerating chamber at 4°C for 1 hour.Pain perception assessment - Paw-pressure test (PP). Changes in the mechanical nociceptive threshold were measured by analgesiometer (Ugo Basile). Pressure was applied to the hind-paw and the value (AU) required to elicit a nociceptive response was taken as the mechanical nociceptive threshold. A cut-off value (24 AU = 480g/cm2) was observed in order to prevent damage of the paw.

Results: Results showed, that a single application of 5HT1A – receptors agonist after the end of 1h CS decreases cold-SIA, while the pretreating with CB1-receptors agonist or antagonist abolishes such an effect to a different degree and at different time of the experiment..

Conclusion: The two systems are involved in pain perception and each one of them modulates the effects on the other.

Keywords: Cold stress, stress-induced analgesia, endogenous cannabinoid system, serotonergic system.

CLINICOPATHOLOGICAL CHARACTERISTICS OF PRIMARY CUTANEOUS MELANOMA: RESULTS FROM A ROMANIAN REGIONAL CENTER

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Introduction: Melanoma is a melanocytic tumor, with high aggressiveness due to its predisposition to early metastasis and increased mortality rate, in which current therapies fail to prevent tumor relapse. Despite its low frequency among all types of skin cancer, melanoma is responsible for the vast majority of deaths caused by cutaneous neoplasms and its incidence is continuously increasing.

Aim: The aim of our study was to evaluate the demographic and clinicopathological features of primary cutaneous melanoma (PCM) cases diagnosed in a Romanian regional center.

Materials and methods: A retrospective study was conducted on all cases of PCM diagnosed between 2016-2020 in the Department of Pathology from the Clinical County Hospital Mureș. The following parameters were recorded: demographic data, tumor anatomical site, histologic subtype, Breslow index, presence of ulceration, Clark level of invasion.

Results: A total of 82 cases were reviewed: 45 women (54.9%) and 37 men (45.1%) with a mean age of 62.2±16.7 years for the whole study group. Most lesions were encountered in the age group 71-80 years (24.4%) and were localized on the trunk (41.5%) and limbs (31.7%). The most frequent histologic subtypes were nodular (42.7%) and superficial spreading (39%) melanomas. The most frequent Breslow index was 4.00 mm (28%). The majority of lesions had a Clark level of IV (35.4%) and III (30.5%). Ulceration was present in 39 cases (47.6%).

Conclusion: Based on the results of our study, PCM was diagnosed more frequently in women, but in earlier stages and at a younger age compared to men. The nodular subtype, considered to be the most invasive, was identified in the majority of cases and was highly associated with ulceration and advanced stages.

Keywords: skin neoplasms, cutaneous melanoma, nodular melanoma, epidemiology

ANTIDEPRESSANT AND ANTIOXIDANT EFFECTS OF THE NOVEL AROYLHYDRAZONES WITH MELATONIN-LIKE SCAFFOLD IN MICE

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Introduction: The overproduction of ROS and oxidative stress have been implicated in the pathophysiological processes related to various diseases, including Alzheimer's, Parkinson's, anxiety and depression.

Aim: To investigate the potential antidepressant effects of novel indole-based aroylhydrazone in a test of depression as well as the activity against stress-induced oxidative stress in ICR mice.

Materials and methods: In the forced swimming test (FST), the melatonin analogs 3a-c and melatonin (10-100 mg/kg, ip.) were administered to mice 0.5 h before the FST in a single dose. Desipramine (10 mg/kg) was used as a referent drug. In the FST, the total period of immobility during the test phase was assessed. Animals injected with 10 mg/kg of drugs were sacrificed by decapitation immediately after the test procedure for biochemical analysis of markers of oxidative stress into the frontal cortex (FC) and the hippocampus. The activity of superoxide dismutase (SOD) and glutathione peroxidase (GPx) and lipid peroxidation were measured by Elisa method.

Results: In the FST, a single administration of melatonin at 10 mg/kg significantly decreased the duration of immobility which antidepressant effect was comparable to that if desipramine. The compounds 3b and 3a showed a dose-dependent antidepressant effect while 3c analog significantly decreased immobility in all doses used. A significant increase of the stress-induced SOD activity was detected for melatonin, 3a and 3b in the FC as well as for melatonin and 3b in the hippocampus. The stress-induced GPx activity was increased in the FC only in mice injected with melatonin and 3b in the hippocampus, respectively. The malondialdehyde (MDA) levels were significantly lower both in the 3a compared to controls as well as in the stress-induced group with 3a in the FC. Lipid peroxidation in the FC was also diminished in the 3b-treated group with stress.

Conclusion: The results demonstrate that the novel melatonin derivatives can exert antidepressant and antioxidant activities in mice.

Keywords: Antidepressant, Melatonin

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EFFICACY OF THE BOBATH APPROACH IN CHILDREN WITH CEREBRAL PALSY

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Introduction: Cerebral Palsy (CP), consists of chronic non-progressive encephalopathy resulting from Central Nervous System (CNS) lesion manifested by disorders of movement, posture, balance and coordination. One of the rehabilitation approaches that have been used in CP is the Bobath approach or otherwise neurodevelopmental therapy (NDT)

Aim: Review and update of scientific evidence related to the efficacy of the Bobath therapy in children with cerebral palsy and the comparison of the NDT with other treatment techniques.

Materials and methods: Literature review is conducted after searching PEDro, PubMed, Karger, ReasearchGate, Elsevier and also screening of reference list of the studies found is used to identify additional sources. Referring to an update directive (PRISMA 2009), was realized a qualitative literature on studies publishing in the last 10 years, only in English and which provided free access to full text.

Results: Initially, 62 studies were identified for possible inclusion in the literature review. Based on quantitative assessments, 8 studies have been identified for the final review. Among all selected studies we identified the NDT approach, occupational therapy, Modifies Adeli Suit Therapy (MAST) and conventional physiotherapy program. Evidence Database Scale (PEDro) is used to assess risk of bias. Study analysis pragmatically advocated the effectiveness of the Bobath concept and resulted more effective than most comparative treatments such as conventional physiotherapy.

Conclusion: After analyzing and discussing the selected literature, we conclude that all techniques are effective for the rehabilitation of children with cerebral palsy, but the greatest advantage with regard to the potential of improving primary variables and secondary was the Bobath concept without letting in shade other treatments. It is needed to be emphasized that the combination of the NDT with other treatments such as occupational therapy and MAST shows great improvements in children with CP.

Keywords: Cerebral palsy, neurodevelopmental therapy, Bobath therapy

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BREAST MILK EXCELS IN PREVENTING INTESTINAL INFLAMMATION THROUGH INCREASING SECRETORY IGA IN PRETERM NEONATES UNDER DIFFERENT FEEDING REGIMENS

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Introduction: Premature birth becomes the leading cause of death among children under five. Preterm neonates are estimated to have a 35% higher risk from suffering sepsis due to inflammation, one of which is intestinal inflammation. Human breast milk contains bioactive substances including secretory IgA (sIgA), contrary to formula milk. Consequently, exclusive breast milk is expected as the primary strategy for preventing intestinal inflammation.

Aim: This study aims to prove the effectiveness of breast milk to prevent intestinal inflammation in preterm neonates.

Materials and methods: This study used a prospective cohort design. Thirty-nine preterm neonates were enrolled through consecutive sampling and divided into three groups; N1 (expressed breast milk (EBM) 8-12 times in 24 h), N2 (combination breast milk and formula), N3 (formula S26®; energy 82Cal/100mL; protein 2.1 g/100mL). Preterm neonates were followed up until day 7 and 14. Absolute neutrophil counts (ANC) were collected from drawn blood and measured using Automated Haematology Analyser. Secretory IgA (sIgA) and human β-defensin 2 (hBD-2) were collected in feces and measured with enzyme-linked immunosorbent assay (ELISA).

Results: Preterm neonates fed with breast milk (N1) group had significantly higher sIgA levels than other groups (day 7 (1422.15±382.98) p =0.000; 0.000) (day 14 (1542.69±419.47) p = 0.000; 0.000). There was not any significant difference in hBD-2 levels between N2 and N3 (day 7 p = 0.343) (day 14 p = 0.478), however N1 group showed significantly lower hBD-2 compared to N2 and N3 (p = 0.000; 0.000). N3 group also showed highly significant ANC (day 7 p = 0.000; 0.013) (day 14 p = 0.000; 0.013). All groups indicated a very strong correlation among all variables (hBD-2, ANC, and sIgA), N1 (p = 0.000); N2 (p = 0.000); N3 (p = 0.000).

Conclusion: Breast milk only feeding regimen can increase sIgA levels, suppress hBD-2 levels, and stabilize ANC, while other regimens have low sIgA levels and tend to increase the inflammatory marker. Therefore, breast milk can prevent intestinal inflammation in preterm neonates through increasing sIgA.

Keywords: Feeding Regiments, Intestinal Inflammation, Preterm Neonates, Secretory IgA

MELOXICAM, PIROXICAM AND THEIR METAL COMPLEXES: CYTOTOXIC ACTIVITY AND ABILITY TO INDUCE AUTOPHAGY IN HUMAN TRIPLE NEGATIVE BREAST CANCER CELLS

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Introduction: Non-steroidal anti-inflammatory drugs are among the most frequently used medications in the world. In recent years, their antitumor activity has been of increasing interest. Autophagy is a conservative catabolic process that contributes to maintaining homeostasis in the cell, breaking down damaged and unnecessary macromolecules and organelles, as well as pathogens. Its involvement in carcinogenesis is controversial, initially suppressing it but subsequently stimulating tumor progression.

Aim: The aim of our study was to evaluate the influence of non-steroidal anti-inflammatory agents meloxicam, piroxicam and their metal [Zn(II), Cu(II), Co(II), Ni(II)] complexes on viability and proliferation of cultured human triple-negative breast cancer cells (cell line MDA-MB-231) as well as the ability of these compounds to induce autophagy.

Materials and methods: The effect of the compounds on cell viability and proliferation was studied by thiazolyl blue tetrazolium bromide (MTT) test and double staining with acridine orange and propidium iodide. Immunocytochemical analysis with a polyclonal antibody against LC3B protein was used for the detection of autophagy.

Results: The results obtained reveal that the compounds investigated decrease in time-and concentration-dependent manner viability and proliferation of the treated cells, metal complexes are more active as compared to meloxicam and piroxicam, respectively. Zn-Mel, Zn-Pir and Co-Pir have been found to be the most effective cytotoxic agents among the compounds investigated. Applied at concentrations of 50 mcg/ml (24h and 48h, Co-Pir) and 100 mcg/ml (48h, Zn-Pir, Co-Mel, Ni-Mel) some of the complexes examined induce autophagy in the treated cells. At the same conditions, Zn-Mel does not induce autophagy in MDA-MB-231 cells.

Conclusion: The complex role of autophagy in carcinogenesis, as well as the relationship between apoptosis and autophagy, indicate the need to evaluate both the ability to induce apoptosis and autophagy of the potential new antitumor agents.

Keywords: Non-steroidal anti-inflammatory drugs, Metal complexes, Human breast cancer cells, cytotoxic activity, Autophagy

Acknowledgements: Supported by National Science Fund, Ministry of Education and Science, Bulgaria (Grant №ДКОСТ 01-19 from 08.12.2017 and Grant № ДКОСТ 01-16 from 17.08.2017) and a bilateral project between Bulgarian Academy of Sciences and Romanian Academy.

THE ENDOGENOUS CANNABINOID SYSTEM AND NITRIC OXIDE INTERACT IN MODULATION OF COLD STRESS-INDUCED ANALGESIA

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Introduction: Stress-induced analgesia (SIA) represents an indirect indicator for modulation of the stress reaction, which depends on the interaction between several systems. Understanding the underlying mechanisms of such reactions could give helpful clues for decreasing the sometimes deleterious effect of stress impact on the body. Both the endogenous cannabinoid system and nitric oxide are known to take part in the development of the stress-reaction.Yet, no literature data enlighten the interaction between these systems after cold stress.

Aim: The aim of the present study was to estimate the effect of the endogenous cannabinoid and the nitric oxide-ergic systems interaction on SIA after one hour of cold exposure.

Materials and methods: The experiments were carried out on male Wistar rats, housed at room temperature 21 ± 3 °C under 12:12 h light/dark cycle. After one hour of cold stress animals were intraperitoneally injected with CB1-receptor agonist (anandamide, AEA) and the nitric oxide precursor L-arg. CB1 antagonist AM251 and the nitric oxide synthase inhibitor L-NAME were additionally applied in order to further elucidate the interaction between the two systems. Pain thresholds were estimated through Paw pressure (PP) test.

Results: AEA –administration after 1h CS decreased PP-thresholds of experimental animals compared to 1h CS. Administration of L-arg along with AEA led to a short-lasting increase of cold-SIA on the 10th min of the experiment. Administration of CB1 inhibitor AM251 or nitric oxide synthase inhibitor L-NAME prevented the above mentioned increase in cold-SIA and after the 20th min PP-thresholds showed a tendency toward hyperalgesia compared to the controls.

Conclusion: The results obtained point at a potential interaction between the endogenous cannabinoid system and nitric oxide in modulation of stress-induced analgesia. Endocannabinoids are known to induce analgesia, but also to participate in the anti-stress reaction of the body. Nitric oxide has been shown to take part in both analgesia and hyperalgesia mediation.

Keywords: Cold stress-induced analgesia, Endocannabinoids, Nitric Oxide, Paw-pressure test

Acknowledgements: This work was supported by a Grants №№ 20/2014 and D-92/24.06.2020 from the Council of Medical Science, MU-Sofia.

THE EFFECT OF ELEPHANTOPUS SCABER EXTRACT ON HISTOPATOLOGY OF AORTA SECTION IN SPRAGUE-DAWLEY RATS WITH HYPERCHOLESTROLEMIA DIET MODEL

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Introduction: Elephantopus scaber leaf commonly known prickly-leaved elephant's foot is an ethnomedicinal plant often utilized for medicinal purpose and predicted has antihypercholesterolemia effect.

Aim: This study was designed to evaluate the antihypercholesterolemic effect of Elephantosus scaber on histopatology of Sprague-Dawley rat's aorta with hypercholesterolemia diet model.

Materials and methods: This is an Experimental study with post test only control group design. Twenty-one (21) Sprague-Dawley rats of about 2-3 months old, weighing between 150-200 g body weight, were used for the study with incidental sampling. The rats were divided into three groups (3) of seven animals in each cage. First group (G1) was the normal control administered standard meal. Positive control group (G2) and Treatment group (G3) were administered with high fat diet. Administration of 400 mg/kg body weight of Elephantopus scaber extract was given to the third group in 7-11 weeks after induced by high fat diet. Termination was done after last feed administration. Aorta section was done with Hematoxylin eosin stain. Data analysis used Kruskal-wallis followed by Mann-Whitney test.

Results: Proximate measurement was carried out on the Sprague-Dawley rat's aorta section with the following results: wall thickness in normal control group 85.19 ± 8.35 µm; positive control group 95.78 ± 17.64 µm and treatment group 80.50 ± 8.41 µm. Data analysis of Kruskal-Wallis was obtained P=0.018, a>P. The results obtained from the analysis of the Mann-Whitney test are significant difference between the normal control group (G1) and the positive control group (G2). And the non-significant difference between the normal control group (G1) and treatment group (G3).

Conclusion: Elephantosus scaber extract has antihypercholesterolemic potential effect that could reduce atherosclerosis on histopatology of aorta section in Sprague-Dawley rats with hypercholesterolemia diet model.

Keywords: Elephantosus scaber extract, Hypercholesterolemia, Aterosceloris, Aorta, Sprague-Dawley rats

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts Preclinical Sciences Poster Session II (PSPS2)

PREVENTION OF SOCIAL STRESS-INDUCED MEMORY DECLINE IN ADOLESCENT RATS BY ALKALOIDS FROM NARCISSUS CV. HAWERA

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Introduction: Psychological stress during adolescence is an important predisposing factor in the etiology of disorders such as anxiety and depression and may cause enduring cognitive deficits both humans and animals. Some plants containing mesembrine type alkaloids have traditional uses as supplements in the treatment of anxiety, stress and major depressive disorder.

Aim: The purpose of this work is to study the influence of chronic social stress on the working memory and its potential mechanism as well as their potential alleviation by treatment with mesembrine type alkaloid fraction (MZM) isolated from Narcissus cv. Hawera in adolescent rats.

Materials and methods: We have used an alkaloid fraction obtained by extraction from leaves of Narcissus cv. Hawera. Social defeat stress (SS) was induced via chronic (20 days) exposure to Resident-Intruder Paradigm of adolescent male Wistar rats. Unstressed controls, SS and SS+MZM (20 mg/kg/day, 20 days) groups were subjected to Novel Object Recognition Test (NORT) for study of working memory and biochemical assessment of carbonylated proteins in blood plasma and hippocampus.

Results: Exposure of adolescent rats to chronic SS impaired their normal working memory in NORT and elevated carbonylated proteins in blood plasma and hippocampus. Chronic treatment with MZM diminished new object exploration and ameliorated recognition memory in the stressed rats. The treatment with alkaloid fraction normalized the level of carbonylated proteins in the hippocampus, but not in the blood plasma.

Conclusion: Present data support our hypothesis for the protective effects of MZM on the chronic SS-induced memory decline.

Keywords: Mesembrine type alkaloids, Chronic social stress, Narcissus, Phytomedicine, Memory impairment

Acknowledgements: This work was supported by the Medical Science Council, Medical University, Sofia, Bulgaria, contract № 69/2019.

ANTI-INFLAMMATORY AND ANTINOCICEPTIVE EFFECTS OF A VALORPHIN PEPTIDE ANALOGUE IN RATS

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Introduction: The presence of globin chains in other cells besides erythrocytes including brain and peripheral tissues suggests that these proteins and their peptide fragments might play additional physiological functions in different tissues. Hemorphins are endogenous globin-derived peptides belonging to the family of "atypical" opioid peptides that are involved in the control of a variety of physiological functions, including the processing of pain information. The synthesized alpha-aminophosphonic acids and their derivatives are considered to be structural analogues of the corresponding amino acids and transition-state mimics of peptide hydrolysis.

Aim: The aim of the present study was to evaluate the effects of a local injection of an aminophosphonic hemorphin analog on the carrageenan-induced paw oedema and hyperalgesia in comparison to a referent anti-inflammatory drug indomethacin.

Materials and methods: The peptide hemorphin analog V2p, containing amino phosphonate moiety was synthesized by solid-phase peptide synthesis (Fmoc-strategy) and injected intraplanar at a dose of 25 μg/ 5 μl/ rat before the inflammation. The inflammatory process was induced by the intraplantar injection of carrageenan lambda [CRG, 1% carrageenan in saline solution, 100 μl] into the right hind paw. The paw oedema was measured at the 1st, 3rd, and 4th hour after the carrageenan injection with a plethysmometer (Ugo Basile, Italy). Acute nociception is assessed using a paw pressure analgesimeter at the same intervals after the carrageenan injection. Indomethacin at a dose of 5 mg/kg, injected intraperitoneally was used as a reference anti-inflammatory drug.

Results: The pretreatment with the hemorphin analogue also significantly decreased CRG-induced paw oedema at the 1st and 3rd hours. The anti-inflammatory effect of V2p at 1st hour is similar to that of indomethacin, but less at 3rd and 4th hours after CRG.

Conclusion: In conclusion, experimental data revealed a well-defined local anti-inflammatory and antinociceptive effect of this hemorphin analog.

Keywords: Inflammation, Antinociception, Hemorphins, Carrageenan, Indomethacin

Acknowledgements: This study was funded by grant No 80 - 10 - 4/2021 supported by Sofia University "St. Kliment Ohridski".

THE EFFECT OF PHYSICAL REHABILITITATION ON IMPROVING SCOLIOSIS AND QUALITY OF LIFE IN PATIENT WITH ADOLESCENT IDIOPATHIK SCOLIOSIS. A SYSTEMATIC REVIEW OF CLINICAL TRIALS

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Introduction: Sciliosis is a medical condition characerizet by a complex tree-dimensional (3D) deformity of the spine. Idiopathic scoliosis is the most common type of spinal deformity.

Aim: The aims of this study was to evaluate the efficiency of the specific scoliosis exercise (SSE) and conservative treatments, in improving spinal deformities and quality of life, of idiopathic scoliosis, by systematically reviewing the literature.

Materials and methods: A systematic review of 11 studies, 9 were randomized control trial and 2 were prospective. All patients with AIS were 10-18 years, with spine curvature 10`-45`. The literature was searched in databases such as PubMed, Oxford Academy and Cochrane Library. The quality of study was appraised according to the PEDro scale.

Results: In 11 studies we identified the following physiotherapeutic programs: scroth method, physiotherapeutic scoliosis specific exercise (PSSE), self correction etc. 8 randomized controlled trials (RCTs) suggested that SSE with bracing had clinical significance in reducing Cobb angle, also evidence showed that bracing was more effective than SSE on measures of spinal deformity. 3 other studies they found no evidence in positive effects of SSE without using braces, on improving spinal deformities, however, SSE showes greater improvements in QoL and self-image.

Conclusion: More research is needed in this field. The authors conclude that the effectiveness of exercises is not yet established, but might be promising that SSE with other conservative treatments like bracing can reduce Cobb angle and improve quality of life.

Keywords: Adolescent Idiopatic Sciliosis, Cobb angle, Bracing, Scoliosis Specific Exercise (SSE), Quality of Life.

SURVEILLANCE OF ANTIBIOTIC PRESCRIPTION AND USAGE IN INTENSIVE CARE UNITS

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Introduction: Infections represent a very serious problem in the intensive care unit (ICU), therefore antibiotics are frequently administered not only for treatment, but also as the prophylaxis of major infections in critically ill patients.

Aim: The purpose of this study is to observe the use of antibiotics in the ICU by collecting data regarding practices of antibiotic prescription and administration.

Materials and methods: This is a retrospective study, which includes data from a period of 6 months (1 June to 30 November 2018). In total, 193 patients admitted in the ICU of University Clinical Center of Kosovo met the study criteria.

Results: In total, 98.45% of the patients received antibiotic treatment and the main indication were the hospital acquired infections and antibiotic prophylaxis. Inhibitors of wall synthesis and inhibitors of protein synthesis were the most frequently used antibiotic groups. Ceftriaxone(35.76%), Gentamicin(17.22%), and Metronidazole(14.35%) were the most commonly prescribed antibiotics. Only 36.84% of the patients underwent microbiological testing before receiving antibiotic therapy.

Conclusion: The study showed that excessive usage of most of first line low cost antibiotics made the choice of empirical therapy critical. Antibiotic restriction, adherence to protocols, enhanced infection-control delivery, greater awareness through competent surveillance programs, and educational interventions are necessary to fight the rising problem of antimicrobial resistance.

Keywords: Antibiotics surveillance; Intensive Care Units; Infections; AMR.

EFFECTS OF VV-HEMORPHIN-7 AND ITS RGD ANALOGUES ON INFLAMMATION AND PAIN IN RATS

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Introduction: VV-hemorphin-7 (VV-H7) is one of the longest and most stable forms of hemorphins and many of its biological activities (e.g., antinociception and hypotension) are thought to be mediated by opioid receptor activation. Our recent data showed that VV-H7 and its newly synthesized analogues with one or two RGD (arginyl-glycyl-aspartic acid) fragments have dose-dependent antinociceptive effects in the formalin test.

Aim: The present study aimed to evaluate the effects of a local injection of VV-H7 and its analogues RGD1 and RGD2 on the carrageenan-induced paw edema and hyperalgesia compared to anti-inflammatory drug indomethacin.

Materials and methods: The solid-phase peptide synthesis by Fmoc chemistry was used to obtain new analogues of VV-H7, modified at the N- and C-terminus – RGD1 and RGD2. The peptides were injected intraplantar before the carrageenan (CRG) induced-inflammation. At the 1st, 3rd, and 4th hour after injection paw edema was measured with a plethysmometer, and acute nociception is assessed using a paw pressure (PP) analgesimeter. Intraperitoneally injected indomethacin (5 mg/kg) was used as a reference anti-inflammatory drug.

Results: The results showed that the CRG-induced inflammation decreased the mechanical pain threshold in the ipsilateral paw. VV-H7 significantly reduced the paw edema at the 1st hour and hyperalgesia at the 1st and 3rd hours after the injection of CRG. Its effects were comparable to those of indomethacin. RGD analogues showed significant analgesic effects similar to indomethacin in the PP test only at the 1st hour. Both peptide analogues did not show any effects on the paw edema and RGD1 even increased it as compared to VV-H7.

Conclusion: The obtained experimental data revealed significant short-lasting local anti-inflammatory and antinociceptive effects of VV-H7, while its RGD1 and RGD2 analogues showed only short-lasting analgesic effects in the PP test.

Keywords: Inflammation, nociception, VV-hemorphin-7 analogues, rats

Acknowledgements: This work was supported by the Sofia University "St.Kliment Ohridski", contract No.80-10- /2021.

VARIANTS IN GENES CAUSING HIGH RISK PREDISPOSITION IN A FAMILY WITH PAPILLARY THYROID CANCER

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Introduction: Approximately 5% of differentiated thyroid cancers are hereditary. Hereditary non-medullary thyroid (NMTC) cancer may occur as a minor component of familial cancer syndromes or as a primary feature (familial NMTC). Among FNMTC, papillary thyroid cancer (PTC) is the most common. The susceptibility genes causing high risk for the development of familial NMTC are poorly understood.

Aim: To observe and hypothesize the inferred risk for cancer development of variants in several genes in a family with several cases with papillary thyroid cancer.

Materials and methods: Several members of the family have been exome sequenced using Illumina platform.

Results: We detected in five members of a family with PTC altogether 30 variants in 30 genes, none of them was clearly pathogenic and therefore could not be declared causative. However eight of the variants were with uncertain pathogenicity, and other sixteen – considered VUS (variants of uncertain significance). All affected family members were heterozygous carriers of alleles in tumor suppressor genes ATM (p.Leu1420Phe) and RB1 (p.Lys729Thr). In addition, we detected large number of variants in genes belonging to Fanconi anemia family (FANCA, FANCM and FANCD2) though they are considered benign in literature.

Conclusion: Familial PTC has a polygenic inheritance. Most probably the inheritance of several variants in tumor suppressor genes could potentially increase the risk for the development of thyroid cancer. Such genes in our study are ATM and RB1. Somatic mutations in these two genes are associated with many other types of cancer – breast cancer, lung cancer, osteosarcoma, retinoblastoma, etc. The additional variants in three genes from Fanconi anemia group could be aggravating factors for PTC development in the analyzed family.

Keywords: Familial papillary thyroid cancer (PTC), exome sequencing, variants

Acknowledgements: We kindly thank to Dr. Sabine Weidner (Bern University) for providing the samples of the family.

SERUM IRON IN RHEUMATOID ARTHRITIS AND ITS ASSOCIATION WITH INFLAMMATION AND DISEASE ACTIVITY

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Introduction: Rheumatoid arthritis (RA) is a systemic autoimmune disease that involves a chronic and progressive inflammation. Disturbances of iron homeostasis and anemia are often observed in RA. As anemia may cause severe symptoms and aggravation of other disease manifestations, early detection of anemia in RA is of vital importance and should not be neglected in clinical practice.

Aim: The aim of the present study is to compare the levels of serum iron as one of the parameters of iron status in patients with RA and healthy controls and to assess the associations of serum iron with markers of inflammation and disease activity score 28 (DAS28).

Materials and methods: The study involved 57 RA patients and 21 healthy controls. Serum concentrations of Interleukin-6 (IL-6) and C-reactive protein (CRP) were determined using commercially available ELISA kits (BioVendor – Laboratornimedicina, Czech Republic). Laboratory tests such as serum iron and erythrocyte sedimentation rate (ESR) were performed using standard laboratory methods. Statistical analysis was carried out with SPSS 17.0 for Windows.

Results: The levels of serum iron were significantly lower in RA patients compared to controls ($P = 0.014$). Serum iron concentration in RA was negatively associated with IL-6 ($r = -0.378$, $P = 0.004$), CRP ($r = -0.416$, $P = 0.001$), ESR ($r = -0.545$, $P < 0.001$) and DAS28 ($r = -0.375$, $P = 0.004$).

Conclusion: Our results indicate that serum iron is a parameter that reflects the impaired iron metabolism and hypoferremia in RA induced by the inflammation. The inverse correlations of serum iron with variables like IL-6, CRP, ESR and DAS28 confirm the relationship between the functional iron deficiency and systemic inflammation in RA.

Keywords: Iron homeostasis, Rheumatoid arthtritis, Serum iron, IL-6, CRP

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MAST CELLS DENSITY AND FIBROBLAST GROWTH FACTOR-2 PROMOTE THE MYOCARDIAL VULNERABILITY IN SPONTANEOUSLY HYPERTENSIVE RATS

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Introduction: Nowadays, there is an increasing interest about the role of cardiac mast cell density (MCD) in the pathogenesis of myocardial remodeling under hypertension. In addition, mast cells drive this process by stimulating fibroblast activation, myofibroblast differentiation and subsequent collagen accumulation through the action of tryptase, chymase, histamine and fibroblast growth factor-2 (FGF-2).

Aim: The aim of this study was to assess the changes in MCD and FGF-2 expression in the left ventricle (LV) and right ventricle (RV) of 6- and 12-months old spontaneously hypertensive rats (SHR).

Materials and methods: For the present study, we used hearts from six male SHR, divided in two aged groups- 6- and 12- months old. For the light microscopic analysis, the sections were stained with toluidine blue for mast cell visualization. Immunohostochemical reactions with primary monoclonal anti-tryptase antibody and anti-FGF-2 antibody were conducted. Afterwards, the number of mast cells was counted in ten randomly selected areas in each ventricle. MCD was represented as number of mast cells per cross section area (mm^2). Semi-quantitative analysis of FGF-2 expression was assessed with Image J software.

Results: The quantitative analysis, performed on 6- and 12- months SHR, showed an increased MCD in the interstitium and the perivascular areas in the 12-months old SHR. The semi-qantitative analysis showed higher FGF-2 expression in 12-months old, rather than 6-months old SHR.

Conclusion: In conclusion, we have presented a quantitative analysis of the MCD and semi-quantitative valuation of FGF-2 expression on 6- and 12- months old SHR. Our results suggest the potential role of mast cells in myocardial remodeling in response to systemic hypertension in both ventricles

A BLESSING OR A CURSE - CAT EYE SYNDROME

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Introduction: The Schmid-Fraccaro syndrome or mostly known as CES (Cat Eye Syndrome) is a rare genetic disorder with incidence of no more than 1 in 150 000 live births. The syndrome is associated with the presence of an extra chromosome fragment, affecting chromosome 22 and presenting with partial tetrasomy. This extra genetic material leads to the characteristic malformations of the disorder. Some of the sign and symptoms obligatory for CES could be described with the acronym CHARGE which stands for (C)oloboma of the eye; (H)eart defects; (A)tresia of the Choanae; (R)etardation of growth and intellectual deficiency; (G)enital anomalies; and (E)ar anomalies. Four or more of these characteristic features must be fulfilled to make the diagnosis. Depending on the severity of the malformations, there is a chance that the condition could be suspected prenatally.

Clinical case: Third pathological pregnancy for the 37-year-old female who gave birth through an elective Caesarean section to the 2.810 kg female baby. During her first days at the hospital ward, she suffered from respiratory distress syndrome for which oxygen therapy was administered. After one month, on a regular consultation with peadiatric cardiologist it was found that the baby is with rare congenital malformation of the pulmonary veins which leads to the respiratory syndrome. She was diagnosed with TAPVR - (Total Anomalous Pulmonary Vein Return). One week later deroofing of the coronary sinus operation was performed in the National Cardiology Hospital. Palivizumab was administered as a take-home medicine for three weeks. On a second hospitalization it was found that the baby is with left eye coloboma, anal ectopia and preauricular tag.

Conclusion: After examinating both the parents and the baby lymphocyte culture with array CGH it was found out that the baby is with sporadic form of Cat eye syndrome with cariotype 47,XX+mar idic 22.

Keywords: Cat eye syndrome, Coloboma, Preauricular skin tag, chromosomal disorder, anal atresia

PROFILING THE PROPORTIONAL REPORTING RATIOS OF ADVERSE EVENTS FOR VALERIANA AND MELATONIN IN EUDRAVIGILANCE

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Introduction: With the progression of modern society there is a significant shift in the main causes of decreased quality of life. The constant stress, deadlines and even the active night life significantly affect the sleep – one of the most important aspects of the healthy lifestyle. Two of the most commonly used OTC supplements for insomnia are melatonin and valeriana. Their OTC status and lack of strict oversight are the reason why they have the fame of completely safe and one-size-fit all drug for every patient.

Aim: We aimed to analyze the reported adverse events of both suplements from the database of EudraVigilance and to compare their safety profiles.

Materials and methods: In our study, we did a retrospective analysis of the AE reports for “Valeriana” and “Melatonin” from the beginning of the report collection in 2006 until march 2019 which are publicly available at www.adrreports.eu. Data have been presented by means of descriptive statistics. The detailed statistical analysis was performed using GraphPad Prism 8 software. The proportional reporting ratio (PRR) was used to summarize the extent to which a particular adverse event is reported for individuals taking Valeriana, compared to the frequency at which the same adverse event is reported for patients taking Melatonin.

Results: In the studied period, the total number of ADR reports for melatonin were 1243, and for Valeriana were 672. After excluding all the cases with other suspected or concomitant drugs we are left with 163 Melatonin cases (total of 597 individual AEs) and 80 Valeriana cases (total of 369 individual AEs). Examining the PRRs shows that the reporting of some of the most common ADRs is higher for melatonin than Valerian preparations in the EMA database for all age-gender groups.

Conclusion: Generally speaking the valeriana’s safety profile is better, but also its effectiveness is under question. We need further research of the use of melatonin and valeriana, because the current regulatory status of the food supplements in the EU is too liberal and its hard to draw conclusions regarding the risk benefit ratios, without solid, well documented evidence.

Keywords: Melatonin, Valeriana, analys.

ABSTRACTS OF ICMS SOFIA 2021

Abstracts Preclinical Sciences Poster Session III (PSPS3)

RARE FORENSIC CASE OF CONGENITAL ANOMALY- MULTIPLE ACCESSORY SPLEENS

Authors: *Ivan Tsranchev*[1], Biliana Mileva[2], Pavel Timonov[1], Antoaneta Fasova[1], Metodi Goshev[2], Alexander Alexandrov[2]

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Introduction: Accessory spleen is a benign and asymptomatic condition, it usually is single and represents around 15 percents of the population. Statistically, more than one accessory spleen is seen In one quarter of all cases. Except of this, a few cases of more than three spleens in a single patient have been reported in the literature.

Clinical case: We show a case of 46-years-old man on the cadaver's table, died from sepsis. After the death, the patient underwent forensic autopsy for determining the cause, the manner and the mechanism of the death. In internal examination of the body we found three accessory spleens with diameters 2, 2,5 and 3 cm. Each of these accessory spleens resembles normal spleen structure macroscopically and microscopically. Firstly, the accessory spleens were documented in an ultrasound examination of the abdomen during the hospitalization of the patient.

Conclusion: The accessory spleens can be a source of significant hemorrhage into the peritoneal cavity, without adequate therapeutic behaviour.
They also can be an evidence of immune pathologic conditions.

Keywords: accessory spleens, rare congenital anomaly, congenital malformation

BEHAVIORAL CHARACTERISTICS OF ANTINOCICEPTIVE DOSES OF KYOTORPHIN

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Introduction: The role of neuropeptides/neuromodulators as possible therapeutic target is constantly growing. One of these peptides is kyotorphin (KTP) - an endogenous dipeptide (Tyr-Arg) synthesized in nerve terminals and released by depolarizing stimuli. It was proposed that it exerts indirect opioid-like actions, producing analgesia through the release of met-enkephalin. Literature and our previous data revealed the neuroprotective and neuromodulating actions of KTP in the hippocampus and cerebellum, neuroleptic and antiepileptic activity, as well its mild protective effect in the development experimental model of sporadic Alzheimer's disease. The peptide's therapeutic potential raises the question of its putative adverse side effects.

Aim: The objective of this work was to study the effects of antinociceptive doses of KTP on behavioral parameters related to anxiety, motivation and memory in healthy rats.

Materials and methods: To accomplish our goal we used male Wistar rats with stereotaxically implanted guide cannulas into lateral cerebral ventricle. KTP was injected intracerebroventriculary (ICV) at single doses of 25, 50 or 100 μg/rat or subchronically at a dose of 100 μg/rat/day for 10 days. We used paw-pressure test for assessments of acute nociception, elevated plus maze test for evaluation of anxiety-like behavior and novel object recognition test for working memory. The results were analyzed by ANOVA.

Results: KTP showed an antinociceptive effect after its acute ICV administration at all doses used. Subchronic treatment with a dose of 100 μg/rat did not change significantly the pain threshold in paw-pressure test. The highest dose of the peptide (100 μg) showed an anxiolytic effect in elevated plus maze test. The analgesic peptide KTP did not exert any influence on the normal object recognition memory, total motor activity and anxiety-like behavior at lower doses as well as after the subchronic treatment in the healthy animals.

Conclusion: Data showed that KTP has not adverse side effects related to the motivation, habituation and working memory in healthy rats which support its potential as a therapeutic agent.

Keywords: kyotorphin, nociception, anxiety, memory, rats

Acknowledgements: This work was supported by the Sofia University "St.Kliment Ohridski", contract No.No.80-10-1/2020.

PREDICTIVE SIGNIFICANCE OF TUMOR BUDDING IN PATIENTS WITH COLORECTAL CANCER

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Introduction: Colorectal cancers are among the most significant causes of disease and death in the world today. The prognostic factors that indicate tumor aggression are peritumor lymphovascular invasion, perineural invasion, tumor budding, and histologic grade. Tumor budding is the presence of single or small groups of cells, less than four cells on the invasive front of the tumor and indicates the biological aggressiveness of the tumor.

Aim: To determine if there is a statistically significant association between high grade tumor budding with the presence of peritumor lymphovascular and perineural invasion.

Materials and methods: The study included 142 patients with colorectal cancer. The data used for this research were obtained by reviewing the registry from the archives of the Center for Pathology and Pathological Anatomy at the Clinical Center in Nis. The pathohistological report contains the following data: histologic type of tumor, localization, histological gradus, presence of peritumor lymphovascular and perineural invasion, tumor size, status of lymph nodes and metastasis (TNM) stage.

Results: After examining the samples and recording the number of tumor buds, in accordance with the ITBCC criteria, it was observed that high grade tumor budding was found in a high percentage in 63 patients (44.37%), which showed high statistical significance. Perineural invasion was found in 29 patients (20.42%), statistically significantly less than the presence of lymphovascular invasion, found in 57 (40.14%) and tumor budding. The incidence of high grade tumor budding is statistically significantly higher in tumors with peritumor lymphoid vascular invasion ($p < 0.05$), as well as statistically significantly higher presence of perineural invasion of high grade tumor budding ($p < 0.001$).

Conclusion: Chi-squared test revealed that tumor budding was statistically significantly associated with lymphovascular and perineural invasion.

Keywords: colorectal cancer, tumor budding,

LARGER GAZE AREA AND LOWER CONTOUR INTEGRATION ABILITIES IN AUTISM SPECTRUM DISORDER

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Introduction: Autism spectrum disorder (ASD) refers to a lifelong neurodevelopmental condition, characterized by difficulties with social communication and interaction, restricted and repetitive patterns in behaviors, interests, and activities. ASD affects sensory processing. Recent studies suggest that atypical visual perception in ASD could be a result of peculiar visual information processing in early cortical areas. Our interest was provoked by contour integration performance since it is believed that lateral connections between cortical neurons in the primary visual cortex are responsible for grouping local elements.

Aim: The aim of the present study was to evaluate the performance during contour integration task of children and adolescents with ASD and with typical development (TD) and its relation to their gaze behaviour.

Materials and methods: Eye movements were recorded by a gaze tracker during a contour integration task. Stimuli were Gabor elements of random orientation positioned over the whole screen. In half of trials a target line formed by aligned Gabor elements appeared in the middle of the screen. External visual noise was created by rotating the elements of the target line. Twenty children with ASD and twenty age-matched controls with TD participated in the study. Based on the Signal Detection Theory we used the inverse of a measure of sensitivity d', to evaluate the contour integration ability of the participants.

Results: The gaze positions of ASD participants were spread over larger area as compared to the control group. These results are in line with lower contour integration performance of ASD group. Moreover, the external noise increase deteriorated more the integration ability of ASD observers.

Conclusion: The larger gaze area of ASD participants implies greater uncertainty or instability in determining the most informative parts of the image. The reduced ability of the participants with ASD to integrate local visual elements into a global visual percept could be connected to differences in performance efficiency as well as a reduced ability to ignore the background noise. The work reported advances our understanding of autism sensory processing. This work was supported by the National Science Fund of Bulgaria, Grant DN15/6 from 11.12.2017.

Keywords: autism, atypical eye movement, contour integration

Acknowledgements: Institute of Neurobiology, BAS; Sofia Medical University; Clinic of Child Psychiatry "St. Nikolas"

ORAL CONTRACEPTIVES AND CANCER RISK

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Introduction: Oral contraceptives have become popular since the 1970s and are still increasing in popularity both as contraceptive methods and in cases of management of specific conditions like Polycystic Ovary Syndrome (PCOS). Oral contraceptives are separated into two types, the Combined Pill, which contains synthetic versions of estrogen and progesterone and the Progestin-Only (Mini) Pill which lacks estrogen. Both types alter the levels of female hormones, which may affect the proliferation and/or differentiation of cells at specific areas of the female organism such as breasts, uterus, ovaries, cervix and colon.

Aim: Our aim is to try and find the correlation between contraceptive use and cancer. Such correlation may be either increased cancer risk or decreased. As well as establish the mechanism by which cancer may proliferate or be reduced.

Materials and methods: To perform the meta-analysis observational studies have been used and informative material on oral contraceptives and cancer types.

Results: Women who have made use of contraceptives were found to have and increased risk of Breast and Cervical cancer. However Endometrial and Ovarian cancers have shown a 30% to 50% decreased risk of occurrence and Colorectal cancer decreased by 15% to 20%

Conclusion: Contraceptives increase the risk for Breast and Cervical cancers due to alterations that may occur in the cells from the increased levels of estrogen and progesterone. However the opposite is true for Endometrial and Ovarian cancer as cell proliferation in the uterus does not take place and ovulation is prevented. While contraceptives may prevent unplanned pregnancies and are beneficial in cases like PCOS, they can have severe drawbacks such as thrombosis. Thus women should be informed on the use of contraceptives and assisted by a professional.

A BONE MARROW MORPHOMETRY IN PREDICTION OF MOLECULAR RESPONSE IN CHRONIC MYELOID LEUKEMIA

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Introduction: Chronic myeloid leukemia (CML) is characterized by the BCR-ABL1 genetic translocation which leads to constitutive tyrosine kinase signaling. Treatment with tyrosine kinase inhibitors (TKI) should be monitored in order to define the molecular response (MR) which correlate with the quantity of BCR-ABL1 transcript levels and number of CML cells, respectively. To date, only clinical and laboratory data have been used in predicting MR leaving aside the information given by the tumor itself in the bone marrow at the time of diagnosis to which the therapy has being administered.

Aim: The aim is to analyze the standard pathohistological parameters in bone marrow biopsy of the patients with CML and to compare to MR status.

Materials and methods: Thirty-two bone marrow biopsy cases were examined using H&E and standard histochemistry staining after standard formalin fixation and mild decalcification procedure under the light microscope. Additional immunohistochemical staining using anti-CD34 antibody was performed and computer assisted image analysis was used to determine the angiogenesis parameters, the quantity of microvessels per 1mm2 (MVD) and the percentage of microvessel area in total section area (TVA). The MR status was defined as positive if <0.1% BCR-ABL mRNA transcripts were detected in peripheral blood.

Results: Among 26 patients with positive MR status the bone marrow morphometric characteristics were: overall hypercellularity of bone marrow (p=0.037), diffuse distribution of multiplied megakaryocytes (p=0.041), non-compact megakaryocyte clusters (p=0.007) and cloud-like megakaryocyte nuclei (p=0.027). Other morphologic parameters like myelofibrosis, erythrocyte content and morphology, megakaryocyte distribution, megakaryocyte nuclear lobulation, staghorn nuclei, naked and dysmorphic nuclei were not in statistically significant association with MR status. Blood vessel morphometry determined by MVD and TVA showed no connection to MR status as well.

Conclusion: Our results are showing that some morphologic characteristics could serve as predictors of MR in patients on TKI at the time of CML diagnosis before given therapy that could be modified perhaps according to the bone marrow biopsy status.

Keywords: BCR-ABL1, CD34, Chronic myeloid leukemia, Megakaryocyte

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PERIOPERATIVE ANTIBIOTIC PROPHYLAXIS PRESCRIBING PRACTICE IN TERTIARY CARE HOSPITAL - THE IMPACT OF EDUCATIONAL INTERVENTION

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Introduction: Surgical site infections (SSIs) remain one of the major causes of hospital morbidity and mortality.

Aim: The aim of the study is to evaluate the perioperative antimicrobial prophylaxis (PAP) prescribing praxis in three elective procedures (total hip replacement, radical prostatectomy and caesarean delivery) in a single tertiary care hospital in Slovenia and to evaluate the impact of educational intervention on improvement of compliance to recommended local guidelines in Slovenia.

Materials and methods: We performed an interventional study to evaluate the impact of educational intervention on PAP compliance. The PAP prescribing praxis at three selected surgical departments (A, B, C) was observed for three elective types of surgery. Thirty operative reports for each type of surgical procedure were revised according to: indication, timing of preoperative prophylaxis administration, antibiotic selection and dosage, and total duration of prophylaxis. This was followed by educational intervention where infectious disease specialist that encompasses personal discussion with department leaders, continued with a meeting with surgeons with educational seminar about appropriate PAP and supplemented by PAP recommendations as pocket reminders. In the postinterventional period (3-6 months after the intervention) we evaluated again the compliance with PAP recommendation for same type of procedures performed in postinterventional period.

Results: We observed preinterventional complete compliance with local guidelines in 67%, 70% and 3.3% for procedures type A, B and C, respectively. The major deviation from PAP recommendations was observed in the timing of preoperative PAP administration and in the total duration of PAP. In postinterventional period we observed significant improvement in total compliance with PAP recommendation with 80.0%, 90.0% and 50.0% fully compliance in type A, B and C procedures, respectively. The major improvement was observed in the timing of preoperative PAP administration and in the total duration of PAP.

Conclusion: Our study revealed a significant improvement in adherence to PAP recommendation after educational intervention in selected procedures at our institution. The simple intervention can have an important impact on quality of patient care and should be routinely and regularly performed for further improvement in all surgical departments.

Keywords: perioperative antibiotic prophylaxis, recommendations, compliance, surgery, educational intervention

AFRICAN'S LEAF (VERNONIA AMYGDALINA) EXTRACT EFFECT FOR TRYGLICERIDE LEVEL ON WISTAR RAT WITH METABOLIC SYNDROME

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Introduction: Changes in lifestyle are linked with metabolic syndrome. Metabolic syndrome can be marked with the rise of metabolic products, one of them is triglyceride level. African's leaf contains flavonoid, terpenoid, saponin and tannin. This research aimed to determine the effect of African's leaf (Vernonia amygdalina) extract towards triglyceride level of Wistar rats (Rattus norvegicus) with metabolic syndrome model.

Aim: This study was design to evaluate African's leaf (Vernonia amygdalina) Extract Effect of Trygliceride Level on Wistar rat with Metabolic Syndrome.

Materials and methods: The research was laboratory experimental research using pretestposttest control group design. It included 30 male Wistar rats that were divided into 5 groups of normal control group (KKn), positive control group (KKp), and treatment groups (KP1, KP2, KP3). KKp, KP1, KP2 and KP3 were metabolic syndrome induced, fed with high fat high fructose diet and were given with STZNa injection. KP1, KP2 and KP3 were given treament of ethanolic extract of Vernonia amygdalina with dosage 50mg/KgBW, 100mg/KgBW, and 150mg/KgBW respectively. Metabolic syndrome induction were done with high fat high fructose diet for 31 days and injection of STZ-Na on the 28th. Treatment groups got the extract of Vernonia amygdalina for 28 days subsequent to metabolic syndrome induction. The result data of trygliceride level were analyzed using one way ANOVA and Post-Hoc Tukey.

Results: There was a significant differences of trygliceride level between day 32th and 61st with p=0.000 (p<0,05) on all groups. Decreased level of trygliceride were showed the highest on KP3 with mean different value 28,7476 mg/dL, followed by KP1 with 23,7983 mg/dL, and KP2 with 20,8933 mg/dL.

Conclusion: Extract of African's leaf (Vernonia amygdalina) has a significant effect of lowering trygliceride level.

Keywords: African's leaf extract, Vernonia amygdalina, trygliceride, Wistar rat, metabolic syndrome

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PARTICIPATION OF THE ADRENERGIC AND THE ENDOGENOUS CANNABINOID SYSTEMS IN THE PATHOGENESIS OF COLD STRESS-INDUCED ANALGESIA

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Introduction: Stress-induced analgesia (SIA) represents an evolutionarily conserved adaptive response. Cannabinoids have been proved to mediate certain forms of SIA. The almost ubiquitously expressed throughout nociceptive pathways cannabinoid receptor type 1 (CB1) has been also demonstrated in vicinity of the locus coeruleus, raising questions about interactions between the endogenous cannabinoid and the adrenergic systems.

Aim: The purpose of our study was to determine whether cannabinoid and adrenergic systems participate in pathogenesis of cold stress-induced analgesia (c-SIA).

Materials and methods: Male Wistar rats were exposed to 4◦C for one hour (1 h of cold stress, 1h CS) after being injected with different combinations of anandamide (AEA, CB1-receptors agonist), AM251 (CB1-receptors antagonist), Clonidine (Clo, α2-adrenergic receptors agonist), and Yohimbine (Yoh, α2-adrenergic receptors antagonist). C-SIA was assessed by evaluation of Paw pressure-thresholds (PP-test) after the end of stress.

Results: Increased PP-thresholds compared to 1h CS-animals were evaluated during the whole time of the experiment after administration of Clo alone, while AEA increased PP-thresholds only for the first 20 min. C-SIA in AEA+Clo-animals was also evaluated only for the first 20 min of the experiment. AM+Clo increased c-SIA during the whole time of the experiment, while in AEA+Yoh-animals c-SIA was present only on the 10th min.

Conclusion: Endogenous cannabinoid and adrenergic systems take part in cold stress-induced analgesia pathogenesis. Both systems mutually influence each other, with the adrenergic one seeming to have a more prominent impact during the first 20 min, while the endocannabinoid one prevails for the remaining time of the experiment.

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts Preclinical Sciences Poster Session IV (PSPS4)

INTERACTION BETWEEN THE ADRENERGIC AND THE ENDOGENOUS CANNABINOID SYSTEMS IN MODULATION OF PAIN PERCEPTION

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Introduction: The cannabinoid receptor type 1 (CB1) is expressed almost ubiquitously throughout nociceptive pathways. In the same time CB1 activity has been demonstrated in vicinity of the locus coeruleus, raising questions about interactions between the endogenous cannabinoid and the adrenergic systems.

Aim: The purpose of our study was to determine whether cannabinoid and adrenergic mechanisms influence each other in mediation of pain perception.

Materials and methods: Male Wistar rats were injected with anandamide (AEA, CB1-receptors agonist), AM251 (CB1-receptors antagonist), Clonidine (Clo, α2-adrenergic receptors agonist), and Yohimbine (Yoh, α2-adrenergic receptors antagonist) in different combinations. Pain perception was evaluated by Paw pressure test.

Results: Administered alone AEA and Clo increased PP-thresholds of experimental animals during the whole time of the experiment compared to controls. After contemporary injection of both AEA and Clo a progressive decrease of PP-thresholds was observed. After the 30th min of the experiment PP-thresholds of AEA+Clo-animals were lower than PP-thresholds of animals with AEA or Clo alone administration. Yoh administration along with AEA decreased PP-thresholds compared to AEA+Clo during the whole time of the experiment. AM+Clo instead led to an initial increase in PP-thresholds followed by decrease and a second increase from the 40th min of the experiment.

Conclusion: Even though both AEA and Clo alone exert antinociceptive effect, increased nociception after the 40th min is observed after contemporary administration.

Acknowledgements: This work was supported by Grant №D68/23.04.2019 from the Council of Medical Science, MU-Sofia.

NATURAL FOCI OF BORRELIA BURGDORFERI SL IN KAYLAKA PARK IN PLEVEN

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Introduction: Tick-borne diseases increasingly threaten the health of people all around the world. The leading transmissive infection in Bulgaria is Lyme borreliosis, which is caused by spirochetes from the Borrelia burgdorferi sl complex, transmitted by ticks of the genus Ixodes. Multiple cases of tick bites, as well as cases of transmissible infections with Lyme disease prevalence, are reported annually. Kaylaka is a large park spread over 1000 hectares, protected area south of Pleven, Bulgaria. The park offers opportunities for people to engage in recreational activities, walking, picnics and other events.

Aim: To study different areas in Kaylaka Park to estimate tick population mainly of the species Ixodes ricinus, and their contamination with Borrelia burgdorferi sl.

Materials and methods: The areas of study in Kaylaka were divided into two categories according to the daily presence of people into the urbanised and wild areas. The collection was done over a period of 4 years (2016-2019) by the drag-flag method over the vegetation. For each collection, we gathered data like: the time of collection, acreage, geographical coordinates, sex, stage of development and calculation of average density of ticks. For the identification of ticks contaminated with Borrelia burgdorferi sl darkfield microscopy technique was performed.

Results: A total of five sixty one ticks were collected.The number of ticks in urbanised and wild areas were 192 and 369 respectively.The average density of ticks calculated to be 0.095 for urbanised and 0.089 indiviuals per square meter for wild.The average number of ticks collected per minute in urbanised and wild area were 2.47 and 2.95 respectively.Using darkfield microscopy we observed 231 I. ricinus ticks out of which 85 where positive for Borrelia burgdorferi sl. Mean encounter time was 2.25 min for urbanised vs 1.13 min for wild areas.

Conclusion: High population density of Ixodes ricinus ticks has been established in Kaylaka Park and relatively high presence of Borrelia burgdorferi sl. in them has been detected.

Keywords: Borrelia burgdorferi sl, Ixodes ricinus, Lyme borreliosis, Kaylaka Park

PHARMACOTHERAPEUTIC ANALYSIS IN THE NEONATOLOGY CLINIC OF THE UNIVERSITY CLINICAL HOSPITAL SERVICE OF KOSOVO

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Introduction: Treatment in Neonatology, today, despite major advances in the medical field, has moved slower. This disadvantage is thought to be related to organogenesis, as well as to the storage, effective distribution of the drugs in this population. Despite challenges, advances in neonatal pharmacotherapy have been made and attracted many medical professionals.

Aim: This paperwork is to obtain a clear overview of the application of drugs to hospitalized patients at UCCK, thorugh results from patient data in December 2018, January-February 2019.

Materials and methods: The research is of retrospective and descriptive type.Used patient data at NC-UCCK for the time periods December 2018,January- February 2019. 100 patients were included.Literature cited through the software-Zotero. Patients diagnoses are coded according to ICD-10-CM. Therapeutic data are coded according to ATC-DDD.

Results: During December 2018,January-February 2019,100 patients were diagnosed and treated at NC-UCCK: Males 50%,while females 50%. The most common age-groups were 28-32 weeks. The most common diagnosis:SIRS 63 cases, Hyperbilirubinemia 31 cases,Sepsis 13 cases.According to the results: Antimicrobics are the most frequently prescribed group 308 prescriptions, followed by the respiratory system drugs-20 prescriptions, the cardiovascular system drugs 13 prescriptions. 89% of patients were prescribed Ampicillin the first drug, followed by Amikacin 89% as second drug.The third is Meropenem 46%; the fourth stands Vancomycin in 46% of patients; Microbiological analysis was performed on only 53 patients: 39 samples were sterile and 14 patients were positive,whom 3 samples were resistant to all antibiotics.

Conclusion: Very carefully analyzed parameters during paperwork,conducted in the NC-UCCK, results of general and clinical nature were obtained, also important information from pharmacological aspect, which has been the purpose of our research, with particular emphasis on the overview of antibiotic use. Based on the results of the paperwork,we conclude that the therapy described in NC, is individual for each patient based in clinical features and microbiological samples.

Keywords: prematurity, pharmacotherapy, antibiotics

SURFACE PLASMON RESONANCE (SPR) AS A METHOD STUDDING THE KINETIC OF BIOMOLECULAR INTERACTION "HOST-CELLS - HUMAN CORONAVIRUS 229E

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Introduction: Human population rising risks from emerging and reemerging viral infectious diseases, such as coronaviruses. Infection with human coronavirus 229E (HCoV-229E), often cause coldlike symptoms and can result as cytocidal and/or in some cases persistent infection in host-cells. A new application for surface plasmon resonance (SPR), a technique largely employed in molecular bioassays, is the kinetic analysis of cellular processes due to morphological and molecular remodeling, in the SPR signal variation.

Aim: The aim of the present study is to investigate the kinetic of a biomolecular "host-cell—HCoV-229E" interaction, occurring as a result of a target cell tropism, morphological changes and intracellular reorganization through the virus replication process using the SPR method.

Materials and methods: HCoV-229E produces cytopathic effect (CPE) in Vero E6 and Lep cell lines, providing a simple model for in vitro infection study. The relative cell survival, structural-morphological changes associated with the progression of the infectious process, obtained by SPR method are compare with three routinely methods for assess of viability of infected cells (microscopic observation, trypan blue exclusion and MTT colorimetric assays), with the infectious virus titer and intra-/extracellular viral RNA load at various time post-infection (p.i.).

Results: Vero E6 cell line is particularly susceptible to HCoV-229E infection, as produce CPE as early as day 4 after inoculation, with evidence of high levels of virus RNA established by RT-PCR and virus titer. The obtained results from the SPR-method indicate accurate determination of the latent period and exponential phase (released virus). The SPR method correlates with the structural-morphology changes registered by different survival rate assays and a significant decrease/increase in the number or intra-/extracellular RNA copies p.i.

Conclusion: In this study, we demonstrated that morphological and and intracellular reorganization through the virus replication process in host-cells could be followed in real-time using SPR method. These findings are particularly relevant with conventional methods.

Keywords: SPR, human coronavirus 229E

CLINICAL OBSERVATION OF MONOTHERAPY TREATMENT MODALITIES IN PATIENTS WITH EPILEPSY

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Introduction: Defined as a chronic central nervous system disorder, epilepsy is characterized by unpredictable, unprovoked recurrent seizures resulting from abnormal, excessive or hypersynchronous neuronal activity. Despite the fact that the causes for these disturbances of the brain function cannot be clearly identified, several factors have been associated with this neurological condition like birth trauma, cerebrovascular lesions, tumors, infections of the central nerve system etc. Epilepsy doesn`t alter significantly the life expectancy of the patients but their quality of life might be compromised.

Aim: Evaluation and clinical observation of the effectiveness of the different treatment modalities has always been of importance, due to the fact that each distinct form of epilepsy is characterized by its own clinical, pathophysiological characteristics and specific of the underlying etiologic mechanism.

Materials and methods: In our investigation 21 adult patients with epilepsy were included. Their diagnosis was confirmed by the standard neurophysiology diagnostic procedures (EEG, EMG). The treatment protocol of all patients comprised monotherapy with first line antiepileptic drugs-Oxcarbazepine, Carbamazepine and Valproic acid.

Results: The obtained data showed that in the investigated group patients, treated with Valproic acid had less unprovoked recurrent seizures. However, we found some side effects that cannot be ignored and led to the change of therapy in some of the cases: alopecia, gastrointestinal disorder, weight gain, tremor. Moreover, patients should undergo blood tests to determine the valproic acid concentration in order to maintain the therapeutic level and monitor toxicity, which may also cause discomfort. In reference to Oxcarbazepine, after some period of time, we observed a tendency in reducing the severity of the clinical manifestation for prolonged period. According to Carbamazepine, it is the drug with the most side effects in our survey. What is more, Carbamazepine blood levels need to be estimated, too. The observed tendency of decreased epileptic seizures wasn't statistically relevant. This led to the replacement of the medicine with Oxcarbazepine, which reduced the seizures in some of the patients to almost none.

Conclusion: Oxcarbazepine was the medicine of choice in order to the considerably fewer side effects and the lack of necessary for its blood concentration monitoring.

Keywords: Threatment modalities, Epilepsy, Monotherapy, Valproic acid, Oxcarbazepine, Carbamazepine, First line antiepileptic drugs

Acknowledgements: This work was supported by Department of Neurology, Multiprofile Hospital of Active Treatment, Bulgaria

OPIOID-DEPENDENT ANALGESIC EFFECTS OF VV-HEMORPHIN-7 PEPTIDE ANALOGUES IN RATS

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Introduction: VV-hemorphin-7 (VV-H7) is a widespread hemorphin with a variety of biological activities (e.g., antinociception, hypotension, memory) mediated by different receptors including opioid and insulin-regulated aminopeptidase enzyme. Our latest data show that VV-H7 and its newly synthesized analogues with one or two RGD (arginyl-glycyl-aspartic acid) fragments have dose-dependent antinociceptive effects in the formalin test.

Aim: The present study aims to reveal the receptor mechanism of the VV-H7 and RGD-induced antinociception both in phasic and tonic pain in rats.

Materials and methods: Solid-phase peptide synthesis by Fmoc chemistry was used to derive new VV-H7 analogs modified with one (RGD1) and two RGD sequences (RGD2). We pre-treated with two selective opioid receptor antagonists naloxone (with high affinity for mu-receptors) and nor-BNI (highly selective for kappa receptors) before each peptide to assess the involvement of different opioid receptors in peptide-induced antinociception. The intraplantar formalin test is used to examine acute phasic and inflammatory tonic pain reactions in mice.

Results: The results showed that the antinociceptive effects of VV-H7 in the acute and inflammatory phases of the test were blocked by both naloxone and nor-BNI. RGD1 showed a lower antinociceptive effect than VV-H7 and this effect was antagonized only during the first phase by nor-BNI. RGD2 shows antinociception in both phases and its effects are completely antagonized by naloxone but not by nor-BNI.

Conclusion: In summary, our data confirm the involvement of opioid receptors in VV-H7-induced antinociception. Its peptide analogs show a slightly altered antinociceptive profile. RGD2 shows higher selectivity for mu-receptors, while RGD1 has lower effects and higher selectivity for kappa receptors. We suggest that opioid receptors are crucial for the antinociception induced by the precursory peptide and that the effects of RGD analogs include additional mechanisms perhaps related to their affinity to integrins.

Keywords: Opioid receptor antagonists, Nociception, VV-hemorphin-7 analogues, Rats

Acknowledgements: This work was supported by the Sofia University "St.Kliment Ohridski", contract No. 80-10- /2021 to 80-10-4/2021.

SERUM LEVELS OF ADVANCED GLYCATION END PRODUCTS ARE ASSOCIATED WITH INSULIN RESISTANCE AND NUMBER OF METABOLIC SYNDROME COMPONENTS IN MIDDLE-AGED WOMEN

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Introduction: Metabolic syndrome (MetS) represents a cluster of metabolic abnormalities, including central obesity, hypertension, hypertriglyceridemia, low HDL-cholesterol and hyperglycaemia. Advanced glycation end products (AGEs) have been recognized as key players in the development of type 2 diabetes mellitus (T2DM) and its vascular complications. Although MetS is one of the major risk factors for T2DM, the role of AGEs in the early deterioration of insulin sensitivity in MetS is still unclear.

Aim: Therefore, the aim of the current study was to investigate the serum levels of AGEs and their associations with insulin resistance and MetS components in middle-aged women with MetS, uncomplicated by T2DM.

Materials and methods: The levels of AGEs were measured by ELISA in a cross-sectional study of 69 middle-aged female subjects divided into patients with MetS (n = 45) and a control non-MetS group (n = 24). MetS components and fasting plasma insulin levels were also determined. Insulin resistance was estimated by the homeostasis model assessment index (HOMA-IR).

Results: Patients with MetS had significantly higher serum levels of AGEs than the control group [10.33 (6.10 – 33.74) μg/mL versus 6.26 (4.51 – 8.41) μg/mL, p = 0.008]. A significant positive correlation was established between AGEs and HOMA-IR in MetS (r = 0.404, p = 0.006), though AGEs did not correlate with any of MetS components. Furthermore, subjects with three MetS components had significantly lower AGEs concentrations [7.24 (5.31 – 14.28) μg/mL; n = 16], compared both to patients with four [14.87 (6.73 – 42.40) μg/mL; n = 13; p = 0.034] and five MetS components [19.61 (7.18– 52.24) μg/mL; n = 16; p = 0.014]. On multiple regression analysis, serum AGEs remained a significant determinant of HOMA-IR.

Conclusion: Presence of MetS and accumulation of its components are accompanied by increased formation of AGEs. The circulating AGEs levels are independently associated with insulin resistance even in non-diabetic female subjects with MetS. These findings delineate the significant role of AGEs in the pathogenesis of MetS .

Keywords: advanced glycation end products (AGEs), metabolic syndrome, insulin resistance, HOMA-IR

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EFFECTS OF A NOCICEPTIN ANALOGUE ON PROINFLAMMATORY PARAMETERS IN A LPS-INDUCED MODEL OF INFLAMMATION

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Introduction: In the last few years, neuropsychiatric disorders have been associated with high peripheral values of proinflammatory markers which correlate with dysfunctional microglia activity and inflammatory response in the brain (1, 2). The nociceptive system and particularly the neuropeptide nociceptin/orphanin FQ and its analogues have been recently related to many aspects of inflammation and furthermore - they were suggested to play an immunomodulatory role both peripherally and centrally (3).

Aim: The aim of the present study was to investigate the effects of a newly synthesized nociceptin analogue on proinflammatory cytokines in a LPS-induced model of neuroinflammation.

Materials and methods: Male Wistar rats (200-220 g) were randomly divided into 4 groups (n=5): 1. control animals (C) (phys. solution, i.p.); 2. inflammatory model animals (LPS, 1 mg/kg, i.p.); 3. control animals, treated with a nociceptin analogue (C+Noci) (1 mg/kg, i.p.); 4. inflammatory model animals, treated with a nociceptin analogue (LPS+Noci) (1 mg/kg, i.p.+1 mg/kg, i.p.). Six hours after application of the substances the animals were decapitated and their blood was collected to determine serum proinflammatory cytokine levels.

Results: The LPS treated rats demonstrated considerably higher serum levels of IFN-gamma; IL-1 beta proinflammatory cytokines compared to the control rats. The studied proinflammatory parameters of the animals, treated with the nociceptin analogue were comparable to the control ones. However, application of the nociceptin analogue to the LPS challenged rats decreased the serum levels of IL-1beta, compared to the LPS challenged rats.

Conclusion: The single application of the newly synthesized nociceptin analogue decreased the proinflammatory cytokine IL-1beta serum level in the present LPS-induced model of neuroinflammation, and might be suggested for further studying of its immunodulatory potential.

Keywords: nociceptin analogue, LPS model, proinflammatory cytokines, neuroinflammation

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ENDOVASCULAR EMBOLIZATION OF HYPERVASCULAR UTERINE MASS IN THE SETTING OF GESTATIONAL TROPHOBLASTIC TUMOR

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Introduction: Gestational trophoblastic disease (GTD) is a group of gestational tumors, including hydatidiform mole (HM). Its diagnosis is based on clinical features, imaging findings, and human chorionic gonadotropin (β-hCG) titers. In cases with GTD complicated by acute bleeding, transcatheter embolization can be a life-saving procedure.

Clinical case: A 41-year-old woman was admitted to the Emergency Department accusing life-threatening vaginal bleeding and vertigo. According to her medical history, she miscarried two pregnancies: one spontaneous abortion followed by curettage, and a second one that stopped in evolution, medically aborted with prostaglandins. After the first curettage, a diagnosis of partial hydatidiform mole (PHM) was established histologically and due to high levels of β-hCG. The main diseases considered for differential diagnosis were: Choriocarcinoma which is characterized by elevated levels of β-hCG and early hematogenous metastasis, Complete Hydatidiform Mole that is defined by no fetal development and paternal origin only, and Placental Site Trophoblastic Tumor which is represented by low levels of β-hCG. Hydatidiform moles arise from the cytotrophoblasts and syncytiotrophoblasts. When considering PHM, it is almost always triploid as a consequence of fertilization of a healthy ovum by two sperms or by one sperm that reduplicates itself. The outcomes are the following genotypes: 69, XXX, 69, XXY, or 69, XYY. Based on increased levels of β-hCG at the admission - 3031 mUI/mL (normal values in nonpregnant women are < 10.0 mIU/mL) and the hypervascular solid mass in the uterine fundus described ultrasonographically, a pelvic angiographic evaluation was requested. It confirmed the presence of a hypervascular uterine mass with bilateral blood supply from the uterine arteries. Catheterization of the uterine arteries with a 5F catheter followed by injection of fragmented hemostatic sponge resulted in complete devascularization. Three days later, the curettage of the mass was performed. Histopathological results revealed necrotic decidual fragments. A possible unremoved piece of hydatidiform mole and a subsequent diagnosis of GTD was taken into account.

Conclusion: Endovascular embolization is an effective treatment option for severe bleeding caused by residual uterine vascular malformations in patients with GTD.

POST-COVID19 NEUROLOGICAL COMPLICATIONS IN DIABETIC AND NON-DIABETIC PATIENTS

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Introduction: The coronavirus (COVID-19) pandemic is an extraordinary worldwide health crisis. SARS-CoV-2 infection has a wide range of symptoms mostly affecting the respiratory system. A wide range of several neurological complications, starting from headaches, anosmia, ageusia, insomnia, myalgia ending with more severe complications like: stroke and encephalopathy were reported. In this research we were interested in studying the post-COVID19 neurological complications and sleep disturbances in Adjara region in Georgia. It's hypothesized that Post-COVID19 diabetic patients develop more severe neurological complications compared to non-diabetic COVID19 ones. During research was found that Post-COVID19 patients develop a wide range of sleep disturbances compared to non-COVID19 patients.

Aim: The aim of this research is investigating the relationship between Post-COVID19 infection and different types of neurological complications like sleep disturbances, and to give an up-to-date data of the correlation between Diabetes in Post-COVID19 patients and the susceptibility of developing severe neurological complications.

Materials and methods: This observational study started on January 15th . A special questionnaire was used to survey 400 Post-COVID patients in Adjara . The age group 18-85. The collected information about neurological and sleep compliance will be compared in Diabetic and non-Diabetic patients.

Results: Since the 26th of February, the first case of COVID19 was identified in Georgia , more than 270 000 cases were reported, 38 418 cases -in Adjara ; 11 450 - treated in Hospitals, 656- died, 34 825 – recovered. We're expecting further results soon, since it's still an ongoing research, and we will present them on the conference.

Conclusion: In conclusion based on the collected data, we identified a relationship between Post-Covid19, diabetes, sleep disturbances and neurological complications.

Keywords: Neurological complications, Covid-19, Sleep disorders, Adjara, Diabetes.

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THROMBOEMBOLIC COMPLICATIONS IN PATIENTS WITH ACUTE MYELOID LEUKEMIA

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Introduction: The risk of thromboembolic events (TE) in patients with hematologic malignancies was thought to be lower in comparison to solid tumors. Still, new research suggests it is similar or even higher in those with hematologic illnesses. Incidence of TE in patients with acute myeloid leukemia (AML) varies in different studies between 2 and 13%. Additionally, there is no clear data on predictive factors for TE, nor guides for thromboprophylaxis.

Aim: The aim of this study is to acquire data on the frequency of TE, therapy, localization, disease stage upon diagnosis and prognostic factors for their onset.

Materials and methods: This retrospective study will include 150 patients diagnosed and treated for AML in the Hematology Clinic at the Clinical Center of Serbia, diagnosed according to World Health Organization (WHO) recommendations.

Results: Venous thromboembolism (VTE) developed in 18% (n=27) patients. Most frequently, it was the deep vein thrombosis (DVT) 17.33%, 16% of patients with central venous catheter (CVC) related thromboembolism, and 0.67% with pulmonary embolism (PE). Arterial thrombosis was not noted. Thrombosis usually occurred during the phase of administration of consolidation therapy (41.94%). Discrepancy between the groups with and without VTE was statistically relevant, concerning: gender (p=0.009), D-dimer (p<0.001) and lethal outcome (p=0.002). Patients with VTE lived longer in comparison with the group without VTE (p=0.001, SE=0.482, 95% CI 3.056-4.944). The group of AML patients with thrombosis (median 10 months (0.5-46); SE=3.92, 95% CI 2.324-17.676) had a higher five-year survival rate than the one without (median 3 months (0-38); SE=0.533, 95% CI 1.955-4.045). After thrombosis, 24 patients were treated using anticoagulant therapy.

Conclusion: Our study showed a higher incidence of VTE then in previously published studies. Furthermore, our study showed that male patients in consolidation with a CVC and an initial high D-dimer should be considered for thromboprophylaxis.

Keywords: Venous Thromboembolism, Incidence, Prognosis, Thrombosis, Acute Myeloid Leukemia

CLINICAL CASE OF A RARE DISEASE – ANTISYNTHETASE SYNDROME

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Introduction: Antisynthetase syndrome is a rare idiopathic inflammatory myopathy characterized primarily by polymyositis or dermatomyositis and interstitial lung disease in association with serum autoantibodies against aminoacyl-transferRNA synthetase (Jo-1). This clinical case shows that the beginning of the rare autoimmune disease can manifest with such non-specific symptom as polyarthritis presenting several months before the typical sign of proximal muscle weakness thus giving the broad spectrum of differential diagnoses. The second point is the chronological coincidence of statin and febuxostat usage making a differential diagnosis with drug-induced toxicity. The third aspect is the knowledge about paraneoplastic arthritis/myositis with the following necessity to perform investigation.

Clinical case: This case report describes a 61-year-old woman with past medical history of essential hypertension. The patient's laboratory analyzes made 4 months before hospitalization revealed slightly elevated serum levels of CPK (248 U/L (normal range: 29-168)) and uric acid (444 µmol/L (normal range:150-350)), due to which she started usage of febuxostat, and LDLC, due to which she started usage of rosuvastatin. The patient was hospitalized with 4-month history of fatigue, symmetrical polyarthritis of hands, knees and ankles, night pain and prolonged morning stiffness, suggesting the manifestation of seronegative rheumatoid arthritis, and 2-week history of progressive proximal muscle weakness. Laboratory investigations revealed significantly elevated serum levels of CPK (11 680 U/L), AST, CK-MB. Autoimmune myopathy panel revealed strongly positive anti-Jo1 and anti-Ro52 antibodies. CT scan of the chest showed bilateral interstitial lung fibrosis and ground-glass opacity. Investigations for the exclusion of the most common malignancies were performed revealing no data of it. During the intrahospital 10-day period she was treated with intravenous, then switched to oral methylprednisolone (0.75 mg/kg) and immunosuppressive treatment (mycophenolate mofetil) was added.

Conclusion: This clinical case reveals that in case of presence of systemic inflammatory joint involvement the follow-up is significant to make the precise diagnosis. The full anamnestic data are crucial for diagnosing primary autoimmune disease.

Keywords: antisynthetase syndrome, anti-Jo-1 antibodies, interstitial lung disease (ILD), polymyositis, symmetrical polyarthritis

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META-ANALYSIS OF DIAGNOSTIC CHALLENGES OF CELIAC DISEASE IN PEDIATRIC PATIENTS

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Introduction: Celiac disease (CD) is a systemic, chronic, immune-mediated disorder, triggered after the ingestion of gluten proteins from wheat, rye or barley in genetically susceptible individuals. It carries a pattern of multiorgan impairment, chiefly affecting the duodenal mucosa, which leads to chronic malabsorption syndrome. Celiac disease has polymorphous presentation and therefore makes diagnosis challenging. About 10% of patients experience a diagnostic delay of more than 10 years from the onset of symptoms.

Aim: Investigation of the spectrum of clinical symptoms and their effect on concealing proper diagnosis of CD.

Materials and methods: Thorough examination of several case studies of children with typical and atypical clinical presentations was conducted. The atypical symptomatology was mainly extraintestinal, associated with neurological, rheumatic, autoimmune and infectious features. Symptoms included mood swings,migraines, short stature, osteopenia, arthritis, systemic lupus erythematosus, diabetes mellitus, chronic hepatitis, gastroenteritis, respectively. Only a few of them combined the typical gastrointestinal symptoms namely vomiting, abdominal distention/pain, metabolic abnormalities and weight loss along with the extraintestinal. This combination unveiled the perplexity of early identification of the disease, as some patients were unaware that they had the disease until they experienced a crisis episode requiring hospitalization.

Results: The atypical manifestation leads to a diagnostic delay with an upward shift in age from 2 to 8 years. Diagnosis must therefore be established on anamnesis, positive serology for CD (anti-transglutaminase, anti-endomysium and deaminated gliadin antibodies) and suggestive histologic changes in duodenal biopsies, such as villous atrophy and crypt hyperplasia. However, in half of the asymptomatic cases the only clue for prompt diagnosis lies in the persistent anemia and/or ferritin deficiency. Furthermore, infections such as rotavirus or E.coli constitute the primary precipitating factor of the disease, yet they sharply mask its discovery, misguiding the doctors.

Conclusion: CD is difficult to diagnose as it is conjoined with misleading manifestations.A universal screening is currently not advised, which emphasizes the importance of raising awareness amongst health care professionals to the diverse clinical picture of the disease. A comprehensive approach will enable an early recognition and treatment, with subsequent symptom relief and nutritional status optimization.

Keywords: Celiac disease, atypical presentation, serology, diagnostic delay, meta-analysis

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MESENCHYMAL CHONDROSARCOMA OF THE TEMPORAL BONE WITH PENETRATION OF THE SKULL BASE BONE AND MULTIPLE METASTASIS IN THE VERTEBRAE OF THE SPINE: CASE REPORT

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Introduction: Mesenchymal chondrosarcoma is a rare, aggressive form of chondrosarcoma consisting of primitive mesenchymal cells and cartilage cells. Tumors are more common for young patients aged 15 to 35 years. It is mainly observed in the central nervous system, meninges, maxillary sinuses, eyelid, eye socket, and thyroid.

Clinical case: A 40-year-old man had sudden complaints of the numbness on left side of his face and reduced hearing in his left ear 8 years ago. Weak hearing with left ear had worried the patient for half a year already. Man was hospitalized at PSKUS where CT scan of head was performed. The diagnosis discovered pyramidal formations with destructive alterations in the clivus area and inner ear involvement on the left side. Biopsy, taken from tympanic cavity, revealed a neuroblastoma. After consultation of the oncologists, the patient was decided to undergo a radiation therapy. In 2012, radiation therapy was initiated with a total dose of 60 Gy. After 6 years, local progression of the disease developed with metastases in the 7th thoracic vertebra (Th7) and to the left cervical lymph node. In 2018, reviewing the patient's histology a new diagnosis was made - mesenchymal chondrosarcoma. Palliative radiotherapy 40 Gy was started. In 2018, one course of chemotherapy was received in Germany. In 2019, the patient developed an acute progressive sensorimotor deficiency from metastasis Th7 with radiological evidence of destruction with epidural part of the tumor and spinal canal stenosis. In Germany, surgical therapy was performed - spinal decompression Th6-8 and spondylectomy Th7 with complete replacement of the vertebral body as well as local radiation therapy with a total radiation of 30Gy. After rehabilitation, walking skills were gradually regained. In 2020, disease was progressing with new spinal cord metastases C6-7, Th2, Th6. The clinical case has improved after radiotherapy with 35 Gy and 2 courses of chemotherapy. The patient will be genetically tested to decide on a specific treatment.

Conclusion: Mesenchymal chondrosarcoma is a rare, aggressive, and slow-growing tumor that responds poorly to treatment. The best treatment of choice is surgery - radical or extensive excision, the effectiveness of radiation and chemotherapy is poor, which can also be observed in this case.

Keywords: mesenchymal chondrosarcoma

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PMID: 23966829

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MULTIDISCIPLINARY APPROACH TO THE TREATMENT OF BURKITT LYMPHOMA IN 4-YEAR-OLD PATIENT

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Introduction: Burkitt lymphoma (BL) is a highly aggressive mature B-cell malignancy, the most common non-Hodgkin lymphoma among children. Most often extranodal sites are involved, basically the ileocecal region, facial bones, bone marrow. Skin presentation is unusual. The tumor is noticeable for its high proliferative index and enlarges in a short period of time. A tumor lysis syndrome (TLS) can occur due to rapid cell death, which can be induced by initiation of therapy and during surgery in some cases. The release of vast amounts of uric acid, potassium, and phosphorous extremely increases the risk of severe complications, including acute kidney injury, cardiac arrhythmias, seizures, and death.

Clinical case: A 4-year-old boy initially presented in July 2019 with a rapidly spreading rash, substantially on lower extremities and abdomen wall. Subsequently in 2 days the patient shows enlargement of the abdomen and significant deterioration of his condition. The biopsies from the rash and abdominal mass were identical and showed an infiltrate of lymphoid cells with basophilic cytoplasm, which had an extremely high proliferation rate (Ki-67 over 95%). The cells were positive for HLA-DR, CD45, CD10, CD19, CD20, CD38, IgM. Cytogenetic test showed t(8;14)(q24:q32). Just after the surgery patient's condition worsened extremely, ECG showed ventricular fibrillation. Considering rapid level growth of potassium, lactate and prominent metabolic acidosis hemodiafiltration was began. In consequence of high level of uric acid Rasburicase was included into the therapy. The patient received chemotherapy (B-NHL-BFM-95 protocol) with immunotherapy (Rituximab) and due to the sever condition, the treatment was began in the intensive care unit. The therapy was complicated by grade IV hematological toxicity, pneumonia and sepsis which was controlled. The complete response was achieved after the first cycle of treatment (AA). Now treatment is completed and no evidence of existing tumor is seen during 3 months.

Conclusion: This case shows unusual presentation of BL with skin and abdomen involvement, which was complicated by TLS occurrence and emphasizes the necessity of multidisciplinary approach.

Keywords: Tumor lysis syndrome, Burkitt lymphoma

HYPERESTHESIA TREATMENT WITH DESENSITIZER «BIOREPAIR DESENSITIZING ENAMEL REPAIRER TREATMENT» AND LASER RADIATION

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Introduction: Hyperesthesia is an increased sensitivity of hard tissues of teeth. Hyperesthesia manifests itself in the form of pain of a short duration that occurs in response to the action of various stimuls. The intensity of pain reactions can vary from mild sensitivity to severe pain

Aim: To test 3 methods of treating hyperesthesia in groups of volunteers. To evaluate the result using the prevalence index of tooth hyperesthesia and the index of intensity of dental hyperesthesia.

Materials and methods: 24 volunteers aged 17 to 23 years with hyperesthesia of 2 and 3 degrees were selected. Volunteers were divided into 3 groups. The first group (G1) received the desensitizer «Biorepair desensitizing enamel repairer treatment», its participants had to use the drug after brushing their teeth. The second group (G2) was treated with the ALST-01 Optodan device (Ukraine) in a radiation mode with a wavelength of 1000 Nm, 2 W power, non-contact mode, 50 ms pulse / 50 ms pause for 20 seconds. The third group (G3) carried out applications of the said desensitizer and also underwent treatment with the help of the mentioned apparatus, however, a 10 second action of the laser beam was used. The participants of the first group used the desensitizer 2 times a day, the second group had sessions every day, and the 3rd group alternated the day of the desensitizer (2 times a day), with the day of the laser treatment session. In total, the technique was used for 8 days. The index was evaluated using the prevalence index of tooth hyperesthesia and the index of intensity of hyperesthesia of the teeth. Control was carried out before the experiment and 1 month after the experiment.

Results: 1 month after the treatment, the index of intensity of hyperesthesia in G1: 1.53 ± 0.23; G2: 1.21 ± 0.3; G3: 1.19 ± 0.25. In the future, it is planned to conduct a state control 6 and 12 months after the manipulation.

Conclusion: The most effective means for treating hyperesthesia was treatment with a laser beam. The combination of this technique using a desensitizer helps to slightly improve the effectiveness of laser treatment.

TREATING LEIGH SYNDROME: FIRST EXPERIENCE IN LATVIA

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Introduction: Leigh syndrome also known as subacute necrotizing encephalopathy is a progressive neurodegenerative disorder, affecting 1 in 40,000 live births, typically manifesting in infancy or early childhood,often after a viral infection.Clinical manifestations include psychomotor regression with loss of previously acquired motor and mental skills, associated with signs of basal ganglia and brainstem involvement.

Clinical case: Previously healthy, 22-month-old male infant was admitted to Children's Clinical University Hospital due to episode of hypoglycemia (1,6mmol/l). Laboratory findings showed metabolic crisis- ketotic hypoglycemia, lactic acidemia 5,11mmol/l (reference range <2.5 mmol/l) lactic aciduria 4993.00mmol/L (reference range 0-200mmol/L) and abnormal acid-base balance. Physical investigation showed skin rash on patients face and body, edema on the face and both lower limbs, generalized low muscle tone, hepatomegaly (+3cm under costal margin). Neurological investigation disclosed severe hypotonia, ataxia and muscle hypotrophy.Patient had feeding difficulties according to aphthous ulcers in oral cavity.Magnetic Resonance Imaging was done which showed progressing structural changes and lesions in medulla oblongata and mesencephalon.Whole-exome sequencing was performed to identify causative variants. Subsequently, two mutations in SURF1 gene were identified.During hospital stay child received thiamine and L-carnitine . Patients condition dramatically improved and boy was allowed to return home, neurological follow-up was recommended. The affected boys' mother reported to be pregnant at 21 weeks +5 days gestational age. Fetal ultrasound at 21+3 weeks confirmed cerebral periventricular cyst 21mm x 11mm. Subsequently, amniocentesis was performed and fetal DNA testing results showed two mutations in SURF1 gene in heterozygous state. These findings were interpreted as Leigh syndrome and pregnancy was terminated.

Conclusion: We report the first Leigh syndrome case in Latvia in two siblings. Initially our patient received a 300 mg/day dosage of thiamine stopping central nervous system degeneration although there is no specific treatment for Leigh syndrome, and generally specific therapy for mitochondrial disorders in pediatric is not widely available. Periventricular cysts may be the initial in utero presentation in patients with mitochondrial disorders. With appropriate investigations, accurate diagnosis and adequate supportive therapy, symptomatic improvement can be achieved, thereby adding life to the limited years of survival of these children.

Keywords: Leigh syndrome, subacute necrotizing encephalopathy

THE TURNING POINT FOR PATIENTS WITH HEART FAILURE IN THE MODERN DEVICE ERA

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Introduction: Heart failure is a common and costly condition with poor prognosis. Despite the availability of life-saving medical therapy for heart failure with reduced ejection fraction, a significant gap in the use and dosage of guideline-directed medical therapy exists. Living in a modern and high technology era, there are many nonpharmacological therapies that have been used and proved in patients who have this condition. The use of different devices is a unique opportunity to improve care. Furthermore, it is significant to assess how much various modern approaches in cardiology work in unison and to what extent they can lengthen longevity of life in patients with severe heart failure.

Clinical case: This is the case of a 68 year old male emergency patient with a past myocardial infarction, , who was admitted to the hospital with heart failure symptoms.He has a history of coronary artery bypass graft surgery, coronary stent graft and an ICD implanted 10 years ago. He presented to the hospital in a condition that had beed worsening lately. Imaging and laboratory research confirmed heart failure with reduced ejection fraction, moderate mitral and tricuspid insufficiency and also degenerative aorti stenosis.Diagnostic dobutamine stress test was conducted, which indicated low flow, low gradient aortic stenosis. Coronary angiography proved occluded venous grafts. It was concluded that a re-do bypass and an aortic valve surgery are in order, while also taking into consideration the high operative risk. Optimal medical therapy was initiated, which included diuretics, eplerenon, an anticoagulant and angiotensin receptor-neprilysin inhibitor. Six months later the patient has had a CRT-D implanted and transcatheter aortic valve implantation. Upon examination he was clinically stable, with 2-3 grade functional capacity in relation to the New York Heart Association.

Conclusion: This case clearly states how multiple new approaches and devices can work in harmony and improve life quality and expectancy in patients with exacerbated heart failure and coronary artery disease. This patient is a contemporary example of the modern device era.

Keywords: Cardiology

DELAYED DIAGNOSIS OF ULCERATIVE COLITIS WITH SEVERE ANAEMIA AND WEIGHT LOSS IN A PAEDIATRIC PATIENT

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Introduction: Ulcerative colitis (UC) is an immune- mediated disease affecting the large bowel and characterised by mucosal inflammation. UC manifests more aggressively in children than in adults with more extensive disease and moderate-to-severe symptoms, and requires timely diagnosis and treatment initiation. Delayed diagnosis may reflect disease course severity and complications rate in paediatric UC.

Aim: The aim of our study was to present a clinical case of delayed diagnosis of ulcerative colitis with severe anaemia and weight loss and the importance of early referral to specialised centre.

Materials and methods: We analyse the disease phenotype and natural history of paediatric-onset UC diagnosed at a tertiary referral centre for Paediatric Gastroenterology.

Results: A 17-year-old male patient with no significant past medical history, no family history or allergies presented initially with abdominal pain and bloody diarrhoea. He was seen locally and given symptomatic medications. Diarrhoea persisted over months, he had weight loss and fatigue, shortness of breath and pallor. Blood tests revealed low haemoglobin and hypoproteinaemia and he was then referred to specialised centre. After excluding an infectious disease and based on results of severe anaemia, raised inflammatory markers and faecal calprotectin, we did a colonoscopy which showed typical signs of active severe ulcerative pancolitis. Treatment was initiated as per European protocols.

Conclusion: Ulcerative colitis should be considered as a differential diagnosis in paediatric patients presenting with chronic diarrhoea, weight loss and anaemia. Paediatric-onset UC is characterised by extensive bowel involvement and severe clinical presentation. Timely diagnosis could prevent complications and improve patient outcome.

Keywords: Ulcerative colitis, Anemia

A SYSTEMATIC REVIEW AND META-ANALYSIS ON "PROPOFOL–KETAMINE" AND "PROPOFOL–FENTANYL" DRUG COMBINATIONS AND THEIR THERAPEUTIC EFFECTS

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Introduction: Propofol combinations are the most common short-acting intravenous sedative drugs in the field of surgical medicine.

Aim: My objective was to find the ideal drug combinations which can be used during procedures by conducting a systematic review and meta-analysis comparing propofol-fentanyl (fentofol) and propofol-ketamine (ketofol) combinations. My aim was to evaluate and compare the efficacy and haemodynamic stability of these combinations as well as related induction and recovery characteristics of each respective drug.

Materials and methods: The original studies were gathered from top-tier anaesthesiology journals published in the last twelve years. The clinical trials were searched and filtered from Google Scholar as well as Cochrane database and data was extracted based on PRISMA guidelines, whereby it was reviewed, compared as well as presented in a quantitative manner. A fixed effect model was used as many aspects of the studies were homogeneous. Afterwards, I obtained the mean difference and the weighted average of the studies comparing the drug combinations with a 95% confidence interval.

Results: Fentofol combination produced a significantly greater fall in pulse rate (9.28% versus 0.23%) and in both systolic (7.94% versus 0.12%) and diastolic blood pressures (BP; 8.10% versus 0.35%) as compared to ketofol during induction of anesthesia. The mean of recovery time was significantly different in the two groups (ketofol: 5.65 ± 0.35 vs fentofol: 9.33 ± 0.78). Additionally, hypotension was observed to be more prevalent with fentofol (38.6%) than ketofol (14.6%), with a p-value of 0.009.

Conclusion: The results outline that while there is a small fall in pulse rate and blood pressure following ketofol induction, it provided haemodynamic stability during the procedure as well as a faster recovery time. Therefore, ketofol should be an ideal combination drug for procedural sedation. However, the performance of the two drug combinations depends on individual subjects and the safety and efficacy of ketofol as a sedoanalgesic agent are dependent on the dose and the ratio of the mixture. Further research must be completed regarding this.

Keywords: Propofol combinations, ketamine, fentanyl, ketofol, fentofol, propofol-fentanyl, propofol-ketamine

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts
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THE EFFICACY AND SAFETY OF MONOCLONAL ANTIBODY THERAPY COMPARED TO THE STANDARD CHEMOTHERAPY FOR HER2+ BREAST CANCER

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Introduction: According to the statistics, breast cancer is the most commonly identified type of cancer and the second leading reason of death among women. Approximately every 8th woman is diagnosed with breast cancer ; incidence and death rate increase correspondingly with age of woman. Several anti-HER2 targeted therapies have been implicated and overall survival rate has also been improved. In this research main therapeutical anti-HER2 drugs (Trastuzumab and Pertuzumab) were reviewed for efficacy and safety among the patients with HER2+ subtype of breast cancer in Oncology center Batumi

Aim: This study is aimed to compare the efficacy and safety of chemotherapy and monoclonal antibody therapy (human epidermal growth factor receptor 2 positive targeted therapy) in the HER2+ subtype of breast cancer.

Materials and methods: Data were collected from 21 patients who were admitted to New Plasma Clinic in Batumi, Georgia in the period between 2019 – 2020 and who received anti-HER2 targeted drugs (Trastuzumab and/or Pertuzumab) concomitantly with chemotherapy. Results were compared with the pre-existing data on standard chemotherapy regimens. The comparison was based on the response rates (partial and complete) in patients, the overall survival, and the adverse effects of the given therapy.

Results: The data of 21 patients were evaluated, all of them had HER2+ subtype of breast adenocarcinoma proved by immunohistochemistry (IHC) or chromogenic in situ hybridization (CISH) of biopsied specimens. All patients received chemotherapy standard regimens (AC+Paclitaxel or Docetaxel) together with monoclonal drugs, 10 patients had dual blockade therapy with Trastuzumab and Pertuzumab and 11 patients received only Trastuzumab. Complete radiological or pathological response to therapy was achieved in 15 patients (71%), and the results were evidently better and statistically significant compared to the pre-existing data in patients treated with only chemotherapy.

Conclusion: The addition of Trastuzumab and Pertuzumab to neoadjuvant chemotherapy doubled the pCR in HER2+ breast cancer. All eligible patients with HER2 overexpressing breast cancer should be offered HER2 targeted therapy.

Keywords: breast cancer; HER2+; monoclonal antibody therapy

References: 1) Patel, A., Unni, N. and Peng, Y., 2020. The Changing Paradigm for the Treatment of HER2-Positive Breast Cancer. Cancers, 12(8), p.2081.

DIFFICULTIES IN DIAGNOSIS OF LYME DISEASE WITH UNTYPICAL PROGRESSION

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Introduction: A Lyme disease is the most common zoonosis occuring in Poland, it is caused by bacteria (Spirochaete) and transmitted by many species of ticks. Erythema migrans is the most characteristic symptom appearing around a bite zone (30-60%) but sometimes Lyme disease causes many problems with performing appropriate diagnosis, what leads to delayed antibiotic therapy and results in severe complications (for example neuroborreliosis).

Clinical case: A 15-years-old female has visited her GP because of losing her hair and the sensation of general fatigue. She had also problems with getting up from the bed. The patient's physical examination has shown the presence of rash on both legs under the knees, redness of knees, and joints pain. In family history, she mentioned that her father suffered from psoriasis. Laboratory testing has indicated only leukopenia (3,67 k.) Thyroid gland and abdomen ultrasound without changes, so patient was referred to the hospital, department of rheumatology with suspicion of psoriasis. Doctors have tested patient for echocardiography, EBV, ANA, densytometry, calprotektin, HLA-Cw6, HLA-B27 and borreliosis. All symptoms have firstly pointed at EBV infection but all aformentioned tests have beed negative, except the one for Lyme disease (Western Blot IgM 19,42 BBU/ml). The patient has been ordered to take Doxyratio M 100mg (doxycyclin) for 4 weeks and has been discharged from the hospital in a good condition. After the therapy, all symptoms disappeared. During the control appointment (one month after antibiotic therapy) she was marked IgM again and it appeared 28,42 BBU/ml, without any clinical symptoms.

Conclusion: The progression of Lyme disease can be unordinary with unspecific symptoms. It is a diagnostic challenge to suspect borreliosis without any previous history of tick bite or erythema migrans. Patients despite antibiotic therapy have test results with or without any clinical symptoms. Therefore in the countries with a high percentage of Lyme disease, GP in Primary Care should consider the possibility of this disease, even in case, he lacks the evidences of bite.

Keywords: lyme disease, EBV, loss of hair, joint pain, borreliosis

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ANALYSIS OF GENETIC COAGULATION FACTORS MUTATIONS IN FEMALE PATIENTS WITH INFERTILITY

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Introduction: Infertility is defined as a reduction or lack of ability to reproduce. Today there are controversies regarding the importance of coagulation factors mutations in infertility. While some researches proved the significance, there are researches that refused them.

Aim: The aim of this research was to examine the importance of coagulation factors mutations in patients with infertility.

Materials and methods: We examined 630 female patients who underwent treatment for infertility on the Department of human reproduction in Clinical Hospital Centre in Rijeka from January of 2014 until November of 2019. All of our patients ended their treatment with pregnancy. Therapy included IUI, IVF, FET or the combination of mentioned methods. We examined whether our patients had a mutation of coagulation factors (factor II, factor V Leiden, plasminogen activator inhibitor-1 and methylenetetrahydrofolatereductase). 464 of our patients did not have any of the mentioned mutations, 94 were diagnosed with homozygous mutation and 72 were diagnosed with heterozygote mutation of at least one of the examined factors. For every patient, we examined duration of therapy and number of times they underwent the therapy.

Results: We compared the duration of therapy in months for patients without mutations and patients that are homozygotes and patients without mutations and patients that are heterozygotes. Comparison of patients without mutations and homozygotes showed that there is a significant difference in the duration of therapy (p=0,0002), as did a comparison of patients without mutations and heterozygotes (p=0,001). We also compared the number of procedures for patients without mutations and those that are homozygotes or heterozygotes. The comparison showed that there is no significant difference between patients with no mutations and homozygotes (p=0,07) as well as patients without mutations and heterozygotes (p=0,207).

Conclusion: As showed with our research, both homozygotes and heterozygotes had to spend more months on therapy than patients without mutations. However, there was no significant difference in the number of procedures between examined groups. It is important to note that while on therapy, patients also tried the natural way of getting pregnant. Further research is to be done.

Keywords: Infertility, Coagulation factors, Reproduction

FROM BUMPS TO LUMPS- THE IMPORTANCE OF DIFFERENTIAL DIAGNOSIS IN AML

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Introduction: Acute myeloid leukaemia (AML) is a malignant bone marrow disease, during which neoplastic cells are arrested early in development. There is both proliferation and accumulation of blast cells (both in bone marrow and peripheral circulation); the former often impeding bone marrow cell production – resulting in many of the symptoms. Symptoms are typical for these conditions: fatigue and pallor due to the anaemia; increased bleeding due to the thrombocytopenia, and increased tendency towards infections owing to the neutropenia. Genetic factors associated with AML include mutations in the FL13/ITD and PML/RARA genes.

Clinical case: A 70-year-old male patient presented with rashes on the face, body and limbs, plus oral cavity erosions in September 2019. Upon consultation with a dermatologist, a skin biopsy of was taken, resulting in a diagnosis of cellulitis. This was treated with five days of intravenous corticosteroids showing no improvement. Patient returned with a cough and fever (38°C), and was then referred to haematology for investigations - showing mild anaemia and leucocytosis (20.9g/L). Initially, the leucocytosis was thought to result from corticosteroid treatment (with malignancy as a differential diagnosis), however a precautionary bone marrow biopsy revealed blast cells (0.5%) and infiltrative marrow damage (85%). Slight hypercellularity, increased thrombocytogenic megakaryocytes and elevated small maturation lymphocytes were present. Molecular testing showed an NMP1 mutation (associated with the tumour suppressor ARF – precise mechanism unknown) Based on this, the patient was diagnosed with AML. Induction therapy began (Cytarabine/ Doxyrubicin), resulting in prolonged bone marrow aplasia (<40 days with grade 4 haematotoxicity), marrow remission was reported. In the second course, it was decided to eschew doxyrubicin and prescribe antibiotics due to a P.aeruginosa infection (a common side effect of myelosuppression). Remission continued in the third course and anthracycline treatment resumed.

Conclusion: This atypical presentation of AML highlights the importance of the differential diagnosis. Initially, haematological findings were in line with side effects of corticosteroid treatment, the malignancy was only discovered to a precautionary biopsy. In addition, inter-branch referrals are key here as the presentation was dermatological, whereas the pathology was oncological. It is a salutatory lesson in the importance of exploring all avenues indicated by a patient's symptoms.

Keywords: Oncology, Dermatology, Acute Myeloid Leukaemia,

SYNCHRONOUS RHABDOMYOSARCOMA AND NEPHROBLASTOMA -CASE REPORT

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Introduction: Fanconi anemia is a genetically determined disease, inherited autosomally recessive. It belongs to the group of chromosomal instability disorders, characterized by a significantly increased risk of cancer. In the case of Fanconi anemia, it is most often acute myeloid leukemia, squamous cell carcinoma of the head and neck and gynecological neoplasms. Moreover, aplastic anemia and developmental defects occur.

Clinical case: A 12-month-old girl was referred to the oncology clinic due to a tumour of the scapula found accidentally by her mother. After its removal, it was proved to be rhabdomyosarcoma. During hospitalisation, a tumor in the horseshoe kidney was also detected in ultrasound. Surgery was performed and the histopathological examination revealed a mixed form of nephroblastoma, independent of the previously detected neoplasm. The girl underwent chemotherapy. Next-generation sequencing revealed two heterozygous pathogenic changes in the BRCA2 gene, which led to the diagnosis of D1-type Fanconi anemia. In addition, other characteristics of Fanconi anemia can be observed in the patient: slightly delayed motor development, café au lait spots and a slightly thicker left hand. The parents were referred for genetic consultation and were molecularly tested for the carrier mutation. The presence of the mutation was confirmed in both parents, resulting in a high risk of cancer development and a 25% risk of Fanconi anemia in further offspring.

Conclusion: Synchronous occurrence of neoplasms in a child should encourage consideration of genetic determinants of their development.
Identification of the pathogenic mutation enables the introduction of appropriate oncological screening.

Keywords: cancer, fanconi anemia

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ACUTE TRAUMATIC BRAIN INJURY SUCCESSFULLY TREATED WITH HYPERBARIC OXYGEN THERAPY, A CASE REPORT

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Introduction: To present a case of acute traumatic brain injury (TBI) successfully treated with hyperbaric oxygen therapy (HBOT).

Clinical case: A 24-year-old man was admitted to the emergency unit following a motorcycle accident. At admission, the patient's Glasgow Coma Scale (GCS) score was 15 and he was cardiopulmonary compensated with blood pressure 140/72 mmHg and pulse 90 beats per minute. After Focused Assessment with Sonography in Trauma (FAST) scan was deemed normal the patient was sent to a whole-body Computerized Tomography (CT) scan where thoracic aortal aneurism was diagnosed and the patient was immediately sent to surgery where he underwent Thoracic Endovascular Aortic Repair (TEVAR). After the procedure the patient was admitted to the Intensive Care Unit (ICU) where he was analgosedated, artificially ventilated and hemodynamically stabilised. After several failed attempts to remove the patient from artificial ventilation and to wake him up, a brain Magnetic Resonance Imaging (MRI) scan was done which showed numerous lesions in cerebral and cerebellar hemispheres and basal ganglia which were consistent with a combination of diffuse axonal and hypoxic-ischemic brain injury. Since his GCS score was 3-8 and he was not showing any signs of improvement for more than 2 weeks, the patient was, 20 days after admittance, sent to the hyperbaric chamber where he underwent 19 courses of HBOT at 2.0 ATM for 60 minutes daily. After only 1 treatment the patient started showing cognitive improvement with his GCS score being 9-12 for two weeks and after 15 sessions the patient started talking with his GCS score reaching 15. Another MRI scan was taken after 15 sessions which showed significant regression in size of all the brain lesions.

Conclusion: HBOT has been proven to have beneficial outcomes in treating acute TBI although it still remains controversial because of lack of clinical research which tends to be complicated because of injury heterogenicity. This case report demonstrates that HBOT is an effective way of treating acute TBI and more resources should be invested in researching the right treatment protocols.

Keywords: Glasgow Coma scale, Hyperbaric oxygen therapy, Traumatic brain injury

TRAUMATIC LEFT SIDED CHYLOTHORAX : A CASE REPORT

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Introduction: Traumatic chylothorax is a rare condition due to disruption of the thoracic duct anywhere in its course in the mediastinum. We report a case of a 63 years old man, presenting with a chylothorax three weeks after minor chest trauma.

Clinical case: A 63 years old farmer presented in our emergency department for aggravation of dyspnea, persistent chest pain and fever for the last 3 days. He mentioned a minor chest trauma three weeks prior to admission. He reported obstructive sleep apnea (on CPAP 2017), hypertension (treated since 2016) and obesity (BMI 33) with no history of smoking, allergies, pets or recent travel. Examination revealed an obese man, alert and dyspneic while at rest. Vital signs included a heart rate 64 BPM, blood pressure 112/68 mmHg, temperature 39 °C which resolved on admission and oxygen saturation 91% on room air (requiring oxygen therapy 2L/min O2). The chest physical examination was notable for decreased breath sounds and asymmetric expansion over the left lung associated tactile fremitus and dullness on percussion. The rest of the physical examination was unremarkable. Blood test results highlighted white cells (94% neutrophils) 42.46 G/L (4,00-11,00), CRP 392,2 mg/L (0-5), pH 7,39 and negative PCR covid-19 test. The electrocardiogram and echocardiography were normal. The initial chest X-ray confirmed the clinical suspicion for a large pleural effusion and diagnostic thoracenthesis was performed, draining 2000 cc of milky fluid. He was started on antibiotic therapy and hospitalised. Two days later, control radiograph showed a persistant encysted left pleural effusion. Laboratory analysis pointed towards a left sided chylothorax, meeting Light criteria for exudate, high triglycerides 1,85 mmol/L (< 1,7 mmol/L) and low cholesterol level 4,90 mmol/L (<5.7 mmol/L). The blood, sputum and pleural fluid cultures showed no bacterial development. Despite thoracentesis the pleural effusion persisted, therefore, our patient was transferred for pleural debridement via videotheracoscopy followed by the placement of two indwelling chest tubes (anteroapical and posterobasal), extended antibiotic therapy and total parenteral nutrition. The patient was discharged after removal of the drain on day 11, reevaluation of fluid triglycerides and radiographs, both satisfactory.

Conclusion: Although rare, chylothorax following trauma can take days to develop and become clinically apparent. Early recognition and proactive intervention is compulsory, as there is high morbidity and mortality associated with it.

Keywords: traumatic chylothorax ; chyle ; pleural effusion ; left chylothorax

CORRECTION OF SLEEP DISORDERS IN PROFESSIONAL ATHLETES IN THE COMPETITIVE TRAINING PERIOD WITH MELATONIN

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Introduction: Totally 46 professional athletes with varying degrees of sleep disorders was examined. All athletes were kept recommendations for necessary correction of the regime of the day, diet, sleep hygiene (IAAF recommendations, 2018).

Aim: The effectiveness of sleep correction with melatonin in athletes.

Materials and methods: The melatonin treatment group (MT) - 23 athletes who additionally to non pharmaceutical methods received melatonin ("vita-melatonin") at a dose of 3 mg for 30 min before sleep.The duration of the course was determined depends on symptoms by each athlete: the average time consisted 5.26(1.42) days (mean values are presented as M(SD)). MT and the control group (Control, 23 persons who were not treated with melatonin) was representative by the main indicators - age, gender, training time, volume ($p<0.05$).Sleep parameters were determined twice according to Jagim A.R. et al., 2016, and by the Athens Insomnia Scale-5 questionnaire (Soldatos C.R., 2000): at the beginning, and at the end of the competition period of one training macrocycle (45.3(10.5) days).

Results: The sleep induction (Q1) was 2.52(0.79) points in the MT vs 2.35(0.93) in the Control; awakening at night (Q2) 1.74(0.69) vs 1.83(0.78); final awakening ahead of time (Q3) 2.61(0.84) vs 2.43(0.66), total sleep duration (Q4) 2.78(0.6) vs 2.65(0.57), overall quality of sleep (Q5) 2.52(0.51) vs 2.52(0.51) (all $p>0.05$). At the end of the competition period, Q3 and Q4 scores were improved in both groups, Q5 only in MT ($p<0.05$), in particular, the results are: Q1 2.17(0.65) vs 2.21(0.90) ($p=0.841$), Q2 1.65(0.65) vs 1.74(0.75) ($p=0.787$), Q3 1.70(0.64) vs 2.26(0.54) ($p=0.001$); Q4 2.04(0.56) vs 2.48(0.51) ($p=0.032$); Q5 1.52(0.51) vs 2.52(0.59) ($p<0.001$), satisfaction with sports performance was significantly higher in MT as well.

Conclusion: Melatonin treatment is an effective method in the complex of measures to normalize sleep in athletes.

EFFICACY OF ADRENOCORTICOTROPIN IN TREATMENT OF MYASTHENIA GRAVIS

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Introduction: Myasthenia Gravis is caused by antibodies against postsynaptic acetylcholine receptors at the neuromuscular junction of the skeletal muscles. Although among current immunomodulating therapies there are no longer place for adrenocorticotropin, our study reveals results of use of ACTH in clinical ward.

Aim: The aim of the study was to evaluate the effectiveness of ACTH among patients with MG treated initially with anticholinoesterase drugs.

Materials and methods: 31 patients: 23 women and 8 men with severe generalized MG were qualified to the ACTH treatment. 18 patients were 15 to 35 years of age, 13 were 40 to 70 years. They had been previously treated with anticholinoesterase drugs for 1 to 3 years with no improvement. In 25 patients thymectomy had been performed, 6 patients were not operated. 15 patients had thymus hypetrophy, 10 thymoma.In 24 patients the duration of illness was shorter than 5 years whether in 7 patients was 6 – 20 years. To asses the treatment 0 to 5 points scale of efficiency of muscles was implemented before and after ACTH administration. We considered essential the improvement lasted at least two years after a treatment had been completed. Patients were administered 100u of ACTH iv. or im. for 10 days in 4 courses on average.

Results: The effect of ACTH was noted in 83,9% of patients: 61,3% good + very good (period of improvement 2-8 years); 22,6% moderate (period of improvement 2-5 years) In the thymectomy group the effect of drug was noted in 92% (64% good + very good; 28% moderate) of cases whether in no thymectomy group only in 50% (50% good + very good; 0% moderate). In 100% of patients with hypertrophy the effect was observed (73,3% good + very good; 26,7% moderate). In 80% of patients with thymoma the effect was present (50% good + very good; 30% moderate).

Conclusion: The activity of ACTH is the result of its stimulation of the secretion of cortisol and through its function as neurohormone. It is probable that ineffectiveness of ACTH treatment in patients without thymectomy was the result of the inhibitory action of thymus on the cortisol. Although ACTH has been replaced by other more effective drugs this study presented advantages of using it.

Keywords: myasthenia gravis, ACTH, adrenocorticotropin

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Acknowledgements: Ewa Mańko MD PhD

PSEUDOTHROMBOCYTOSIS IN A PATIENT WITH HETEROZYGOUS BETA-THALASSAEMIA

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Introduction: Modern automated haematological methods have been used to analyse blood since the 1950's when the Impedance method was first introduced. Since then studies have shown discrepancies in using the electrical impedance principle to analyse blood platelets in patients with abnormal red blood cells. This research explores the efficacy of using the routine platelet counting method (electrical impedance) in a thalassemia patient against other haematological methods i.e manual microscopic platelet counting and optical fluorescence count.

Aim: To analyse the performance of different platelet counting methods in a patient with heterozygous beta-thalassemia.

Materials and methods: The patient's platelet count was measured in the laboratory using three different analytical approaches. Technique 1 used the Electric Impedance method (PLT-I) on the Sysmex XN 1000 haematology analyser. Technique 2 involved manual microscopic platelet counting of the patient's peripheral blood smear performed in a Bürker's counting chamber. Technique 3 used the automated optical fluorescence (PLT-O) approach on the Sysmex XN 1000.

Results: After completion of the platelet analysis using the different methods, the results showed significant differences between each technique. The standardised reference range of platelets is 150 - 400x109/L. The electric impedance method (PLT-I) revealed a platelet count of 1617x109/L (supposed thrombocytosis) with abnormal platelet distribution on an RBC/PLT histogram. Manual microscopic platelets counting performed in the Bürker's counting chamber showed a lower platelet count of 102x109/L. Automated optical fluorescence count on Sysmex XN 1000 detected a platelet count of 116x109/L.

Conclusion: Among the evaluated methods the results show that the impedance method (PLT-I) had anomalous results associated with spuriously high platelet counts - pseudothrombocytosis in comparison to the optical fluorescence approach (PLT-O) and the peripheral blood smear. It was also noted that the impedance method could not distinguish between large platelets from extremely small RBC's or RBC fragments. Therefore, the latter two methods are recommended as alternative platelet counting techniques in patients with abnormal red blood cells.

Keywords: pseudothrombocytosis, spurious platelet count, thalassaemia

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PNEUMOCONIOSIS MIMICKING NUMEROUS LUNG METASTASES OF MEDULLARY THYROID CARCINOMA — A CASE STUDY

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Introduction: Medullary thyroid carcinoma (MTC) is a rare primary thyroid tumor originating from calcitonin-producing C-cells. MTC accounts for approximately 5% of primary thyroid malignancies. These cancers are predominantly sporadic (75%) and can spread to the liver, bones, lungs or other distant organs. Although most lung metastases have macronodular appearance, other patterns of lesions have also been described.

Clinical case: A 63-year-old man, a retired mechanic, was referred to Oncological Endocrinology Department for further management three months after total thyroidectomy due to MTC. Pathological examination revealed a 7 cm primary tumor and all resected lymph nodes contained MTC metastases with extrathyroidal extension. The TNM classification was established as pT3N1. On physical examination, the patient's vital signs and breathing sounds were unremarkable. He had a history of smoking. The levels of CEA and calcitonin were slightly increased – 18,8 ng/mL and 31,8 pg/mL respectively. The RET mutation was not detected. Six months after the surgery, the patient received 33 sessions of adjuvant radiotherapy (6600cGy/t). He failed to attend follow-up visits. Thirteen months after the primary diagnosis, a follow-up CT of the thorax showed numerous pulmonary nodules and lymphadenopathy resembling metastases. Calcitonin increased to 40 pg/mL. The patient was referred to the Thoracic Surgery Department where EBUS-TBNA was performed. However, a histopathological examination of the retrieved lymph nodes did not show any abnormalities. Since the possibility of metastases could not be ruled out, an anterior thoracotomy was performed. The removed lung masses revealed black-grey nodules which turned out to be pneumoconiosis. Due to that, the patient is continuing his care in the Oncological Endocrinology Department with calcitonin monitoring and regular imaging.

Conclusion: Pneumoconiosis is the term for interstitial lung diseases caused by chronic inhalation of dust, usually as a result of work-place exposure. While commonly associated with coal-miners, it can be caused by a broad spectrum of substances. The differentiation of pneumoconiosis from other interstitial lung diseases may be challenging. Moreover, most physicians do not encounter these diseases very frequently. This is the first described case of pneumoconiosis mimicking MTC metastases. We aimed to once again highlight the importance of obtaining an occupational history.

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RARE DISEASES - WHY AND HOW SHOULD THEY BE TREATED? CASE REPORT OF MOYAMOYA DISEASE

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Introduction: Moyamoya disease (MMD) is a rare, progressive, cerebrovascular arteriopathy, characterized by bilateral stenosis of distal internal carotid arteries or their branches and the development of compensatory collateral vessels. It may be associated with other pathological conditions and can lead to ischemic events in children.

Clinical case: An 8-year old girl presented with facial nerve paralysis. Clinical examination revealed hypertension at 240/140mmHg. CT angiography showed stenosis of the left renal artery (LRA) and reduced size of the right kidney. Implantation of the stent to LRA was performed. During hospitalization an episode of transient ischemic attack occurred. Occlusive changes in the intracranial parts of both internal carotid arteries (ICA), left medial and anterior cerebral arteries were found in MRI. Well-developed collateral vessels and ischemic lesions in the brain parenchyma were visualized. Due to abnormal pulmonary blood flow and multiple lesions of small pulmonary arteries, observed in CT angiography, cardiac catheterization was executed. Pulmonary arterial hypertension (PAH) was confirmed. Non-atherosclerotic arteriopathies are the most frequently identified causes of childhood ischemic stroke. Other predisposing factors include cardiac, hematological, metabolic or prothrombotic disorders, genetic syndromes and connective tissue diseases. In this case MRI was the conclusive examination. Patient was diagnosed with MMD. Pathophysiological changes in MMD include fibrocellular thickening of intima in ICA and other brain arteries. Their mechanisms are unknown, though the genetic background is suspected to play a great role. Patient receives acetylsalicylic acid to prevent further ischemic events and Sildenafil as a PAH treatment. Neurosurgery was considered but not performed due to PAH.

Conclusion: We presented a case of a very uncommon coexistence of MMD with renovascular hypertension and PAH. Hypertension in children is usually secondary to other pathological conditions. Most frequently its origin is renovascular. Ischemic events in the pediatric population are rare but dangerous, so in case of occurrence of any risk factor, preventive treatment should be introduced immediately. Coexistence of MMD and other conditions such as PAH may influence therapeutic decisions. Better understanding of MMD's genetics and pathomechanisms can lead to the development of adequate treatment.

Acknowledgements: Małgorzata Żuk MD PhD, Ewa Płodzień MD

RUNNING THE CLOCK DOWN ON UROSEPSIS

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Introduction: Urosepsis is a form of sepsis caused by an infection in the urogenital tract. The infective agent is present in the bloodstream, this can trigger a cascade of events resulting in the dilation and increased permeability of blood vessels. This may lead to the development of septic shock. Septic Shock is characterized by a decrease in blood pressure and tissue perfusion. Sepsis diagnostic criteria: Temperature: 38°C>T or T>36°C Heart Rate: More than 90 bpm Respiratory Rate: Respiratory rate of more than 20 breaths pM. WBC count: WBC12 000

Clinical case: Patient A was admitted in very poor general condition with complaints of persistent fever, diminished cognitive abilities and loss of consciousness. Patient first complained of difficulty urinating and low grade fever. He received a consultation with a Urologist, a prescription for the antibiotic Levoxa was issued without a urinary analysis being performed. The patient reported no improvement in his symptoms during the first week of treatment. After a week of antibiotic treatment his condition began to deteriorate, he sought medical attention at another healthcare centre. He was instructed to continue antibiotic treatment, with no additional tests being performed. Three weeks after the development of his initial symptoms the patient was taken to an Emergency department. The criteria for a sepsis diagnosis were observed and met. His blood culture tested positive for the presence of E. coli in the blood. The patient was admitted into hospital where he went into septic shock and required a transfer to the ICU. An antibiogram was performed revealing broad antibiotic resistance. Susceptibility to Meropenem was found. The patient was discharged three weeks after admission.

Conclusion: In conclusion, the case highlights to us the immense need for a higher level of awareness from both the public and medical practitioners of the risks and diagnostic criteria for Sepsis. Patient A suffered complications, including cardiac insufficiency and chronic liver disease. The quality of life of the patient as well as his life expectancy were likely heavily diminished by the delay in diagnosis.

SEVERE NEONATAL CHOLESTASIS AS AN INITIAL PRESENTATION OF CYSTIC FIBROSIS

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Introduction: Cystic fibrosis (CF) is a multisystem life-threatening genetic disorder caused by mutations in the CF transmembrane conductance regulator (CFTR) gene, resulting in abnormal regulation of salt and water movement across membranes. Usually, the liver involvement is late, however cholestasis in infancy could be an initial presentation. All infants with persistent neonatal jaundice should be evaluated for cholestatic liver disease including CF.

Aim: We aimed to analyse the heterogeneous phenotype of CF in infancy. In Bulgaria the neonatal screening program does not include CF and the role of clinicians in recognising the disease is crucial.

Materials and methods: We present an unusual clinical case of CF mimicking biliary atresia in the early disease course. The patient was referred for evaluation to Paediatric Gastroenterology Department in a tertiary centre.

Results: A male infant who was born premature presented to our unit with neonatal cholestasis, conjugated hyperbilirubinemia, persistent acholic stools and poor weight gain. We performed infections disease tests (virology and blood culture), metabolic screening for galactosemia, tyrosinemia, alpha-1 antitrypsin deficiency and others, sweat test and genetics for CF, hypopituitarism was excluded. The ultrasound scan showed enlarged liver with hyperechoic structure, small gallbladder full of sludge, normal spleen and kidneys. The genetic test confirmed homozygous state for the classical del508 mutation. Treatment was initiated as per protocol.

Conclusion: Neonatal cholestasis is a rare clinical presentation of CF. Early diagnosis is very important for the prognosis, especially in countries without established neonatal screening program.

Keywords: cystic fibrosis

A RARE CASE OF BERARDINELLI-SEIP SYNDROME IN A CHILD WITH INSULIN-DEPENDENT DIABETES MELLITUS

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Introduction: We present a rare case of congenital generalized lipodystrophy in a 13-year old girl, presenting in the clinic for a planned operation of a perianal abscess. Berardinelli- Seip syndrome is a rare autosomal recessive disorder characterized by the presence of hepatomegaly, insulin-resistance, acromegaloid appearance and generalized lipodystrophy affecting the trunk, limbs and face. Prevalence is estimated at 1 per 12 million in the general population. Approximately 500 cases have been reported in the literature. Disease-causing mutations are linked to genes BSCL2 and AGPAT2.

Clinical case: A 13-year old girl presented to the clinic for a planned operation of a perianal abscess, during which hyperglycemia was noted and further evaluation was undertaken. Physical examination revealed a girl with rough, acromegaloid appearance with prominent masculinization. Prominent acanthosis nigricans was noted on the neck, axillae and cubital fossae, with greatly reduced subcutaneous adipose tissue throughout the body. She also had an athletic body habitus with muscle hypertrophy. Pubertal development was graded at Stage 4 in Tanner scale. Further physical examination was unremarkable. A full blood count was remarkable for relative monocytosis. Biochemical parameters revealed an elevated GGT, alkaline phosphatase, serum sodium. An elevated C-peptide and HbA1C value of 12,59% confirmed the diagnosis. Hormonal testing showed elevated values of 17β-estradiol. Cortisol rhythm, TSH, FT4 FSH and LH were within normal limits. Urinalysis was performed which showed no abnormalities. Echocardiography revealed left ventricular hypertrophy and papillary muscle dysfunction. Abdominal ultrasound revealed hepatomegaly with hepatic steatosis. DNA analysis confirmed the diagnosis of Berardinelli-Seip syndrome subgroup 1.. Mild communication difficulty and an IQ within the lower limits of normal were found. Differential diagnosis includes congential generalized lipodystrophy types 3,4, Russel diencephalic syndrome and lysosomal storage diseases. Familial partial Dunnigan-Koeberling lipodystrophy and acquired generalized lipodystrophy should also be considered. Treatment with Metfogamma, Insulatard and Inogynol as well as Amikacin, metronidazole was initiated. Regular follow-up by a pediatric endocrinologist was recommended.

Conclusion: Given the rarity and severity of Berardinelli- Seip syndrome and the nuances of treatment, we report this case in order to raise awareness and facilitate recognition by specialists.

Keywords: Berardinelli-Seip, insulin resistance, lipodystrophy, masculinity, signs and symptoms

ROLE OF MAGNETIC RESONANCE IMAGING AND SCINTIGRAPHY IN EVALUATION OF SACROILIITIS IN PATIENTS WITH JUVENILE IDIOPATHIC ARTHRITIS

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Introduction: Juvenile idiopathic arthritis (JIA) is a pediatric autoimmune disease that can cause sacroiliitis. Evidence suggests that the best method for early detection of sacroiliitis is magnetic resonance imaging (MRI), while scintigraphy is being criticized for limited diagnostic value, low sensitivity and specificity.

Aim: To compare the frequency of MRI and scintigraphy use during the period from 2014 to 2018, evaluate the findings of radiological examinations and compare the results of MRI and scintigraphy after revision with a certified radiologist.

Materials and methods: Medical history of 82 patients over the period of 2014 to 2018 were analyzed in this retrospective study, using the Children's Clinical University Hospital database. Results of MRI and scintigraphy were revised by certified radiologist in 2020 and compared with initial results. MS Excel and IBM SPSS Statistics 26.0 were used for data compilation and analysis.

Results: Scintigraphy was most frequently used in 2015 (n=7) and only once in 2018. MRI was used twice more often in 2018 compared to 2014. Due to that signs of sacroiliitis were most frequently detected by MRI than scintigraphy (60% vs 12%, respectively). Out of 11 patients who had both examinations findings of MRI and scintigraphy were different in 46%, but not significantly (p=0.063). Findings before and after revision were different in 38% of MRI and 36% of scintigraphy results with no significant differences (p=0.424 and p=0.625, respectively).

Conclusion: Frequency of MRI use for the diagnosis of sacroiliitis has increased over 5 years, while use of scintigraphy decreased. Nowadays the role of MRI in diagnosis of sacroiliitis is higher compared to scintigraphy. MRI and scintigraphy findings in same patients as well as results of both examinations before and after revision were similar.

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Acknowledgement

Scientific research supervisors: MD, PhD Zane Dāvidsone, MD Natālija Merkla

EVALUATION OF LEFT ATRIAL FUNCTION AND MYOCARDIAL DAMAGE AFTER CATHETER ABLATION FOR PAROXYSMAL ATRIAL FIBRILLATION USING THE CONTACT FORCE SENSING RADIOFREQUENCY CATHETER OR THE SECOND GENERATION CRYOBALLOON

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Introduction: Catheter ablation (CA) for paroxysmal atrial fibrillation (PAF) results in myocardial injury. Difference in the functioning left atrial (LA) tissue can occur using different CA techniques.

Aim: Our study compares the biomarker, the LA mechanical, and the electrophysiological findings as indicators of LA tissue loss after contact force sensing radiofrequency catheter (CF-RF) and the 2nd generation cryoballoon (CB) ablation.

Materials and methods: Between November 2018 and February 2020 32 PAF patients [14 (43.8%) women, mean age=56 years] participated in our prospective study who underwent CA procedure (CF-RF: 14, CB: 18). Before the procedure LA CT-angiography was performed at Semmelweis University Heart and Vascular Center. The biomarker levels (CRP, LDH, hsTnT, and CK-MB) and the transport function of the LA by transthoracic echocardiography (TTE) was compared pre-and postprocedurally. Pre- and postablation LA endocardial bipolar voltage map (EAM) was performed in sinus rhythm using Pentaray multielectrode diagnostic catheter and CARTO Confidense module. LA CT-EAM merge was used to analyze the total LA surface and the low voltage area. At the 3-month follow-up visit Holter, TTECG and TTE was evaluated.

Results: Postablation CK-MB levels were significantly higher in the CB group (CB: 23.4, CF-RF: 7.1 ng/mL, $p<0.001$). The transport function of the LA did not change significantly by TTE after the CA procedure (LA ejection fraction: CF-RF: 56.7%; CB: 53.5%, $p>0.05$). The ablated area/LA surface ratio in the CF-RF group was 8.2%, while in the CB group 14.4% ($p=0.01$).

Conclusion: After CA of PAF, tissue loss is not extensive and did not reduce the transport function of the LA significantly. The magnitude of remaining active tissue in the LA is significantly higher after CF-RF ablation according to electrophysiological parameters.

Keywords: atrial fibrillation; ablation; radiofrequency; cryoballoon; myocardial function

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FREQUENCY ASSESSMENT OF THE IRRITABLE BOWEL SYNDROME AMONG THE STUDENTS AT THE UNIVERSITY OF NIŠ

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Introduction: IBS is a relapsing, remitting, chronic and functional gastrointestinal disorder, without a sufficiently clear etiopathogenesis and with a broad variety of symptomatic presentation. There are several subtypes, diarrhea predominant, constipation predominant, alternating, and unclassified IBS. The student population is exposed to a great amount of stress, unhealthy lifestyle and diet because of which the syndrome's frequency among them is high.

Aim: To estimate the IBS frequency among the students at the University of Niš.

Materials and methods: An online anonymous survey was filled by 322 students from four faculties. After eliminating the participants with red flag symptoms, the sample was reduced to 274 participants. Rome IV criteria was used for the estimation of the syndrome's presence. GAP-7 survey was used for the anxiety assessment.

Results: The prevalence of the syndrome was 15.68%. The constipation predominant subtype was found in 13.95%, the diarrhea predominant in 46.51%, the alternating in 30.23%, and the unclassified in 9.31% of cases. Those positive to the syndrome were more often absent from the lectures ($p=0.00001$, $p<0.05$). They experienced heartburn and headaches more often ($p=0.00073$, $p<0.05$; $p=0.0083$, $p<0.05$). There was a statistically significant correlation between the syndrome and eating in the upright position and off the table ($p=0.042$, $p<0.05$). Anxiety was present in 65.12% of cases, but there was no statistical significance ($p=0,097$, $p<0,05$). There was no significant correlation between the syndrome and the diet, physical activity, smoking, student's year of study, BMI, sex, age, etc.

Conclusion: The obtained results represent the potential frequency, because those positive on Rome IV criteria were not subsequently clinically tested, which would confirm or exclude the organic diseases of the digestive tract. Great differences in the results of various studies confirm the disease's poorly defined clinical and etiopathogenetic factors as well as their heterogeneity, which requires additional research.

Keywords: irritable bowel syndrome; frequency; students; Rome IV criteria

HOW DOES CHRONIC RHINOSINUSITIS IMPACT NASAL CAVITY ANATOMICAL STRUCTURES

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Introduction: Chronic rhinosinusitis is a highly prevalent condition affecting the general population, associated with significant reduction of quality of life. It may result in permanent changes in the nasal and sinus mucosa.

Aim: To evaluate features of nasal cavity anatomical structures in CT scans, patients with chronic rhinosinusitis.

Materials and methods: The retrospective study was conducted at the Headline Clinic and Pauls Stradiņš Clinical University Hospital with 148 patients with chronic rhinosinusitis. Anatomical structures of the nasal cavity as seen in CT scans were analyzed. Data were analysed using IBM SPSS Statistics 22. Statistical significance was set at $p<0.05$.

Results: 102 were male patients (68,9%), 46 were female (31,1%). 123 patients (80,9%) had ostiomeatal complex narrowing. 75% (n=111) had radiologically confirmed maximal cerebral mucosa hyperplasia on the right side and 76.4% (n=113) on the left side. Signs of chronic inflammation (sclerosis) on the right side were seen in 14 patients (9.5%), left side in 12 (8.1%) patients. Inferior nasal concha hypertrophy on the right side was found in 91 patients (61,5%), on the left side - 88 (59,5%). Middle nasal concha hypertrophy on the right side was in 56,1% (n=81), left side – 57,4% (n=85). No statistically significant correlation was found between signs of chronic inflammation (sclerosis) and nasal concha hypertrophy ($p>0.05$)

Conclusion: Chronic rhinosinusitis has important affect to nasal cavity anatomical structures. For many patients, the narrowing of the osteomeatal complex was found, witch is important sing in chronic rhinosinusitis. The data showed that inferior nasal concha hypertrophy was the most common found.

Keywords: Rhinosinusitis, nasal cavity, anatomical structures

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VITAMIN D FOR TREATMENT OF NAFLD DETECTED BY TRANSIENT ELASTOGRAPHY: A RANDOMIZED DOUBLE-BLIND PLACEBO CONTROLLED TRIAL

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Introduction: Non-alcoholic fatty liver disease (NAFLD) is a chronic, parenchymal liver disease closely related to obesity and metabolic syndrome.
Today NAFLD is considered to be leading chronic liver disease and the leading cause of alterated liver enzymes.

Aim: We aimed to evaluate the effect of vitamin D supplementation on transient elastography (TE, FibroScan) indices of liver steatosis [controlled attenuation parameter (CAP)] and fibrosis [liver stiffness measurement (LSM)] in adults with non-alcoholic fatty liver disease (NAFLD).

Materials and methods: In this randomized (2:1), double-blind single-center 12-month trial (ClinicalTrials.gov NCT04038853) patients were treated with vitamin D oral solution (1000 IU/day) or a matching placebo. Two co-primary outcomes were changes in CAP and LSM after 360 days of treatment vs. baseline. Two main secondary outcomes were changes in CAP and LSM after 180 days of treatment.

Results: Both CAP and LSM gradually decreased in vitamin D-treated patients (n=201) and slightly increased in the placebo arm (n=110). Vitamin D was superior to placebo for both primary outcomes (mean differences in CAP and LSM changes -49.5 dB/m [95%CI -59.5 to -39.4] and -0.72 kPa [95%CI -1.43, 0.00], respectively) and both secondary outcomes (-22.1 dB/m [-32.1 to -12.1] and -0.89 kPa [-1.61 to -0.17], respectively). Of a number of secondary (exploratory) outcomes (change at 12 months vs. baseline), vitamin D reduced serum uric acid levels (-17.9 µmol/L [-30.6 to -5.2]), gamma glutamyl transferase levels (-8.9 IU/L [-15.5 to – 2.3)] (false discovery rate-adjusted P=0.0484 for both outcomes) and homeostatic model assessment of insulin resistance index (-1.6 [-3.1 to -0.2], adjusted P=0.107).

Conclusion: Low-medium dose supplementation of vitamin D (1000 IU/day) over 12 months reduces TE indices of liver steatosis (CAP) and fibrosis (LSM) in adults with NAFLD.

Keywords: Controlled attenuation parameter, Fibroscan, Liver stiffness measurements, Nonalcoholic fatty liver disease, Vitamin D

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A CASE-CONTROL STUDY OF COVID-19 IMPACT ON MENTAL HEALTH

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Introduction: Mental health assessment during COVID-19 pandemic became extremely significant. In Ukraine level of depression was 23,32% and for anxiety 36,67%. However, there is no clear understanding of the mechanism of Sars-Cov-2 infection's impact on mental state.

Aim: We aimed to see if there is a link between COVID-19 history and current occupation state with depression and\or anxiety severity.

Materials and methods: An anonymous online-survey of 159 respondents of average age 26.47 from Ukraine conducted via Google-forms (depression level evaluated by PHQ-9 scale, anxiety - GAD-7). Further data analysis performed using Microsoft Excel. Shapiro-Wilk Test used to evaluate data distribution, Student's T-test used to compare depression and anxiety scores in respondents, who had\hadn't COVID-19 and among those, who are/aren't currently occupied.

Results: Among 159 survey participants 73(45.9%) already had COVID-19, 86(54.1%) - hadn't; 70 (44%) are occupied, 89(56%) aren't. The average depression score (DS) is 11.84, average anxiety score (AS) - 15.83. The total AS and DS were normally distributed (p-value 0.16 and 0.146 respectively). Among those, who already had COVID-19: mean AS -16.07, mean DS - 12.92; while among participants, who haven't: COVID-19 mean AS -15.63, mean DS - 10.93. T-value for DS - 4.7673, for AS -1.1573 (p=0.05, df=1,976). DS of respondents, who had COVID-19, is higher (p=0.05), than of those who didn't; there is no statistically significant difference for AS. Among participants, who currently aren't occupied mean AS=16.65, mean DS=13.25; and for those, who work mean AS=14,79, mean DS=10,12. T-value for DS - 4.9612, for AS -7.7063 (p=0.001, df= 3.357).

Conclusion: Thus, there is a significant difference in depression and anxiety levels between occupied and non-occupied groups.

Keywords: anxiety, depression, COVID-19

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A DEEP VEIN THROMBOSIS CASE OF AN UNEXPECTED ETIOLOGY - PAGET-SCHROETTER SYNDROME

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Introduction: Although deep vein thrombosis affecting the lower limbs is often seen in the emergency department (ED),when it comes to subclavian veins thrombosis the number of cases is much lower. Paget-Schroetter Syndrome is a rare condition in which the patients develop a thrombus in the subclavian vein due to the sudden increase of physical activity involving the upper limbs.

Clinical case: We present a case of a 43-year-old female with no personal medical history, who presented to the ED with unilateral swelling, cyanotic discoloration and tumefaction of the right upper limb. The initial physical exam revealed a positive Urschel sign (enlarged superficial veins) and mottled skin besides pain and tumefaction,which are suggestive signs for thrombosis. D-dimer tests were required revealing a pathologic value of 1.85µg/mL. Also, an ultrasound revealed a thrombus in the subclavian vein proximal to the axillary region; an angiographic computed tomography was performed showing a bilateral pulmonary embolism in the intermediate branches. Furthermore, due to relevant family history, the patient was tested for hereditary platelets conditions, but all the tests came back negative. Through anamnesis, it was determined that the patient had recently taken up on a new job which was much more physically demanding, an important hint that led to a diagnosis of Paget-Schroetter syndrome. The patent was transfered to the internal medicine department where a treatment consisting of Rivaroxaban was initiated. The patient made a full recovery and was discharged few days later.

Conclusion: Although it is rare, Paget-Schroetter syndrome can occur in patients who experience a sudden increase in physical activity involving the upper limbs. This syndrome can be fatal and should be treated with celerity due to the anatomic proximity to the heart and lungs.

Keywords: Paget schroetter, thrombosis

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Session IV
(IMOS4)

PREDICTORS OF INTRAHOSPITAL OUTCOME IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION COMPLICATED WITH CARDIOGENIC SHOCK

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Introduction: Acute myocardial infarction complicated by cardiogenic shock is associated with high patient mortality, which is why early recognition of predictors of intrahospital mortality in these patients is important.

Aim: Determining the influence of certain demographic, clinical, diagnostic and therapeutic parameters on the intrahospital outcome of patients with acute myocardial infarction complicated by cardiogenic shock.

Materials and methods: In our observational cohort study, we included 60 patients hospitalized in the Intensive Care Unit of the Institute of Cardiovascular Diseases of Vojvodina due to acute myocardial infarction complicated by cardiogenic shock from January to December 2018. The influence of demographic, clinical, diagnostic and therapeutic parameters on intrahospital mortality was monitored. The level of statistical significance was set at $p<0.05$. The data was processed in the statistical package SPSS 17.

Results: 81.7% of patients had STEMI and the remaining 18.3% had NSTEMI myocardial infarction. Total mortality was 80%. Intrahospital mortality was statistically significantly affected by: diabetes mellitus ($p=0.041$), chronic renal failure ($p=0.012$), glucose ($p=0.031$), creatinine ($p<0.0005$) and highly sensitive troponin ($p=0.017$). The heart rate at admission in the deceased was 100/min, and in the survivors 50/min ($p=0.044$). A statistically significant difference ($p=0.036$) was found by comparing the shock index in the deceased and survivors. Comparing the mortality of patients in relation to the stage of SCAI classification in stage B was 60%, in stage C 52.6%, in stage D 94.4%, in stage E 100% ($p=0.001$).

Conclusion: Previous diagnosis of diabetes mellitus and chronic renal failure, initial heart rate, shock index value, serum glucose, creatinine, high-sensitivity troponin, as well as belonging to a certain stage of SCAI classification significantly affected the intrahospital mortality of patients.

Keywords: acute myocardial infarction; cardiogenic shock; SCAI classification

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SUCCESSFUL PREGNANCY IN A PATIENT WITH REPEATED IMPLANTATION FAILURE

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Introduction: Repeated implantation failure (RIF) is considered a serious challenge in the field of assisted reproductive technology. It is defined as the inability to achieve a clinical pregnancy in women under the age of 38, after being transferred more than 4 good quality embryos with at least 3 transfers. RIF can be attributed to various reasons such as uterine malformations, low endometrial receptivity, displaced window of implantation, absence of optimal embryo, etc. In most cases, it is a complex problem with more than one variables.

Clinical case: We present you a case of a 36-year old woman who had a history of 4 unsuccessful embryo transfers – in each procedure a different number of good quality embryos were transferred but failed to implant. Therefore, the patient was diagnosed with RIF. Following discussion, a decision was made to perform mixed double embryo transfer (MDET) - an innovative approach for improving IVF outcomes in RIF patients. Subsequently, an anomaly of the uterine cavity was detected during ultrasound - partial septum, class U2 according to the ESHRE classification. After hysteroscopic septal resection the MDET was performed and the end result was a successful pregnancy.

Conclusion: Unfortunately it was not determined whether the implantation failure was due to a displaced window of implantation or to the septum.

DENDRITIC ULCER OF THE CORNEA - DIAGNOSIS AND MANAGEMENT IN PRIMARY CARE

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Introduction: We present here the interesting case of a misdiagnosed acute red eye in a primary care setting.

The patient was originally diagnosed with bacterial conjunctivitis before it later being clear he was suffering from a Herpes Zoster infection of the cornea, causing a dendritic ulcer.

Clinical case: A 55 year old man presented to his registered general practitioner complaining of unilateral reddening and pain in his right eye which had been present for two days. The patient did not complain of any loss of visual acuity and complained of no other ocular symptoms. The patient had no other relevant medical history and was otherwise well. As a result of the COVID-19 pandemic the patient was assessed over the phone and was advised to take chloramphenicol 0.5% for bacterial conjunctivitis. After three days the patient's condition deteriorated, with worsening pain in the eye, increased conjunctival injection and photophobia and as such self admitted to the emergency department where an eye examination with fluorescein staining showed a dendriform lesion confirming a dendritic corneal ulcer. The patient was treated with ganciclovir 0.15% ophthalmic gel for two weeks until his symptoms had fully resolved. Dendritic corneal ulcers are a severe complication of herpes simplex virus in the cornea, and one of the key differential diagnoses in a patient with a red eye, and should be suspected where there is also pain. The disease is the leading cause of corneal blindness in the developed world. In this case, partly due to the lack of appropriate physical examination due to the COVID-19 pandemic, this patient was misdiagnosed and mistreated which could have led to severe complications.

Conclusion: Management of red eye in primary care is an essential skill and much time has been devoted to providing effective diagnostic and management frameworks for practitioners. As the medical world shifts, perhaps irreversibly, towards remote consultation, the importance of a comprehensive physical examination, including fluorescein staining, in any patients who have additional symptoms other than simply conjunctival injection cannot be overstated.

Keywords: Ophthalmology, Red eye, Primary Care, Telemedicine

References: bestpractice.bmj.com, uptodate.com, Oxford Handbook of Ophthalmology

Acknowledgements: I would like to thank Dr T. Khalafpour for her assistance in this case

ANTERIOR HERPETIC UVEITIS: A RETROSPECTIVE STUDY

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Introduction: Herpetic uveitis is the most cause of infectious anterior uveitis in Bulgaria. It is frequently associated with corneal changes and glaucoma.

Aim: The objective of our study is to evaluate the epidemiologic, clinical and therapeutic characteristics of the patients with herpetic uveitis treated in Alexandrovska hospital between January 2012 and August 2019.

Materials and methods: We did a retrospective study on 206 patients with uveitis from Eye Clinic, second department, Alexandrovska hospital. The study period was from January 2012 to August 2019. The follow up period was from 3 months to 7 years. The diagnosis was based on clinical and specialized diagnostic methods. Descriptive statistical analysis was applied.

Results: Of 206 patients with uveitis, 46 (22,3%) had herpetic etiology. Anterior uveitis was present in 35 patients (76,1%). There were 20 women and 15 men with an average age of 55 years. The anterior uveitis was mainly acute (54,3%), unilateral (100%) and non-granulomatous (77,2%). The most frequent complications were ocular hypertension in 15 cases (43%) and corneal leukoma – in 7 (34,3%). The visual acuity was from 0.02 to
1.0, most commonly 1.0. There was associated dermatitis in 10 patients (28.6%). The applied therapy was acyclovir, valacyclovir, gancyclovir and corticosteroids.

Conclusion: Herpes viruses are a common cause of infectious uveitis. Anterior uveitis is associated with a good prognosis in terms of visual acuity.
Antiviral therapy in combination with corticosteroids has a great importance for the patient recovery.

Keywords: infectious uveitis, herpes virus, uveitis, ophthalmology

DILATED CARDIOMYOPATHY IN A YOUNG ADULT WITH AN UNRECOGNIZED ACUTE MYOCARDIAL INFARCTION ASSOCIATED WITH AN UNUSUAL CAUSE

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Introduction: Unrecognized myocardial infarction (MI) is linked to a poor prognosis and is a major cause of heart failure (HF) leading to physical disability. We describe a young patient with ST-elevation myocardial infarction (STEMI) in whom essential thrombocythemia (ET) was found as the probable cause.

Clinical case: In October 2007, a 33-year-old Caucasian male with no cardiac risk factors and no family history of heart disease presented to the department of cardiology with symptoms of epigastric pain, nausea and vomiting. The patient had visited the emergency department the previous day with the same symptoms. There he was prescribed spasmolytics and was discharged home. His ECG on admission revealed an extensive anterior STEMI. Elevated markers of myocardial necrosis were observed. Echocardiography showed apical, septal and lateral wall akinesis and left ventricle ejection fraction (LVEF) of 39%. Two weeks later the patient was admitted for coronary angiography which revealed peripheral no reflow and a non-significant stenosis of LAD. He developed HF, dilated cardiomyopathy with left ventricle aneurysm, atrial fibrillation, severe mitral and tricuspid regurgitation. During one of his hospital stays an elevated platelet count was detected which was later associated with a JAK2 V617F mutation. After bone marrow biopsy the patient was diagnosed with ET. In 2011 the patient was directed to cardiac surgery. Coronary artery bypass grafting, left ventricle aneurysm repair, mitral and tricuspid valve prosthetic ring annuloplasty were performed. A pacemaker was implanted intraoperatively. In 2014 the patient underwent CRT-D (cardiac resynchronization therapy - defibrillator) implantation. At the time of writing the patient is in stable condition with a LVEF of 30%. He is receiving optimal medical therapy for heart failure including an angiotensin receptor neprylisin inhibitor. As of February 2021 our patient is a candidate for heart transplantation.

Conclusion: With this case we would like to illustrate the importance of early and accurate diagnosis of MI in young adults. Late recognition of symptoms can be a cause of cardiac dysfunction and severe HF. We would also like to highlight that coronary artery thrombosis is rare in ET, however it is important to consider ET as a possible cause of MI in young patients without other risk factors.

Keywords: STEMI, Essential thrombocythemia, Heart failure

SUCCESSFUL ENDOVACULAR TREATMENT OF TYPE B AORTIC DISSECTION IN A 15-YEAR OLD CHILD

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Introduction: Aortic dissection is a rare condition in the pediatric and young adult population. Here, we present an unusual case of a 15-year old male patient with type B aortic dissection, treated by endovascular approach, becoming the first known case of a endovascularly treated aortic dissection in a child.

Clinical case: A 15-year old male patient with sudden onset of chest and back pain and numbness in the left leg. Chest and abdominal CT revealed Stanford type B aortic dissection, leading to subocclusive stenosis of the superior mesenteric artery (causing critical intestinal dysfunction with ilues) and total occlusion of the left and right iliac arteries. The child was admitted in critical condition. Revascularization was achieved by several consecutive endovascular procedures and the patient was discharched with full restoration of flow in the target organ arteries. The first step of the interventional treatment included stenting of the superior mesenteric artery, abdominal aorta and balloon dilatation of the left iliac artery. Due to resistant renovascular hypertension, stenting of the left renal artery was conducted, leading to a optimal blood pressure control. Thirty-three days after these procedures, an endovascular endograft prossthesis implantation was performed to close the primary tear in the thoracic aorta. Genetic testing revealed ACTA2 mutation.

Conclusion: This case is extraordanary because of its combined life-threatening aortic and vessel pathologies, treated for the first time with endovascular means in a child and highlights the feasibility of endovascular treatment in the pediatric population.

Keywords: aorta, aortic dissection, child, endovascular

LABRUNE SYNDROME – A RARE DISEASE, KEY DIAGNOSIS AND FURTHER MANAGEMENT?

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Introduction: Labrune syndrome also known as leukoencephalopathy with calcification and cysts (LCC) is a rare genetic syndrome with autosomal recessive inheritance, affecting fewer than one in 1 million people. After many years of diagnosis based on clinical, radiological, and histopathological findings, in 2016 there was a breakthrough, related to the confirmation of a mutation in the SNORD118 gene as the cause of this syndrome. In addition to typical radiological findings (such as diffuse cerebral microangiopathy with the development of micro - and macrocysts, extensive cerebral calcifications, demyelination and hemorrhage), patients may also complain of focal neurological deficits, extrapyramidal, pyramidal and cerebellar symptoms, headaches, seizures and cognitive deficits.

Clinical case: CASE PRESENTATION: The authors reported a normally developing 10-year-old girl, who complained of chronic headaches and frequent upper respiratory tract infections without any additional clinical symptoms. The family history was negative. Pregnancy and the delivery period were unremarkable. In head CT bilateral, symmetrical and multifocal calcification in deep brain structures (basal ganglia) and dentate nuclei were found. Brain MRI showed small areas of hemorrhage with the areas of periventricular white matter leukodystrophy and cysts, which grew up in the next MRI. After that, the girl was qualified for whole-exome sequencing (WES), which showed mutations in the SNORD118 gene and confirmed the diagnosis. DIFFERENTIAL DIAGNOSIS: The following diseases were taken under consideration: parasitic infections such as hydatid, cysticercosis, and cryptococcosis, Coat's disease, cerebroretinal microangiopathy with calcifications and cysts, Aicardi-Goutières syndrome. PATHOPHYSIOLOGY: To the best of our knowledge, ours is probably the first case of a child reported in Poland. Our patient presented with raised intracranial pressure and cyst-related mass effects, which are the main presenting features of LCC. Etiopathogenesis of LCC is still a matter of debate. TREATMENT/MANAGEMENT: Bevacizumab implementation is planned in the near future due to the lack of clinical symptoms and possible causal treatment.

Conclusion: In this case, we observed a discrepancy between clinical and radiological data, thus only genetic results allowed us to establish a final diagnosis.

DIFFERENTIAL DIAGNOSIS OF SYNCOPE - IS IT A PIECE OF CAKE?

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Introduction: Syncope is one of the most common causes of admissions to the emergency department. Based on the statistics, it affects nearly 39% of the population regardless of gender. The pathophysiological basis of syncope is brain tissue hypoperfusion. Approximately half of the patients reporting syncope are admitted to the hospital for further diagnosis.

Clinical case: Woman, aged 52, sought medical attention due to multiple episodes of syncope without complete loss of consciousness, which appeared for the first time a couple of months ago. The clinical presentation of symptoms described by the patient was not specific. Based on the given characteristics, a vasovagal syncope was the most probable one. When inquired about her family history, the woman significantly reported her grandmother's and aunt's sudden deaths of unspecified etiology. The woman was under the care of a psychiatric outpatient clinic because of depression. The patient was admitted to the hospital for further diagnosis mostly due to the family loaded anamnesis. Physical examination, orthostatic and laboratory tests showed no pathologies, neither did abdominal ultrasonography, chest X-ray and head computed tomography. In the electrocardiographic examination, the sinus rhythm was registered. Echocardiography revealed a 15x13mm pedunculated lesion, which was deemed a cardiac myxoma owing to its echocardiographic features and typical location in the left atrium. The tumor was resected immediately. Two months after the operation, the woman started to complain about symptoms of supraventricular tachyarrhythmia, most likely due to the cardiac surgery itself. No more episodes of syncope were observed. Now the patient is under the care of an electrocardiologist.

Conclusion: Several aspects of the case study require emphasis. First of all, it enhances the role of a reliable anamnesis even more. Further, the study indicates the need for more detailed and newer research into the familial occurrence of cardiac myxomas, as the vast majority of the research conducted to date is more than ten years old. Last but not least, it shows how broad the range of differential diagnosis of syncope should be, with rare causes included.

Keywords: cardiac myxoma, sudden death, syncope

GENDER DIFFERENCES IN OUTCOMES AFTER PERCUTANEOUS CORONARY INTERVENTION OF LEFT MAIN CORONARY ARTERY: SINGLE HIGH VOLUME CENTER EXPERIENCE

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Introduction: There is still controversy regarding whether female sex is associated with worse outcomes after percutaneous coronary intervention (PCI) of left main coronary artery (LM).

Aim: Our aim was to examine gender-based differences in patients after LM PCI.

Materials and methods: Consecutive 459 patients (mean age: 68,4+/-9,4) in whom PCI of LM was performed (between January 2015 and June 2018) were included in the study. The clinical and angiographic data of these patients including short and long-term outcomes has been analyzed.

Results: The whole group consisted of 112 (24,4%) women and 347 (75,6%) men. Compared with men, women were older (69,9+/-8,9 vs 67,9+/-9,5; p=0,04), had higher prevalence rates of diabetes (43,8% vs 33,4%; p=0,048) and hypertension (92% vs 79,1%; p<0,01). Renal failure (42% vs 32,3%; p=0,061) was found insignificantly more often in women, frequency of other comorbidities did not differ statistically. In our study women were more often disqualified from bypass surgery (19,6% vs 11,8%; p=0,036) and more often required complex stenting techniques (29,2% vs 18,7%; p=0,028). SYNTAX Score and Euroscore II did not differ statistically between the genders. All periprocedural complications (8,9% vs 8,4%; p=0,85) and the frequency of myocardial infarction (6,3% vs 4%; p=0,330) did not differ among the groups. We observed higher all-cause mortality in men group (19,1% vs 24,3%; p=0,041) at a median follow-up of 808 days (range 367 to 1616 days).

Conclusion: In our real-life cohort of patients, complex LM procedures and comorbidities were more frequent in women. There was no significant difference in short-term results between two genders, although in our real-life study we observed higher long-term all-cause mortality in men. Our results suggest that female gender in LM PCI is not a predictor of adverse outcomes. Further studies are required to determine the optimal revascularization modality in women.

Keywords: left main coronary artery; percutaneous coronary intervention;

MODERN THERAPY FOR HEART FAILURE, REALITY OR NOT?

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Introduction: Heart failure (HF) is a progressive cardiac disease with very poor prognosis despite improvements in HF treatment and introduction of modern therapy. Mitral regurgitation (MR) is a very common valvular disease. morbidity and mortality of patients with secondary MR remain high. Surgical treatment improves patients' prognosis and the quality of life, but no pharmacological therapy has been proven effective. Sacubitril /valsartan has recently been approved for the treatment of HF with reduced ejection fraction. There are data that the drug might be beneficial in patients with secondary MR, but there is no proof for those with postoperative secondary MR. Given its recent introduction in the armamentarium for the treatment of HF and lack of more data, "real-practice" evidence is required to deepen the clinical management of Sacubitril/valsartan therapy.

Clinical case: Here, we report a relevant case of a 51 years old male patient with HF with history of acute coronary syndrome followed by the formation of an apical aneurysm and secondary mitral and tricuspid regurgitation. After complex surgical treatment with Dor procedure, coronary artery bypass graft and mitral and tricuspid valve remodelling, moderate to severe postoperative MR was still observed. After 6 months of treatment with Sacubitril/valsartan the patient showed reduction in the grade of the secondary MR and clinical improvement in his functional capacity.

Conclusion: Among patients with secondary postoperative MR, Sacubitril/valsartan might reduce the grade of MR due to reverse remodeling of the left ventricle. Our findings suggest that an angiotensin receptor-neprilysin inhibitor might be considered for optimal medical therapy of patients with HF and functional MR, thus proving that this new therapy has it's place in the management of such patients.

Keywords: heart failure, sacubitril/valsartan, secondary mitral regurgitation, reverse remodeling

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Internal Medicine
Poster
Session I
(IMPS1)

ECG PREDICTORS FOR RESPONSE TO CARDIAC RESYNCHRONIZATION THERAPY

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Introduction: Cardiac resynchronization therapy (CRT) is a well-proven therapy in patients with congestive heart failure and reduced ejection fraction (HFrEF). Despite the number of implantations and more than 20 years' experience, the nonresponse in patients with already implanted CRT continues to be a significant problem. The ECG remains easy, fast and informative way to preselect patients suitable for CRT.

Aim: To define potential predictors for CRT response based on ECG signs and markers performed before implantation and immediately after implantation and adjustment of the device.

Materials and methods: We enrolled 81 patients (pts) in period 2016-2018 with HFrEF treated with CRT pacemaker or defibrilator therapy with no preselection based on etiology (39 ischemix pts and 43 pts with dilated cardiomyopathy) underlying rhythm, class indications for CRT (I, IIa or IIb accoring to the current ESC guidelines) or primary implantation/upgrade. At 6 months follow-up, we separated the pts into 3 different subgroups according to definition for CRT response as it follows: responders (5% increase of the EF) - 42 pts (51.9%); nonresponders (<5% increase in the EF or worse than baseline) - 13 pts (16%); super-responders (>50% increase in the EF) - 22 pts (27.2%). 4 pts died and were excluded from the study

Results: We analyzed the following ECG markers for response to CRT in the studied population using logistic regression model: QRS morphology (left or right BBB), QRS width before implantation, QRS shorten after implantation (comparing to the baseline), AV block Ist degree at baseline, underling rhythm (sinus or AF) before implantation, notching or slurring of the QRS in case of LBBB morphology. The results showed that the QRS width before implantation is the only significant independent marker. Every 1-ms increase in QRS duration raises the patient's probability of falling into the responders' group by 1.04 (OR 1.042, 95% CI 1.008 - 1.077, p = 0.014) and into the super-responders' group by 1,045 (OR 1.045, 95% CI 1.009 - 1,082, p = 0.014).

Conclusion: ECG continues to have a great impact on the determination of the patients eligible for CRT. The only significant ECG marker in our study was the QRS width before CRT implantation.

Keywords: Heart failure, CRT, ECG predictors for response

THE RELATIONSHIP BETWEEN MYOFASCIAL TRIGGER POINTS OF THE TRAPEZIUS MUSCLE AND BIOELECTRICAL ACTIVITY OF THE MASTICATORY MUSCLES

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Introduction: The referred pain is the subject of considerations in relation to the pain of the stomatognathic system, however, the mechanisms causing this pain have not yet been clearly explained. Myofascial trigger points (TrPs), through the mechanism of referred pain, may also be responsible for the development of pain in the masticatory muscles. Understanding of the mechanisms of referred pain arising from the muscles of the cervical spine may be important in understanding the etiology and development disorders such as temporomandibular disorders (TMD).

Aim: To assess the relationship between the occurrence of active TrPs within the upper trapezius muscle and bioelectric activity of masticatory muscles and the values of activity and asymmetry index.

Materials and methods: Based on TrPs diagnostic criteria according to Travell&Simons and Research Diagnostic Criteria for Temporomandibular Disorders, 167 people were qualified for the study. They were divided into 3 groups: 1. - control group (without the presence of TrPs and without TMD), 2. - the group with the current active TrPs within the trapezius, without TMD and 3. - the group with diagnosed TMD, without the presence of TrPs within the trapezius muscle. Muscle activity was assessed in rest, during clenching in intercuspal position, and during active mouth opening within the anterior temporalis muscles and superficial masseter muscles. The bioelectrical activity was measured using the BioEMG III BioResearch Associates, Inc. electromyograph (Milwaukee, WI, USA). The W Shapiro-Wilk test and Kruskal-Wallis test were used for statistical analysis. The materiality threshold was set at $p < 0.05$.

Results: The values of bioelectrical activity of the examined muscles were higher in the group of people with the presence of TrPs within the trapezius muscle compared to the other groups both at rest, during teeth clenching in intercuspal position and during active mouth opening. The highest asymmetry index values were found in subjects with TrPs. All results were statistically significant ($p < 0.05$).

Conclusion: The presence of TrPs within the trapezius muscle is associated with increased resting and functional activity within the masticatory muscles and with a change in parameters within the studied activity and asymmetry index.

Keywords: temporomandibular disorders, trigger points, sEMG, masseter, temporalis muscle

CASE REPORT: COEXISTENCE OF HERPES ZOSTER ENCEPHALITIS AND LOW GRADE GLIOMA

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Introduction: This study presents a rare case of a patient who suffered from Herpes Zoster Encephalitis, which developed on the background of very Low Grade Glioma. Herpes Zoster Encephalitis is a complication of Varicella-Zoster Virus infection. 5% of patients with HZE exhibit accompanied neoplasia, in this case LGG a primary brain tumor originating from the supporting glial cells of the CNS.

Clinical case: A 20 year old male patient was admitted to the hospital with complains developing at the background of febrile condition with presentation of severe right hemiparesis and central lesion of VII Cranial Nerve. In several days paresis progressed to plegia. During hospitalization a simple partial motor Jackson's seizure was observed. Initial CSF examination detected antibodies against VZV, but the finding wasn't confirmed in the next 2 CSF examinations. MRI examinations detected a pathological lesion in the periventricular white matter of the parietal lobe in the left hemisphere. Initial diagnosis was acute encephalitis or primary lymphoma with diagnostic alternative of LGG. The patient was treated for viral encephalitis with Zovirax(30mg/kg I.V.for 7 days) and oral Acyclovir(5x800mg) and almost complete recovery was observed. The patient was hospitalized again for control examination 2 months later and MRI revealed persistence of lesion with increase size of 2 mm and mild right hemiparesis was observed. EEG showed sharp and slow waves with temporal and parietal localizations at right side. In SVS spectroscopy the spectrum of NAA was preserved but Choline was pathologically increased, so was the ratio towards creatine. Thus, the theory of coexistence was confirmed by the complete clinical recovery of patient when treated with antiviral medications and the patient's lack of clinical symptoms to the very slow growth of glioma.

Conclusion: LGG may present as encephalitis with parietal lobe involvement brain imaging. Failure to consider the possibility of HZE can lead to a delay in accurate diagnosis and proper treatment, with a significant risk of mortality. Therefore, acyclovir should be administrated and intense follow up with short repeat brain imaging(MRI) is necessary due to possible coexistence of LGG.

Keywords: Herpes Zoster Encephalitis (HZE), Low Grade Glioma (LGG), Varicella-Zoster Virus (VZV), Magnetic Resonance Imaging (MRI)

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WILSON'S DISEASE IN AN ADULT WOMAN-A CASE REPORT

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Introduction: Wilson's disease (hepatolenticular degeneration) is an autosomal recessive disordercharacterized by: (1)defective excretion of copper into bile (2)total body increase (3)copper accumulationin the cytoplasm of liver cells (4)decreased ceruloplasmin level in plasma and (5)increased copper in plasma,causing increased urinary excretion of copper.

Clinical case: A 40year old woman came to the hospital with tremor, unsteadiness, drawling , dystonia and stated that she was weak and had a fainting tendency.According to the case history,4-5 years ago she had transaminasemia with no other neurological symptom and the medical investigations,including biopsy did not show any illness. Differential Diagnosis:Ceruloplasmin level was decreased in the patient's plasma and copper level in her urine was increased.Moreover her liver biopsy revealed hepatic fibrosis and regenerative nodules.Finally production of Kayser-Fleischer ring at the corneal edge of her sclerocorneal junction was not observed. This is the most important diagnostic sign in Wilson's disease. Pathophysiology: In Wilson's disease patients' copper progressively accumulates within the hepatocytes and compromises hepatic function. Furthermore, unbound copper spills out of the liver and is deposited in other organs and tissues,such as the brain,provoking damage and dysfunction. Therefore apart from the hepatic manifestations,thereare also, among others, ophthalmological (deposition of copper within Descemet's membrane) and neurological manifestations. Neurological manifestations include:tremor (the most frequent initial neurological feature of the disease) ,unsteadiness (due to the cerebellar dysfunction),dysarthria (drawling) and dystonia (involving the tongue,face,and pharynx). Treatment: Treatment includes liver transplantation and the administration of :zinc(blocks intestinal absorption of copper),penicillamine,(copper chelator),trientine (copper chelator) and tetrathiomolybdate (chelator,blocks copper absorption)

Conclusion: Concerning the patient, the diagnosis of Wilson's disease is made taking into account that there are not only hepatic,but also neurological manifestations, ophthalmological signs can exist but its not necessary to present in any case.

Keywords: Wilson's disease, liver, neurological manifestations

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METABOLIC SYNDROME, GHRELIN, AND NEUROPEPTIDE Y IN HIGH SCHOOL PUPILS AGED 16-19 YEARS

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Introduction: Metabolic syndrome development is one of the biggest social-medical problems of our time that affects also younger age groups. It is crucial to assess the anthropometric and metabolic disturbances early in adolescence in order to prevent complications further in life.

Aim: To characterize the components of metabolic syndrome and to evaluate the relationship of ghrelin and neuropeptide Y levels with main anthropometric parameters in high school pupils aged between 16 and 19 years.

Materials and methods: An observational cross-section study consisted of 72 high school pupils aged between 16 and 19 years. The participants were divided into 2 subgroups according to their body mass index: BMI<25 and BMI≥25. Measurements of height, weight, waist circumference, hip circumference, amount and percentage of body fat, blood pressure, heart rate, fasting levels of blood glucose, insulin, ghrelin, neuropeptide Y, total and HDL-cholesterol, triglycerides and uric acid were performed. HOMA-index of insulin resistance and LDL-cholesterol were calculated. Ghrelin and neuropepride Y levels were measured by immunoenzyme methods.

Results: Adolescents with BMI≥25 had significantly higher levels of systolic and diastolic blood pressure and heart rate, insulin and HOMA-index, triglycerides and uric acid, a trend to higher levels of blood glucose and total cholesterol, and to lower levels of HDL-cholesterol. Ghrelin levels were significantly lower in overweight adolescents. No significant differences were observed in terms of neuropeptide Y. Among the adolescents with BMI≥25, 68.6% met the IDF diagnostic criteria of metabolic syndrome: increased WC plus at least 2 components: dysglycaemia, dyslipidaemia and hypertension. Correlations between all clinical, anthropometric and laboratory parameters were analyzed. Significant negative correlation between ghrelin and BMI, WC, waist/hips ratio, and body fat was found. Neuropeptide Y shows no significant relationship with body proportions .

Conclusion: The percentage of an overt metabolic syndrome was very high in the overweight pupils. Our study confirms the strong association of ghrelin with body weight and main anthropometric parameters in adolescents aged between 16-19 years. The risk factors must be analyzed early in adolescence and appropriate measures should be taken in order to prevent complications and occurrence of severe associated diseases .

Keywords: metabolic syndrome, ghrelin, neuropeptide Y, overweight, adolescents,,

EXTREME BRADYCARDIA WITH DATA OF EXTENDED DENGUE MENIGOENCEPHALITIS: A CASE REPORT

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Introduction: Dengue is an endemic epidemic viral disease, transmitted by Aedes mosquitoes. It represents the most important arbovirosis worldwide, has several forms of clinical expression. The atypical is rare and involves an organ or system: encephalopathy, cardiomyopathy or hepatopathy.

Clinical case: We reported previously healthy 59-year-old man who came to the emergency department with insomnia for a month, two weeks with fever. He presented vertigo, right motor lateralization, sinus bradycardia, dyspnea at rest and syncope, then administered 15mg of diazepam and phenytoin without improvement, he was unconscious and with epileptic state, has miotic pupils, neck stiffness, urinary sphincter relaxation and MAP: 75mmHg, RR: 21, HR: 96, temperature: 41Celsius-degree. The electrocardiogram revealed sinus bradycardia with HR: 42 and a chest-X-ray cardiomegaly of 2th-grade. The fever persisted, this appears in few pathologies, one of them is expanded dengue syndrome. Pathophysiology is unknown. However, neurological disorders in the post-infectious phase is related to immunologically mediated neuronal lesion, also cardiac damage may be due to direct effect of the virus on myocardium or response of cytokines triggered by related-infection. Supportive care was with analgesics and acetaminophen, also fluid replacement, rest and orotracheal intubation and extubation were sufficient for the recovery. Although the infection wasn't confirmed serologically, with clinical characteristics, endemic area, season and the recovery of fever-bradycardia the probable etiologic agent is dengue virus. Laboratory results: erythrocytes 4.29 x 10^6/ul (4-5), hemoglobin 13.87g/dl (12.20-15), hematocrit 40.3%(36-44), platelets 191 x 10^3/ul (150-450), lymphocytes 3.25 x 10^3/ul (1.5-40), neutrophils 5.77 x 10^3/ul (1.80-7.20), glucose 173mg/dl (65-110), urea 37.20mg/dl (15-42.80), creatinine 1.2mg/dl (0.70-1.50), ALT 36mg/dl (11-66), AST 53U/l (15-46), albumin 4.60g/dl (3-5-5), CPK 829U/l (30-70), CPK-MB 23U/l
(25-54).

Conclusion: Extended dengue generated greater commitment in the heart, epileptic state is related to meningeal condition of the virus, compromising the general state of the patient.

Keywords: Dengue fever, Dengue syndrome, Meningitis, Epileptic status, Sinus bradycardia.

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PATIENT WITH LOW BACK PAIN AS A SIGN OF MULTIPLE MYELOMA

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Introduction: Case report presents 44-year-old man, a dental technician with multiple myeloma, discovered after two months of progressive back pain.

Clinical case: The patient reported mild pain in the lower back while visiting the family physician. Physical labor or trauma were excluded as a possible cause of pain. He has a positive malignant neoplasm family history regarding his sister (non hodgkin lymphoma) and father (lung cancer). NSAIDs were prescribed and the patient also underwent physical therapy but neither reduced the pain. Since the intensity of the pain developed, MRI was performed and the finding set the suspicion of a lymphoproliferative disorder. A new MRI of the thoracolumbar spine with contrast was done and it discovered formations dimensions around 1 cm in the 2nd lumbar and 7th thoracic vertebra. Hematological treatment was indicated and the diagnosis of multiple myeloma was made. Differential diagnosis: The most common causes are the ones regarding the spine itself, such as lumbar strain, osteoarthritis, spinal stenosis, herniated nucleus pulposus, fracture and spondylolisthesis. Systemic causes are some rheumatic diseases, malignancy and infections. Some conditions can cause referred pain in the lower back, such as aortic aneurysm, pelvic, retroperitoneal or gastrointestinal conditions. Pathophysiology: Multiple myeloma is a malignant disease which affects the bone marrow. Lytic lesions are found in the bones where hematopoiesis occurs and lead to pain, fractures, anemia and hypercalcemia which are all present in presented patient. Monoclonal antibodies (IgG kappa) are present in the serum and atypical plasma cells are detected by performing biopsy. Treatment: VTD protocol (Bortezomib, Thalidomide, Dexamethasone) therapy was started. Due to osteolytic lesions and fractures conservative therapy was indicated. Patient was hospitalized, received cyclophosphamide for peripheral blood mobilization of hematopoietic stem cells before chemotherapy with autologous stem cell transplantation. Two leukapheresis were performed and an adequate number of peripheral stem cells was collected.

Conclusion: Low back pain can be caused by a number of medical conditions. Although multiple myeloma is a rare cause, we should consider it when the pain has not been relieved with NSAIDs or physical therapy and it intensifies over time.

Keywords: multiple myeloma, low back pain

CASE OF AN ACUTE STEMI IN A PATIENT WITH A HISTORY OF COVID-19

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Introduction: The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has emerged in 2020 and thus causing a worldwide pandemic of the disease COVID-19. While it is mainly a respiratory illness, there are data that the novel coronavirus has a tropism towards cardiac tissue causing a number of pathologies – acute coronary syndrome, myocarditis, pericarditis, arrhythmias etc.

Clinical case: We report a case of a 68-year-old man with cardiovascular risk factors including recently diagnosed hypertension, new onset DM type 2, dyslipidemia, who presented to the ED with an onset of retrosternal pain of four days, most severe at the day of presentation. The conducted examinations in the ED showed ECG changes suggesting an inferior STEMI and RBBB with a first-degree AV block. The laboratory tests were abnormal as the troponin was 14467 ng/L (RR <19.6 ng/L), the markers of inflammation were elevated [CRP-167.4 mg/l (RR<5 mg/l), ferritin-461.9 ng/ml (24-336 ng/ml)] and the test for IgG and IgM antibodies against SARS-CoV-2 turned out positive, while the PCR test – negative. The subsequent ECGs and laboratory tests that were carried out after hospitalization showed evidence of short episodes of second-degree AV block Mobitz I (Wenckebach block phenomenon) alongside with RBBB and a first-degree AV block and elevated procalcitonin-1.24 ng/ml (RR<0.36 ng/ml). The differential diagnosis that should be taken into account is with inflammatory diseases of the heart (pericarditis,myocarditis), which could also present with a chest pain and elevated inflammatory markers, especially after a viral infection. It is possible that the COVID-19 infection precipitated the inferior STEMI due to the systemic inflammatory response. As it is now known, the severe cases of COVID-19 develop a cytokine storm with the activation of proinflammatory mediators. These lead to further endothelial activation and procoagulant state of the endothelial cells, resulting in a thrombus formation at the site of a ruptured atheromatous plaque. The patient was managed with emergent cardiac catheterization. However, the TIMI flow after the placement of three DES was 0-1 and he was discussed for a coronary artery bypass graft.

Conclusion: Overall it is possible that the hyperactive immune reaction towards SARS-CoV-2 could precipitate endothelial dysfunction, plaque rupture and subsequent STEMI.

STUDY OF BLOOD PARAMETERS IN HOSPITALIZED PATIENTS WITH COVID-19 INFECTION COMPLICATED BY PNEUMONIA

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Introduction: Any information about Covid-19 including comprehensive data analysis for better prediction of the course of the diseases and its prognosis is of significance

Aim: The aim of the study was to assess dynamics of blood parameters in patients with various courses of the infection according to the NEW score

Materials and methods: We worked as volunteers with Covid patients. Our study involved 31 coronovirus patients with bilateral interstitial pneumonia. 16 (51.6%) females and 15 (48.4%) males aged 62.2 divided into 3 groups by NEWS score on the 1st day of hospitalization. Group 1(low severity, N=10), Group 2 (moderate, N=10) and Group 3 (grave condition, N=11). Indices of blood count and biochemical tests were analyzed on the 1st, 7th and 14th days. Numerical data of the non-normal distributed values were presented as median (Me). Mann-Whitney U test with confidence level 0f 0.95 was used

Results: Comparison of Group 3 with the 1st and 2nd groups disclosed: a higher hyperglycemia frequency - Me of glucose of 1 (5.6; 5.1 mmol\L), 2 (5.7; 4.9;5.61 mmol\L) and 3 (8.4;6.7;6.15 mmol\L) groups respectively. We also investigated leukocytosis Me in the 3rd group, LDH Me and total protein as well as ALT levels which was increased commonly in patients in Group 1 Me (18.5; 15; 13 u\L).

Conclusion: Severity of condition in Covid-19 by NEWS score correlates directly with a higher frequency of shift in blood parameters - total protein, glucose, leukocytes and ALT as well as LDH levels

Keywords: Covid-16, pneumonia, blood parameters

SENILE AMYLOIDOSIS

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Introduction: Amyloidosis belongs to a group of diseases in which there is an abnormal accumulation of protein (amyloid) in various tissues and organs, which leads to disorders in their structure and function. The most common types of amyloidosis that lead to cardiomyopathy are: Acquired slight amyloidosis (AL), Hereditary transthyretin-related amyloidosis (ATTR), wild-type (non-hereditary) transthyretin - associated amyloidosis (ATTRwt) - systemic senile amyloidosis (SSA). Systemic senile amyloidosis (SSA) is characterized by: • Symptoms after age 65, slow progression, more benign course. • Significantly more common in men (almost 90%). • Pathoanatomical studies have established wt ATTR in the heart and vessels in 1 of 4 over 80 years of age. • Extremely heart attack.

Clinical case: This is the case of an 81-year-old man with persistent atrial fibrillation and arterial hypertension developing paroxysmal dyspnoea at night against a background of chronic heart failure. The patient is admitted to the emergency room in a damaged general condition with cyanosis, arrhythmic mid-75 bpm, holistic murmur, respiratory rate 20 / min, lack of right-sided breathing and premature swelling. Laboratory tests were performed, pleural effusion puncture showing transudate, Holter ECG- no significant pauses, 200 VEx, buccal biopsy - no signs of amyloid. Neurological examination revealed cerebrovascular disease. A number of other studies have been conducted to demonstrate senile amyloidosis. They were all negative. Bone scintigraphy was discussed to confirm the diagnosis, but it has not been performed since the patient died. Diuretic therapy was performed.

Conclusion: The above case is an example of a patient with excessive left ventricular hypertrophy and suspected cardiac amyloidosis which has not been identified after the studies. A multimodality approach is required to diagnose senile amyloidosis.

Keywords: senile amyloidosis, bone scintigraphy, amyloid, heart failure

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Internal Medicine
Poster
Session II
(IMPS2)

ATYPICAL CLINICAL PRESENTATION OF GIANT CELL ARTERITIS

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Introduction: We present a case of a 64 – year – old woman with giant cell arteritis (GCA) and suspicion of extrapulmonary tuberculosis.

Clinical case: The patient was admitted to our department due to severe general condition and massive weight loss (20 kg of BW in the last 6 months). Her medical history included only arterial hypertension. She had contact with a tuberculosis patient in her family in the last year and half. When examined upon admission the patient was subfebrile and pale. Painless enlarged lymph nodes were present on the neck. Diffuse abdominal pain on palpation and erythematous painful changes of the lower legs were noted. The results of laboratory tests indicated significantly high inflammatory parameters (CRP, SE, fibrinogen) and low hemoglobin. Bacterial and viral infections were excluded due to negative urine culture, blood culture and smear tests. Ultrasound and cytological puncture of the neck showed enlarged and cytologically reactive lymph nodes. Further examination excluded other malignancies. Thoracic MSCT showed enlarged mediastinal lymph nodes. There were signs of chronic pericarditis on the ultrasound. PPD skin test was extremely positive and PHD biopsy of the lower legs skin changes showed erythema induratum of Bazin. CT angiography, MR angiography and PET scan were performed and revealed wall thickening of the aorta and in the area proximal to the ACC bifurcation. Initial differential diagnosis included suspicion of extrapulmonary tuberculosis. After one month on triple anti – tuberculosis therapy and no clinical improvement, this diagnosis was dismissed. Inflammatory parameters were still high, the general condition of the patient serious. GC aortitis was confirmed. The patient was treated with glucocorticoids, methotrexate and acetylsalicylic acid after which she showed significant clinical and subjective improvement.

Conclusion: Giant cell arteritis is a systemic inflammatory disease, the most common form of vasculitis in adults that affects large blood vessels. In some cases the diagnosis can be difficult to determine, malignant and infectious diseases should be excluded. Quick diagnosis determination and immediate treatment with corticosteroids and methotrexate or IL-6 antagonists is necessary and usually improves the patient's general condition.

CHRONIC INFLAMMATORY DEMYELINATING POLYNEUROPATHY, PREVIOUSLY BOARDED AS A GUILLAIN-BARRE SYNDROME: A CASE REPORT

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Introduction: Guillain Barre syndrome (GBS) and chronic inflammatory demyelinating polyneuropathy (CIDP) are autoimmune demyelinating neuropathies that share clinical and laboratory similarities, the differences are in the response to treatment.

Clinical case: We report a 54-year-old man previously known to have diabetes mellitus type 2 treated with metformin and glibenclamide. He presented 10kg weight loss the last month, decreased muscle strength in lower extremities which increased until he was unable to walk, then he had fever and abdominal pain. He arrived to the emergency department with impossibility to raise the arms, dyspnea, bradylalia, paleness, lung fields of the right hemithorax hypoventilated, abdomen with dullness on the right side, lower extremities with edema and upper limb strength with 2/5 bilateral force, abolished osteotendinous reflexes, decreased sensation below the knees, MAP: 107mmHg, RR: 18, HR: 75. Refers similar previous episodes. The patient was treated as a GBS, but after performing complementary studies; CT scan showed pleural effusion associated with right posterobasal alveolar occupation, electromyography revealed an axonal degenerative polyneuropathy with acute inflammatory data, it leads to a diagnosis of CIDP. The differential diagnoses were Eaton-Lambert syndrome, myasthenia gravis, GBS. The causes of the CIDP are unknown, although abnormalities in cellular and humoral immunity have been demonstrated. This pathology has electrophysiological and pathological findings of segmental demyelination. There is a symmetrical motor/sensory disorder with proximal and distal weakness and dysreflexia with conduction slowdown, temporal dispersion and/or conduction blockage. He was initially managed with saline solution 0.9% 1000 mL/kg over 12h, followed by gabapentina OV every 8h, intravenous maintenance fluids, also sucralfate 1g every 6h, ursodeoxycholic acid 250mg every 24h and human immunoglobulin. Laboratory results: hemoglobin 11.9g/dl, platelets 422 x 103 u/l, leukocytes 41.77 x 103 u/l, glucose 143mg/dl, creatinine 0.5mg/dl, GGT 861U/l, Ca 12.2mg/gl, Na 131mmol/dl, IgG 3586.78mg/dl.

Conclusion: The hyperimmunoglobulinemia G, may indicate a process of autoimmunity that probably be involved in acute symptomatology. Once the patient was treated, it was observed that the patient recovered the muscular strength in the extremities and the ventilatory state stabilized.

Keywords: Guillain-Barre, Chronic inflammatory demyelinating polyneuropathy, Neuropathy, Polyneuropathy

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EPILEPTIC SEIZURES ASSOCIATED WITH FRIEDREICH'S ATAXIA

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Introduction: Friedreich's ataxia is an autosomal recessive neurodegenerative disorder caused by expansions of an unstable GAA trinucleotide repeat in the STM7/X25 gene on chromosome 9q. This disease can be associated with many abnormalities: cerebellar and sensory ataxia, heart disease, musculoskeletal deformities or diabetes mellitus. Epilepsy is seldom described as a clinical feature in Friedreich's ataxia, very few cases having been reported. The mechanisms of seizures are also unclear.

Clinical case: This is the case of a 18-year-old patient with history of Friedreich's ataxia and hypertrophic cardiomyopathy who was admitted in our clinic for generalized seizures with chaotic movements of limbs. Altered level of consciousness, self-inflicted tongue biting and postictal state with confusion completed the episode .He experienced three such attacks during the last three months. Physical examination revealed pes cavus, kyphoscoliosis, bilateral foot deformities including high plantar arches and hammertoes. Also, generalized muscle hypotrophy and motor weakness of the lower extremities, as well as severe limb and gait ataxia with difficulty in standing without support were described. Extensor plantar responses were present in spite of areflexia. Dysarthria, loss of joint position and vibration sense in all limbs, mild cognitive impairment completed the Harding's diagnosis criteria.The electrocardiography showed negative T waves in the anterolateral leads. Interictal electroencephalogram was also performed but no interictal epileptiform activity was detected. Cerebral magnetic resonance imaging (MRI) revealed a large communicating fourth ventricle (Dandy Walker malformation) and inferior vermian hypoplasia. There are no other detected MRI cortical lesions to explain seizures.

Conclusion: The particularity of this case consists in the association of epileptic seizures and Dandy Walker malformation to Friedreich's ataxia.Possible mechanisms of seizures could be related to the GAA expansions.The length of this trinucleotide repeat determines the clinical phenotype of the disease, thus influencing the age of onset, the progression and the complications developed. The decrease in frataxin expression,as seen in Friedreich's ataxia, alters neuronal and mitochondrial iron metabolism,damages tissues and leads to possible lesions of cortical neuronal circuits with epileptogenesis.

Keywords: Friedreich's ataxia, seizures, STM7/X25 gene, Dandy Walker malformation, frataxin

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CONGENITAL ADRENAL HYPERPLASIA (CAH)-SALT-WASTING FORM IN A NEWBORN BABY

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Introduction: CAH is a group of rare inherited autosomal recessive conditions, characterized by defects in the enzymes that produce specific hormones of the adrenal cortex. We present a case of a male newborn baby with CAH-salt wasting form and certain signs of those enzymatic defects.

Clinical case: A full-term newborn baby was admitted to the hospital for routine medical care and check up. Blood tests, screening test for 17-hydroxyprogesterone, chest & abdominal ultrasound and physical exam were performed. The blood test revealed normal K^+ (4.77mmol/L) and HCO_3^- (24 mmol/L) concentrations. The screening test revealed increased 17-OH progesterone (285.67 nmol/L), which is a strong indicator for CAH. Chest and abdominal ultrasound showed no echographic pathology. On physical examination, the general status of the newborn was in good condition but revealed enlarged penis (5.0 cm) and hyperpigmented scrotum. In addition, the newborn baby presented with dehydration. It was treated with hydrocortisone (3x2 mg per os) and fludrocortisone (1x25 μg orally) and hydration with sodium chloride 0.9% and glucose 5%. The pathophysiology behind this condition is that it is an autosomal recessive condition, characterized by defects in one of the enzymes that produce the adrenal cortex hormones (mineralocorticoids, glucocortocoids, androgens). Different enzymatic defects can be present and depending on which enzyme is defective, certain endocrine changes can occur, which as a consequence, lead to certain signs and symptoms. 21-hydroxylase deficiency and 11β-hydroxylase deficiency lead to low cortisol and aldosterone but elevated androgen levels. 17α-hydroxylase deficiency leads to low levels of all aforementioned hormones.

Conclusion: CAH is a socially important disease. Untreated, it can lead to serious and life-threatening complications and even to death. It is important to perform the screening test at birth, so that adequate and life-long treatment will be initiated as soon as possible and prevent complications, that might affect the development and quality of life of the child.

SERUM LEVELS OF CHEMERIN IN PATIENTS WITH OSTEOARTHRITIS OF THE KNEE JOINT

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Introduction: The role of adipokines in the pathogenesis of knee osteoarthritis (KOA) is being re-evaluated in recent years. The results, however, are still controversial. One of these soluble mediators secreted by the white adipose tissue is chemerin. It has demonstrated some links between obesity, regulation of inflammation, synovitis and knee articular cartilage damage. Therefore, it is possible that research in this area may yield a breakthrough in early diagnosis and identifying disease severity in patients with KOA.

Aim: To evaluate the association between serum level of chemerin and markers of inflammation as well as BMI in patients with osteoarthritis of the knee joint.

Materials and methods: In this preliminary study 14 patients with KOA were recruited (3 males, 11 females; mean age 67.5+-2.3 years). Another 31 age and sex matched cases with no history of joint disease were included as a control group (10 males, 21 females; mean age 59.9+-13.1 years). The sandwich enzyme-linked immunosorbent assay was used to determine the serum concentration of chemerin (ELISA). Body mass index (BMI) was calculated for all individuals. Erythrocyte sedimentation rate (ESR), C-reactive protein, serum level of uric acid (UA) were measured in the subgroup of 14 patients.

Results: Our study showed no statistically significant difference between serum levels of chemerin between the groups of patients and healthy controls (241 (224.3- 259.3) vs. 228 (203.1-276.0) ng/mL, p>0.05 respectively). A positive correlation was found between serum chemerin and UA (r=0.644, p=0.13). No significant correlation was established between concentrations of serum chemerin and markers of inflammation- ESR (r=0.386, p=0.172), CRP (r=0.40, p=0.892), as well as with BMI (r=-0.243, p=0.403).

Conclusion: Chemerin might be considered more as a local factor of inflammation rather than as a systemic inflammatory substance responsible for cartilage damage in knee osteoarthritis. Further studies are needed to confirm that chemerin might contribute to the inflammatory processes within the joint and thus it might take part in the pathogenesis of the disease.

Keywords: chemerin, serum chemerin, adipokines, osteoarthritis, knee joint

THE ROLE THE RENIN-ANGIOTENSIN-ALDOSTERONE SYSTEM HAS IN HEART FAILURE

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Introduction: Heart failure (HF) is a major and growing public health problem with high morbidity, mortality and costs. The number of diagnosed patients is expected to rise by 46% by 2030, (Circulation 2017). Consequently, it's becoming ever so important in understanding systems within the body that are associated with such conditions like HF, and how the drugs we use interact with such systems.

Aim: The purpose of the investigation is to analyse the importance of the role that the renin-angiotensin-aldosterone system (RAAS) has in HF and how various drugs are used to target this system in order to combat this disease.

Materials and methods: The studies were done using a large double-blind, placebo-controlled, randomised clinical trial. It's known that the activity of RAAS is increased in patients with HF (CFR 2019) hence targeting RAAS, is needed to slow the progression of the disease. In the study enalapril, an ACE inhibitor was used. Patients were randomised and either given enalapril or placebo, in addition to conventional medical therapy consisting chiefly of digitalis, diuretics, and nitrates. Enalapril was started at 2.5mg to 5mg bid and titrated to maximum 10mg bid. The patients were seen at 2 weeks, 6 weeks, 4 months, and then every 4 months until the study was completed (NEJM 1991).

Results: The results showed that 4 years of follow up, mortality associated with enalapril had been reduced by 16%. This was mainly due to a decrease in the risk of death due to worsening HF. In addition, there was also a reduction in the risk of cardiovascular hospitalisation (enalapril- 57% and placebo- 63%). It was estimated that treating 1000 CHF patients with enalapril for approximately 3 years would prevent 350 hospitalisations and 50 premature deaths (NEJM 1991).

Conclusion: Results concluded that the use of enalapril during treatment was directly proportional to decreased mortality as well as decreased hospitalisation due to cardiovascular events. The activation of RAAS has a negative effect on patients with heart failure and that by inhibiting or slowing RAAS the patients have a reduce chance of mortality.

Keywords: RAAS, Heart Failure, ACE Inhibitors

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Acknowledgements: Professor A. Tolekova

THE EFFECT OF AFTERNOON SLEEP ON BLOOD PRESSURE REGULATION

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Introduction: The afternoon rest is usually a short period of sleep that lasts from minutes to hours. The effects of night sleep on blood pressure have been examined in many studies, but the effects of afternoon sleep have been rarely examined.

Aim: The aim of this study was to investigate the effect of afternoon sleep on blood pressure regulation in patients with hypertension who are on antihypertensive therapy.

Materials and methods: The study included 100 patients with hypertension, aged from 30 to 80. The instrument of the study is a self-administered combined type questionnaire “Afternoon Sleep Questionnaire”. The patients measured blood pressure in the morning, afternoon, and evening for 7 days and registered the values into the table at the end of questionnaire .The collected data are processed in the program "SPSS".

Results: Patients who slept in the afternoon had higher systolic blood pressure in the morning ($p = 0.027$). Longer duration of afternoon sleep indicated higher blood pressure ($p < 0.05$). Men who slept in the afternoon had higher systolic and diastolic pressures in the afternoon than women who slept in the afternoon ($p = 0.013$). Men who slept in the afternoon had higher systolic blood pressure in the morning, systolic pressure in the evening, and diastolic pressure in the evening than men who did not sleep in the afternoon ($p < 0.01$). The duration of night sleep showed the effect only on systolic pressure values in the afternoon and evening in patients who did not sleep in the afternoon ($p = 0.05$). The blood pressure of all patients varied significantly throughout the day ($p < 0.01$).

Conclusion: The impact of afternoon sleep in hypertensive patients has proven as a significant factor in the regulation of blood pressure, especially in men.

Keywords: blood pressure; hypertension; afternoon sleeping; nap

UNDERSTANDING CHRONIC TRAUMATIC ENCEPHALOPATHY (CTE) AND THE RISK IN CONTACT SPORTS

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Introduction: Traumatic brain injury (TBI) is a major concern, affecting an estimated 10 million people worldwide per year. CTE is a neurodegenerative disease that has been associated with a history of repetitive head impacts, such as those in contact sports. The specific pattern of tau deposition with minimal amyloid-beta deposition is suspected to be the neuropathological basis for CTE and distinguishes it from other neurodegenerative disorders.

Aim: The aim of this meta-analysis is to review CTE and the risks in contact sports.

Materials and methods: A targeted thematic analysis is presented. The following information is collected from a wide range of scientific literature in the field of neurology. This study reviews English publications with keywords such as "chronic trauma encephalopathy, contact sports, neurodegenerative disease, former football players, tau deposition" in New England Journal of Medicine, JAMA Network, National Center for Biotechnology Information and others. The search reviews 25 full text articles.

Results: CTE is characterized neuropathologically by the deposition of tau aggregates in neurons, astrocytes, and cell processes in an irregular pattern around small blood vessels at the depths of cortical sulci. The tau aggregates are in the frontal, temporal, and parietal cortices in the early stages of disease and later are distributed throughout the cerebral cortex, medial temporal lobe, diencephalon, and brain stem. Living former American football players with cognitive and neuropsychiatric symptoms have higher tau-levels than controls in these brain regions and don't have elevated amyloid-beta levels. Common among players with mild CTE pathology are behavioral, mood, and cognitive symptoms and among severe CTE pathology signs of dementia are predominant. Mortality from neurodegenerative diseases is more common among former athletes than among non-athletes. Post-mortem studies of former football players show that a high proportion were diagnosed neuropathologically with CTE. The same changes have been reported in 75% of former contact sport players.

Conclusion: The present review concludes based on the systematic review of the scientific publications and case reports that contact sport athletes may be at increased risk of long-term neurological conditions, particularly chronic traumatic encephalopathy.

Keywords: chronic trauma encephalopathy, contact sport, neurodegenerative disease, former soccer (football) players, tau deposition

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DERMOSCOPIC FEATURES OF SUPERFICIAL SPREADING MELANOMA

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Introduction: Melanoma is a neoplasm of melanin-producing cells. Supericial spreading melanoma is the most common form, which accounts for 70% of all melanomas. It is presented as a small, irregularly pigmented, macular lesion, then elevation, multicolor, erosion, ulceration, and bleeding occur. Dermoscopy is a non-invasive diagnostic method designed to visualize the dermoscopic characteristics of melanomas that are not visible to the naked eye. The color, structure, symmetry, edges and dermoscopic features associated with blood vessels are examined.

Aim: Analysis and determination of the most common dermoscopic structures in patients with confirmed histopathological diagnosis of superficial spreading melanoma.

Materials and methods: The retrospective study included 30 patients diagnosed with superficial spreading melanoma. The lesions were subjected to dermoscopic pattern analysis, after which a dermoscopic diagnosis of superficial spreading melanoma was made. The following dermoscopic characteristics were monitored during the examination: atypical pigmented network, irregularly distributed globules, regressive structures and atypical vascular structures.

Results: From a total of 30 respondents, 17 were male, 13 were female. Patient's ages ranged from 27 to 78 years, with an average age of 55 years. In men, 66% of lesions were on the trunk and on the upper and lower extremities 17% each. In women, 54% of lesions were on the lower extremities, 31% on the trunk, and 15% on the upper extremities. The atypical pigmented network was present in 100%, irregularly distributed globules in 40%, atypical vascular structures in 36.7%, and regressive structures in 30% of lesions.

Conclusion: By analyzing the dermoscopic structures and the results of our study, we have shown that the presence of an atypical pigment network is the most significant dermoscopic feature for the diagnosis of superficial spreading melanoma.

Keywords: superficial spreading melanoma, dermoscopy,

CONCEALED ACCESSORY PATHWAY AS A CAUSE OF ATRIAL FIBRILLATION IN A MIDDLE-AGED FEMALE PATIENT

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Introduction: Palpitations are perceived abnormalities of the heartbeat. Their etiology is mostly cardiac, but also psychiatric or metabolic. Most arrhythmias present with palpitations and some of them are due to an anomaly in the heart conduction system (f.i. accessory pathway). Electrophysiology studies (EPS) can be performed to identify underlying pathology and catheter ablation can provide definitive treatment.

Clinical case: A 45-year-old woman with structurally healthy heart and a 10-year history of palpitations presented to the emergency department with atrial fibrillation (AF) and was successfully treated with propafenone. Considering her history of frequent palpitations an EPS was indicated in order to search for supraventricular tachycardia (SVT). However, SVT couldn't be induced and EPS showed no evidence of accessory pathway (AP) or other mechanisms which could trigger re-entry (circular) tachycardia. During the same procedure pulmonary vein (PV) isolation using cryoballoon was performed to treat AF. However, only left PVs were isolated due to transitory phrenic nerve paralysis. During follow-up, the patient experienced recurrent palpitations and was hospitalised for repeat EPS. Electrophysiological 3D mapping system (CARTO 3) was used without fluoroscopy. It showed that only left PVs were isolated. Isolation of the right PVs was successfully completed using radiofrequency (RF) ablation catheter. However, catheter manipulation triggered a transitory SVT which the patient recognized as her usual palpitations. Therefore, more aggressive EPS protocol was used to induce SVT and atria were mapped during arrhythmia. This showed concealed left lateral AP. It was concluded that the AP was the cause of atrioventricular re-entry tachycardia (AVRT) that degenerated into AF which was initially registered in this patient. Subsequently, AP was successfully ablated and SVT was no longer inducible. The patient was discharged the next day and reported complete relief of symptoms afterwards.

Conclusion: Electrophysiological study is indicated in patients with history of palpitations. AF in younger patients could be the result of unrecognised SVT. One possible SVT is an AVRT with underlying concealed AP which can be identified only by aggressive EPS protocols. AP ablation provides definitive treatment of such arrhythmias and complete remission of symptoms.

Keywords: Atrial fibrilation, heart, palpitations, arrhythmia

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Internal Medicine
Poster
Session III
(IMPS3)

PLEURAL EFFUSION IN CHILDHOOD - IS IT ONLY DUE TO PNEUMONIA?

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Introduction: From the published literature we found that more than 50% up to 70% of pleural effusions in paediatric patients are parapneumonic, while the second common ethology - congestive heart failure is responsible for no more than 17%.The other possible causes for pleural effusions in this age group are much more rare and include renal diseases,trauma and malignancies.

Clinical case: We present case of a 13-year-old boy, who has family history of diabetes and arterial hypertension(from fathers' side)and bronchial asthma, Raynaud syndrome and allergy(from mother' side).The boy is allergic to ampicillin /sulbactam combination.In may 2019 he was diagnosed with rheumatoid arthritis due to knee affection.Four months later due to dyspnoea,thoracal and left shoulder pain a CT was performed and the patient was diagnosed with thymic carcinoma, stage IVA.Despite aggressive chemotherapy and complex management (including surgery) the cancer advanced so the family decided to try alternative medicine and abandon classical therapy.After a scheduled tooth manipulation,the boy was feverish, with cough and complained from chest pain.Despite the therapy with Amoxiclave/clavulonic acid the symptoms did not subside and even a rash was noted.On X-ray a pleural effusion in left was noted,accompanied by elevated ESR - 120 mm and CRP - 77.08 mg/l.The patient was referred to the clinic for conservative treatment of pleural effusion.We excluded bacterial pneumonia,viral pneumonia,heart failure,kidney involvement, trauma and finally we focussed our therapy towards paraneoplastic effusion.Besides supportive care and continuing the antibiotic therapy (before coming to the hospital)we added Dexamethason and macrolide(due to antiiflamatory activity not as antibiotic).Very important issue was also psychological support and explanation to the mother for the hazards of alternative medicine.

Conclusion: Not every pleural effusion with elevated inflammatory markers is parapneumonic.

Keywords: pleural effusion, mediastinal mass, thymic carcinoma

TREATMENT OF A PREGNANT WOMAN WITH CHOLEDOCHOLITHIASIS AND INTRAHEPATIC AND EXTRAHEPATIC CHOLESTASIS

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Introduction: Choledocholithiasis is the presence of stones within the common bile duct. The present-day treatment of bile duct stones is endoscopic retrograde cholangiopancreatography (ERCP) or in some cases a laparoscopic cholecystectomy with bile duct exploration.

Clinical case: A pregnant woman in 24 weeks of gestation enters Trakia hospital in Stara Zagora under urgent conditions. The reason being abdominal pain, nausea, hyperthermia, darkening of the urine and lightening of the excrements. Diagnosis: Choledocholithiasis. Intrahepatic and extrahepatic cholestasis. Differential Diagnosis: Acute pancreatitis, Biliary stricture, Ascending cholangitis, Appendicitis. Pathophysiology: Gallstones are classified as cholesterol stones and pigmented stones and are present in approximately 20% of females and 8% of males. These stones cause the majority of all biliary tract problems, and depending on where the stone become impacted, specific problems occur. Treatment: It is solved that ERCP under ultrasound control is the best management of the problem. The examination is done under ultrasound control, without X-ray control due to the pregnancy of the patient. During the operation a small stone and a large amount of congested, purulent bile juice are evacuated. A plastic biliary stent is placed under ultrasound control in the common bile duct and the common hepatic duct. The manipulation is well tolerated by the patient and the fetus. The general condition of the woman is improved. Clinical examinations have been repeated after a couple of days. They showed decreased levels of liver enzymes as well as CRP levels. The patient is discharged from the hospital in an improved general condition. This procedure only provides temporary drainage of the common bile duct and the pancreatic duct. 6 months after having given birth, the patient is hospitalized again. This time ERCP is performed under X-ray control. The temporary stent is removed and the remaining 17 stones are evacuated from the bile duct.

Conclusion: The complex and non-invasive procedure ERCP requires highly specialized equipment as well as well-trained specialists. Such medical cases in Bulgaria as the one described above are no more than a dozen.

Keywords: Choledocholithiasis, Intrahepatic and extrahepatic cholestasis, Pregnant woman, ERCP

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Acknowledgements: This poster was possible because of the work of the whole Gastroenterology department of Trakia Hospital, Stara Zagora.

PROGNOSTIC VALUE OF MITRAL REGURGITATION IN PATIENTS WITH PRIMARY ASIMETRIC CARDIOMYOPATHY

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Introduction: Hypertrophic Cardiomyopathy (HCM) represents increased wall thickness of the left ventricle (LV) or LV mass that is not caused by hypertension or heart valve diseases. Mitral regurgitation (MR) is very common in patients with HCM, and determining the degree of MR is of utmost importance in these patients.

Aim: The aim of this study is to determine whether the presence of a higher degree of MR affects the clinical and structural presentation of patients with primary HCM.

Materials and methods: A prospective study examined 102 patients, diagnosed with primary asymmetric HCM. The degree of MR was determined echocardiographicaly. According to the severity of the MR patients were divided into 2 groups: Group 1 (n=52) with no/trace or mild MR and Group 2 (n=50) with moderate/moderate to severe MR.

Results: Group 2 had significantly more often syncope (p=0.041) and NYHA II class (p<0.001). Patients in Group 2 had more frequent previous AF (p=0.032) as well as new onset of AF (p=0.014) compared to the patients in Group 1. Patients with a higher degree of MR had statistically significantly higher left atrial volume index (p<0.001) as well as indirectly measured pressure in the right ventricle (p=0.001). Group 2 had significantly higher E/e' (p<0.001), higher values of Nt-pro-BNP values (p=0.001) than Group 1. Kaplan- Meier analysis demonstrated that event free survival rate during follow up of median 75 (IQR 48-103) months was significantly higher in Group 1 compared to the Group 2 (79% vs. 46%, p<0.001). After adjustment for relevant con-founders, moderate/moderate to severe MR remained as an independent predictor of death (hazard ratio 2.58, 95%CI: 1.08-6.13, p<0.001).

Conclusion: Higher degree of MR is related to the severity of HCM in echocardiographic, clinical and prognostic aspects. These results indicate that MR assessment can be important for adequate treatment and prognosis of patients with HCM

Keywords: mitral regurgitation, hypertrophic cardiomyopathy, echocardiography

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UNIQUE EXTRAHEPATIC APPEARANCE IN CHRONIC HEPATITIS C PATIENT

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Introduction: Porphyria cutanea tarda is a rare disease, resulting from the low activity of the enzyme Uroporphyrinogen decarboxylase (UROD). It takes part in the stepwise process of haem particle synthesis, part of the hemoglobin molecule. The result is an overproduction of porphyrins and their precursors that accumulate in the blood, skin, and liver.

Clinical case: We present the case of a 63-year-old male with chronic viral C hepatitis, liver cirrhosis, and porphyria cutanea tarda (PCT). The patient was first admitted in 2018 due to ulcer-vesicle formations in the forearm region. He tested positive for cirrhosis, which proved to be of hepatitis C origin. The final diagnosis is based on the typical clinical symptoms combined with laboratory test analysis. In the global mindset conditions such as epidermolysis bullosa acquisita, bullous lupus erythematosus, other porphyrias, and pseudoporphyria should be taken into consideration. PCT is an acquired and familial disorder in which activity of the heme synthetic enzyme UROD is deficient. The main role in the pathogenesis is set by the inflammatory processes, accompanied by oxidative stress and a decrease in hepcidin synthesis in liver cells - causing iron accumulation and a decrease in UROD activity. The potential trigger factors in association with the inflammatory process are chronic hepatitis C, HIV infection, alcohol, estrogen-containing drugs, and smoking. The clinical laboratory analysis demonstrates an anti-HCV positive patient with a Class A Child-Pugh score. Liver biopsy was performed proving A1, F4 METAVIR score, genotype 1c HC. Close observation of the clinical manifestations and paraclinical evidence were considered in establishing the therapeutic management including a three-month course with direct-acting antivirals Dasabuvir 250mg and Ombitasvir/paritaprevir/ritonavir 12,5/75/50mg which sustained virological response, negative HCV RNA and full remission of the skin disease.

Conclusion: The aim of this study is to emphasize the importance of the correlation between chronic Hepatitis C and the extrahepatic clinical presentation of PCT. Taking into consideration the clinical testing results, a specific treatment was carried out leading to a persistent virological response with no side effects.

Keywords: porphyria, HepatitisC, Cirrhosis

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Acknowledgements: MU, MF, UMHAT Alexandrovska, Sofia

CHRONIC GRANULOMATOUS DISEASE(CGD): A DIAGNOSIS NOT TO BE MISSED.

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Introduction: Chronic granulomatous disease (CGD) is a congenital immunodeficiency syndrome caused by X-linked or autosomal recessive defect in phagocytic nicotinamide adenine dinucleotide phosphate (NADPH) oxidase.

Clinical case: An eight months old boy experienced recurrent respiratory and urinary infections and persistent mouth thrushes. At the age of twelve months, he presented fever, cough and dyspnea and received treatment with little effect. A year later, having similar symptoms, he was hospitalized. A chest X-ray showed pneumonia with pleural fluid and pleural paracentesis isolated Aspergillus for which he received amphotericin. Later, he was diagnosed with aspergillosis of spine which was considered as contamination from the pleural paracentesis. Despite high intravenous doses of antifungal drugs, lung and bone aspergillosis persisted, resulting in lobectomy and spinal fusion. Until the age of twelve, he contracted many infections. Despite of treatment with the best available antibiotics, there was no cure. He later developed kidney failure and died from stroke. The differential diagnosis of recurrent, persistent infections includes primary immune deficiencies of T, B cells, complement and phagocytes including polymorphonuclear cells (PMNs) and macrophages. PMNs' critical role is to kill bacteria. PMNs ingest bacteria in the phagosome, trigger the synthesis of NADPH oxidase and produce superoxide radicals and hydrogen peroxide through which they kill bacteria. NADPH oxidase consists of 4 proteins: p91 phox, p21, p47 and p67. Any defect of these 4 proteins results in CGD. The gene encoding for P91 phox maps on the short arm of the X chromosome, while the genes for P47, p67, P21 map to autosomal chromosomes. The patient had normal immunoglobulins and complement levels. However, he had abnormal nitrotetrazolium test, specific for the function of PMNs and NADPH oxidase. This established the diagnosis of CGD. DNA sequencing showed complete absence of gp91-phox protein. Management of CGD includes prophylactic antibiotics, treatment of acute infections and immunomodulatory therapy for life. In some cases, hematopoietic stem cell transplantation is considered.

Conclusion: Any patient with recurrent bacterial or fungal infections, requires extensive investigation for possible phagocytosis immunodeficiency and is important the early identification of carriers for genetic counseling.

Keywords: Chronic Granulomatous Disease, recurrent bacterial or fungal infections, nitrotetrazolium test, genetic counseling

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WOLF-HIRSCHHORN SYNDROME (WHS) IN A NEWBORN FEMALE: CASE REPORT

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Introduction: Wolf-Hirschhorn syndrome (WHS) is a rare multiple malformation syndrome first described by Cooper and Hirschhorn in 1961. The disorder is caused by a microdeletion affecting the distal portion of the 4th chromosome's short arm. The main syndrome features include typical facial dysmorphisms, growth deficiency, congenital heart defects, intellectual disability and seizures. The prevalence of WHS is estimated to be from 1 in 50,000 births to 1 in 20,000 live births, with female to male ratio of 2:1.

Clinical case: The proband (second child of 20 years old mother) is a girl, born in 32th week of gestation after a spontaneous rupture of the amniotic sac. The newborn was pale, atonic and with significant bradycardia. Physical examination of the baby revealed multiple malformations including cleft lip and palate, hypertelorism, horizontally situated eyes, brachycephalic skull, wide bridge of the nose, micrognathia, short neck, low positioned ears and severe reduction defects of the limbs. Fifteen minutes after the birth the newborn died due to asystolia. Cytogenetic analysis from peripheral blood lymphocyte culture established karyotype 46, XX, del(4)(p14).

Conclusion: Typical phenotype of the newborn revealed by clinical examination in combination with the result of cytogenetic analysis referred to the final diagnosis of WHS.

Keywords: chromosomal microdeletion, multiple malformations, cytogenetic analysis

INTERVENTIONAL THERAPY IN MITRAL REGURGITATION AS AN ALTERNATIVE TO SURGICAL TREATMENT? A CASE REPORT

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Introduction: Mitral regurgitation is a common valvulopathy, being on the second place in Europe after aortic stenosis. The transcateter repair of the mitral valve provides a therapeutic alternative to patients with mitral regurgitation and increased surgical risk.

Clinical case: Our presentation includes a 56-year-old patient, a former smoker, suffering from dyslipidemia, hypertensive, with inferior-posterolateral lateral myocardial infarction, with BMS on MG I with moderately severe VS systolic dysfunction (LVEF = 20%) , after the coronary angiography reevaluation was performed the implantation of a pharmacologically active stent in the IVA II was decided. The patient had repeated cardiac decompensations, a history of moderately severe mitral regurgitation, so, it has been decided to interventionally reduce the mitral regurgitation by MitraClip implantation and subsequently the implantation of a heart defibrillator was decided due to the presence of episodes of NSVT. After that, the patient had a favorable evolution, improving the severity of the mitral regurgitation, increasing the functional capacity and reducing the left ventricular remodeling.

Conclusion: Although valvular surgery remains the standard care in patients with symptomatic severe mitral regurgitation, this presentation demonstrates that the use of interventional procedure is a viable solution for patients who are not candidates for surgery.

Keywords: heart failure, mitral regurgitation, MitraClip, interventional procedure

RISK FACTORS FOR ONSET AND DEVELOPMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN PATIENTS WITH ACTIVE PULMONARY TUBERCULOSIS

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Introduction: Chronic bronchial obstruction in patients with active pulmonary tuberculosis (PTB) may be an initial manifestation of undiagnosed chronic obstructive pulmonary disease (COPD). In order to adequately optimize therapy, timely differentiation of these two entities necessary.

Aim: Determine the impact of potential risk factors for onset and development of COPD in patients with active PTB.

Materials and methods: Clinical data of selected 60 patients diagnosed and treated with PTB, with first time manifested bronchial obstruction from January 2005 to December 2019 was retrospectively analyzed at the Clinic for Pulmonary Diseases, Clinical Center Nis,. The influence of demographic characteristics, cigarette smoking habits, air pollution, initial radiological spread of pulmonary changes and the rate of sputum conversion, as potential risk factors for COPD were correlated with achieved values of pulmonary function parameters during initial stages of PTB treatment.

Results: The average age of patients in our study was 52.61 ± 17.35 years, of which 78.30% were men and 21.70% were women, mostly workers (35.00%) and retirees(26.70%). The average values of pulmonary function parameters showed a statistically significant increase in FEV1 (L) ($p < 0.001$), FVC (L) ($p < 0.01$) and FEV1 / FVCx100% (%) ($p < 0.05$) , which indicates improvement in bronchial obstruction. A correlation was found between cigarette smoking ($p = 0.039$), length of smoking ($p = 0.042$), and occupational exposure to respiratory irritants over 15 years ($p = 0.001$) with minor differences in FEV1 values during the initial phase of PTB treatment.

Conclusion: Symptoms of COPD in active PTB, confirmed risk factors and achieved FEV1 values during anti-tuberculosis therapy justify concomitant COPD therapy according to current treatment strategies, potentially preventing complications of the underlying disease, improving overall treatment outcome and patient quality of life.

Keywords: risk factors; tuberculosis; COPD;

DERMOSCOPIC FEATURES OF SUPERFICIAL BASAL CELL CARCINOMA

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Introduction: Basocellular carcinoma (BCC) is the most common malignant skin tumor in white race that develops from undifferentiated cells of the basal layer of the epidermis. It is a multifactorial disease and occurs in several clinical variants. Superficial basal cell carcinoma accounts for 10 to 15% of BCC cases. This type has a slow evolution and manifests itself as irregularly shaped lesions. Dermoscopy is a non-invasive diagnostic method that advances the clinical diagnosis of BCC, allowing the detection of cancer at an early stage.

Aim: Analysis of the frequency of dermoscopic features of superficial BCC in patients with a histopathologically confirmed diagnosis of this tumor.

Materials and methods: A retrospective study included 30 patients with a definitive diagnosis of superficial BCC. Tumor changes were subjected to dermoscopic analysis. The following characteristics were included in the study: short superficial telangiectasia, multiple erosions, unstructured white to red areas.

Results: Of the total number of patients, 19 were male and 11 were female. Patient's age at the time of the study ranged from 32 to 78 years. The localization data obtained show that the distribution of lesions was highest on the trunk in 53% of cases, of which 33% on the back and 20% on the front of the trunk. Minor representation was present on the arms in 27% of cases and legs in 17% of cases, while in one case localization was noted on the scalp. Analysis of dermoscopic images revealed three types of dermoscopic changes, with 93.33% of cases presenting short superficial telangiectasia, in 60% of multiple small erosion and in 83.33% of cases unstructured white to red areas.

Conclusion: By analyzing dermoscopic structures, we have shown that short superficial telangiectasia is the most predictive dermoscopic characteristic for the diagnosis of superficial BCC.

Keywords: superficial basocellular carcinoma, dermoscopy,

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Internal Medicine
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Session IV
(IMPS4)

STEINERT MYOTONIC DYSTROPHY AND GENETIC COUNSELING

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Introduction: Myotonic dystrophies (DMs) are autosomal dominant, multisystemic diseases with a core pattern of clinical presentation including myotonia, muscular dystrophy, cardiac conduction defects, posterior iridescent cataracts, and endocrine disorders [1].

Clinical case: Presentation: 35 years old woman, with lower back pain and pain at cervical region. She also has complained of proximal muscle stiffness at legs (sometimes) and weakness of leg muscles since her puberty. Family history - father with early eye cataracts, grandmother with cataracts and some leg problems; her father's cousin with leg problems and daughter of her father's cousin with strange muscle disease, many operations and early death (without diagnosis). The patient has sister (younger than her) with early cataract, which is pregnant now. Such patients require genetic counseling. Neurological examination - Myopathic face, dorsal foot weakness, myotonic phenomenon at hands, hyporeflexia at legs. No cataract. Obesity. Normal thyroid function. Normal glucose levels. Blood examination – normal blood count, normal glucose, creatinine, urea and electrolytes. Normal ECG. Needle EMG with myotonic discharges. Myotonic dystrophy type 1 Steinert Differential diagnosis: Myotonia congenita, Schwartz–Jampel syndrome, Hyperkalemic periodic paralysis, acid maltase deficiency. Pathophysiology: - AD inheritance, anticipation phenomenon with increase in the length of the number of CTG repeats (unstable region) in the DMPK gene [1]. Treatment: no specific treatment is available. Symptomatic treatment for sleep apnea (modafinil, non-invasive ventilation), for myotonia – imipramine, taurine, Erythromycin, and eventually other stabilizers of muscle membranes; for the heart – sometimes pacemaker should be put.

Conclusion: Such diseases are not treatable and with an autosomal dominant pattern of inheritance can be very prevalent in families hence it is import to undertake some form of genetic counseling with these patients. This should involve: assessing the medical and family histories to interpret the chance of disease occurrence and recurrence; education about inheritance, testing, management, prevention and resources; and providing counseling to promote informed choices and adaptation to the risk or condition.

Keywords: Steinhert's Disease, Myotonic Dystrophy

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FEMALE GENITAL MUTILATION – A CASE REPORT

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Introduction: Female genital mutilation (FGM) comprises all procedures involving partial or total removal of the external female genitalia or other injuries to the female genital organs for non-medical reasons. Although primarily concentrated in 30 countries in Africa and the Middle East, female genital mutilation is also practiced in some countries in Asia and Latin America and amongst immigrant populations. Each year, more than 3 million girls worldwide are at risk of undergoing FGM, with most girls cut before the age of 15.

Clinical case: We present a case of a 35- year-old woman immigrant who underwent an operative intervention for clitoris removal at the age of 14 on demand of her parents. The procedure was performed by a woman without medical education using a razor blade. No anesthesia and prior disinfection were performed. In addition to the severe pain felt during the procedure, bleeding and secretion from the wound were observed in the following weeks. During the forensic examination the woman reported pain and absence of pleasure during sexual intercourse, and in the genital area we observed the absence of almost the entire clitoris, an obliquely located cicatrix and palpatory tenderness in the area and when stretching the labia.

Conclusion: Female genital mutilation is recognized internationally as a violation of the human rights of children and women. Girls who undergo female genital mutilation face short-term complications such as severe pain, shock, excessive bleeding, infections, and difficulty in passing urine, as well as long-term consequences for their sexual, reproductive and mental health. The removal of a significant portion of the clitoris constitutes a deformity of the reproductive system due to the removal of an essential anatomical structure — a sensory organ with loss of sensation leading to a permanent disorder. According to the Bulgarian legislation, female genital mutilation is considered a serious physical harm.

Keywords: female genital mutilation, grievous physical harm, forensic aspects

THERAPEUTIC, PHYSIOTHERAPEUTIC AND EDUCATIONAL PROCEDURES IN CONNECTIVE TISSUE DISEASES (SYSTEMIC LUPUS ERYTHEMATOSUS, PROGRESSIVE SYSTEMIC SCLEROSIS, DERMATOMYOSITIS AND POLYMYOSITIS)

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Introduction: Connective tissue diseases are systemic diseases, that attack the muscles and structures that are mainly composed of fibrotic tissue (collagen).Therefore, there is a decrease in the functional capacity of the organs, nervous and musculoskeletal system. This group also includes: Systemic lupus erythematosus, Systemic sclerosis, Dermatomyositis and Polymyositis, which are autoimmune inflammatory diseases that are characterized by the formation of autoantibodies. These diseases are characterized by articular, musculoskeletal, skin, cardiovascular, urinary, hematological, nervous, pulmonary, ocular, and other symptoms.

Aim: The purpose of this paper was to analyse pharmacological and physiotherapeutic treatment of patients with connective tissue diseases in Kosovo.

Materials and methods: This research was a retrospective study and was conducted at the Clinical Center of Rheumatology, University Clinical Center of Kosovo, from 2016 to 2019. Epidemiological data, clinical manifestations and pharmacological therapy were investigated. For physical therapy, due to the lack of recorded data, a literature review was done. Examination was done with objective and subjective methods.

Results: Out of 107 patients with connective tissue diseases 87 (81.3%) were females and 20 (18.7%) were males. The most vulnerable age group was 41-50 years. Most common clinical manifestation of SLE was arterial hypertension 36.8%, meanwhile for SS is pulmonary arterial hypertension 45.5%. The most used pharmacological treatment were corticosteroids with 74.8% and most used physiotherapy is kinesiotherapy.

Conclusion: Connective tissue diseases target mostly women of 41-50 years old. Hipertension is the most common clinical manifestation.
Corticosteroids are the most used pharmacological treatment and kinesiotherapy is the most used physiotherapeutic treatment.

Keywords: Systemic lupus erythematosus, Systemic sclerosis, Dermatomyositis, Polymyositis, pharmacological therapy, physiotherapy.

IMMUNE THROMBOCYTOPENIA AFTER SARS-COV-2 INFECTION

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Introduction: SARS-CoV-2 disease is characterized by viremia phase and inflammatory phase in which hyperimmune response can result in post-covid complications.

Clinical case: A 21-year-old male tested positive on SARS-CoV-2 in early August 2020 after mild symptoms of fatigue, headache, and diarrhea. Two weeks after first symptoms he noticed petechiae, primarily on legs and arms. After emergency admission, laboratory results verified thrombocytopenia (3x10E9/L). He was hospitalized and methylprednisolone 1 mg/kg was started, but without response. Intravenous immunoglobulins (IVIg) were administered, 40 mg for 4 days, and methylprednisolone was increased to 1.5 mg/kg. It was suspected that SARS-CoV-2 induced immune thrombocytopenia (ITP) because specific anti-platelet antibodies were detected alongside anti-SARS-CoV-2 antibodies (anti-nucleocapsid IgG and anti-spike IgA and IgG). Patient had no previous family history of immunologic and hematologic diseases. He responded with return of platelets to the normal levels and was discharged with slow tapering of methylprednisolone. In September, platelets rapidly dropped (53x10E9/L) and the patient developed intolerance to corticosteroids. He received second course of IVIgs, with modest rise in platelet levels this time. Treatment with eltrombopag 50 mg, a thrombopoietin receptor agonist, was introduced. Other treatments (immunosuppressive agents, rituximab, or splenectomy) were not considered optimal during the global pandemic. Platelet levels were maintained in the range of 40-90x10E9/L to avoid spontaneous hemorrhage. In November, during the treatment with eltrombopag, he had a febrile episode which led to a decrease in platelets (10x10E9/L) and increase in anti-SARS-CoV-2 IgA levels. IgG levels were showing constant decrease nearing their detection limit. After third course of IVIgs, platelets returned to the previous range. Six months after the infection, only IgA antibodies were detectable.

Conclusion: This case shows how immune response to SARS-CoV-2 can induce a potentially long-term autoimmune disorder. Even though anti-SARS-CoV-2 antibody levels drastically dropped, ITP shows no signs of improvement.

Keywords: COVID-19, ITP

BACTERIAL PREVALENCE AND SUSCEPTIBILITY PROFILE OF BURN WOUND PATIENTS IN A BURN UNIT AT TERTIARY CARE CENTER-RIYADH, KSA

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Introduction: Burn wounds induce metabolic alterations that predispose the patient to various complications. Infection is the most common cause of morbidity and mortality in this population. Bacterial profile of burn wound patients is diverse, depending on timing and location of injury. Early after burning, the predominant microorganisms are gram-positive bacteria such as Staphylococcus aureus. Subsequently, the burn wound colonizes with a variety of microorganisms comprising both susceptible and multi-drug resistant gram-negative bacteria such as Pseudomonas aeruginosa and Acinetobacter species.

Aim: In this study, we aim to determine the bacterial prevalence and antibiotic profile in patients with burn wounds in a burn unit at a tertiary hospital in Riyadh region in Saudi Arabia. This study will help in understanding the epidemiology of burn wound infection and determining the prevalence of highly resistant bacteria in burn wound patients.

Materials and methods: A single-center, retrospective study, between January 2013 to January 2018 in a burn unit at a tertiary hospital in Riyadh region. Inclusion criteria include all adult patients (>17 years of age) admitted to burn unit as per institution protocol with burn wounds including partial-thickness burns and full-thickness burns pre and post grafting and burn injury in patients with preexisting medical conditions that could complicate management, or affect prognoses such as diabetes mellitus, end-stage renal failure, liver cirrhosis, peripheral vascular disease, malignancy, or who have any medical devices or prosthetic valves or indwelling catheters and patients immunosuppressive drugs. We have excluded pregnant women and other burn patients without wound.

Results: To be discussed after completion of the study.

Conclusion: Illustrating the role of strict infection control practices in preventing the nosocomial transmission of microorganisms among burn patients, and guiding empiric antibiotic therapy to avoid unnecessary broad antibiotic usage, will reduce mortality and morbidity related to infections and decrease the incidence of multi-drug resistant organisms in a burn unit.

Keywords: Burn, Bacterial, Infections, Prevalence, multi-drug resistant organisms, Riyadh

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SOMATIC DISEASES IN PATIENTS WITH CHRONIC SCHIZOPHRENIA

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Introduction: Significantly shorter life expectancy for schizophrenia patients with some somatic disease compared to the general population is reported. Incidence in patients hasn't yet been specified.

Aim: The aim of this study was to determine the incidence of somatic diseases in patients with chronic schizophrenia with a longer evolution of the disease, the association between their occurrence and type of schizophrenia, the length of hospitalization and unhealthy lifestyle, and to compare them with the results of patients with a shorter evolution of the disease.

Materials and methods: The first experimental group included 100 patients whose disease evolution was longer then 3 years . The second experimental group included 30 patients whose disease evolution was less than 3 years. Data was obtained through insight into patient medical histories and processed in the program "SPPS"

Results: Percentage analysis showed that the highest prevalence of CVS disease was in hebephrenic type of schizophrenia, the highest prevalence of CVS disease and hepatopathy was in the 1st group of patients and the highest prevalence of hypertension and COPD was in the 2nd group of patients. In the 1st group of patients was higher percentage of consumption alcohol and drugs and higher number of suicide attempts. In the second group was higher consumption of tobacoo. By the Spearman's correlation coefficient was showed the correlation between length of hospitalization and CVS, COPD and urinary diseases, old age and CTA and urinary diseases, obesity and CTA, COPD and urinary diseases, as well as the negative correlation between educational attainment, CVD and COPD.

Conclusion: The longer evolution of schizophrenia is accompanied by higher incidence of somatic comorbidities. Obesity and lower levels of education in relation to alcohol and drugs consumption showed the significant correlation with the occurrence comorbidities. Inadequate screening and lack of protocols for the diagnosis and treatment of somatic diseases in patients with schizophrenia also have a significant impact.

Keywords: somatic diseases, comorbidities, schizophrenia

THE CHALLENGE - PACEMAKER LEAD ENDOCARDITIS

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Introduction: Nowadays, use of intracardiac devices for heart diseases is increased. Pacemaker lead endocarditis is an uncommon complication after pacemaker implantation, but is associated with high rates of morbidity and mortality. It can be seen early or late after pacemaker implantation. Medical treatment alone is rarely successful, and there is increasing evidence that the entire pacing system should be removed quickly to achieve complete infection eradication with a following antibiotic treatment for 6 weeks.

Clinical case: We present a case of a 82 year-old man, who was implanted a permanent pacemaker eight years ago. He had complaints of fever, chills and fatigue in the last three months. The patient also admitted losing weight. Physical examination was normal except body temperature (38,5 °C) and systolic regurgitant murmur on the left lower sternal border. Laboratory values showed: haemoglobin 91 g/L and increased levels of C-Reactive protein 29.8 mg/L. Other routine laboratory values were within normal limits. Transthoracic echocardiography was performed and showed a mobile mass resembling vegetation on the pacemaker lead, around the tricuspid valve with size of 4 cm . Two sets of blood culture were negative. Antibiotic therapy with Amoxicillin/clavulanic acid and Gentamycin was administered with transitory recovery. Transvenous pacemaker lead removal was contraindicated in this case due to the size of the vegetation. The patient was counselled on the need for surgery, but he refused any surgical intervention and insisted on conservative management. At the end of third week of treatment the patient died from pulmonary embolism.

Conclusion: In conclusion, in patients with pacemakers and risk factors for endocarditis, fever must suggest lead endocarditis. The presentation may be atypical and the presenting symptoms may occur late after the intervention. TTE and TEE must be performed in search of vegetations. In addition to appropriate antibiotic therapy, extraction of infected material is needed for the cure. The technique of removal depends on the size of the vegetation.

Keywords: pacemaker, lead endocarditis, pulmonary embolism

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WHEN THE NEEDED ONE DOES HARM - CASE OF BOY WITH CYSTIC FIBROSIS?

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Introduction: All medications, can trigger allergies and when this happens the medication is listed as a forbidden for the affected individual.

Clinical case: We present case of a 5-year-old boy, with genetically confirmed cystic fibrosis (CF) (compound heterozygous delF508/N1303K). After the confirmation at the age of 1 year and 3 months and a rigorous therapy regimen was initiated. Unfortunately for his second birthday he got the worst possible present - infection with Pseudomonas aeruginosa (PA). Despite proper eradication protocol and aggressive treatment, the infection persisted and currently is in chronic state. At such tender age the only available option is continuous inhaled Colistin, which was done with good tolerance for more than 2 years. The patient developed well, didn't require additional antibiotics or hospitalizations. In July 2020 however after the regular inhalation with Colistin very dramatic allergic skin reaction was noted (including oedema and erythematous plaques). We excluded other possible causes for this reaction, we even provoked the rash 3 days after the stop of the Colistin with another inhalation and the rash reappeared. This is the first time the child showed any allergic reaction with no family allergic history. After allergology consultation - antihistamine therapy was prescribed and antibiotic was changed with oral cefuroxime for one month. A month later Colistin was initiated once again under strict medical monitoring and is continued with favourable effect so far. Since PA is one of the main killers in CF patients (bad prognostic factor and leads to poorer weight gain and increased number of hospitalization and fast lung function deterioration) all national guidelines favour constant antibiotic suppression therapy in case of chronic infection. The child future benefits of proper control of the infection, therefore despite the allergic reaction we insisted to continue the therapy after short wash out period and antihistamine protection.

Conclusion: Having an allergic reaction to a medication does not always means we have to forget about it. Sometimes we have to measure the risk/benefit ratio and to find a way to circumvent the possible harms of the much-needed medicine.

Keywords: Cystic fibrosis, allergic reaction, Pseudomonas aeruginosa, Colistin

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
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COMPARATIVE EFFICIENCY OF POST-THROMBOTIC VENOUS OBSTRUCTION STENTING

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Introduction: Chronic obstructive diseases of the inferior vena cava (IVC) can be complicated by the development of IVC syndrome. Open IVC surgeries are rarely used, as they're technically complex. Endovascular methods of treatment are considered promising. We want to assess whether a therapy supplemented by venous stenting has any advantages.

Aim: To evaluate the efficency of post-thrombotic iliocaval venous obstruction stenting

Materials and methods: A prospective comparative study was carried out by using a group of historical control. Patients who suffered acute proximal venous thrombosis with an outcome in stenosis or occlusion of the ileocaval segment, with signs of post-thrombotic disease (PTD) according to the Villalta Score (5 or more points) were included. The patients were divided into 2 groups. The first group (historical control group) included patients who received conservative treatment. The second group included patients who underwent venous stenting in addition to conservative therapy. The state of the venous bed was assessed using USAS. The Vilalta score was performed 6 months after treatment.

Results: The technical success of stenting was achieved in all cases (100%). SAE not registered. Stent occlusion was detected in one case (5%) at the 4th month of follow-up and required re-intervention. Thus, the primary and secondary permeability were 95% and 100%, respectively. After 6 months, a significant decrease in the Villalta score was noted in the main group (from 15.1 ± 3.4 to 4.4 ± 2.1; $p < 0.0001$). In the control group, there were no such changes (13.1 ± 3.1 versus 12.8 ± 3.0). Major and NLCS bleeding was not observed. Minor bleeding was registered in one patient of each group (5%) and did not require a change in the antithrombotic therapy.

Conclusion: Stenting of the veins of the lower extremities in post-thrombotic obstruction is an effective and safe technique for restoring venous outflow, which significantly improves the results of treatment of patients with post-thrombotic disease.

Keywords: possthrombotic disease, venous stenting, intravascular ultrasound

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ON CHANGES IN OVARY AFTER UNILATERAL OOPHORECTOMY IN PCOS: AN EXPERIMENTAL STUDY

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Introduction: The reproductive health still remains one of the main issues facing society. According to the World Health Organization, 2004 reports, infertility affects up to 15% of the reproductive-aged couples worldwide. The growing incidence rate of gynecological and endocrinological pathology in patients, which leads to infertility, has attracted a lot of interest from researchers. This research seeks to demonstrate the structural changes in the ovary of PCOS rats allowing us to treat resistant cases of PCOS or to estimate fertility age period of women who have undergone ovariectomy.

Aim: To determine morphological characteristics of ovarian gland adjustment left after unilateral oophorectomy in the condition of the ovarian pathology, particularly in Polycystic Ovarian Syndrome (PCOS)

Materials and methods: Research was carried out on 40 Wistar laboratory rats. Anatomical, morpho-metrical, mathematic-statistic and histological methods like light microscopy and transmission electron microscopy were used to estimate the morphological changes taking place in an ovary.

Results: The research carried out allows asserting that, unilateral ovariectomy in rats with normal ovaries leads to premature failure of reproductive function of females in the fertile age. In a case of polycystic ovaries, a number of structurally-functional reorganizations takes place during the reproductive period, that are connected with normalization of physiological processes.

Conclusion: Our research showed that in case of the unilateral ovariectomy performed on the polycystic ovaries there was an improvement of the functional condition of the remaining ovary. It can be proven by the prevailing hormone producing cysts over the cysts lacking theca interna. Secondary follicles and yellow bodies started to appear on the 90th day of life of the rats.

Keywords: Wistar, ovary, fertile, period, hormones

Acknowledgements: Department of biology, Crimean federal university •Department of Gynaecology Crimean federal university •Department of pathology Crimean federal university

EPIDEMIOLOGY OF PROSTHETIC HIP JOINT INFECTIONS

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Introduction: Although prosthetic joint infection (PJI) is a rare complication after total hip arthroplasty, it represents a significant postoperative involvement which is associated with unsatisfactory functional results and high risk of morbidity. The incidence for Bulgaria varies between 1-3%. The treatment involves various of specialists in different approaches. The exact diagnosis of the causative agent is of great importance for the final outcome.

Aim: The aim of our study is to create an epidemiological profile for prosthetic hip infection for our hospital.

Materials and methods: Between 2000 and the end of 2019 (March 2000 – December 2019), 125 patients were diagnosed with PJI at the department of 'Orthopedics and Traumatology' at the 'Tsaritsa Yoanna' ISUL University Hospital, Sofia. The average age of the patients was 62 years. The study includes 59 male and 66 female patients. All cases were diagnosed using preoperative synovial fluid culture specimen and periprosthetic tissue culture specimen samples testing. All the samples have been tested in the department of Microbiology at the 'Tsaritsa Yoanna' ISUL University Hospital, Sofia.

Results: 11 different kinds of bacteria were isolated. Staphylococcus epidermidis was found in the greatest amount of patients – 37 (29,60%). Staphylococcus aureus - in 20 of the cases (16%); Enterococcus faecalis – 9 cases (7,20%). Some Gram negative types also came out – Pseudomonas aeruginosa – 5 cases (4%), E. coli – 4 cases (3,2%) Enterobacter cloacae – 4 (3,2%). Microorganisms typical for hospital acquired infections (Klebsiella pneumonia and Acinetobacter baumannii) were found in 4 other cases (3,2%). In addition culture negative is reported in 37 (29,60%) of the cases.

Conclusion: The percentage of the positive cultures (70,40%) in our study corresponds to the average in the literature. Gram positive bacteria prevail in our study.

CONGENITAL LYMPHANGIOMA SUCCESSFULLY TREATED WITH SCLEROTHERAPY

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Introduction: Lymphangiomas are benign congenital vascular malformations. Around 70% are found in the head and neck area. Based on pathohistological findings, there are three types: macrocystic, microcystic, and the combined type. They can cause airway obstruction, dysphagia and can also be asymptomatic. Lymphangiomas are diagnosed with clinical examination, ultrasound, and MRI (Magnetic resonance imaging). Treatment includes surgery or sclerotherapy.

Clinical case: We present a girl that has been followed since the 32nd week of gestation due to a cystic process on the left side of her neck. She was born with a cesarean section on the 40th week of pregnancy. After birth, fiber-optic endoscopy showed no signs of compression on the pharynx and larynx. MRI scan showed expansive process spreading from the aortal arch, surrounding left subclavian artery in its root. The process spread subcutaneously in the cranial direction, surrounding the shoulder and extending in posterior cervical space. The cytological analysis detected lymphangioma, and it was decided to treat her with chemotherapy using OK-432 (picibanil) and neomycin sclerosing agents. OK-432 is a lyophilized mixture of a low-virulence strain of group A Streptococcus pyogenes incubated with benzylpenicillin. It stimulates the accumulation of neutrophils and macrophages, which then increases the permeability of the endothelium. Increased permeability leads to lymph drainage from lymphangioma. Side effects include edema, redness, febrility, pain, leukocytosis, and thrombocytosis. Bleomycin is an anti-cancer drug that is also used as a sclerosing agent. Our patient received the first dose of OK-432 when she turned three months, and two months later, she received the second dose. At the age of seven months, she received bleomycin. Treatment was successful, and she was cured.

Conclusion: Our goal was to present sclerotherapy as an alternative to surgery which is sometimes hard to do in such a challenging anatomical region.

Keywords: lymphangioma, neck, sclerotherapy

DOWN SYNDROME IN A MULTIPLE PREGNANCY

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Introduction: Twin pregnancies account for 1-3% of all pregnancies. Dizygotic twins are twice as common as monozygotic and in their case there is a high chance of discrepancy of chromosomal abnormalities. This report desrcibes a case of twins discordant for Down syndrome.

Clinical case: A 37 year old woman, with a current twin pregnancy at 19 weeks of gestation, visited the hospital for a routine second trimester scan. The patient did not undergo first trimester screening and the chorionicity of the twins was unknown. She had normal findings in Twin1 for both biometry and structural screening and Down syndrome features in Twin2. The ultrasound of the Twin2 revealed nuchal translucency 7mm (normal <5mm), sandal gap and absent nasal bone (normal >4,6mm). We explained that there is high risk for Down syndrome and the patient opted for amniocentesis. The results showed normal fetal karyotype for Twin1 (46,XX) and an abnormal one for Twin2 (47,XY,+21) diagnosing Down syndrome. Down syndrome is the most common trisomy with significant fetal loss rate. Aging is thought to break down the chiasmata that keep the paired chromosomes aligned. Following completion of meiosis at the time of ovulation, nondysjunction will result in one gamete having two copies of the affected chromosome, leading to trisomy if fertilised. However, this was the case in one of the two fetuses as they do not share the same genetic material. The patient decided to undergo selective embryo reduction abroad. Reduction of the unhealthy fetus was performed at 32 weeks of gestation by intracardiac injection of 2mmEq/mL of potassium chloride. A follow up ultrasound was done after a week and it was normal. The patient gave birth to a healthy girl and there were traces of the reducted fetus.

Conclusion: First trimester screening is important as it is used to assess a pregnant woman's risk for carrying an unhealthy fetus. Specifically in twins, it is much better to reduce the abnormal fetus in the first trimester, otherwise it can lead to preterm labor when it is done in the second or third trimester.

Keywords: Down syndrome, Multiple pregnancy, Selective embryo reduction, Prenatal screening

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PATIENT WITH VIRCHOW'S NODE FROM AN UNKNOWN PRIMARY SITE

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Introduction: The enlargement of a left-sided supraclavicular lymph node (also called Virchow's node) is known as the Troisier sign. It is often a representation of metastatic spread of cancer via the thoracic duct.

Clinical case: The patient has a history for primary lung andenocarcinoma (stage IIIA) and has undergone an upper right lobectomy three years ago. He has been diagnosed with stage IIA primary adenocarcinoma of the sigmoid colon and underwent a hemicolectomy recently. Imaging shows involvement of lymph nodes in the miadiastinum and abdominal cavity. The patient has gone through two courses of chemotherapy, each 4 and 6 cycles respectively. The patient presents to the Head and Neck Surgery Department of "University Hospital Queen Joanna- ISUL" with swelling and palpation-induced pain in the left supraclavicular fossa. Positron emission tomography(PET) shows increase in metabolic activity. The differential diagnosis for lymphadenopathy is extensive. It generally categorizes as neoplastic, infectious, inflammatory, reactive, and nondiagnostic. The supraclavicular lymph nodes are the final common pathway of the lymphatic system as it joins the central venous system. The Virchow's node is adjacent to the junction where incoming lymph is introduced back into the venous circulation through the left subclavian vein. It has extensive drainage sites and drains distant regions which include but are not limited to the stomach, kidney, cervix, testis, and pancreas through various lymphatic pathways. These anatomical relations explain the propensity of various malignancies to metastasize to this lymph node. Left-sided selective neck dissection for lymph node extraction was performed. The lymph node was approximately 2x3cm. The pathologic diagnosis, as well as the immunohistochemistry staining, determine the origin of the node as arising from a poorly differentiated lung adenocarcinoma.

Conclusion: Beeing able to deduct the Virchow's node origin is of great importance for reevaluating the patient's condition and restaging of the lung cancer. With this taken into account, the patient goes from IIIA to IIIB stage, which is a clear sign for disease progression and poorer outcome.

Keywords: Virchow's node, metastasis, adenocarcinoma, neck dissection

EVALUATION OF THE EFFECTIVENESS OF THE USE OF XENOGENIC OSTEOPLASTIC MATERIAL IN COMBINATION WITH PRP PLASMA WHEN REPLACING BONE DEFECTS AFTER REMOVAL OF RADICULAR CYSTS

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Introduction: The most common cyst of the root surfaces of the teeth is also called a periapical or apical cyst. About 60% of all jaw cysts are radicular or residual cysts. Root cysts can form in the periapical region of any teeth, at any age. This cyst is classified as inflammatory, because in most cases it is a consequence of pulp necrosis during caries, and the associated periapical inflammatory response.

Aim: To compare the effectiveness of different methods of treating radicular cysts in the area of the mandibular incisors.

Materials and methods: We selected the results of treatment of 19 male patients, aged 24 to 35 years, who underwent a cystectomy of radicular cysts in the area of the mandible incisors. 11 and patients
(G1) underwent a cystectomy with resection of the apex of the root and filling of the formed cavity with turund with an antibiotic. 8 and other patients (G2) had blood taken to create a platelet rich plasma preparation. He also performed a cystectomy, however, a root apex resection was not performed, and the resulting bone cavity was filled with xenogenic osteoplastic material mixed with autogenous platelet-rich plasma. The general treatment in the form of anti-inflammatory and antibacterial agents did not differ in both groups. Patients rinsed the oral cavity 0.05% of the chlorhexidine bigluconate solution three times a day. After 4 and 8 weeks, treatment was monitored using targeted radiography.

Results: The postoperative period was normal in both groups of patients. During the first (4 week) control radiography, G2 showed a higher level of bone replacement of the cavity than G1. The second (8th week) x-ray showed that in G2 the bone cavities were predominantly replaced by the formed bone tissue. In some patients from G1, the osteogenesis process was still ongoing.

Conclusion: The use of autologous plasma and xenogenic osteoplastic material even without root apex resection gave a better indicator of bone tissue regeneration compared to the classical operation with root apex resection and cotton turundas with antibiotic solution.

INTRAUTERINE SURGICAL CORRECTION OF MIELOMENINGOCELE: RESULTS

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Introduction: Mielomeningocele (MMC) is the most common and clinically signigicant form of spina bifida when a herniation is formed with the involvement of meningeal membranes and tissue of the spinal cord. Direct contact with amniotic liquid leads to intrauterine lesion and degeneration of neural tissue. Until recent years the only treatment of spina bifida was postnatal surgical correction of deformity, including cerebrospinal fluid shunting. However, it has been shown that fetal surgery reduces the need for shunt and improves neurological outcomes in patient with MMC.

Aim: This paper aims to evaluate the results and the outcomes of intrauterine correction of mielomeningocele in Lapino Clinical Hospital from 2016 to 2019.

Materials and methods: Ninety-four pregnant women with MMC of the fetus were included in the study. Fourteen patients formed the group of those who had the fetal surgery performed in Lapino Clinical Hospital. Eighty patients formed the group of postnatal correction following the results of multicenter clinical study of MMC held in the USA.

Results: Intrauterine correction of MMC enables to decrease the risk of ventriculoperitoneal shunting ($p<0.001$) and increases the level of cognitive and motor skills comparing with the group of postnatal treatment.

Conclusion: Intrauterine surgical correction should be the metod of choice for MMC correction.

Keywords: spina bifida, mielomeningocele, fetal surgery

MULTIVISCERAL RESECTION FOR LOCALLY ADVANCED T4 GASTRIC CANCER

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Introduction: Gastric cancer (GC) is the fourth most common cancer worldwide and third in terms of mortality. Due to the lack of early symptoms most of the patients are diagnosed in an advanced stage - locally advanced tumors or metastatic spread. Curative surgery would be indicated if R0 margins could be achieved.

Clinical case: A 69-years-old male presented electively with epigastric pain, nausea, weight loss of ten kilograms and weakness for a month. A diagnosis of an upper abdominal mass had been already established elsewhere and gastroscopy and biopsy confirmed low-grade gastric adenocarcinoma localized in the antrum. CT abdomen/pelvis with contrast on admission showed primary GC that has extended to the head and body of the pancreas with very close proximity to the transverse colon. The other abdominal organs were unremarkable. Other differential diagnoses were excluded due to the specificity of the CT findings and the confirmed histological verification. The patient was admitted to the surgical ward and planned for surgery. The procedure was carried out under general anesthesia. A total median laparotomy was made. The findings were confirmed and a D2 gastrectomy, subtotal colectomy and pancreato-duodenal resection en-bloc with paraaortal lymph node dissection were performed. Five consecutive anastomoses - pancreato-jejuno-, hepatico-jejuno-, eosophago-jejuno-, jejuno-jejuno- and ileo-transversoanastomosis were performed. Post-operative recovery was uneventful apart from a small pleural effusion that was treated conservatively. Nasojejunal feeding was initiated on the first post-op day and bowel movement was present on the fourth. The patient was safely discharged on the fifteenth day.

Conclusion: In conclusion, despite the complexity and the high risk of complications from such major surgery, it is the only intervention that provides a R0 resection and improves chance of long term survival and better quality of life.

Keywords: gastric cancer, multivisceral resection, D2 gastrectomy

MECKEL'S DIVERTICULUM. DIFFERENTIAL DIAGNOSIS OF GASTROINTESTINAL BLEEDING - CASE REPORT

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Introduction: Meckel's diverticulum is a congenital bulging of the small intestine, resulting from improper regression of ductus omphaloentericus. It affects approximately 2% of the population. Symptoms however mainly occur in children by the age of two. Meckel's diverticulum is often asymptomatic or can present with gastrointestinal (GI) bleeding, which can lead to a broad differential diagnosis. Complications include ulceration, mechanical ileus, perforation, peritonitis and profuse hemorrhages, which makes a quick, accurate diagnosis necessary.

Clinical case: The case report describes a 7-year-old girl who presented with anemic syndrome and painless rectal melena - like bleeding, occurring for a second time in two months. From the physical examination of the abdomen was established mild-to-moderate periumbilical pain, lack of peritoneal irritation, and slightly increased peristaltic movements. The patient was afebrile. The black color of the excrements is caused by hemoglobin, which has been altered by digestive enzymes and intestinal bacteria. Due to profuse bleeding, hemoglobin levels of the patinet were 44g/L and hematocrit was 19%, correlating with the paleness and somnolence present in the patient. The long list of differential diagnosis included esophagitis, esophageal varices, gastritis, gastric or duodenal erosion and ulcers, fissures, polyps, food allergies, inflammatory bowel disease, Meckel's diverticulum, infectious colitis, and malignancies. To confirm or reject the diagnoses were performed the following invasive diagnostic procedures: gastroscopy and colonoscopy with biopsy of the stomach, duodenal bulbus, and colon, scintigraphy with 1.4mCi 99mTc pertechnetate (Meckel's scan), computed tomography (CT) scan of the abdomen and lesser pelvis, ultrasound of the abdomen. Based on the physical examination of the patient and the findings of the scintigraphy and CT scan, it was concluded that the most probable diagnosis is Meckel's diverticulum. An inferior median laparotomy was performed on the patient. An inflamed Meckel's diverticulum with ulceration adjacent to the ileal mucosa was found 40cm proximal to the ileocecal valve. An additional finding was the inflamed appendix, which was removed.

Conclusion: GI bleeding in pediatric patients is a common and complicated symptom, requiring extensive examination and diagnostic evaluation. Although Meckel's diverticulum rarely presents clinically, it should be considered in all cases of pediatric GI bleeding, due to its severe complications.

Keywords: Meckel's diverticulum, Gastrointestinal bleeding, Melena, Anemia, Pediatrics, Surgery

ABSTRACTS OF ICMS SOFIA 2021

Abstracts Surgery Oral Session II (SOS2)

EFFECT OF HIGH-DOSE VERSUS LOW-DOSE ASPIRIN IN PATIENTS WITH CORONARY ARTERY DISEASE UNDERGOING PERCUTANEOUS CORONARY INTERVENTION: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

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Introduction: Aspirin is the most common antiplatelet therapy that widely used for patients with coronary artery disease (CAD) after undergoing percutaneous coronary intervention (PCI). However, the use of appropriate dose of aspirin is still debatable and remains uncertain. Currently, aspirin is used in daily doses between 75 and 325 mg.

Aim: To evaluate the effect of high-dose versus low-dose aspirin in patients with coronary artery disease after undergoing PCI

Materials and methods: We performed PubMed and Sciencedirect databases in accordance with PRISMA 2009 guidelines. We searched randomized controlled trials that compared the effect of high dose versus low dose aspirin among patients with coronary artery disease. We searched trials from January 1, 2005 to March 1, 2021. The analysis model used was a random effects model. The outcomes were cardiovascular death, bleeding, myocardial infarction (MI), stroke, mortality, and major adverse cardiovascular events (MACE).

Results: Four RCTs with a total of 22,409 patients (10,340 in high dose group and 12,069 in low dose group) met the inclusion criteria. There was no significant differences on cardiovascular death (Odd Ratio (OR) 1,07; 95% confidence interval (CI) 0.73-1.56; P = 0.74), MI (OR 1.09; 95% CI 0.85-1.39; P = 0.50), stroke (OR 1.32; 95% CI 0.87-1.99; P = 0.19), and mortality (OR 0.93; 95% CI 0.72-1.21; P = 0.60). Nevertheless, high dose aspirin significantly was found to have higher incidence compared with low dose aspirin on bleeding (OR 1.39; 95% CI 1.07-1.80; P = 0.01) and MACE (OR 1.37; 95% CI 1.15-1.63; P = 0.0005).

Conclusion: Among patients with CAD after undergoing PCI, high dose aspirin was associated with higher incidence of bleeding and MACE. There was no association in the incidence of cardiovascular death, MI, stroke, and mortality compared with low dose aspirin.

Keywords: Aspirin, Coronary artery disease, Percutaneous coronary intervention, Bleeding

OVARIAN METASTASES FROM BREAST CANCER

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Introduction: Breast cancer is one of the main reasons for secondary ovarian cancer. It metastases both through blood and lymphatic vessels. Through the vessels the primary cancer cells spread distantly and colonize distant organs. One of the rarest metastatic sites is the ovaries. However, there is a number of similarities between ovarian metastases from breast cancer and primary ovarian cancer. Differentiating the former from the latter is difficult. The successful diagnostics allows for adequate treatment and prognosis.

Clinical case: We present you the case of 57-year-old female with tumor formations covering the ovaries. 14 years ago she underwent mastectomy due to breast cancer. PET scan assigned by orthopedist detected formations in the pelvis and ascites. Vaginal ultrasound confirmed bilateral enlarged ovaries 5x5cm and ascites in the Douglas pouch. Taking the patient's symptoms into consideration, there is a chance for primary ovarian cancer or ovarian metastases. The metastatic pathway of breast cancer is both hematogenic and lymphogenic. Through the vessels the primary cancer cells spread distantly and colonize distant organs. Breast cancer rarely gives metastases in the reproductive system (ovarian metastases). After hospitalization the patient tested positive for CA 125 (105U/l). A bilateral oophorectomy was performed. The intervention is mostly a diagnostic method. The histological report shows that the right ovary had diffuse infiltration from ductal carcinoma and desmoplasia. The right fallopian tube was infiltrated by the tumor as well. The left ovary had a small number of cysts and had diffuse infiltration from ductal carcinoma forming ductal structures and desmoplasia. The left fallopian tube was infiltrated from the neoplasmal process. The immunohistochemical analysis displayed elevation in GATA3 and CEA. The woman was HR positive and HER2 negative. Prognosis of survival of both primary ovarian cancer and ovarian metastases from breast cancer is low. It has one of the lowest 5-year survival rate .

Conclusion: Differentiating primary ovarian cancer from ovarian metastases as a consequence from breast cancer is often difficult. It important due to the differences in life expectancy and treatment.

Keywords: ovarian metastases, primary ovarian cancer, breast cancer

Acknowledgements: Todorova-Baitcheva A. MD

A META-ANALYSIS ON TRANSCATHETER AORTIC VALVE REPLACEMENT VS SURGICAL AORTIC VALVE REPLACEMENT

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Introduction: Aortic stenosis (AS) is the narrowing of the exit of the left ventricle of the heart. Once the stenosis has become severe, treatment primarily involves surgery to replace the valve. Transcatheter aortic-valve replacement, which treats aortic stenosis by displacing and functionally replacing the native valve with a bio prosthetic valve delivered on a catheter.

Aim: The objective of this study was to compare transcatheter aortic valve implantation (VIV-TAVI) and surgical replacement and the associated patient outcomes.

Materials and methods: In Cochrane clinical trials included 2818 participants who were randomly allocated to undergo either TAVI or surgical aortic valve replacement (SAVR). The results were concluded using risk ratio (RR) and continuous data using the mean difference (MD), with respective 95% confidence intervals. Primary and secondary outcomes were analysed along with using the GRADE approach to assess certainty evidence.

Results: The concluded results show the all-cause mortality values were RR 0.69, 95% CI 0.33 to 1.44; SAVR 11 deaths per 1000, TAVI 8 deaths per 1000 (95% CI 4 to 16). For stroke (moderate certainty)
RR 0.73, 95% CI 0.42 to 1.25; SAVR 21 strokes per 1000, TAVI 16 strokes per 1000 (95% CI 9 to 27). However, RR 3.65, 95% CI 1.50 to 8.87; SAVR 47 per 1000, TAVI 170 cases per 1000 (95% CI 70 to 413 shows that TAVI increases the risk of PPM implantation. In addition, the secondary outcome of hospitalization between TAVI and SAVR is uncertain. The New England Journal of Medicine also provides evidence the rates of death from any cause were 3.4% in the transcatheter group and 6.5% in the surgical group at 30 days (P=0.07) and 24.2% and 26.8%, respectively, at 1 year (P=0.44). However, at 30 days, major vascular complications were significantly more frequent with transcatheter replacement (11.0% vs. 3.2%, P<0.001) were obtained.

Conclusion: There is clear evidence suggesting that the use of TAVI in patients with aortic stenosis, however short term mortality for TAVI and SAVR had little to no difference especially in severe aortic stenosis patients, Similarly, there is probably little or no difference in risk of stroke, but vascular complications were higher in TAVI.

Keywords: Transcatheter Aortic valve replacement, Surgical aortic valve replacement

INGUINAL HERNIA MESH REPAIR: ANATOMICAL RISK FACTORS FOR THE RECURRENCE

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Introduction: The analysis of scientific publications of last 5 years shows that the questions of anatomical preconditions, role of gender and physique in recurrences of inguinal hernias after mesh hernia repair up-to-date. Considered as a "gold standard", tension-free hernioplasty has many advantages comparing to tissue repair, but the question of the graft's size remains a subject of discussions.

Aim: To substantiate anatomical parameters influencing choice of graft's size and shape in inguinal hernia repair.

Materials and methods: In the research took part 74 patients of both gender with primary inguinal hernias. All the patients were divided into 3 groups due to type of physique: 26 patients (35.1%) of endomorph type, 20 patients (27%) of ectomorph type and 28 patients (37.8%) of mesomorph type. An in-depth analysis of anatomical parameters of the inguinal region was performed in these groups. Received data were used to calculate the optimal sizes of the prosthetic mesh for the inguinal hernia repair depending on the physique and gender.

Results: The obtained data show that the anatomical parameters of pelvis and inguinal regions in particular vary not only in people of different gender and type of physique, but sometimes may vary in one person. That leads us to necessity of individual approach to the choice of size of hernia mesh in every individual case. Based on the obtained data the optimal size of the allograft for the inguinal hernia repair for the patients of different physique and gender were calculated. We may conclude that inguinal allografts of standard size correspond not to all patients. During the operation, surgeons have to modify the size of standard graft with the scissors or to use a bigger piece of mesh to form the graft of necessary size. All that may lead to mistakes and raise the risk of complications and recurrence.

Conclusion: The anatomical sizes of inguinal regions may vary not only in people of different gender and body structure, but sometimes may also vary in one person, and require an individual approach to the choice of size of hernia mesh in every individual case.

Keywords: Hernia, inguinal region, recurrence, complications p

SOFT TISSUE SARCOMA OF HEAD AND NECK : SERIES OF FOUR CASES AND LITERATURE REVIEW

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Introduction: Soft tissue sarcomas of the head and neck are rare mesenchymal malignant neoplasms with significant morbidity and mortality. Soft tissue sarcomas account for less than 10% of all soft tissue sarcomas and approximately 1% of all head and neck neoplasms in adults. Pediatric soft tissue sarcomas are relatively rare and 850-900 children and adolescents are diagnosed with rhabdomyosarcoma(RMS) or one of non-RMS soft tissue sarcomas in a year. The histological classification of soft tissue sarcomas present with various clinical characteristics. Head and neck soft tissue sarcomas have a high risk of local recurrence and metastatic formation. The treatment includes the combination of surgery,radiotherapy and chemotherapy.

Clinical case: Materials and Methods: We reported a case series of 4 patients with soft tissue sarcoma of the head and neck ; 3 patients were diagnosed with different variants of rhabdomyosarcoma and 1 patient was diagnosed with leiomyosarcoma. The patients were treated in the Otorhinolaryngology clinic of University Hospital “Queen Giovanna "- ISUL in the last 5 year-period. Results: Patient ages at diagnosis were 6,7,35 and 37 and were presented with the symptoms of a palpable mass in the tumour area and some specific symptoms such as nasal congestion,snoring and hoarseness. All patients received surgical resection and adjuvant chemo-radiotherapy.

Conclusion: In our case series, we reported the results of the combined-modality approach for the treatment of differently classified soft tissue sarcomas of head and neck. The improvement of treatment is still very necessary because of the aggressive outcome and poor prognosis.

Keywords: sarcoma, soft tissue, rhabdomyosarcoma, leiomyosarcoma, surgical resection, head and neck, oncology,

PHOSPHATURIC MESENCHYMAL TUMOR IN NASAL CAVITY

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Introduction: Phosphaturic-mesenchymal-tumor(PMT) is defined as morphologically distinctive neoplasm that produce tumor-inducted osteomalacia(TIO) in most affected patients, usually through production of fibroblast-growth-factor23 (FGF23). Clinical symptoms, including progressive muscular weaknes and diffuse bone pain from pathologic fractures, are often present for months or years before the possibility of PMT is considered. PMT may occur in any soft tissue or osseous location. PMT in the nasal cavities often contain thick-walled blood vessels and a relatively large component of mature adipose tissue, simulating a vascular malformation or cavernous hemangioma.

Clinical case: 2020-12-03 45-years-old caucasian male, department of Otorhinolaryngology. Complaints: inability to breath through the right nostril. Difficulty of breathing started in 2019-09. Anamnesis-morbi:2019-11-13CT scan findings:right frontal and maxillary sinuses, ethmoidal cells and right nasal cavity completely filled by mass. Biopsy was taken. Answer:capillary hemangioma.
2019-11-28MRT scan findings: mass in the right nasal cavity and ethmoidal cells, reactive changes in the right sinuses. Tumor removal surgery postponed because of the COVID-19 pandemic. Anamnesis-vitae:Antiphospholipid syndrome, idiopathic otosclerosis with patological fractures, multiple sites, reactive arthritis, aseptic necrosis of both hips, idiopathic gout, ancle pain since 2019-09. Status praesens:Patological findings of otorhinolaryngological examination:the right nasal cavity is completely obstructed by soft tissues, endoscopic examination throught the right nostril of the middle slit and nasopharynx is not possible to perform. Treatment:2020-12-03 surgery:Extirpatio tumoris cavi nasi communis dex. Dissected mass was sent to the pathologist for the confirmation of the diagnosis. Answer: PMT. Blood-test: 2020-12-04:creatinine(μmol/l)54(n.r.64-104);P(mmol/l)0,72(n.r.0,74-1,52).

Conclusion: PMT is under-recognized, both by clinicians and pathologists. Under-recognizion is leaded by patients suffering from disability related to their tumors for several years. The diagnosis is commonly delayed due to the non-specific nature of symptoms, lack of clinical suspicion, failure to include serum phosphorus levels in routine blood chemistry testing, and difficulty in identifying the responsible tumor. Despite their often-dramatic clinical presentations, the great majority of PMT are benign neoplasms that may be fully cured with complete surgical resection resulting in resolution of phosphate wasting and osteomalacia.

Acknowledgements: MD Donata Sukyte-Raube

ANGIOMYOLIPOMA VESSELS EMBOLIZATION IN PATIENT WITH PRINGLE-BOURNEVILLE'A PHACOMATOSIS

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Introduction: Pringle-Bourneville'a phacomatosis (tuberous sclerosis complex,TSC) is an autosomal dominant genetic disorder, which can be also caused by de novo mutation. This disease manifests itself as hamartomas in skin, kidneys, lungs and central nervous system. It occurs with equal frequency in both sexes, but women seem to have more marked signs. Mortality and morbidity is usually caused by neurological and renal complications. In kidney this disease appears as angiomyolipomas, renal cell carcinomas and cysts.

Clinical case: Male Patient, 16 years old with TSC and epilepsy, after two subependymal nodules resection, was admitted to the hospital with urinary tract haemorrhage. He required complementary blood transfusion. CT scan revealed angiomyolipoma (9,5 x 7 x 9,2 cm) in upper part of the right kidney and vascular anomalies. Moreover, in tumor there was a hematoma (3 x 2 cm) with a breakthrough to the pelvicalyceal system. Some other smaller angiomyolipomas were noticed in liver and both kidneys and a significant blood clot in urinary bladder. Aortonephrography showed that tumor was supplied by two branches of right renal artery. Patient was qualified to embolization of both branches. After procedure, contrast enhancement of tumor vessels in control angiography was not present. Normal vascularization of the healthy part of the kidney was obtained. Tumor bleeding stopped. Patient was discharged home in good condition (Hemoglobin 11,1 g% [13 – 17,5 g%], haematocrit 37,8% [37 – 49%]. Control USG after one year from the procedure revealed tumor size reduction (3,5 x 3 x 3 cm) and other angiomyolipomas under 1 cm. TSC manifestations can be found in different organs, so differentiation of the disease depends on its form. Symptoms like in our patient can appear in other kidney disorder such as renal tumors independently from TSC, urinary tract infections, glomerulonephritis, kidney injuries. TSC is caused by mutation in TSC1 or TSC2, which encode hamartin and tuberin, respectively. Available method of angiomyolipoma treatment is vessel embolization or tumor resection.

Conclusion: Extensive angiomyolipoma vessels embolization is a precise, effective and minimally invasive method of treatment. It should be preferred more than resection due to less risk of severe complication occurrence.

OSSIFYING FIBROLIPOMA CAUSING POSTERIOR INTEROSSEOUS NERVE SYNDROME- THE IMPORTANCE OF BIOPSY

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Introduction: Posterior Interosseous Nerve (PIN) syndrome is a peripheral nerve palsy which can be caused by extrinsic compression, most often by a lipoma (1). Lipomas are the most common benign soft tissue tumour in adults (2), however variant lipomas, such as fibrolipomas are rarer. Sometimes, the tumour tissue may undergo metaplasia, resulting in changes such as ossification. To our knowledge, this is the first case reported on an ossifiying fibrolipoma eliciting PIN syndrome.

Clinical case: A 54-year-old female presented with a 6-month history of difficulty extending her right little finger at the metacarpophalangeal joint, alongside weakness in her right extensor carpi ulnaris and extensor pollicis longus. She had pain and swelling in her right arm, and the area felt tender on examination. MRI findings suggested this was an intramuscular lipoma, and surgical decompression was recommended immediately. Upon surgical resection bony material was felt in the tumour. Histopathology revealed the tumour to consist of lobulated fatty tissue with interspersed spindle cell elements and numerous foci of ossification. This made the tumour an ossifying fibrolipoma, which was externally compressing the posterior interosseous nerve. The mechanism of ossification of lipomas is unknown, but is thought to be a reactive change in response to mechanical stress, repeated trauma, or ischaemia(3). Complete surgical marginal exicison is the gold standard of treatment for lipomas, and can be performed as a day case under local anaesthesia.

Conclusion: In conclusion, this case emphasises the need for early diagnostics and localisation of the lesion to allow for preoperative surgical planning. It also highlights the need of biopsy to accurately differentiate variant lipomas from the benign kind.

Keywords: Fibrolipoma, Posterior Interosseous Nerve syndrome
Acknowledgements: Mr. Saikat Ray

SURGICAL TREATMENT OF THORACO-ABDOMINAL AORTIC ANEURYSM TYPE V

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Introduction: Even nowadays the treatment of thoraco-abdominal aortic aneurysms remains one of the greatest challenges in the modern cardiovascular surgery. The rupture of these aneurysms significantly complicates their treatment due to the urgency of the condition.According to the statistics, this fact leads to a very high mortality rate.

Clinical case: We present you a case of a 58 year old man who was admitted in the ER with chest and abdominal pain and deteriorating condition in the last few hours. CT Angiography showed a thoraco-abdominal aneurysm Crawford type V with a rupture of the thoracic part into the mediastinum. The coeliac trunk and the superior mesenteric artery were exiting the lower pole of the aneurysmal sac. Double left renal artery with stenosis of the second one and tortuosity of the common iliac arteries was also present. A decision was made for an open surgical intervention. The possibility of endovascular treatment was rejected due to the anatomical features of the iliac vessels and coeliac trunk and upper mesenteric artery. Small lumen of both left renal arteries makes chimney or snorkel technique impossible.

Conclusion: TAAA are highly lethal disorders and open surgical repair is the best long-term solution for them, providing durability and survival.

Keywords: thoraco-abdominal aneurysm, aneurysm Crawford type V

SUMATRIPTAN INCREASES SKIN FLAP SURVIVAL THROUGH ACTIVATION OF 5-HYDROXYTRYPTAMINE 1B/1D RECEPTORS IN RATS: THE MEDIATING ROLE OF THE NITRIC OXIDE PATHWAY

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Introduction: random pattern skin flaps are applicable for reconstructing any defect in plastic surgery. However, they are diffcult to apply because of necrosis. Sumatriptan, a selective 5-hydroxytryptamine 1b/1d agonist, is routinely used to offset acute migraine attacks. Recent studies have suggested that sumatriptan may induce vasodilation at lower concentrations.

Aim: We aim is to investigate the effect of sumatriptan on skin flap survival and the role of nitric oxide in this phenomenon.

Materials and methods: Seventy-two male Sprague-Dawley rats were divided into eight groups. Increasing doses of sumatriptan (0.1, 0.3, and 1 mg/kg) were given intraperitoneally to three different groups after dorsal random pattern skin flaps were performed. To assess the exact role of 5-hydroxytryptamine 1b/1d receptors, GR-127935 was administered solely and with sumatriptan. nitro-l-arginine methyl ester (l-NAME, a nonselective nitric oxide synthase inhibitor) was used to evaluate any possible involvement of nitric oxide in this study. All rats were examined 7 days later.

Results: The results demonstrated that flap survival was increased by lower doses of sumatriptan compared to a control group for both 0.3 mg/kg ($p = 0.03$, mean difference = 32, SE = 8) and 0.1 mg/kg ($p = 0.02$, mean differ- ence = 26, SE = 8). This protective effect was eliminated by coadministration of GR-127935 or nitro-l-arginine methyl ester with sumatriptan. Histopathologic studies revealed a signi cant increase in capillary count and collagen deposition and a decreased amount of edema, in ammation, and degeneration.

Conclusion: Sumatriptan in lower concentration increases skin flap survival by means of activation of 5-hydroxytryptamine 1b/1d receptors. This effect is mediated through the nitric oxide synthase pathway.

Keywords: sumatriptan, skin flap, nitric oxide

ABSTRACTS OF ICMS SOFIA 2021

Abstracts Surgery Oral Session III (SOS3)

CLINICAL OUTCOME FOLLOWING SURGICAL TREATMENT OF CAVERNOUS MALFORMATION RELATED EPILEPSY

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Introduction: Cerebral cavernous malformations (CCM) are the second most common type of cerebral vascular malformations and also regarded as highly epileptogenic lesions if they involve the cortex. Before diagnosis, epileptic seizures are seen in half of the patients with CCMs.

Aim: To gain a better understanding of surgical seizure outcomes, we performed a retrospective observational study of CCM patients with two patient cohorts as non-drug-resistant cavernoma related epilepsy (CRE) and drug-resistant CRE.

Materials and methods: From 2001 through 2018, 56 patients with non-drug-resistant (40/56, 71%) and drug-resistant CRE (16/56, 29%) underwent resective surgery. Patients who were still experiencing seizures after appropriate antiepileptic drug therapy were put in the drug resistant CRE group.

Results: The efficiency of seizure control was ranked according to Engel class at the last follow up as Engel class I in 53 patients (95%; IA= 45 [80%], IB=3 [5%] IC=1 [9%]), Engel class IID in 1 patient and Engel class IIIA in 2 patients. All the patients who were put in the non-drug-resistant CRE cohort were Engel class I after the surgery. On the other hand, the 4 patients whose seizures continued in the post-operative period were in the in the drug-resistant CRE patient cohort.

Conclusion: CREs must be approached patient-wise with clinical findings and epileptic work-up which elaborates localization specifications. We believe that this study adds to our knowledge regarding especially extratemporal CCMs and helps us to determine the appropriate neurosurgical treatment approach for patients with CCMs.

Keywords: cavernous malformation, epilepsy, drug-resistant epilepsy, epilepsy surgery

ASSESSMENT OF 5 - YEAR BREAST CANCER RISK AMONG IRAQI WOMEN IN 2019

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Introduction: Breast cancer is a one of the most common cancer among all world ' s women . In Iraq , breast cancer is the first cancer that is common among Iraqis and the leading cause of death from malignant neoplasm among Iraqi women . The cases in Iraq increased from 26 . 6 / 100 , 000 in 2000 to 31 . 5 100 , 000 in 2009

Aim: To assess the 5 - year risk and lifetine risk an ong Iraqi women and predict the governorate that has the higher risk among the others .

Materials and methods: Our study is a cross sectional study with multistage sampling was conducted among 1093 Iraqi females from all the Iraqi ' s 18th governorates . All the women aged (35 and < 85) years old , they were not diagnosed with breast cancer previously and they had not BRCA1 or BRCA2 . A pilot study of 73 participants were done at first to test the validity and reliability of the Arabic version of the questionnaire .

Results: 80. 6% of them were Arabic, 12. 5% were Kurdish, 6. 9% were Turkmen. The average of the 5 - year risk is 1. 34 (75. 3% of them have low risk and 24. 7% have high risk). The mean of lifelong risk is 13. 37 (64. 7% of them have low risk, 30. 3% have average risk and 5% have high risk). Linear regression model showed that Age, Family history and Menopause are the most predictors for 5 - year risk while Age and Family history are the most predictors for lifetime risk.

Conclusion: The 5 - year risk of BC among Iraqi 's women for 2019 is very high then other world and in is distributed commonly in Baghdad, Dhi Qar, Nineveh and Maysan. While the lifetimerisk is higher in Najaf and Dhi Qar. Screening programs are very important for Iraqi 's women for the prevention of BC. Mann in ography should be done every 6 months especially for those who have higher risk than the others.

Keywords: Breast Cancer, Gail Model, BCRAT, Assessment, 5 years' risk, lifetime risk

NEW STRATEGIES IN DIAGNOSIS AND TREATMENT OF DIABETIC RETINOPATHY

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Introduction: Diabetic retinopathy is eye disease with great socioeconomic impact. It is induced by tissue hypoxia in posterior segment of the eye. It is sometimes difficult to treat it.

Aim: To show our diagnostic and treatment algorithm used for patients with diabetic retinopathy.

Materials and methods: The research was made in "St.Sofia" Hospital – Sofia. More than 150 patients with different stages of diabetic retinopathy were included. They passed all routine methods of examination (visual acuity, intraocular pressure measurement, slit lamp examination of anterior and posterior eye segment after pupil dilatation) and special methods: optical coherence tomography, red-free fundus photography, fluorescein angiography, B-scan).

Results: All patients were treated according to the stage of the disease and following our algorithm. We used conservative treatment, laser treatment, surgical treatment. Most of the patients remained in a stable eye condition during the 3-years period of observation.

Conclusion: Diabetic retinopathy is a disease which needs a complex and individual treatment. The key of proper treatment is to identify the exact stage of the disease with all routine and special methods of examination and to use separately or in combination all modern methods of treatment.

COBLATOR- ASSISTED TONSILLECTOMY AS AN ALTERNATIVE METHOD FOR TREATMENT OF CHRONIC TONSILLITIS AND OBSTRUCTIVE SYNDROME IN CHILDREN, ADOLESCENTS AND ADULTS

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Introduction: Coblator-assisted tonsillectomy is a method, which alongside the conventional approach, has been applied for surgical treatment to patients from all age groups for over 10 years. Coblation generates bipolar current, but with lower frequency than the classic diathermy and the heat effect on the adjacent tissues is less harmful. Reduced levels of pain, faster recovery and intact immune functions are reported. Post operative bleeding is contradictory.

Aim: To compare the results of the coblator-assisted and the classic tonsillectomy – bleeding, analgesics intake and recovery of children and adults with indications for surgical treatment.

Materials and methods: The research included 80 patients: children 3-18 years old and adults 18-65 years old, both men and women. They were divided into two groups, each of them with 40 patients (10 adults and 30 children), depending on which technique was going to be used.

Results: All the surgeries were successful. Only 2 cases of postoperative bleeding were reported for the coblator – assisted method (1) and 3 cases for the conventional procedure (2). Pain was measured 7.12±0.78 and 5.81± 1.39 on the first day and 3.34±1.04 (p=2.80584E-11) on the second day. Most of the complaints came from adults. 42% (1) versus 86% (2) of the patients took analgesics.

Conclusion: Coblator-assisted tonsillectomy is a new for the region surgical method of treatment. Our research supports its efficiency and safety as an alternative to the classic approach to children and adults with chronic tonsillitis and obstructive syndrome, indicated for operative treatment

Keywords: coblation, coblator-assisted tonsillectomy, otorhinolaryngology

POSTEROLATERAL APPROACH IN CASE OF POSTERIOR MALLEOLAR FRACTURES

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Introduction: The posterolateral approach to the ankle is valuable in cases of posterior malleolar fractures. These are mainly rotation-induced fractures comprising greater than 30% of the articular surface or those with a joint instability.

Aim: Presenting a safe and effective approach of re-establishing ankle fractures.

Materials and methods: The patient is in prone position. A 10 centimeter longitudinal incision is made in between the lateral malleolus and the Achilles tendon. The sural nerve is protected throughout the course of dissection. The flexor hallucis longus muscle is retracted medially with a gentle care of the peroneal artery exposing the distal part of the tibia. The fibula can be fixed medially to the peroneal muscles. A plate may be applied to the retrofibular surface as long as this doesn't impair the peroneal muscles' proper function. A passive dorsiflexion aid in restoration of the length. An anti-glide plate is applied. A fluoroscopy review is required to confirm the congruity. The foot is immobilized with the ankle in neutral position. A period of 12 weeks of non-weight bearing is required.

Results: Outcomes are favorable in terms of fracture reduction and overall complication rates. The displacement of the posterior malleolus must remain less than 1 millimeter. Residual erythema and numbness in the distribution of the sural nerve are reported as complications in low number of patients. The numbness is expected to resolve.

Conclusion: When compared with the anterior approach, in which the anterior tibial artery can be affected, the posterolateral approach appears as a safe choice. The former, also, ends in worse reposition. On the other hand, the peroneal nerve could be damaged from behind. Furthermore, a fairly common complication is skin necrosis due to wound edges' traction. A later obstacle is that the removal of the plates turn out to be harder. • Conclusion: The posterolateral approach for management of posterior malleolar fracture is a safe and effective method for achieving anatomic reduction and re-establishing the syndesmosis posteriorly.

Keywords: Posterolateral approach, posterior malleolar fracture, trimalleolar fracture

COMMON OVARIAN TUMORS IN PEDIATRIC AGE- A STUDY AND REVIEW OF LITERATURE

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Introduction: Ovarian masses in childhood present with different aetiologies. Functional ovarian cysts are most common whereas benign or malignant ovarian neoplasms are rare, occurring in 2.6/100 000 girls. The need to differentiate between these types of tumours is of great importance as treatment varies greatly amongst them and could often determine future fertility. Clinical presentation of ovarian tumours is similar between the different types and includes signs and symptoms of precocious puberty, abdominal pain, endocrine disturbance, increase in tumour markers and a pelvic mass on imaging. Definite diagnosis is made by histopathological analysis.

Aim: The aim of this study is to evaluate the presenting symptoms and clinical outcomes of the patients diagnosed with ovarian tumours in the Department of Pediatric Surgery St George Hospital Plovdiv and to review the literature.

Materials and methods: 8 patients were treated between February 2012 and December 2019 at the Department of Pediatric Surgery, St George Hospital, Plovdiv. The age of the patients ranged from 23 days to 12years. The clinical presentation, method of treatment and clinical outcome is analysed.

Results: All of the patients treated were symptomatic with abdominal pain or the presence of a palpable mass. One patient presented with a delay of menarche. All the patients were diagnosed with a benign disease- 6 had ovarian cysts, 1 patient had a mucinous cystadenoma, 1 patient had a mixed tumour-papillary serous cystadenoma/mature teratoma. Operations performed were laparotomy (8) with cystectomy (6), oophorectomy (2), salpingo-oophorectomy (1).

Conclusion: All the cases in our study were benign with ovarian cysts being the most common. Patients were in good condition after surgery. With the proper treatment patients have positive outcomes

Keywords: Ovarian tumor, Pediatric Age

Acknowledgements: We appreciate Prof Penka Stefanova, the Head of the Department of Pediatric Surgery, St George Hospital, Plovdiv who supervised our work and provided us with the resources we needed to perform this study. We also thank Prof E. Uchikova, the Head of the Department of Obstetrics, St George Hospital Plovdiv, for her invaluable contribution to this study.

THE ROLE OF ULTRASOUND IN THE ASSESSMENT OF LOW FORMS OF RECTAL ATRESIA

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Introduction: Anorectal malformations (ARM) are not very rare and are presented with many anatomical varieties, which determine different methods of the operative treatment. In the diagnostic evaluation of neonates with imperforate anus, the primary goal is to distinguish between high-type (supralevator) and low-type (infralevator) of imperforate anus. Usually the distinction can be done by using the clinical database. According to the research data, there is 8-10% inaccuracy in the clinical assessment of ARM in all cases. The ultrasound (US) has been used to evaluate ARM for the first time in 1989, but its application is not widespread yet.

Clinical case: In this study, two newborns with imperforate anus examined only by US are presented. With this case report we demonstrate the usefulness of the conventional ultrasonography to assess low-type of ARM. Scanning was performed with a high frequency linear transducer by a suprapubic approach and directly through the perineum. The blind rectum and the adjacent structures were precisely identified by US and also the distance to the perineal skin was measured.

Conclusion: In conclusion, conventional US in neonates with imperforate anus can help the evaluation of the relationship between the puborectal muscle and the distal rectal pouch. Therefore it is an excellent diagnostic method for determination of the imperforate anus type.

Keywords: Anorectal malformations, Diagnostic evaluation, Ultrasound examination

CEREBELLAR PILOMYXOID ASTROCYTOMA IN 12-YEAR OLD CHILD: A CASE REPORT

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Introduction: Pilomyxoid astrocytoma (PMA) is a variant of the most common brain tumor in pediatric population– pilocytic astrocytoma. No definite grade assignment is recommended for PMA on the last 2016 WHO classification for CNS. PMAs are more aggressive than the average pilocystic astrocytoma due to its predisposition to local recurrence and cerebrospinal fluid dissemination. Those tumors tend to exhibit a predilection for the optic chiasm, third ventricle and hypothalamus. Pilomyxoid astrocytoma tumors are generally presented to children in age range of 2 months to 4 years.

Clinical case: We report a case of 12-years-old girl presented with vertigo, gait disturbance, tremor of the right hand and diplopia. The neurological examination reveal signs of intracranial hypertension, cerebellar ataxia and palsy of VI CN in left. MRI showed massive tumor formation located in the left cerebellar hemisphere and dislocation of the fourth ventricle and the brain stem. The patient underwent a total resection of the tumor formation via left-sided suboccipital retrosigmoid craniectomy. The histological review of the resected tumor showed characteristics similar to pilomyxoid astrocytoma. Improvement of neurological deficit was observed. No evidence of residual or recurrent tumor was found on follow-up MRI, one month after the procedure.

Conclusion: Pilomyxoid astrocytomas are more aggressive and more prone to local recurrence than pilocytic astrocytomas. The cerebellar localization is untypical for PMA. Complete surgical resection is the most reliable prognostic factor.

Keywords: Pilomyxoid astrocytoma, Pediatric, Neurosurgery, Cerebellum,

THE COMPARISON OF FIBRIN SEALANT VS SUTURE BASED MESH FIXATION OUTCOMES IN LICHTENSTEIN INGUINAL HERNIOPLASTY: A SYSTEMATIC REVIEW

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Introduction: Lichtenstein inguinal hernia repair is a very common procedure which uses a mesh to reduce recurrence of hernia. Fibrin glue is the most widely researched organic glue used in surgery [1] and hence the slight differences in efficacy of using this glue instead of sutures to fixate the mesh can prove to be extremely beneficial and cost-effective in managing patients long term complications.

Aim: To determine whether fibrin sealant based mesh fixation improves the outcome of Lichtenstein inguinal hernia repair in terms of chronic pain and recurrence compared with the traditional suture based mesh fixation.

Materials and methods: Five databases were used to search for randomised control trials using predetermined inclusion and exclusion criteria. After removing duplicates, analysing by the title, abstract and finally by full text, only five studies fulfilled the PICOs criteria and were included in the systematic review. These papers were critically appraised according to the SIGN Methodology Checklist for Randomised Control Trials and were assessed for risk of bias according to the Cochrane Handbook for Systematic Reviews of Interventions.

Results: Out of the 997 participants in five RCTs, it was found there was no statistically significant correlation between hernia recurrence and the use of fibrin glue or sutures for mesh fixation. Two studies revealed that the patients who underwent Lichtenstein hernioplasty had less chronic pain as well as a shorter duration of the surgery. However, two other studies revealed there was no particular difference in chronic pain when using sutures or fibrin glue for mesh fixation, and one study showed that there was no statistical significance of favouring one particular method of fixation.

Conclusion: It was found that there were fewer incidences of chronic pain with the use of fibrin sealant than with the control comparison. There was no evidence of a difference between the two groups in terms of hernia recurrence.

Keywords: Lichtenstein, Hernia repair, General surgery, Fibrin glue

IS THERE AN INCREASED RISK OF KIDNEY STONE FORMATION AMONGST ADULTS ON THE KETO DIET?

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Introduction: Ketogenic Diet (KD) is a tried and tested formula in treating paediatric refractory epilepsy spanning back nearly a century. The high fat, moderate protein and low carbohydrate regime induce the body to go into a ketosis state, whereby the body uses fat as fuel rather than carbohydrate. Nephrolithiasis is one of the established long-term effects of this diet on children.

Aim: Plenty of research exists showing the various effects of this diet on children with epilepsy. However, a quick search on PubMed shows not a single paper on whether the ketogenic diet has an increased risk of forming stones in adults. We aim to see if a study is feasible to assess if individuals are more at risk of forming stones than the general population.

Materials and methods: A questionnaire was given online to individuals who are/were on this diet. Data was collected on factors like pre-disposing risk factors, duration of the diet, previous kidney stones and daily water intake.

Results: A total of 108 surveys was collected with a mean age of 47.78 years. The diet's mean duration was 1.6 years, and the mean daily water intake was 1.6 litres. The incidence of kidney stone formation was 7.40%, below the worldwide yearly incidence of 10%. This dropped to 4.62% if those with previous kidney stones were excluded; the incidence number fell to 4.62%. Individuals drinking more than 2 litres of water daily had an incidence rate of 2.7%. Significant past medical conditions and medications were also taken into consideration.

Conclusion: Long term follow-up of prevalence, including sex, age, ethnicity, supplements and lifestyle,
will give us a better understanding of this question. Indicators like Urinary calcium: creatinine could be used as an indicator.

Keywords: Ketogenic Diet, Kidney Stone, Urology

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Surgery
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Session IV
(SOS4)

IMPACT OF TWO-STAGE SCREENING FOR VASA PREVIA IN A SMALL PUBLIC HOSPITAL. CAN WE PREVENT AN OBSTETRIC TRAGEDY?

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Introduction: Vasa praevia is a condition in which umbilical cord vessels cover or are located near the inner opening of the cervical canal, between the cervix and the adjacent part of the fetus. In this case, the vessels are not protected and are susceptible to compression, which leads to fetal hypoxia, as well as rupture, which leads to massive hemorrhage of the fetus. In undiagnosed cases of vasa praevia, there is a high risk of stillbirth, as well as high mortality and morbidity in the neonatal period. These risks can largely be reduced if the condition is prenatally diagnosed.

Clinical case: In Sheynovo Hospital (small public hospital in Sofia, Bulgaria) we offer two stage screening for detection of vasa previa through transvaginal ultrasound with a colored doppler. Since November 2018 till February 2021 there were three cases of vasa praevia diagnosed through a two-stage screening model. All three cases ended in a live birth by Caesarean section. All patients were monitored by serial measurement of cervical length and corticosteroid prophylaxis was carried out at 32 weeks. There were no stillbirths related to vasa previa in Sheynovo Hospital for the given period.

Conclusion: The proposed two-stage screening model is easy and feasible. The detection of umbilical cord in the placenta with a colored doppler takes less than 1 minute, and the importance of diagnosis is undeniable.

Keywords: vasa previa, stillbirth, prenatal diagnosis

IMPORTANCE OF PROCALCITONIN AND C-REACTIVE PROTEIN IN EARLY DETECTION OF DEHISCENCE OF COLORECTAL ANASTOMOSES IN PATIENTS OPERATED ON DUE TO RECTAL CANCER

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Introduction: The most serious complications in colorectal surgery are the complications on anostomoses because they are life-threatening. One of the most serious complications which can be fatal are dehiscences of anostomoses.

Aim: Testing sensitivity, specififcity and diagnostic accuracy by determination of C-reactive protein and procalcitonin in detection of dehiscences of colorectal anastomoses.

Materials and methods: The study was carried out as aclinical prospective study. The study included 100 patients operated on due to rectal cancer within elective programme by a radical dissection with creation of stapler colorectal anostomoses. In all patients, on the second and fourth postoperative day, the values of C-reactive protein and procalcitonin in the serum were tested regardless of the appearance of the clinical manifestations of anostomosis dehiscence.

Results: Dehiscence rate in our study was 13%. The values of procalcitonin and C-reactive protein were significantly statistically higher on the second and fourth postoperative day in patients with dehiscence of colorectal anostomoses.

Conclusion: Procalcitonin and C-reactive protein are reliable parametres in early detection and diagnostics of dehiscences of colorectal anastomoses. KEY WORDS. dehiscences,colorectal anastomoses, procalcitonin, C-reactive protein

FUNCTIONAL HEMISPHEROTOMY IN PATIENTS WITH PHARMACORESISTANT EPILEPSY: REVIEW AND ANALYSIS OF 12 PATIENTS

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Introduction: The surgical treatment of pharmacorestistant epilepsy may be classified as resective, disconnective and stimulation techniques. These techniques may be applied to hemispheric pathologies such as porencephalic cyst, Sturge Weber syndrome, Rasmussen encephalitis, etc. Initially hemispheric pathologies were treated with hemispherectomy. Dandy reported the first series of anatomic hemispherectomy as treatment of malignant glioma (Dandy 1928). McKenzie was the first who proposed hemispherectomy for hemispheric epilepsies (McKenzie 1938). In 1974, Rasmussen introduced the functional hemispherectomy which consists in removing less cerebral tissue and disconnecting the remaining part of the hemisphere (Rasmussen 1983). Villemure and Schramm propose a small a peri-insular window (Villemure 1995) and Delalande used a parasagittal approach to perform an almost entirely disconnective procedure which was named hemispherotomy (Delalande 2007). The first hemispherotomy in Bulgaria was performed on 07.06.2011 by K.M and K.G. Hemispherotomy was performed in 12 patients from 2011 to 2020. This surgical technique is not routine neurosurgical intervention and is reserved for the most developed epilepsy surgery centers. A few centers in Europe are specialized in this procedure.

Aim: The goal of this study was to perform a retrospective analysis of the first Bulgarian series of patients with hemispherotomy for drug-resistant epilepsy.

Materials and methods: Our material included 12 patients with intractable epilepsy operated on by the senior author K.M. in the Functional Neurosurgery Center at University Hospital "St. Ivan Rilski", Sofia between 2011 and 2020. Functional hemispherotomy consisted of 10 periinsular and 2 parasagittal approaches. A comprehensive preoperative evaluation including clinical, neurophysiological (video-electroencephalographic), and radiological (MR imaging, PET) workup was performed in all cases.

Results: The histopathology among patients who underwent hemispherotomy was: large postischemic porencephalic cyst (9), Sturge Weber syndrome (2), Rasmussen encephalitis (1). Complete seizure control was achieved in 11 patients (Engel class I) and worthwhile improvement in another patient (Engel class III). There were no surgical complications and no new neurological or neuropsychological deficits. There were 2 cases of postoperative hydrocephalus requiring ventriculoperitoneal shunt.

Conclusion: Hemispherotomy seems safe and effective surgical technique in selected patients with diffuse hemispheric epilepsies.

Keywords: Peri-insular hemispherotomy, Intractable epilepsy, Parasagittal hemispherotomy

RIVES - STOPPA TECHNIQUE COMBINED WITH ANTERIOR COMPONENT SEPARATION METHOD BY RAMIREZ USED FOR TREATMENT OF A BIG VENTRAL POSTINCISIONAL HERNIA

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Introduction: Ventral abdominal hernias can occur as a result of previous laparotomies, but can also occur de novo. Given the aging population and the problem of obesity in the world, ventral hernias are a common public health problem. Depending on the size of the defect, the constitution of the patient, and the tissue tension at the closure of the defect, the rate of relapses is high.

Clinical case: We present a case of a 57-year-old male patient with a relapse of a large ventral hernia. He underwent surgery for a ventral hernia 5 years ago, when the hernia opening was sutured without mesh placement. The patient was presented in our institution with a large hernia in the midline, predominantly in the upper hemiabdomen. The width of the hernia opening was 14 cm. The patient underwent surgery. After preparing the hernia, the hernia bag was opened and its contents were released from the adhesions and sunk into the abdomen. By incision of the rectal sheath along the medial side, the retrorectus space on both sides was prepared. Since the medial edges of the lower leaves of the rectal sheaths could not be approximated, the hernia sac was used to cover the abdominal organs. A large polypropylene mesh by Rives - Stoppa was placed in the retrorectus space. The anterior fascia was not able to close primarily due to strong lateralization of the rectus muscle. Therefore, relaxation incisions of the external oblique muscle along the lateral side of the rectus muscle were chosen using the Ramirez technique. An additional 4 cm was then obtained on each side due to the medicalization of the rectus muscle. The subcutaneous space was drained with two redon drains. Excess skin was excised, and the wound was closed in layers. The postoperative recovery went smoothly. In the 5 year clinical follow up the patient had no relapses.

Conclusion: By combining retromuscular placement of the large Rives-Stoppa mesh and medial mobilization of the rectus muscle with the help of the Ramirez technique, it is possible to successfully treat most large ventral hernias with a minimal rate of relapses and complications.

Keywords: Rives-Stoppa technique, Ventral hernia, Ramirez technique

A HYBRID OF CONGENITAL PULMONARY AIRWAY MALFORMATION TYPE 3 AND A EXTRALOBAR BRONCHOPULMONARY SEQUESTRATION.

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Introduction: Congenital pulmonary airway malformations (CPAMs) occur as a result of the aberrant formation of pulmonary lobes or segments. Bronchopulmonary sequestration is a rare birth defect in which an abnormal mass of nonfunctioning lung tissue forms during prenatal development. A hybrid of CPAM and BPS is a rare newly recognized congenital lung lesion that demonstrates clinicopathologic characteristics of both lesion types. Each lung mass has the histological features of CPAM and is supplied by an anomalous aortic vessel characteristic of a BPS.

Clinical case: We present a case of a 36-year-old pregnant woman who was referred to the antenatal department for a scan at 20 weeks due to spontaneous preterm premature rupture of membranes. A detailed ultrasound examination revealed oligohydramnios and fetal lung malformation. Large hyperechoic homogeneous microcystic CPAM causing mediastinal shift without fetal hydrops. There was a feeding vessel with direct origin from the aorta suggesting a hybrid lesion (a combination of pulmonary sequestration and CPAM). The heart was displaced to the right and the right lung was compressed. CPAM volume ratio (CVR) was calculated higher than 1.6 giving an 80% risk of developing fetal hydrops later in the pregnancy. Due to the poor prognosis for the pregnancy-related to the higher chance of developing bronchopulmonary dysplasia and the potential risk of hydrops after extensive counseling the patient decided to proceed with the termination of the pregnancy at 20 weeks. A complete fetal autopsy was performed confirming the antenatal diagnosis. The left lung mass filled the whole thoracic cavity. Microscopically, the left lung mass showed dilated bronchiole-like structures (1-5 mm) that were lined with ciliated columnar cells without any intervening mucinous cells. Our case is an example of congenital pulmonary airway malformation type 3.

Conclusion: Prognosis of antenatally detected cystic lung lesions depends mainly on specific histology of the lesion, associated anomalies, presence or absence of hydrops or other signs of cardiovascular compromise, and risk of pulmonary hypoplasia based on the degree of residual lung compression.

Keywords: Cystic adenomatoid malformation of lung type 3, Bronchopulmonary sequestration, Hybrid lesion, Congenital, Lung diseases

FIBROLAMELLAR HEPATOCELLULAR CARCINOMA – A RARE LIVER CANCER THAT DEVELOPS WITHOUT UNDERLYING LIVER DISEASE

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Introduction: Fibrolamellar hepatocellular carcinomas (FHCCs) account for 1-10% of primary liver cancers. Typically occur in young adults (20 to 40 years of age) but elderly people can also be affected. Unlike hepatocellular carcinomas (HCCs) they do not have an association with cirrhosis, alcoholism and hepatitis B or C infection. Clinical presentation is often non-specific.

Clinical case: A 66-year-old female reported to the surgical outpatient clinic concerned about the results of routine abdominal ultrasound. She did not report any complaints. Physical examination was unremarkable. Abdominal ultrasound revealed a non-enlarged liver with a slightly enhanced parenchyma echogram. On a border of segments II and III a focal normoechoic lesion measuring 5 x 6 cm with vessels in the form of a wheel with spokes was shown. Computed tomography of abdominal cavity and MRI scan confirmed the tumor in the liver. All laboratory tests including the liver panel were within the normal range. The most probable diagnosis was focal nodular hyperplasia (FNH). Control imaging tests were recommended in 3 months. Control MRI showed a progression of the lesion to 6 x 8 cm and widening of the intrahepatic and extrahepatic bile ducts. Laboratory tests revealed slightly increase in ALT: 44 IU/l (normal range 5-41), AST level at the upper limit of normal: 47 IU/l (normal range: 7-47) and increased level of GGT: 100 IU/l (normal range: 10-66). Tumor markers (AFP, CEA, Ca19-9) were not elevated. The patient was qualified for resection of the affected liver segments. The postoperative course was complicated by right-sides pneumonia. Histopathological evaluation confirmed fibrolamellar hepatocellular carcinoma.

Conclusion: FHCC often is asymptomatic and does not show any abnormalities in laboratory tests. FHCC requires differentiation from a benign FNH due to the similar picture in imaging tests. During the diagnostics process care should be taken not to delay the qualification for the surgery, as in some cases liver resection allows for complete recovery.

Keywords: fibrolamellar carcinoma, hepatocellular carcinoma, liver diseases, liver resection

ONE-STAGE FOREHEAD AND SCALP RECONSTRUCTION WITH LOCAL TISSUE FLAPS

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Introduction: Reconstruction of forehead and scalp defects is among the most challenging procedures in plastic surgery. The paucity of adjacent extensible tissue, the critical nature of underlying structures and the aesthetic importance of the subunit often makes the surgery a devastating endeavor. A broad variety of reconstructive options had been proposed: skin grafting and dermal alternatives, tissue expansion, local skin and soft tissue flaps, regional flaps and free tissue transfer. In terms of effectiveness, downtime, patient compliance and satisfaction and hospital costs local flaps seem to be a reliable choice in the daily practice.

Aim: To demonstrate the abilities and reliability of the local skin and soft tissue flaps in single-stage repair of the forehead and scalp.

Materials and methods: A retrospective analysis was conducted identifying patients with a single-stage reconstruction with local flaps of full-thickness post-excisional and posttraumatic defects. As exclusion criteria skull bone affection and follow-up less than 12 months were selected. Appropriate demographic, pathological, clinical data and photo documentation were collected and analyzed.

Results: A total of 27 patients with soft tissue defects affecting frontal and temporo-parieto-occipital region were selected, including 18 women and 9 men (mean age, 65.1 y; age range, 54-87 y). 16 of them (59,3%) presented a defect in the hair-bearing zone of the scalp and were included in Group 1. 11 (40,7%) of the patients had a defect localized in the frontal area and were included in Group 2. The most common local flap type in Group 1 was the pivotal one in its different subtypes; for Group 2 it was the advancement flap type in its modalities. There were 2 minor complications in Group 2 consisting in partial wound dehiscence and delayed heeling. All the patients were satisfied of the anatomic, functional and aesthetic outcome at 12 months follow-up.

Conclusion: Local tissue flaps have proven to be a reliable and sophisticated option for reconstruction of full-thickness defects affecting the forehead and the hair-bearing scalp area. A thorough understanding of the surgical anatomy is paramount for the right choice of flap and for achieving optimal reconstructive outcomes.

Keywords: scalp reconstruction, forehead, full-thickness defect, local flaps.

THE ANALYSIS OF THE INFLUENCE OF DIFFERENT TYPES OF TITANIUM PLATES ON THE INCREASED RATE OF POSTOPERATIVE COMPLICATIONS AMONG THE PATIENTS WITH MANDIBULAR FRACTURES

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Introduction: The Craniomaxillofacial surgery department of MUW stated the increased rate of complications after surgery among the patients with mandibular fractures in the last 2 years. Except for the producer of titanium plates nothing has changed in the procedure over last few years.

Aim: Aim of the study was to check the amount of complications over the past 5 years and to check if there is an increased rate of complications as well as to find a correlation between the different types of titanium plates and increased amount of complications while excluding all the other factors.

Materials and methods: We designed a retrospective study in which 722 patients from years: 2015-2019 years were included, each of them underwent a rigid mandibular fixation surgery of fractures. Data collected from case records included: age, time from injury to surgery, type and amount of plates, screws and openings used, type and amount of mandibular fractures and information about postoperative complications. This data were statistically analysed. Complications were divided into: severe (non-union, mobility of bone fragments at the anastomosis site) and moderate (swelling, fistula, changes in occlusal conditions, pain and limited mandibular abduction), in some cases reoperation was necessary. The composition and shape of the titanium plates were studied.

Results: Among all the patients 85 (11,77%) presented complications. Among them 26 patients were treated with Modus, 59 with other (Synthes and Martin) titanium plates. It was noticed that 12 from 20 (60%) of patients with severe complications were treated with Modus (p=0,0012). Reoperation was necessary for 6 of 7 (85,7%) patients with complications among Modus group (p=0,001). Analysis also showed a correlation between fracture site and complication: mandibular body - severe complications, mandibular branch – swelling, condylar process - occlusal changes. Statistical analysis didn't show the correlation between complication frequency and other compared parameters. Titanium plates have differences in shape and composition.

Conclusion: Frequency of severe complications and amount of reoperations increased over the past 2 years and it is correlated with the use of Modus titanium plates. The cause of this may be the shape and the composition of plates.

Keywords: mandibular fractures, titanium plates, complications

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts Surgery Poster Session I (SPS1)

LOCAL FLAP FACIAL RECONSTRUCTION AFTER SURGICAL RESECTION OF MULTIPLE BASAL CELL CARCINOMA LESIONS

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Introduction: Multiple cutaneous facial defects present a complex reconstructive challenge due to their exceptionally visible site, their relatively vast proportions compared to the area of the face, as well as limited local tissue supply. According to the size of the tumor, its exact location, relationship to adjacent structures, available donor tissue and existing skin tension lines, numerous techniques are available for closure. Advancement flaps are considered appropriate for the coverage of defects located in the nasal region, especially in elderly patients because of the presence of significant skin laxity in the cheek area.

Clinical case: An 81-year old male patient was admitted in the Department of Plastic and Reconstructive Surgery with several suspicious for malignancy facial lesions. One nodule located on the nasal ala associated with pain and the other at the nasolabial fold showing signs of superficial ulceration and necrosis. Both presenting as different forms of basal cell carcinoma. No regional lymph nodes were enlarged in this patient. There was no evidence of metastasis. Further histology results confirmed the diagnosis. Wide surgical excision of the tumors was performed. Non-aggressive basal cell carcinoma types require 3-5 mm resection margins depending on the size. A full-thickness modified nasolabial U-advancement flap was used for the reconstruction of the nasal region. In order to cover both defects with a single flap one of the lesions was included in Burow's triangle. One week later, the patient was discharged from the hospital in a generally good health.

Conclusion: The ever ongoing improvement of already established advanced techniques in the field of reconstructive surgery have greatly improved the outcome of highly invasive types of skin cancer. Further evaluation of clinical treatment should consider the margins of the tumor, its histological analysis, and the distant and lymph node metastasis.

Keywords: BCC, surgery, reconstruction, flap, facial, plastic

References: Grabb and Smith's Plastic Surgery 6th edition, by Kevin C. Chung MD (Author);

Acknowledgements: Grabb and Smith's Plastic Surgery 6th edition, by Kevin C. Chung MD (Author);

SAFETY AND COMPLICATIONS IN LIVER RESECTION SURGERY

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Introduction: The surgical strategy for the treatment of resectable synchronous hepatic metastases of colorectal cancer (CRC) remains controversial.

Aim: To asses the safety of simultaneous and delayed liver resections and relations of morbidity to the extensiveness of hepatectomy and perioperative factors.

Materials and methods: Intraoperative and postoperative data of 31 patients with simultaneous liver and colorectal resection are compared with data of 51 patients who underwent colon and hepatic resection in the staging setting because liver metastases from colorectal cancer. Analized were demographic data, number of metastases, type of the liver resection, operation time, intraoperative blood loss, morbidity and mortality and lenght of hospitalisation.

Results: In the group of the patients operated simultaneously 5 hepatectomies, 3 sectionectomies, 2 trisegmentectomies, 3 bisegmentectomy, 6 segmentectomies, and 12 metastasectomies were combined with colon resection. Operation time (280 vs. 330 minutes) and intraoperative blood loss (450 vs. 820 ml) was lower compared with . the parameters cumulated in two staged operation. Postoperative morbidity was lower in the simultaneous group 19.35 vs 19.60, without statistical significance. There was no hospital mortality in the both groups. Patients having simultaneous resection required fewer days in the hospital (median 10.2 days vs. 18.34 days).

Conclusion: By avoiding a second laparotomy, overall operation time, blood loss, hospital stay and complication rate are reduced with no change in hospital mortality. Simultaneous colon and hepatic resection is a safe and efficient procedure for the treatment of synchronous colorectal liver metastases.

Keywords: colorectal cancer, liver metastases, liver resection, simultaneous operation

COMPLETE SURGICAL EXCISION OF LARYNGEAL LIPOMAS - A MANDATORY PROCEDURE

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Introduction: Lipomas are the most common subcutaneous benign tumors. Less than 15% of all lipomas arise in the head and neck, with less than 1% affecting the larynx. Because of the location, the tumor may cause life-threating symptoms by airway obstruction. Our aim is to highlight the importance of complete excision of the laryngeal lipoma in order to avoid recurrences.

Clinical case: Case presentation: We present the case of a 66-year-old female who had a history of nine previous surgeries for excision of a laryngeal lipoma with recurrences at every 3 to 4 years. The diagnosis of laryngeal lipoma was firstly made in 1990, two years after tracheal intubation during a C-section, suggesting trauma as a precipitant factor. Now she is presenting to the hospital experiencing dry cough, dysphagia, hoarseness and the sensation of choking in decubitus. The endoscopic evaluation reveals a yellowish, oval swelling arising from the left aryepiglottic fold. On palpation, it is mobile and soft. There is no sign of inflammation of the overlying mucosa. Differential Diagnosis: The differential diagnosis of laryngeal lipoma includes liposarcoma, lipoblastoma and hibernoma, for which the histopathological examination is decisive. Pathophysiology: The exact pathophysiology of lipomas is not clear. However, genetic implications and trauma have been demonstrated as trigger factors in the development of the tumor. Treatment/Management: The treatment of choice is total excision. Surgical therapies involve endoscopic techniques and external surgical approach (cervicotomy), depending on the tumor's size and location. In our case, the patient underwent suspension microlaryngoscopy and the tumor was removed through transoral endoscopic CO2 laser resection. The surgery has been done under general anaesthesia. Pathology examination showed typical features of a fibrolipoma. A long-term follow-up is mandatory as recurrences are possible and usually are caused by an incomplete excised lipoma or a malignant transformation.

Conclusion: Total excision is mandatory for this type of lesions in order to avoid recurrences.

NUTCRACKER SYNDROME: THE CASE OF A YOUNG FEMALE DOCTOR

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Introduction: Nutcracker syndrome (NCS) is a rare but important differential in patients presenting with left flank pain, hypertension, haematuria, proteinuria and, in males, left sided varicocele. The name derives from the entrapment or compression of the left renal vein (LRV) as it passes between the abdominal aorta posteriorly and superior mesenteric artery (SMA) anteriorly, akin to the jaws of a nutcracker. Management options include conservative approaches, as well as intra and extravascular stents, and even open surgery.

Clinical case: This 32-year-old female doctor initially presented to gastroenterology with progressively worsening nausea and vomiting, epigastric pain. She found that her symptoms improved when she avoided eating, and as a result had ended up with severe weight loss. She also reported loin pain and haematuria. Her symptoms had reached a point where she was no longer able to work, and her social life had been negatively impacted. Her mood was low and she felt that she had nothing to look forward to. A range of gastroenterology investigations, including endoscopy, were conducted but nothing was found to explain her symptoms. No urological anomalies were found either. Conservative management including anti-emetics and amitriptyline provided some benefit at first, but this was short-lived. Psychological evaluation and counselling ruled out a functional explanation for her symptoms, but did provide her with essential support and coping techniques. A CT angiogram showed entrapment of the LRV proximally between the SMA and the aorta, with venous collaterals consistent with anterior NCS. A diagnostic venogram, performed under local anaesthetic, confirmed NCS as the cause for her symptoms. After successful renal autotransplantation, she was discharged home. One year on she is pain free, has gained weight and has returned to work.

Conclusion: NCS can impact dramatically on quality of life, and presents with a range of debilitating symptoms. Effective management, consequently, requires a multidisciplinary approach. Further, it is important to correlate symptoms with their underlying pathophysiology to avoid unnecessary and unsuccessful procedures.

Keywords: Surgery, Multidisciplinary, Quality of life, Vascular, Urology, Gastroeneterology, Psychiatry

INFLAMMATION BIOMARKERS IN THE DIAGNOSTICS OF CHRONIC RECURRENT INFECTION OF URINARY SYSTEM IN PATIENTS WITH ANORECTAL MALFORMATIONS

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Introduction: Combination of anorectal malformations (ARMS) and urinary system (US) defects has several factors (intestinal–urinary fistulas, infravesical obstruction, neurogenic dysfunction of lower urinary tract) contributing to persistence of urinary tract infection (UTI).

Aim: Evaluation of inflammatory process features in urinary tract in patients with ARMS and combined USdefects, determination of inflammation biomarkers.

Materials and methods: Retrospective analysis of treatment of 100 patients with ARMS, evaluation of defects structure, US pathology and presence of UTI. 34 children with chronic pyelonephritis (CP) in acute stage and US defects were examined. Group A (n=20) ARMS with CP in acute phase on the background of US defects. Group B (n=14) with CP in acute phase without ARMS. Comparison group (n=20) patients without UTI. Biomarkers (IL-1β, IL-6, IL-8, IL-10, VEGF, MCP-1) were determined at 3 study points: before the start of a/b therapy, 5-7 days after and 1.5 months after the start of treatment.

Results: Out of 100 children with ARMS: 50 have combined US defects, 48 - CP, 5 - chronic kidney disease. In patients with ARMS and CP on background of laboratory parameters normalization and absence of clinical manifestations of inflammation, increase of IL-1β, IL-6, IL-8, MCP-1 and VEGF in urine was noted, which indicates permanent latent inflammatory process.

Conclusion: Cytokine monitoring is a new approach to assess activity of inflammatory process in urinary tract and developpersonalized treatment strategy for each patient with combination of urological pathology and ARMS.

Keywords: anorectal malformations, biomarkers, children, urinary tract infection.

ATYPICAL ONSET OF GASTRIC CANCER COMPLICATED WITH PERFORATION

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Introduction: Gastric cancer is an aggressive disease that represents the fourth most common type of cancer, although there has been a noted global decrease in incidence and mortality rate in the last 75 years. Gastric cancers have an insidious beginning and manifest themselves without specific symptoms, so most cases are diagnosed in advanced stages. Perforation is a rare complication of gastric cancer, accounting for less than 1% of all gastric cancer cases. Gastric perforation is thought to be a predictor of advanced disease.

Clinical case: We present the case of a 74-year-old female diagnosed with gastric cancer, located at the lesser curvature of the stomach. The patient is hospitalized for epigastric pain with retrosternal irradiation, weight loss of approximately 20 kg in the last 6 months and inappetence or loss of appetite. After the initial clinical consult, the patient undergoes complementary investigations such as abdominal X-ray of the void, which highlights pneumoperitoneum minimally, alongside emergency superior digestive endoscopy that reveals a reflux esophagus, stomach with ulcer on the lesser curve and an abdominal computer tomography which highlights the gastric tumor mass with regional adenopathy. The surgical treatment involves the means of exploratory laparotomy, a treatment necessary for the isolation of the tumor, which revealed an adherent syndrome and a tumor formation that invaded the left lobe subtotal gastrectomy with gastro-entero Roux-en Y anastomosis, D1 and D2 lymphadenectomy, lavage, drainage, parietography in anatomical layers. The postoperative progression is favorable, stable haemodynamic and respiratorily balanced patient, with flexible, mobile, painless abdomen, drainage tubes that have minimal drainage.

Conclusion: The treatment of gastric cancer in the emergency room is extremely difficult because it does not allow for sufficient preoperative investigations of the patient. The symptomatology in gastric cancer is quite unspecific, and patients frequently use the means of self-medication for gastroduodenal ulcer. The use of mechanical anastomosis systems shortens the operating time.

Keywords: Gastric cancer, perforation, subtotal gastrectomy, laparostomy, lymphadenectomy

LASER VISION CORRECTION

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Introduction: Problems focusing on light rays in the eye are called refractive anomalies (Ametropi). Refractive abnormalities are classified into: myopia, hyperopia, and astigmatism. Patients can correct anomalies with Spectacles, Lenses and Refractive Surgery.There are several methods for eye sight correction, most popular are: Radial Keratotomy (RK), Refractive Keratotomy Photo (PRK), Laser In Situ Keratomileusis (LASIK). LASIK through the laser exchanger makes correcting refractory flaws.The purpose of this paper is to see the efficacy of the LASIK method in treating refractive abnormalities

Clinical case: The eye is a sensitive organ that detects light. This research is a retrospective and descriptive type analysis and includes data for the period September 2015 - May 2018. Data for 50 patients who did Laser eye surgery have been collected.In the description structure, female gender dominates with 58 percentage of the total and masculine 42 percentage. According to age groups:
20-29 years were 70 percentage , 30-39 were 26 percentage , and 40-49 were 4 percentage . According to the type of astigmatism: patients with myopic astigmatism 94%, farsightedness 4% astigmatism and 2% with mixed astigmatism. Most of them had corneal thickness of 500 - 599 mikro meter. Dry eye test values in most patients were 30-39 mm, then 20-29 mm, and the smallest number 10-19 mm.The largest number of corrected eyes diagnosed with myopic astigmatism was in the range of -1 to -6, while vision .Ranged from -1 to -4 for both eyes. In patients before surgery there was a greater vision . Variability than after surgery. There are changes in number of patients during 2015-2018.

Conclusion: When analyzing the data of our patients, women mainly dominate the young age because they are trying to regulate the quality of life. Based on anomalies, 94% are myopic because they feel the need to correct anomalies. Corneal topography and Dry eye test patient's test have the desired values.
Improvement of the vision after surgery is achieved. There has been an apparent increase in number of operations over the years. Based on the postoperative results, it is clear that the Laser surgery method very effective method of treating a refractive abnormalities.

Keywords: Miopi, Hyperopi, Astigmatism, Lasik

CLINICAL CASE OF A CHILD WITH A DERMOID CYST IN THE LUMBAR SPINE.

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Introduction: Intramedullary dermoid cysts are rare congenital benign spinal tumors with a frequency of 5-7% of all childhood intradural tumors. In 50% of cases, the dermoid cysts may also be associated with the presence of a dermal sinus, leading to a manifestation of a different level of neurological deficiency and disability in childhood.

Clinical case: We present a case of a 14-year-old girl with a dermoid cyst located in the lumbar spine causing compression in the field of caudal equina with clinical manifestation of compensatory scoliosis, vertebral syndrome and radicular symptoms. - Differential diagnosis: The differential diagnosis of intradural cysts of the spinal cord includes spinal arachnoid cyst, spinal epidermoid cyst, spinal neurenteric cyst, spinal lipoma, spinal teratoma. Also consider intramedullary spinal tumors or intradural extramedullary spinal tumors, (depending on location). - Pathophysiology: Dermoid cysts are benign. They result from inclusion of epithelial tissue within the neural groove during embryonic development. Like epidermoid cysts, they have a lining of stratified squamous epithelial cells; unlike epidermoid cysts, they also contain sebaceous glands, sweat glands and hair follicles, which account for the fat intensity signal seen in these lesions. Unlike true neoplasms which grow by progressive cell division, dermoid cysts enlarge by desquamation of normal cells and secretion of dermal elements into the cystic cavity. - Treatment/Management: Although benign and slow growing, dermoid cysts carry a risk of rupture which is associated with a high morbidity and mortality . A dermoid cyst can rupture during surgery, after a trauma or spontaneously can leed to aseptic meningitis a.k.a Mollaret`s meningitis. Surgical excision is the treatment of choice, resulting in improvement or stablilisation of symptoms in the majority of patients .

Conclusion: At this stage, surgical treatment of this type of lesion is left with no alternative. The main priority is the choice of atraumatic access to the lesion, as well as the anatomical storage of the spinal column, which was achieved through laminoplasty. Careful preoperative planning and the use of modern surgical treatment as well as neuromonitoring are essential to minimize damage to neural structures and preserve their integrity.

HIBERNOMA ON THE FLOOR OF THE ORAL CAVITY

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Introduction: In 1906, Merkel first described the hibernoma as a psuedolipoma. It is a benign tumor made of brown adipose tissue in which research is ongoing and only a handful of clinical cases have been reported. This case in particular is the first of its kind due to its location and the careful surgical methods had to be implicated to ensure a desirable outcome.

Clinical case: A 59 year old healthy male who presented with a hibernoma on the floor of the oral cavity. After a series of imaging methods (MRI, CT and Ultrasound) from specialists, the tumor was found on the right side of the neck , next to the right submandibular gland. There was displacement of adjacent structures and cervical lymphadenopathy. Usually, the hibernoma is not found in this location and required surgical treatment from a maxillofacial surgeon and medicinal prophylaxis. A follow-up of the patient was made and it was found he is haemo-dynamically and physically stable after the surgery.

Conclusion: The hibernoma was removed successfully even though it was in a abnormal location and a rubber drain was placed intraorally. There were no signs of inflammation or suppuration in the operated area and the patient was able to continue with life as normal upon review. A biopsy was taken to confirm the histology of the tumor, confirming it's benign behaviour.

Keywords: Hibernoma; Pathology; Surgery

RECONSTRUCTION OF THE CHRONIC WOUND IN THE AREA OF THE ACHILLES TENDON

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Introduction: Chronic wounds are those that do not progress through a normal, orderly, and timely sequence of repair. In this wound type, there is usually an underlying pathology, which produces a delay in the healing process. They are common and are often incorrectly treated. Appropriate diagnosis and treatment are essential to promote wound healing and prevent further complications.

Clinical case: A 65-year-old male with diabetes and chronic arterial insufficiency was admitted to the Department of Plastic surgery. He had arterial ulcers in the lower extremity and was treated in another institution with a split-thickness skin graft (Thiersch). Clinical evaluation established that it was an unsuccessful reconstruction attempt with skin necrosis and soft tissue defect alongside Achilles tendon. DSA pelvic and lower extremity angiography showed non-revascularisable peripheral arterial disease. Despite the poor vascular status, it was decided to reconstruct the considerable defect, with 20x15 centimeters in size in the area of the Achilles tendon, which was exposed and partly necrotic. Wound conditioning was indicated. The treatment consisted of repeated debridement and targeted antibiotic therapy, due to isolation of MRSA and Pseudomonas aeruginosa. After receiving satisfactory local status, active surgical treatment was initiated. First, a free split-thickness skin graft was taken from the thigh region. Three-dimensional collagen matrix dressing composed of bovine type I collagen and elastin (Matriderm®) was applied to the area of the major defect and was covered with a 1:1.5 meshed split-thickness skin graft. For the prevention of the Thiersch rejection and infection, the receiving region was covered with hydrofiber silver dressing. In the 6-month clinical follow-up, graft demonstrated complete reepithelialisation, was vital and the function of the Achilles tendon was preserved.

Conclusion: A combination of Matriderm® with autologous split-thickness skin grafts to cover chronic wounds, in the area of the Achilles tendon, results in an excellent functional and cosmetic outcome. Such combined treatment should play a greater role in the future as it has shown excellent clinical results and displayed the improvement of the quality of patients' lives.

Keywords: Achilles tendon, chronic wound, reconstruction, Matriderm, split-thickness skin graft

A RARE CASE OF HYPERTROPHIC PYLORIC STENOSIS IN A PRETERM NEONATE

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Introduction: Although hypertrophic pyloric stenosis isn`t a rare condition within itself, it is extremely rarely developed in preterm babies. It also presents diagnostic difficulties, as the clinical presentation is atypical and less specific than usual.

Clinical case: The patient, A.K. was a second twin, born in 32nd gestation week through Cesarean section. APGAR score was 7 at minute 1, and 9 at minute 5. The baby weight was measured at 910g, length - 35.5cm, head circumference - 28cm. After initial reanimation, the patient was hospitalized in an PICU. A consultation with a pediatric surgeon was preformed, due to feeding intolerance. At 14 days of age the patient was admitted in the pediatric surgery department at the st. George university hospital in Plovdiv for surgical treatment . Physical examination showed HR-134bpm, arrhythmic breathing (RR-49/min), with episodes of dyspnea,; bloated abdomen and hyperactive bowel sounds. An "Olive" was not palpable. Native x-ray of the abdomen showed no abnormal findings. Water soluble radiocontrast agent was deposited trough a nasogastric tube. Subsequent x-rays were taken 40 minutes, 1 hour, 3 hours, 6 hours and 21hours after that. The stomach showed no abnormalities. Passage through the pylor was shown on the third hour. No abnormalities were found in the rest of the digestive system. Differential diagnosis included: incomplete duodenal obstruction, annular pancreas, hypertrophic pyloric stenosis. Treatment : The patient underwent surgery 4 days after admission, due to the persisting sings of ileus. After laparotomy, the pylor was visualized, and the diagnosis was confirmed. Hiniken-Mikulicz pyloroplasty was preformed. The patient remained intubated for 2 days after the surgery. There were no complications in the post-operative period, and the patient had restored feeding tolerance 17 days after the surgery.

Conclusion: Due to its extreme rarity and atypical manifestation, hypertrophic pyloric stenosis in preterm babies presents a diagnostic challenge.
We are sharing the experience of the pediatric surgery department of the st. George university hospital.

Keywords: hypertrophic pyloric stenosis, preterm

RADIOLOGICAL ASPECT OF TRAUMATIC HEAD INJURY

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Introduction: Traumatic head injury (THI) is the third leading cause of morbidity globally, after vascular disease and malignancies. Multislice computed tomography (MSCT) represents a gold standard imaging method for THI.

Aim: The aim of this study was to determine the incidence and presentation of the radiological aspect of traumatic head injuries on multislice computed tomography.

Materials and methods: Our study represents a retrospective analysis of 125 patients (73.68% of males and 26.32% females) with an average 56.45±20.89 years of age (range: 2-89), who underwent CT examination of the head in Center for Radiology of the University Clinical Center in Nis, with the referral diagnosis head trauma, in the three-month period. The CT scan was performed on a 64-slice scanner (MSCT). The presence of THI in the form of the neurocranium and viscerocranium fractures and the presence of traumatic intracranial (intraaxial and extraaxial) hemorrhages regarding gender and age were determined.

Results: Of all examined patients, traumatic head injuries were diagnosed in 86 patients (68.8%), while in 39 patients (31.2%), CT examination of the endocranium was negative. Traumatic head injuries were more prevalent in male patients (74.41%), while in female patients, it was 25.58%. A total of 52 fractures of the neurocranium and 29 fractures of the viscerocranium were found. Furthermore, the largest number of patients with traumatic intracranial hemorrhages had a subdural hematoma (40.70%), contusion foci (29.07%), subarachnoid hemorrhage (24.42%), and epidural hematoma (11.63%).

Conclusion: MSCT is currently the gold standard and method of choice in diagnosing traumatic head injuries due to the rapid examination time, which is very important in acute conditions. It is important to keep in mind the correct clinical picture of the patient and the radiological findings in timely diagnosis, appropriate treatment, and monitoring of the course of the disease in patients with THI.

Keywords: traumatic head injury, MSCT, fracture, hemorrhage

ABSTRACTS OF ICMS SOFIA 2021

Abstracts Surgery Poster Session II (SPS2)

EVALUATION OF PATIENT-CENTRED AND CLINICAL OUTCOMES AFTER TOTALLY ENDOSCOPIC CARDIAC SURGERY

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Introduction: The state-of-the-art procedure to conduct cardiac surgery is a median sternotomy. With this technique, there is a possibility that the sternum is not closed properly, leading to wound infections associated with high morbidity and mortality. Over the past years, minimally invasive procedures have been developed to reduce the surgical trauma. Regarding the least invasive procedure, totally endoscopic cardiac surgery, no prospective data concerning the patients centered outcomes such as quality of life (QoL) are available.

Aim: The aim of this study is to evaluate patient-centered and clinical outcomes at baseline, 2 weeks, 1 month, 3 months, and 1 year after totally endoscopic cardiac surgery.

Materials and methods: All patients undergoing endoscopic cardiac surgery in the Jessa hospital between November 2019 and January 2020 were included. Patients who already underwent cardiac surgery were excluded. Through the short form 36 questionnaire the QoL was determined before, and 14 and 30 days after the surgery. Clinical parameters are collected from the patient's medical file.

Results: We included 58 patients with a mean Euro score II of 2.49 +/- 2.28, corresponding to a low to moderate operative risk. The mean age was 70.92 +/- 9.73 and 77.6% were males. During the surgery, the mean cross-clamping time and perfusion time were respectively 57.51 +/- 33.80 and 88.40 +/- 34.9 minutes. Patients were ventilated on the intensive care unit for 6.9 +/- 6 hours where they stayed for
56.5 +/- 21.92 hours. The hospital stay after the surgery was 6.32 +/- 3.28 days. Atrial fibrillation was seen in 15,5% of the patients. Two patients developed a CVA after the surgery. The mortality rate was 0%. After totally endoscopic surgery, the general health and social functioning were decreased 14 days postoperatively. However, 30 days postoperative, the emotional wellbeing of these patients was significantly increased, and they experienced less pain compared to baseline. Physical functioning was not changed after the surgery. These are the initial results of a bigger cohort study ending in June 2021.

Conclusion: The preliminary results of this cohort study are promising, showing increased emotional wellbeing and less pain 30 days after the surgery.

Keywords: Totally endoscopic cardiac surgery, Quality of life, Clinical outcomes

TOTAL ANOMALOUS PULMONARY VENOUS RETURN

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Introduction: Total anomalous pulmonary venous return is a rare congenital malformation in which all four pulmonary veins do not connect normally to the left atrium. Instead the four pulmonary veins drain abnormally to the right atrium by way of an abnormal (anomalous) connection.

Clinical case: Newborn infant was admitted to the pediatric cardiology department with a suspicion on a congenital heart defect. The pregnancy was normal and regulary controlled, but the mother had gestational diabetes mellitus controlled with exercise. Birth was vaginal, in the 39th gestational week, and the infant was 3380 g heavy, 49 cm long with Apgar score 10/10. 12 hours after birth patient developed generalised cyanosis and was transferred to the neonatology department where he was intubated. The patient was also started on an antibiotic therapy, including ampicillin and gentamicin. Even though there were no murmurs on auscultation, the ultrasound showed total anomalous pulmonary venous return to the brachiocephalic vein, with a ventricular septal defect. Rashkinds elective atrioseptostomy was performed and the child was removed from the intubator with a saturation 80-90%. The final surgical procedure was planned within 6 months. The surgical repair connects all of the veins to the back of the left atrium, resulting in a normal connection of pulmonary veins to left atrium. The outcome is generally excellent since the surgical mortality is less than 5%. Because the surgical repair results in a normal circulation, these children are typically expected to grow and develop normally.

Conclusion: Total anomalous pulmonary venous return is an anomaly in which lung and systemic circulation do not communicate directly. In this case blood was mixed due to vsd and open ductus arteriosus Botalli. 12 hours after birth ductus arteriosus started closing and infant developed cyanosis. Palliative maneuver, Rashkind, during catheterization created a hole between atria and improved blood mixing and saturation. This case report shows a rare condition that would be lethal without the proper care. Rashkind maneuver and modern surgical techniques reduced mortality from 100% to 5%. Since medicine has come a long way, this patient will survive, grow and develop normally.

Keywords: heart, defect, Rashkind, pulmonary, veins

THE EFFECT OF EARLY ORAL NUTRITION ON DECREASING THE COMPLICATIONS AND HOSPITALIZATION DURATION FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY SURGERY; A RANDOMIZED CLINICAL TRIAL

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Introduction: Recently, some studies have been conducted to assess whether different abdominal surgeries can benefit from early oral nutrition, and it seems that early nutrition is beneficial in terms of reducing postoperative morbidity and mortality.

Aim: The aim of this study was to consider the effect of early oral nutrition on decreasing the complications and hospitalization duration following laparoscopic cholecystectomy surgery.

Materials and methods: One hundred patients undergoing laparoscopic cholecystectomy were randomly divided into two groups: early feeding (n=50) and routine feeding (n = 50). After surgery, all of these patients were evaluated in terms of vomiting, nausea, hearing of bowel sound, flatus passing, stools passing, and duration of admission.

Results: There was no significant different between the two groups in terms of frequency of nausea (P = 0.548), vomiting (P = 0.668), and onset abdominal function (P=0.152). The mean time of hearing of bowel sounds in the intervention group was significantly lower than the control group (12.79 ± 4.99 vs. 16.09 ± 4.76 and P = 0.002). The mean duration of hospitalization in the intervention group was significantly lower than the control group (1.42 ± 0.50 days versus 1.70 ± 0.05 days and P = 0.006).

Conclusion: The findings of the study showed that in patients undergoing laparoscopic cholecystectomy, early nutrition has a significant effect on reducing hospital admission of these patients without any adverse effects such as nausea and vomiting compared to traditional nutrition.

Keywords: laparoscopic cholecystectomy, nausea, vomiting, hospitalization, oral early feeding.

TREATMENT PECULARITIES IN TROCHANTERIC FRACTURES

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Introduction: Trochanteric fracture in adults overwhelming affects elderly subjects. Frequency is increasing with population aging despite the development of treatments for osteoporosis. In erderly subjects, fracture entails a serious risk of loss of independence best reduced with surgery (usually conservative) thas should be undertaken with minimal delay. Treatment is surgical , of various sorts. Open reduction internal fixation (ORIF) with intra- or extra-medullary implants is the most frequent atitude in these fractures, which usually heal easily. In elderly patients, arthroplasty is an alternative of choise for some authors. These different treatment modalities are presented, focusing on technical details.

Aim: To evaluate thetreatment methods of the pertrochanteric hip fractures.

Materials and methods: We studied a pacient-based cohort, overall 209 pacientsfrom Orthopedic Department of Emergency Medicine Institute during period 07.02.2018-07.02.2020.

Results: The majority of pertrochanteric hip fractures was found in women -65%(137),men -35%(72). In 95%the main cause of the fracture was usual trauma , 5%- car accidents. The group was divided by age : 75-95 y -103p(49%) ,45-75y-78p(37%), 60-45y-24p(11%), <45 -22p(1,9%). Fractures were divided by Evans Classification : Evans I-9p(4,3%), Evans II-22p(10,5%),Evans III-28p(13,3%),Evans IV-28p(13,3%),Evans V-118p(56,4%),Evans R-4p(1,9%). 37% (79p) had benefit from the orthopedic treatment , 63%(130p) have undergone the surgical method. In 75% was used PFN, in 17-DHS, in 4,5%- cemented hip hemiarthroplasty was perfomed , in 2,3%-DCS, in 1,5%- uncemented hip hemiarthroplasty ,in 0,7%- total hip joint replacement .

Conclusion: Even though there is a large pool of surgical methods of treatment , a big number of patients had the benefit from orthopedics type of treatment. The main cause is the existence of high anaesthetical and surgical risc . Surgical type of treatment in case of perthrohanteric hip fractures allows to prevent different types of complication. Kaufer variables are used to choose the fixator for the osteosynthesis.

Keywords: Trochanteric fractures, Internal fixation

References: Campbell's Operative Orthopaedics ,International Edition ,2013

COMPARISON OF DIFFERENT LIVER TRANSECTION TECHNIQUES

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Introduction: Linear radiofrequency device (LRFD) is disposable tool designed for liver parenchyma transection using controled radiofrequency to "seal" blood vessels and bile ducts, making liver resection easier and safer compared with the standard Kellyclasia technique.

Aim: In the present study, the authors compared significant intraoperative parameters and postoperative results on the 100 patients operated at Surgical Clinic Clinical Center Nis, with the aim to determine real value of the LRFD compared with the standard kellyclasia technique.

Materials and methods: The study analyzes data of the 100 patients divided in two groups: control group (72 patients) with the kellyclasia resection technique and group with resection preformed using LRFD -Tissue Link / Dissection Sealer (DS-3.0) (28 patients). The following parameters are analysed: duration of the liver ischaemia, liver parenchyma transection time, intraoperative blood loss, significant intraoperative and postoperative complication rate, duration of the hospitalisation and mortality.

Results: LRFD was used in 28 liver resections. Average duration of the liver ischaemia in the control group was 32 minutes. In the LRFD group, liver was resected without ischaemia. Transection of the liver parenchyma was significantly slower in the LRFD group (2.9 versus 1.5 cm^2 /min.). Intraoperative bleeding was lower using LRFD (200 ml compared with 420 ml in the control group). One biliary leak was registered after use of the LRFD.

Conclusion: LRFD is simple device for safe liver transection without ischaemia and singificant reducing of the intraoperative blood loss. High price for disposable device and slow parenchyma transection are disadvantages of this technique compared with the standard Kellyclasia technique.

Keywords: liver resections, RF currents, hemorrhage

ANTENATAL FETAL VASCULAR MALPERFUSION IS A PLACENTAL FACTOR FOR TERM PREECLAMPSIA

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Introduction: Currently, there is evidence that late preeclampsia (PE) in full-term pregnancy is more due to metabolic and cardiac dysfunction of the mother's body than to placenta pathology, therefore PE in full-term pregnancy should be considered as a pathological condition different from early preeclampsia.

Aim: A comparative histopathological evaluation of the fetal-placental and uteroplacental compartments of term and preterm placentas from pregnancies with preeclampsia was performed.

Materials and methods: A retrospective histological examination of 81 placentas from abnormal pregnancies complicated by preeclampsia at 32-35 weeks (n-52) and full-term (37-41 weeks, n-29) gestation was performed. Histopathological criteria of maternal vascular malperfusion (MVM) were as follows: acceleration of villi development and placental infarction (more than 10% of the placenta volume); criteria for fetal vascular malperfusion (FVM) were as follows: fibro muscular sclerosis, vascular ectasia and thrombosis of placental stem villi. The histological description of the placenta pathology was carried out in accordance with the nomenclature of the Amsterdam group for the study of the placenta.

Results: Histopathological signs of MVM in all placentas with preeclampsia were detected in 71 cases (88%). Among them, with preterm PE in 52(100%) cases, in term gestation - in 19 (66%) cases. Histopathological signs of FVM were detected in 27 (93%) placentas with term PE and only in 11(21%) placentas with preterm PE

Conclusion: We hypothesize, that FVM is an important feto-placental factor in the development of PE. PE in a full-term pregnancy may be associated with compensatory activation of the tone of feto-placental large vessels in conditions of clinically latent fetoplacental blood flow disturbance (FVM).

Keywords: preeclampsia,study of the placenta,epidemiological data,diseases in the postnatal period and adulthood.

Acknowledgements: I would like to express my special thanks to gratitude to my scientific advisor(Tussupbekova M.M., Doctor of Medical Science, Professor of the Department of Pathology, Medical University of Karaganda.)who gave me the golden oppertunity to do this wondeful project on the topic(ANTENATAL FETAL VASCULAR MALPERFUSION IS A PLACENTAL FACTOR FOR TERM PREECLAMPSIA) which also help me in doing a lot of research and i came to know about so many new things i am really thankful to them.secondly i would also like to thanks my parents and friends who helped me a lot in finalizing this project within the limited time frame.

THE IMPACT OF ELECTRONIC SMOKING DEVICES ON THE CONDITION OF ORAL TISSUES

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Introduction: Today, smoking is the main cause of most diseases worldwide. It is worrisome that young people are actively starting to smoke, because the earlier the disease develops, the more harmful it is for health and the faster the epidemic will develop. According to the Global Teen Tobacco Survey Use among Adolescents, about 40.3% tried smoking, of which 23% use electronic cigarettes and every five teenagers one of them regularly smokes them. In 2015, only 5.5% of teenagers in Ukraine used electronic cigarettes, and now 20% smoke them daily. Research into the potential health effects of using electronic cigarettes in teenagers is limited.

Aim: To determine the dental status of teens using electronic smoking devices.

Materials and methods: The study was conducted among 30 adolescents (17 boys and 13 girls) who systematically use electronic cigarettes between the ages of 13 and 18 to seek a preventive examination

Results: During clinical examination, gum inflammation and bleeding were detected in most patients. Oral hygiene status were determined using the index OHI-S (Green J.C., Vermillion J.K., 1964), it values was equal to 1,65. The intensity of the inflammatory process in the gums was determined using the GI index, it was equal to 1,25. The PMA index was 34.5%, which corresponds to the average severity of gingivitis.

Conclusion: The analysis of the data of an epidemiological examination is a necessary step for the further planning of measures for the prevention of dental diseases. Adolescents who use electronic smoking devices have a tendency to worsen the hygienic condition of the oral cavity and increase the indicators characterizing inflammation of the gums, which is the basis for further research. Awareness should be raised in smokers of electronic smoking devices and they should be targeted to smokers in smoking preventive measures.

Keywords: electronic device, OHI-S, PMA index, hygiene, Adolescent

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A RARE CASE OF A HUMAN TAIL

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Introduction: Congenital caudal appendage is an umbrella term describing an elongated skin-covered protrusions varying in shape and size in the lumbosacral and coccygeal region. A number of classifications have been proposed according to the morphology and content of the 'caudal appendage, but most of them agree upon separating two groups – 'true tail' or 'vestigial tail' containing adipose tissue, connective tissue, central bundles of striated muscle, blood vessels and nerves and no vertebrae, and 'pseudo tail' (lipoma, teratoma, myelomeningocoele and parasitic fetus).The caudal appendage could be positioned in the midline of the lumbar, sacral and coccygeal region, but deviations from the sagittal plane are possible. Both categories of the congenital caudal appendage are associated with other coexisting anomalies – cleft palate, spina bifida and other forms of spinal dysraphism. The exact mechanism of the embryogenesis of the 'human tail' has not yet been clarified. However, the malfunction of two genes is thought to play role in the pathogenesis - Wnt-3a and Hoxb13 (Hoxb13-knockout mice had longer tails and two additional caudal vertebrae). Human tails are object of interest to the medical practitioners due to the rarity of the condition, the underlying pathology and the social stigma associated with it.

Clinical case: A female neonate born after a full-term uncomplicated pregnancy was admitted to the paediatric surgery department due to an elongated midline cutaneous protrusion in the sacrum resembling a tail that appeared since birth. The growth was covered by skin and a cystic mass containing a mucous-like substance was observed at the tip. The neurological examination revealed no deficits in the muscle tone, strength and sphincter activity. A radical excision was performed at age of 9 months. The pathohistological sample showed a mass consisting of connective tissue and covered with epithelium.

Conclusion: Although most of the lumbosacral masses contain an underlying spinal or chordal pathology, our case presents a very rare true human tail that is not accompanied by other congenital pathology such as spinal dysraphism, cleft palate.

Keywords: human tail, vestigial tail, caudal appendage

AVULSION FRACTURES - THOROUGH DIAGNOSTICS FOR PREVENTION OF COMPLICATIONS.

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Introduction: Avulsion fractures are one of the potential illnesses that may be a result of the overexploitation of the locomotor system. They are caused by excessive stretching forces present during uncoordinated muscle spasm or non-physiological articular movement when tendon or ligament pull the bone fragment. The main symptoms include a sudden onset of strong pain accompanied by a feeling of crackling or the decreased mobility of the limb. Due to similar clinical indicators, it is often misdiagnosed as damaged ligaments of the two-headed thigh muscle. This may lead to the introduction of a suboptimal treatment plan, with a prolonged convalescence period or deprived limb ability.

Clinical case: This study describes a case of a young soccer player who suffered from an ischial tuberosity avulsion fracture that was misdiagnosed as a torn of the two-headed thigh muscle. Due to the prolonged recovery period, an MR scan was performed 12 months after the incident revealing a non-union displaced avulsion fracture of the ischial tuberosity. After 16 months of unsuccessful conservative treatment, surgical fixation of the fracture was performed.

Conclusion: This case underlines the value of both physical examination and thorough differential diagnosis of motor system injuries, especially in cases of younger patients. Proper and quick implementation of treatment minimizes the effects of an injury. Chronic hip pain, especially in young athletes, cannot be underestimated.

Keywords: Avulsion fractures, Ischial tuberosity, Hip pain

SQUAMOUS CELL RENAL CANCER WITH CAVAL TUMOR THROMBUS GRADE III EXTENDING TO RIGHT ATRIUM

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Introduction: Squamous cell carcinoma of the renal pelvis is a rare urological entity. It represents only 0.5% to 0.8% of malignant renal tumors. The extension of renal squamous cell carcinoma to inferior vena cava is, to our knowledge, described in just 8 reported cases so far.

Clinical case: We describe a case of a 72 years old male patient who presented with occasional hematuria and flank pain of the left lumbar region. Ultrasound and computerized thomography revealed hypovascular tumor of the left kidney involving about 90% of the parenchyma with a thrombus extending to the level of right atrium. In collaboration with cardiothoracic surgeons, we preformed radical nephrectomy and thrombectomy by the Chevron incision and median sternotomy. Histological analysis verified that squamous cell carcinoma had extended to the perirenal fat. The regional lymph nodes were not involved. Same tumorous pattern is verified in the thrombus of inferior vena cava.

Conclusion: To our knowledge, this is the second case of successful surgical treatment of the non-metastatic renal squamous cell carcinoma with caval thrombus. Surgical procedure was uneventful and patient is scheduled up for a close monitoring.

Keywords: squamous cell carcinoma, renal pelvis, inferior vena cava extension, surgical treatment

ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Public Health
Oral
Session I
(PHOS1)

SPLENIC ARTERY ANEURYSM (SAA) SEGMENTATION AND 3D - PRINTED MODEL FOR PRESURGICAL PLANNING.

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Introduction: Splenic artery aneurysm (SAA) is relatively rare, although potentially deadly condition in which the diameter of the vessel is at least 50% bigger than expected. Aneurysms are classified as true, when all the layers of the wall are involved, and pseudoaneurysms when only the intima tears with subsequent dissection of blood into a false lumen and later formation of periarterial hematoma. True aneurysms are further divided in fusiform and saccular classification considering their morphological structure.

Clinical case: The main goal is to segment the pathology in a physical 3d model. A Computed tomography set of an anonymized adult male patient with SAA was used for the segmentation, which was performed with the medical software - 3D Slicer. Initially a threshold was set to from 150 to 950 Hounsfield units, but due to the high vessel density some bone structures remained so they needed to be manually removed. Hollow effect has been used subsequently. The data was then exported as STL file (Standard Triangle Language) and loaded into Autodesk Meshmixer to be further refined of artefacts and to reduce the polygon count even more. The final model consists of a digital file which can be used for fast visualization diagnostic, as well as 3d printed hollow model for presurgical planning or educational purposes. A raw segmentation can be generated in under 30 minutes, if immediate results are necessary. However, the model can be further refined and optimized. Depending on hardware availability, size and intricacy it could take 2 - 10 hours.

Conclusion: 3d vascular reconstruction using CT data and fused deposition modelling 3d printer is a highly accurate, relatively fast and cheap method. Such models are also suitable for students' training and research studies. https://sketchfab.com/3d-models/splenic-artery-aneurism-saa-34d4c3ff81374cbab3233e39404c8ebb

Keywords: Splenic Artery Aneurysm, 3d printing, 3d modelling, 3d imaging, 3d reconstruction, CT angiography

References:https://www.scielo.br/scielo.php?pid=S167754492020000100401script=sci_arttext&tlng=en, https://www.ncbi.nlm.nih.gov/books/NBK430849/

ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICES OF INDIAN HEALTH CARE PROVIDERS AND MEDICAL STUDENTS ON COVID-19: AN ONLINE CROSS-SECTIONAL STUDY

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Introduction: COVID-19 has created fear, misconceptions, and apprehensions among not just the public but also the healthcare providers[1].

Aim: To evaluate the knowledge, attitudes & practices (KAP) towards COVID-19 among health care providers and medical students of India

Materials and methods: An online cross-sectional study was conducted in India on present and future healthcare providers. The questionnaire was developed using modified Delphi Method and was pre-validated (Cronbach's alpha α = 0·8) and standardized before circulating it as a Google Form and data was collected from 15th to 25th September 2020. SPSS software was used to apply Kolmogorov-Smirnov test, Mann-Whitney U test and Kruskal Wallis H test, Spearman's rank correlation. P-value<0·05 was considered significant.

Results: 1137 medical students, 840 doctors, 126 nurses, 96 healthcare workers, 12 ward attendants participated in the study (Total=2211). Mean scores for knowledge(K), attitude(A) & practices(P) were 5·93 (±1·211 S.D) out of 8, 5·20 (±0·843 S.D) out of 6 & 2·38 (±0·896 S.D) out of 4 respectively. Significant and positive Spearman's correlations between knowledge-attitude (ρ=0·273, p<0·0001), knowledge-practices (ρ=0·222, p<0·0001) and attitude-practices (ρ=0·175, p<0·0001) were observed. Profession had significant correlation with mean K (ρ=-0·252, p<0·0001) and A (ρ=-0·285, p<0·0001), mean P (ρ=-0·073, p<0·0001) and mean KAP (ρ=-0·240, P<0·0001). Age was associated with mean A (ρ=0·096, p<0·0001), mean P (ρ=0·086, p<0·0001), mean KAP (ρ=0·115, p<0·0001). State/UT of residence showed significant correlation with mean P (ρ=0·060, p=0.005) and mean KAP (ρ=0·080, p<0·0001).

Conclusion: There is an average to good KAP for COVID-19. The study reaffirm that better knowledge can lead to a positive attitude and subsequently result in good practices. Scientific education and training, good governance and community action play important roles in determining the quality of the healthcare system.

Keywords: COVID-19, Knowledge, Attitude, Practices, Medical professionals

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International Journal of Academic Medicine and Pharmacy, Volume: 2 Issue: 3(Volume: 2 Issue: 3), 261–266. https://doi.org/10.29228/jamp.45177

ADHERENCE TO NUTRITIONAL RECOMMENDATIONS BY PATIENTS WITH TYPE 1 DIABETES

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Introduction: Adherence to dietary guidelines is an integral part of the treatment and self-management of type 1 diabetes (T1D) patients. It is a prerequisite to prevent long-term complications. The starting point of nutrition therapy is to follow the diet recommended for T1D in compliance with the general healthy diet requirements.

Aim: The aim is to collect and analyze published studies on dietary habits and adherence to dietary recommendations in adult patients with type 1 diabetes.

Materials and methods: A literature search of the PubMed and Google scholar database was conducted (2006-2021). The process of study selection, identification, screening, eligibility, and inclusion followed the PRISMA recommendations and flowchart: 423 titles were retrieved, 16 articles were eligible. Our inclusion criteria were 1/focused on dietary habits, 2/ included information on dietary intakes-energy and nutrients, 3/reflected adherence to dietary recommendations, 4/analyzed knowledge about nutrition in T1D patients. All papers were crosschecked and reviewed for selection by 2 independent reviewers. Our study was limited to articles published in English and Bulgarian.

Results: The predominant share of the studies are based on nutrient intake and less frequently on dietary behavior - 90% of the T1DP patients meet the protein intake recommendations, they consume less carbohydrates (40 - 45 E%) and fat (<35 E%), especially saturated fat than the general population. The fiber intake is lower than the recommended but still more than that of the general population. Regarding food groups, a positive trend is the higher intake of vegetables and fruit. A negative tendency is that the mean salt intake exceeds the recommendations, and in some studies only 27% of T1D patients report a diet within the recommended salt consumption. Deviations in alcohol and sugar intake, which are frequent but less than in the general population, are associated with poorly managed diabetes. In countries, where the treatment of T1D patients includes a consultation with a nutritionist, a better compliance to a healthy diet is reported.

Conclusion: Although T1D patients report healthier diet than the general population, more nutrition education is still needed. How this may affect the long-term complications of T1D is to be studied.

Keywords: type 1 diabetes, diet, eating behavior, healthy nutrition

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EVOLUTION OF THE CONCEPT OF "AUTISM"

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Introduction: Autism spectrum disorder (ASD) is now described as a neurodevelopmental disorder characterized by persistent deficits in social communication and social interaction across multiple contexts and the presence of restricted, repetitive patterns of behavior, interests, or activities. These symptoms are present from early childhood and limit or impair everyday functioning. Decades have passed since the first description of the syndrome of early infantile autism in 1943 up to the current diagnostic criteria for ASD.

Aim: To review the evolution the concept of "autism" and analyse the changes of the concepts with regard to the contemporary scientific body of research and the development of neurosciences.

Materials and methods: A review of the diagnostic criteria for "autism" in the Diagnostic and Statistical Manual for Mental Disorders (DSM) and a comparison with the International Classification of Diseases (ICD).

Results: While the term "autism" was first introduced by Bleuler to describe social withdrawal in patients with schizophrenia (1911), the first classic description of the syndrome of early infantile autism was made by Kanner (1943) and infantile autism was included as an explicitly defined category in the DSM-III (1980). Up to DSM-V's view of ASD, the conceptions of the disorder have evolved while retaining important continuity with Kanner's view for the hallmarks of the condition.ASD now encompasses disorders previously referred to as early infantile autism, childhood autism, Kanner's autism, high-functioning autism, atypical autism, pervasive developmental disorder not otherwise specified, childhood is integrative disorder, and Asperger's disorder. Scientific evidence point that these are a single condition with different symptom severity and have neurodevelopmental basis.

Conclusion: The convergence of diagnostic approach in DSM-IV and ICD-10 has provided as hared system that has fostered a huge body of research into the genetics, neuro-imaging, metabolism, behaviour and cognition in children and adults with ASD, leading to current view of "autism" as a spectrum of disorders, classified as neurodevelopmental disorders in the DSM-5 and ICD-11.

Keywords: Autism spectrum disorders, autism, Kanner, DSM-5, ICD-10

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HEAD CT DOSE OPTIMISATION: A PHANTOM STUDY.

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Introduction: Due to exposition of ionising radiation, CT examinations are associated with a risk of carcinogenesis depending on the radiation dose received.. Unfortunately, more radiation means better image quality. Therefore a burning topic in CT imaging is iterative recontruction (IR) techniques, which may compensate quality of “noisy” CT images obtained using lower radiation dose.

Aim: To find the most optimal IR technique allowing to perform head CT examinations with lower radiation doses, maintaining diagnostic informativity of the image.

Materials and methods: Ten head CT image series using a PIXY antropomorphic human training phantom were scanned with a 64-slice CT machine with dose affecting parameters - kV and mAs – changed every time. CT dose index (CTDIvol) for each scan differed (2.3-35.4 mGy). For every scan, five reconstructions were performed using iterative reconstruction algorithms (Philips iDose, from 1 to 5), for the bone and brain windows. One radiologist performed 15 measurements of radiodensity and image noise in 3 slices of every reconstructed series . The median density and noise values, along with the corresponding signal-to-noise ratio (SNR) were calculated to estimate the most optimal IR technique providing the best image. Both image quality and dose (CTDIvol, in mGy) used in examination were taken into account to determine the best IR technique for use in practice.

Results: For the brain, reconstructions with iDose 5 always provided the least noise and the best SNR in comparison with other reconstructions made with the same dose. At comparable image quality levels, CTDIvol can be reduced by 45%. When CTDIvol is over 30 mGy, SNR drops and noise slowly increases. For bones, no IR technique was convincingly better than any other; image quality is closely correlated with ionising radiation used for examination. There is a slight superiority for iDose 4, when the dose CTDIvol is more than 20 mGy.

Conclusion: In head CT examination, iDose 5 is the most optimal IR technique to balance the radiation dose and image quality for brain whereas iDose 4 is slightly superior to be used for bone reconstructions.

Keywords: CT dose optimisation, iterative recontruction methods, iDose

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HIGH BODY MASS INDEX (BMI) AND THE ONSET OF SEXUAL MATURATION

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Introduction: Recent studies show that girls as young as three years have started showing signs of early sexual maturation.This is becoming a concerning problem worldwide as it increases the risk of developing breast cancer and ovarian cancer in the future.A high BMI is considered to be a contributing factor to the early onset of puberty.

Aim: To investigate the correlation between a high BMI and the onset of puberty in males and females.

Materials and methods: Three databases- Science Direct, Pubmed and Cochrane were used to conduct the searches, using the keywords "obesity" and "puberty." All articles that assessed the association between obesity and the onset of puberty were identified. 10 relevant articles published within the last 10 years were carefully chosen. 7 longitudinal studies met the inclusion criteria. The appropriate data was extracted from each study.

Results: A total of 22,655 participants, aged between 10-12 years, with a high BMI were included in the final analysis. Girls who were overweight (85th–97th percentile) and obese (≥97th percentile) displayed an earlier onset of thelarche and menarche in all 7 studies ($p < .01$; 95% CI:
0.02-0.19). Consistent results were not shown in boys. Two studies showed scrotal and testicular enlargement ($p < .01$; 95% CI: 0.07-0.19) in
overweight boys. One study revealed a delayed onset of puberty in obese boys (OR 3.77; 95% CI: 1.34-10.52).

Conclusion: This indicated that, a high BMI had a direct correlation with the onset of puberty in females. The correlation between a high BMI and the onset of puberty in males remains unclear. This calls for further investigation and research in this field.

Keywords: Obesity; puberty; BMI; thelarche; menarche; boys

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PUBLIC ATTITUDES TOWARDS COVID-19 VACCINATION IN BULGARIA

Authors: *Helen Popov*[1], James Moore[2]

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Introduction: Early reports following the approval of several COVID-19 vaccines in Bulgaria, indicated that a significant portion of the population is hesitant toward being vaccinated against the SARS-Cov-2 Virus. As of March 2021, Bulgaria is among the countries with the lowest rates of vaccination in the European Union.

Aim: The aims of the study were to investigate public attitudes towards COVID-19 vaccination and the desire for further information from most trusted sources. It included looking at demographics by breakdown of age and education.

Materials and methods: Data were collected by means of a questionnaire, circulated on social media forums and face-to-face.

Results: From the total number of responses (n=408), 37.8%(n=154) said they would refuse vaccination. Of this group 62%(n=97) indicated they would like more information before considering changing their decision. 67%(n=104) indicated they would respect health information from doctors and 37%(n=90) were considered high risk by comorbidities. Vaccine refusal by age group was highest in 18-29 and 85+ years, 54% and 66% respectively. This showed that respondents, who were reluctant to be vaccinated, were keen for further information and highlighted public trust in medical sources for information. Concerns about vaccine efficacy and safety were the most frequently stated reasons contributing to vaccine refusal in Bulgaria.

Conclusion: It was concluded that uptake of COVID-19 vaccination in Bulgaria could be improved through targeted medical advice, delivered either through governmental initiative or independent medical authorities. Further research is needed to ascertain the most effective public health approach, focusing on increasing vaccine uptake and countering misinformation.

Keywords: Public Health, COVID-19, Vaccination

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ANXIETY, DEPRESSION AND QUALITY OF LIFE IN PATIENTS WITH GLAUCOMA

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Introduction: Previous studies have shown a significant comorbidity between depressive, anxious disorders and glaucoma, as a chronic, progressive and debilitating disease, which is a second most common cause of vision loss in the world.

Aim: To determine the presence of depression and anxiety, to assess the quality of life in patients with glaucoma, as well as comparation of the obtained results with the same results recorded among the respondents from the healthy population

Materials and methods: Cross-sectional study, carried out in Ophthalmology Clinic, at Clinical Center in Nis. Experimental group consisted of 44 respondents with confirmed glaucoma, 20 to 80 years of age, with elementary education at least. Presence of anxiety, depression, was evaluated using Zung's self-rating instruments for anxiety, depression, while the quality of life was evaluated in both groups using a questionnaire by the World Health Organization for assessment of quality of life – Brief version. Socio-demographic and glaucoma related parameters were gathered.

Results: 38.64% patients with glaucoma has shown signs of depression, mostly mild and moderately severe forms, while mild depression was found in 4.17% of respondents among the control group. Number of patients with anxiety was two times higher in experimental than in control group. Mentioned results show statistically relevant difference ($p<0.01$). We determined statistically relevant correlation between the frequency of depression and the severity of glaucoma (p0.05). While comparing the gathered values for each domain as well as the overall QOL we found a statistically relevant difference ($p<0.001$). Statistically relevant correlation was found between the patients with milder and more severe glaucoma forms

Conclusion: Comorbid depression and anxiety in patients with glaucoma occurs in more severe forms of glaucoma, in patients with longer duration of the disease for medical and psycho-social reasons. Recognizing and treating these disorders has a positive effect on improving the quality of life and compliance, and therefore on the course and outcome of the disease

Keywords: anxiety; depression; quality of life; glaucoma

3D RECONSTRUCTION OF A SCOLIOSIS CASE

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Introduction: The condition Scoliosis is characterized by an abnormal curvature of the spine greater than 10 degrees. It may occur in various areas of the spine and affect multiple areas simultaneously. 80-85% of the cases are referred to as Idiopathic Scoliosis due to the lack of defined cause. Additionally, scoliosis can be classified into neuromuscular (NS) and congenital (CS). NS is typically a secondary symptom of a preexistent condition while CS occurs during embryological development. If the spine curves beyond 40 degrees the condition is considered Severe Scoliosis (SS).

Clinical case: Primary objective is producing a solid 3D model of SS. An anonymous torso computed tomography set of an adult male with SS was used. The segmentation was performed via the program 3DSlicer. In order to select exclusively high-density structures such as bones, a threshold was set from 150 to 1400 Hounsfield units. Afterwards, the data was exported as Standard Triangle Language (STL) file and subsequently loaded into the program Autodesk Meshmixer, so the model could be manually cleared of artefacts and the polygon count further reduced. The end model can be utilized as 3D visualization or 3D printed for surgical planning, as phantom model or for educational purposes. 3D reconstructions of the trunk are advantageous for treatment methods such as bracing or surgery. Biplanar X-rays models provide detailed 3D reconstructions of spinal deformities for patients in standing position without excessive radiation doses. Therefore, a clinical necessity for rapid and accurate reconstruction techniques exists. Using exclusively 3DSlicer a raw reconstruction could be generated within 30 minutes, supposing quick results are paramount. However, rough models could be further refined and optimized in 2 to 8 hours depending on size, intricacy and available hardware.

Conclusion: In conclusion, supporting numerous recent scientific endeavors, 3D reconstruction is demonstrated as rather reliable and uncomplicated technique, suitable for educational, diagnostic and therapeutic purposes.

Keywords: Scoliosis, 3D model, Reconstruction

References: https://sketchfab.com/3d-models/scoliosis-3265ac8b49d84bf985f744111e2768a9

IS ENERGY BASED PHYSIOTHERAPY USE REASONABLE FOR THOSE WHO DO NOT HAVE FEMALE SEXUAL DYSFUNCTION?

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Introduction: High Intensity Focused Electro-Magnetic technology (HIFEMt) – innovative physiotherapeutic method for diminishing weakness of pelvic floor muscles (PFM). Its effect is based on intense focused electromagnetic fields, causing contractions of higher tension than Maximal Voluntary contractions of PFM. As strong PFM is associated with high sexual function and satisfaction, HIFEMt is believed to have great prospectives in treatment of Female Sexual dysfunction (FSD). But could it be used to improve sexual life in case of normal sexual function?

Aim: To compare HIFEMt use for FSD patients and non-FSD patients.

Materials and methods: 40 women, aged 25 to 45, selected according to specific criteria, underwent ten HIFEM technology procedures according to local regimen. Data was obtained from questionnaires, filled before the 1st and the 10th procedures, using validated Female Sexual Function Index(FSFI) – suggesting FSFI<26.55 for the diagnosis of FSD – and supplementary questions. Data was processed with Microsoft Excel and IBM SPSS Statistics 22.0.

Results: 60%(n=21) of patients were nullipara. 50%(n=7) of those, who had ≥1child had episiotomy/ruptures during labor. 22.9%(n=8) have tried Kegel exercises as a method to improve the quality of sexual life before. In 91.4%(n=32) partner knew about the research and supported woman. 48.6%(n=17) named anorgasmia as the reason of participation in the research, 42%(n=15) – libido problems, 20% (n=7) – pain during intercourse. Before the start of procedure cycles 60%(n=24) of all patients had FSD, with the mean(IQR) value 22.50(4.85) with the lowest numbers in Desire domain (3.10(1.00)). 87.5%(n=35) of patients have underwent full procedure cycle. 12.5%(n=5) were excluded because of developing contraindications for the procedures(pregnancy, acute infections, hemorrhoid disease). 5.7%(n=2) developed complications after 7th and 10th procedure(PFM hypertonus (n=2)), both non-FSD group. After the 10th procedure 42.9% had FSD(n=15) with FSFI 27.17(3.58). The biggest changes were in Orgasm domain (0.84(1.37)) after the 5th; 0.93(1.6) after the 10th. Medians(Q1-Q3) of FSFI changes from 1st till 10th procedure between FSD group and non-FSD group were statistically significant: 6.1(3.1-11.1) and 1.9(-3.1-5.0).

Conclusion: HIFEMt shows better results in symptomatic therapy of FSD than as method of improvement of previously normal sexual function – its use for non-FSD patients is possible, however each case should be considered individually. Further evaluation needed.

Keywords: Female Sexual health

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KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING CARCINOMA CERVIX SCREENING, HPV VACCINATION AND ACCEPTABILITY OF SELF-SAMPLING FOR HPV TESTING AMONG WOMEN IN A RURAL AREA OF TAMIL NADU,INDIA – A CROSS SECTIONAL STUDY

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Introduction: Cervical cancer is the most common cancer affecting women in India. 1 in 53 women in India would be affected by cervical cancer in their lifetime as compared to 1 in 100 in developing countries. Indian women face a 1.4% cumulative death risk. HPV strains 16 and 18 contribute to 70% of the cervical cancer cases. Screening for cervical cancer and early detection of pre-cancerous states improves survival rates in cervical cancer. Lack knowledge, privacy and discomfort associated with pap smear lead to lower participation. Studies have shown that self-collected samples of cervical smear are effective in increasing screening coverage.

Aim: To assess the knowledge, attitude and practices regarding cervical cancer screening, HPV vaccination among women in a rural area of Tamilnadu, India and the factors influencing the same. To explore the acceptability of self-collected cervical smear for HPV testing.

Materials and methods: Community based cross sectional study in the field practice area of Rural Health Training Center, 2 months (June 2018 – July 2018), among women 20 years and above who were residents. Sample size of 260, using systematic random sampling method by questionnaire method. Ethical approval from institute obtained.

Results: 70.4% had poor knowledge. Knowledge scores improved with education. Education was significantly associated with overall attitude scores. 23.7% of persons in the age group 30-39 years had undergone pap smear at least once in their life time. Reason for not undergoing pap smear was lack of knowledge. 70.8% of the women agreed to take up the self-sampling, 63.8% stated it would be less embarrassing.

Conclusion: The knowledge was lower which reflects lack of health awareness and education. Increasing girl child school education, expansion of Government screening and awareness campaigns, better ease of access to facilities, involvement of public private partnerships recommended. In response to the feasibility of self-sampling is therefore evident that this helps in improving the screening practice, compliance and early detection of lesions.

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IMPROVING PATIENTS' SLEEP QUALITY IN A BUSY MEDICAL WARD

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Introduction: Sleep is a biological necessity and disturbed sleep is associated with a number of adverse impacts on health. Getting enough good quality sleep is a vitally important component of a healthy and balanced lifestyle - although sleep often doesn't receive the attention it deserves. Noise at night in a busy medical ward has always been a problem stopping patients from getting a good night rest in hospital, but there have been minimal manners to improve patient's sleep quality. Poor sleep quality in hospital could have indirectly diminished the speed of patient's recovery in hospital, leading to longer hospital admissions.

Aim: To assess patients' sleep quality in a busy acute ward and explore the impact of wearing eye masks and ear plugs on night time sleep disruptions.

Materials and methods: We assessed sleep quality by handing out questionnaires to patients. Then we handed out disposable ear plugs and eye masks and collected Feedback questionnaires from patients to assess if their sleep quality improved. The total of 153 patients were included in the project.

Results: We have found that providing ear plugs and eye masks to the patients on the ward improved their quality of sleep. There was a 60% improvement in night sleep duration with earplugs and eye masks. Introduction of the earplugs and eye masks increased the quality of sleep on AAU by 105%

Conclusion: In the first part of our project we concluded that 60% of our patients had poor night rest in AAU due to noise disturbance. Providing ear plugs and face masks to ward patients improved both the duration and quality of their sleep. The sleep duration is still shorter than their usual duration at home, however through introduction of face masks and ear plugs the reduction in sleeping time came down from 3 hours to 1.2 hours.

Keywords: sleep, sleep disturbance, lifestyle medicine,

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ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Public Health
Oral
Session II
(PHOS2)

ETIOLOGY AND PSYCHOTHERAPEUTIC TREATMENT OF NARCISSISTIC PERSONALITY DISORDER

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Introduction: We all love ourselves.That seems to be such an instinctively true statement that we do not bother to examine it more thoroughly.In our daily affairs,in love,in business,in other areas of our life-we act on this premise.Yet upon a more meticulous inspection,it looks shakier.There is one group of people that seems distinct in its mental constitution: the narcissists. Narcissistic Personality Disorder(NPD) is a personality disorder that involves pervasive term pattern of grandiosity(in fantasy or behavior),need for admiration and lack of empathy,beginning by the early adulthood and present in various contexts such as family and work.Sadism is the key trait observed in the most severe type of NPD,malignant narcissism.Pathological narcissism is a life long pattern of traits and behaviours which signify infatuation and obsession with one's self to the exclusion of all others and the egoistic and ruthless pursuit of one's self gratification,dominance and ambition.

Aim: The purpose of this study is to explore the theories of development of narcissistic personality disorder, to understand the dynamic psychological defense mechanisms with which he operates the efficiency of the therapeutic models, and raising consciousness about the ubiquity of this disorder.

Materials and methods: In this study are revisited three clinical cases in which is considered the optimal treatment of NPD, accentuating on psychoanalytic therapy. The data are provided from surveys taken from the databases of the Systematic Data Repository, Pubmed, Medline.

Results: The first clinical case highlights a multifaceted interactive pattern between narcissistic functioning and substance abuse, competence, fragility, internal vulnerability and external self-improvement. The second clinical case demonstrates patterns of attachment that may unfold and dominate the therapeutic alliance during the treatment of a patient with an eating disorder and pathological narcissism/narcissistic personality disorder. Systematic exploration of basic experiences and psychological trauma, which contribute to reactivity, and self improvement as well as rejected, avoided, and preoccupied interactive patterns can alter narcissistic functioning. The basic contribution of narcissistic functioning as a psychiatric disorder may be totally unrecongnized. It prevents remission and and contributes to relapses and reluctance to follow psychiatric treatment recommendations. The third clinical case shows a series of empathetic demonstrations, especially in terms of emotional regulation

Conclusion: Adult Narcissist can be rarely 'cured', though some scholars think otherwise.Still the earlier the therapeutic intervention,the better the prognosis.Long-term, consistent outpatient care is the approach of choice in the treatment of Narcissistic Personality Disorder(NPD).This usually involves a combination of psychotherapy and medication management.The mainstay of treatment is individual psychotherapy-specifically, psychoanalytic psychotherapy.Other therapeutic modalities used to treat the disorder include group,family and couples therapy,as well as cognitive behavioural therapy and short-term objective-focused psychotherapy.

Keywords: Narcissism; Narcissistic personality disorder; malignant self-love, pathological narcissism

LOWER BACK PAIN IN DENTAL STUDENTS

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Introduction: Lower back pain occurs and increasingly affects the entire population, regardless of the age and gender, like pandemic. Modern technology is not the only etiological factor that causes lower back pain. There are professions, such as dentistry, that require sitting or standing for a long time, from the university days till the retirement. Commitment to this kind of work often causes neglection of minor health problems, such as lower back pain, which can soon become chronic pain. Such pain reduces both mental and physical capabilities of the individual, and thus the community - and consequently causes dissatisfaction and impairs the quality of life.

Aim: Our goal is to assess the incidence of lower back pain in dental students and assess the impact of lower back pain on psychophysical functionality and finally propose a solution for the improvement, detection and treatment of the lower back.

Materials and methods: Methodology: Cross-sectional study We have used a multiple-choice survey, consisting of 22 questions, with various range of answers. It was conducted among dental students from the first to the sixth year. The survey was carefully read and filled in, considering that some of the questions included the habits of the respondents and their methods of treatment.

Results: The survey included a homogeneous group of 127 respondents. Over 76% felt lower back pain. 49,22% claimed that pain interfered with their mental work, and 18,36% did not feel pain at all, meaning that 50,78% were not significantly hindered by the pain in their mental work. 27,34% used medication, and 7,81% sought the help of an expert.

Conclusion: The lower back pain certainly causes disturbances in various segments of life. Pain causes nervousness that significantly affects the thinking process, and thus makes it difficult to accomplish your goals. Pain is often caused by long-term sitting which is the daily routine of dental students. Therefore, it is important to understand this problem and apply appropriate methods (regular exercises, physical activity, walking) to solve it in order to achieve better results, both during studies and in future work.

Keywords: Low back pain,students,nervousnesness,studying

DOES PARTICIPATION IN STUDENT ORGANIZATIONS AND INSOMNIA CORRELATE WITH BURNOUT LEVEL IN MEDICAL STUDENTS? - A CROSS-SECTIONAL STUDY IN UNIVERSITAS JEMBER

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Introduction: While participating in student organizations might be beneficial to improve soft skills, the additional organization-related burdens potentially as insomnia and might subsequently lead to burnout. Research about these possibly intertwining aspects of Indonesian medical students has been limited. This research was therefore conducted.

Aim: To investigate the correlations of participation in student organizations and insomnia with burnout in medical students.

Materials and methods: This cross-sectional study recruited first to third-year medical students in the Faculty of Medicine, Universitas Jember, to participate. Three questionnaires were utilized: 1) self-composed questionnaire to inquire student's level of participation in student organizations, 2) The Insomnia Severity Index questionnaire to assess insomnia, and 3) Maslach Burnout Inventory to assess burnout. Spearman's rho analysis was employed to analyze how participation in student organizations and insomnia correlates with burnout.

Results: A number of 144 medical students completed an online form containing the three questionnaires. Most participants were female (68.1%; n=98) and first-year students (41%; n=59). The self-composed questionnaire demonstrated acceptable validity (Cronbach a>0.7). The burnout component "emotional exhaustion" demonstrated weak significant correlations with the duration of organizational meetings, perceived busyness and insomnia ($r=0.202$, $P<0.05$; $r=0.175$, $P<0.05$; and $r=0.288$, $P<0.01$, respectively). Finally, the "depersonalization" component demonstrated a weak but significant correlation with insomnia ($r=0.225$; $P<0.01$).

Conclusion: Despite its weakness, significant correlations found between participation in student organization and insomnia with burnout might alert the necessity for further exploration and changes to better regulate and improve overall medical student activities.

Keywords: Burnout, Insomnia, Student organizations

FACTORS CONTRIBUTING TO VACCINE HESITANCY AMONG PARENTS IN KIEV

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Introduction: The vaccination is one of the greatest medical achievement in human history. Still vaccine hesitancy remains a global threat and promotes the outbreaks of vaccine preventable disease.

Aim: This study seeks to assess the factors influencing parental decision-making about vaccination.

Materials and methods: For this cross-sectional study , the questionnaire method developed by the European Academy of Paediatrics Research in Ambulatory Setting Network (EAPRASnet) was used . The study was conducted among 795 parents whose children were treated in patiently at Children's clinical hospital, kiev Ukraine. The survey consists of groups of people with different response formats and 5- point Likert scale. We analysed following factors: gender of parents, their age, education, consultation with doctors. The data collected from the questionnaire was processed with the Microsoft Excel software and analysed statistically with SPSS version 12.0 .

Results: Analysis showed that 86.1 % of parents who got the consultation from paediatricians and 83.2% who were consulted by family doctors believe that vaccines are effective, compared to the 60.7% ($p<0.01$) of parents who got the consultation by other specialists. “The vaccination of child is important” was acknowledged by 81.5% of parents with high university degree whereas only 67% of parents ($p\leq0.05$) from high school agreed to the above statement. The statement “I only vaccinate my child because it is required for kindergarten admissions” was supported by 4.5% of highly educated parents and 15.3% by another parents. 94.9% of Parents between age of 17-24 years old agree that vaccination is important , compared to 85.1% of parents of age 25+ years ($p <0.05$). Considering gender 91.9% of men believe that vaccination is important , compared to 84% of females.

Conclusion: Our study shows that major part of population still believe in the importance of vaccination. simultaneously there is a range of factors revealed by this study which influenced vaccine hesitancy. Taking into account, this information further needs monitoring and identification of factors which will help to enlighten common people about vaccination and developing strategies of vaccines .

Keywords: hesitancy , vaccination , EAPRASnet , vaccine

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Students in Ukraine: Findings from a Survey Conducted at Bogomolets National Medical University

PREVALENCE AND COMPARISON OF DEPRESSION RATES IN THE GERIATRIC POPULATION OF AN OLD AGE HOME AND A COMMUNITY, AND ITS ASSOCIATION WITH DEMOGRAPHIC FACTORS

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Introduction: Depression is the most common mental health problem in the elderly. This adds severe burden on the patient, also affecting their families and their financial situation

Aim: Finding out the prevalence of depression among older adults living in an old age home and a community provides information about the impetus one should give on mental health. Therefore, the results of this study will help the entire health care community to understand the severity of depression in the geriatric age group, find the leading causes of depression and help with the intervention of the linkage.

Materials and methods: A cross section study of the geriatric group of population was performed, two sections of the geriatric group were taken for the study- geriatric population residing in an old age home (80) and geriatric population residing in a community (80). There were two forms used for data collection - a Geriatric Depression Scale (GDS), a standardized tool used to assess the level of depression and a demographic form was used to collect the demographic information. To find the association between different factors, the statistical method of Chi-square test and P-value was taken. A null hypothesis was formed with no association taken into consideration and Chi-square values and P-value was calculated to find the possible association between the decided factors. The confidence interval taken for P-value is 95% with 0.05 level of significance.

Results: It was found that the depression rate in the old age home was 36%, while in the community it was 24%. The following factors were found to be associated with these depression rates - gender (chi-square value-13.804, p-value-0.00029), educational status (chi-square value-11.941, p-value-0.008), chronic illness (chi-square value-5.854, p-value-0.0155), marital status (chi-square value-9.62, p-value-0.047)

Conclusion: Depression was prevalent in both of the geriatric population and therefore, increased attention to mental health care in the geriatric population should be encouraged.

Keywords: depression, geriatrics, old age, community

THE ASSOCIATION OF STRESS MANAGEMENT WITH COMPLIANCE TOWARDS PREVENTIVE MEASURES OF COVID-19 IN MEDICAL STUDENTS ACROSS PAKISTAN: A CROSS SECTIONAL STUDY

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Introduction: The adherence to preventive measures of COVID-19 with the novel evidence based in our research can be further implemented as a non-pharmacological therapy for low grade stress and anxiety. Plus, this study can be used as proof that abiding by the recommendations is in fact a stress reliever on its own and can help persuade the population to follow preventive measures more, allowing for an even more biddable society to control the outbreak.

Aim: The basic aim was to investigate relationship between managing stress and the compliance to preventive measures of COVID-19. Plus, to identify a psychological gain that comes with following recommended preventive measures.

Materials and methods: A cross-sectional study with 1342 medical students was conducted in medical colleges across Pakistan. On 30th May 2020, a questionnaire to assess preventive measures and stress management was placed at end of a national quiz competition that had good reliability (Chronbach's Alpha > 0.7) and validity. Chi square and T test were used for comparison among groups. IBM SPSS 26.0 was used for data analysis.

Results: Out of 1342 medical students, 881(65.6%) were females and 461(34.4%) males. 1021 participants (76%) of the sample who claimed they could manage stress had a better mean score of 11.33 ± 1.79 (out of 13) for preventive practices in comparison to a score of 10.09 ± 2.92 for the 321 (24%) participants who couldn't manage stress (p=0.000). Amazingly, they also responded positively to all 13 preventive measure questions with p values for all being 0.000 except the one related to calling health authorities when exhibiting minor symptoms.

Conclusion: There is a strong association between managing stress and compliance to preventive measures which hasn't been established before in literature. Those who follow preventive measures have more chances of being able to manage stress.

Keywords: COVID-19, Mental health, Preventive measures, Public Health, Stress management

THE IMPACT OF THE COVID-19 PANDEMIC ON THE DEVELOPMENT OF DEPRESSION, ANXIETY AND STRESS IN PEOPLE WITH INTERNET ADDICTION

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Introduction: The problem of raising anxiety is extremely relevant, especially among people suffering from Internet addiction.

Aim: Investigate the relationship between depression, anxiety and stress caused by the COVID-19 pandemic and the presence of Internet addiction.

Materials and methods: 447 respondents (225 men and 302 women) were analyzed. During the work we collected information about the subjective attitude of respondents to COVID-19. Were used: Kimberly Young Internet Addiction Test Questionnaire (IAT), Depression, Anxiety and Stress Scale (DASS-21), Mathematical Statistics Methods.

Results: Respondents were divided into two groups, according to the presence of Internet addiction on the IAT test and into four subgroups, according to the collected information about the personal attitude of respondents to COVID-19: group "A" - 119 people, who were found to be addicted to the Internet (subgroup "X" - 72 respondents with subjective experience, who had a high level of confidence in information about the pandemic; subgroup "Y" - 47 respondents who were skeptical about the disease); group "B" - 328 people without Internet addiction (subgroup "X" - 206 respondents, subgroup "Y" - 122 respondents respectively). It was found that the level of depression on the DASS-21 scale in group "A", subgroup "X" was mostly mild, in subgroup "Y" - mild. The level of anxiety in subgroup "X" was moderate, in subgroup "Y" - also moderate. The level of stress in subgroup "X" was moderate, in subgroup "Y" - mild. As for the group "B", the level of depression in subgroup "X" was mostly mild, in subgroup "Y" - normal. The level of anxiety in subgroup "X" was mild, in subgroup "Y" - normal. The level of stress in subgroup "X" was mild, in subgroup "Y" - normal.

Conclusion: Internet addiction affects the development of depression, anxiety and stress directly. People with Internet addiction who have higher subjective feelings about COVID-19 are more likely to have mental disorders that require psychotherapeutic correction.

Keywords: Internet addiction, depression, stress, anxiety, COVID-19

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TO INVESTIGATE THE RELATIONSHIP BETWEEN MULTIPLE DEPRIVATION AND SEVERITY OF GLAUCOMA AT DIAGNOSIS

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Introduction: Glaucoma is an irreversible cause of blindness which can be prevented with early identification of preventable risk factors. Multiple deprivation has been linked to poorer mortality and morbidity outcomes of various diseases. There have been limited studies to evaluate the effect of multiple deprivation on glaucoma severity.

Aim: The aim of this study is to evaluate the relationship between multiple deprivation and severity of glaucoma at diagnosis

Materials and methods: A retrospective study was conducted at the Princess Alexandra Eye Pavilion, Chalmers Street, Edinburgh on 472 consecutive patients, over a 3 month period, referred to the specialist eye treatment centre for glaucoma, ocular hypertension or suspected glaucoma. The severity of glaucoma was determined by the visual field (VF) mean deviation (MD). The deprivation index was derived from the Scottish Index of Multiple Deprivation (SIMD) 2020 using the postcodes of patients. A scatter plot graph was plotted and regression analysis was used to determine the relationship between the MD of the better and worse eye with the deprivation index.

Results: A higher proportion of patients living in 0 to 1000 SIMD areas had a MD of worse than -8 dB or -12 dB at presentation compared to those living in other areas. There was a significant relationship between lower SIMD and worse glaucoma severity in the worse eye. MD in the worse eye decreased by 0.038 dB (95% CI 0.014 to 0.062 dB) with each 100 point decrease in SIMD (P = 0.002).

Conclusion: Multiple deprivation affects the severity of glaucoma at presentation. More focus needs to be invested on educating those who are more deprived, ensuring equal access to early eye care and creating awareness amongst groups who are at higher risk of developing glaucoma.

THE IMPACT OF COVID-19 MEASURES ON CHILDREN WITH DEVELOPMENTAL DISABILITIES: SERVICE AND RESEARCH PRIORITIES FROM THREE EUROPEAN COUNTRIES

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Introduction: The COVID-19 pandemic has drastically changed the lives of children with disabilities and their families. Among the most challenging barriers studies report are reduced access to healthcare services. The long-term effects of the COVID-19 measures are yet to be discovered.

Aim: The study aims to enable research data by synthesizing the effectiveness of treatment and service delivery to children with disabilities during the COVID-19 crisis in three European countries.

Materials and methods: The review followed PRISMA protocols for systematic review. Databases searched included Google Scholar and Pubmed from December 2019 to November 2020. We reviewed 1691 abstracts, 35 of which met our inclusion criteria for full review, resulting in 6 articles that are the current analysis. The inclusion criteria consisted of reports of COVID-19 measures, children with disabilities, service delivery and treatment, Bulgaria, Germany, and Sweden. All four authors screened the abstracts, titles and shared subjective selections for further review through an Excel sheet. Each author was then responsible to crosscheck and review the selection by another author for cross accountability.

Results: In Bulgaria, a study reported that service providers find it difficult to work remotely with young children as children get easily distracted. [1] Studies conducted across several European countries emphasized the negative impacts and increased stress in parents of children with disabilities and the increase of inequalities [2,3]. An italian study states, this could also be an opportunity for areas with less accessible treatments. [4] All studies reported delayed onset of telemedicine as a plausible cause for worsened quality of life and poor rehabilitation outcomes.

Conclusion: While the effects of the pandemic are still unknown, two major trends can be highlighted. On one hand, many parents discuss the positive effects of the time spent with their children. [1, 5] On the other hand, parents fear that remote treatment and service delivery may cause them additional stress and responsibilities as they don't feel fully prepared to act as therapists of their children. [3] Future studies should focus on family-mediated models of service delivery to children with disabilities as a way to address those families' needs.

Keywords: children, disabilities, COVID-19, services, treatment

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PREVALENCE OF RECURRENT ISOLATED SLEEP PARALYSIS (RISP) IN A BULGARIAN POPULATION SAMPLE – WHAT WE KNOW SO FAR

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Introduction: Recurrent isolated sleep paralysis (RISP) is a rapid eye movement parasomnia accompanied by hallucinations and significant distress to those who suffer from it. RISP is proving to be one of the modern day health issues, as more and more cases emerge currently on a global perspective.

Aim: The aim of this study is to estimate the prevalence of recurrent isolated sleep paralysis (RISP) among a representative sample of the Bulgarian population using an online survey.

Materials and methods: All volunteering participants (n=886) were assessed for RISP by questioning them whether they have experienced paralytic episodes as well as the frequency of SP-related somatic and psychopathologic symptoms. The participants' gender was also taken into account. The survey was carried out on a social media platform in February this year and information was gathered by analyzing the given answers.

Results: A total of 886 individuals took part of the assessment. 54,51% (483/886) of the participants stated they have experienced symptoms of sleep paralysis. 75,78% (366/483) of them responded they've had paralytic episodes on more than one recurring occasion recently and 24,22% (117/483) answered with "Only once". A minority of individuals (0.04%) reported having vivid hallucinations without being physically paralyzed. Rates of RISP did not differ in terms of gender, since 38,09% of the people who answered positively were women and 37,68% were men.

Conclusion: RISP is an emerging, potentially dangerous parasomnia condition. Based on this survey, the results showed that isolated sleep paralysis is reported to be experienced by more than 50% of the participating individuals. These high percentages together with the lack of specific clinical or psychotherapeutic interventions lead to the deduction that further studies and larger trials are needed to establish the pathogenic mechanisms and long-term consequences of recurrent isolated sleep paralysis.

Keywords: sleep paralysis, isolated sleep paralysis, parasomnia, psychiatry

References: Stefani, A., Högl, B. Nightmare Disorder and Isolated Sleep Paralysis. Neurotherapeutics (2020) https://doi.org/10.1007/s13311-020-00966-8.

PLACE ATTACHMENT AND AGING: A SCOPING REVIEW

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Introduction: Introduction: Although the study of human attachment to his physical environment over the past 30 years has attracted the attention of many gerontologists; in-depth examination phenomenon of place attachment shows that there is no general agreement on concept and the dimensions of PA from older adults' viewpoint. PA may play a role in end-of-life adjustment. It promotes self-esteem and provides a sense of security and belonging, which helps to maintain a positive self-identity and preservation of independence in the face of loss of functional abilities in older adults.

Aim: The aim of this study was to explore and synthesize themes related to place attachment and to identify the dimensions of this concept in the older adults.

Materials and methods: A five-step scoping review framework was used to explore the existing studies that have investigated older adults' place attachment. Both qualitative and quantitative studies were included in this research. Data searching was conducted on databases during March and April 2019. First, 449 articles were identified and after screening, 29 eligible studies were reviewed.

Results: The results specified 17 subcategories and five main categories for the concept of place attachment among community dwelling older adults, including physical, social, economic, psychological and autobiographical attachment.

Conclusion: The result of this study showed that the multi-faced concept of place attachment is a universal feeling among older adults which is shaped based on the combination of three themes including people, place, and bond. Therefore, it is important to pay more attention to dimensions of place attachment in planning for aging in place and age friendly communities.

Keywords: Place Attachment, Scoping Review, Older Adults, Neighborhood

References: 1. Wahl H, Gitlin L. The Cambridge handbook of successful aging: Cambridge University Press 2019. p. 570-93. 2. Najafi M, Kamal M.
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ABSTRACTS OF ICMS SOFIA 2021

Abstracts
Public Health
Poster
Session I
(PHPS1)

CARDIOMETABOLIC RISK AND ITS RELATIONSHIP WITH LEVELS OF PHYSICAL ACTIVITY IN FIRST-YEAR STUDENTS OF THE NURSING DEGREE AT CUCOSTA

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Introduction: Cardiometabolic risk factors (CMR) are those involved in the change that is generated in the metabolism by physical inactivity, poor eating habits, and excess body weight. It represents any state or process that increases the development of a cardiovascular or metabolic pathology in humans.

Aim: The study aims to diagnose physical activity levels (AF) in students with cardiometabolic risk. Our objective was to find the relationship between CMR and AF levels in university students of CUCosta.

Materials and methods: The present study is transversal, analytical, and not controlled. Analysis of the results was semi-quantitative. 32 first-year nursing students participated in CUCosta and signed informed consent. A fasting blood glucose and blood pressure sample was taken. International physical activity questionnaire short form (IPAQ sf) was applied. Investigation was carried out after the evaluation and approval of the research ethics committee of the CUCosta.

Results: 90.62% of the students in the first-year nursing degree are women, with an age range of 17 to 21 years. CMR, such as BMI, showed 28%
preobesity, 14% type II obesity, and 3% type III obesity. 18.75% showed prediabetes, 15.62% have abdominal circumference greater than 88 cm,
18.75% have normal blood pressure and 9.3% smoke. 81.25% have a familiar history of type 2 diabetes, 59.36% High Blood Pressure (HBP), and
21.87% deaths from heart disease. In the AF levels 43.8% are inactive, 31.3% moderately active, and 25% physically active.

Conclusion: Based on the results we can conclude that the ratio of inactive students (43.8%) is close to the overall result of abnormal BMI 45%, with a large genetic load of both type 2 Diabetes and HAS, which leaves this segment of students vulnerable to present metabolic syndrome in a short time.

Keywords: Physical activity, Risk, Health, Cardiometabolic Risk

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THE EFFICACY OF FACE MASKS TO INTERRUPT OR REDUCE THE SPREAD OF COVID-19.

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Introduction: Originally, face masks were used to protect surgical wound from spread of oral and nasal bacteria generated via staff. Currently, due to new polices across the world by governments has resulted in the wide use of face masks as personal health and public control measure, such as, in work environments and supermarkets. Interestingly, relative effectiveness of different types of face masks against novel coronavirus (COVID-19) is limited.

Aim: We conducted a meta-analysis to investigate the efficacy of face masks use in controlling transmission of COVID-19.

Materials and methods: A systemic literature search of clinical trials, cohorts, case studies, journals using PUBMED/Medline, Cochrane library, Lancet, ProQuest Dialog database, Google scholar and downloadable database of CDC from December 2019 to March 2021. Ten studies were eligible for data extraction and quantitative analysis (meta-analysis) due to homogeneity.

Results: The sample size (n) of 16280 pooled shows the use of face mask resulted in reduction of infection (0.470, 95%CI 0.043 to 5.085) ($p<0.001$). The single use masks (Surgical and N95 masks) had a larger drop in virus transmission (via respiratory droplets) compared with reusable masks (cloth face masks) thus were more effective. The cloth face masks are ineffective to prevent influenza like diseases (including coronavirus) when compared to the surgical masks. (relative risk 13.25, 95%CI 1.74 – 0.97).

Conclusion: The findings suggest that there is an association of face mask use and reduction in the transmission of COVID-19. The single use masks are more effective than the reusable masks. However, novel coronavirus spreads primarily with respiratory droplets but there are many secrets yet to be revealed about the transmissibility and there are many disputes about airborne transmission of the virus.

Keywords: Face masks, COVID-19, Cloth Face Masks, Meta-analysis

References: • J J. Fuk-woo chan, K Kok .. (2020) 'Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan', National library of Medicine , (), pp. 1-2 [Online]. Available at: https://pubmed.ncbi.nlm.nih.gov/31987001/ (Accessed: 20 Feb 2021). • N. Hoertal, M. Blachier .. (2021) 'Impact of the timing and adherence to face mask use on the course of the COVID-19 epidemic in France', Journal of Travel medicine ,28(2), pp. 2-3.

Acknowledgements: There was no funding agency that has made a significant contribution to the work.

FACTORS ASSOCIATED WITH DYSPEPSIA AMONG SIXTH YEAR MEDICAL STUDENTS AT THE UNIVERSITY OF RIJEKA MEDICAL SCHOOL

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Introduction: Dyspepsia is defined as the presence of epigastric pain, burning, postprandial fullness or early satiety, sometimes with heartburn. It is common in the population with prevalence varying from 25% to 41%. Risk factors associated with its development are stress, alcohol, smoking, obesity, lack of sleep, spicy food.

Aim: The purpose of this study was to analyze the prevalence of dyspepsia and to evaluate the association between lifestyle and dietary factors associated with dyspepsia among sixth-year medical students in Rijeka, Croatia.

Materials and methods: A cross-sectional survey study was conducted among sixth-year medical students at Faculty of Medicine, University of Rijeka, and collected basic demographic data, dyspepsia prevalence, dietary factors, and lifestyle factors. All statistical calculations were performed using STATA/IC ver.11.1. (StataCorp. 2009. Stata Statistical Software: Release 11. College Station, TX: StataCorp LP). Frequency distributions of various risk factors were determined for all students, as well as the frequency distributions of dyspepsia. We used Pearson's chi square exact test and Kruskal-Wallis rank test for group comparisons. For risk analysis we used bivariate and multiple logistic regression.

Results: From a total of 93 students (30.1% male) with a mean age of 24.57 ± 1.41 years, 33 (35.5%) respondents reported having dyspepsia. There was a significant association between having anxiety symptoms (p=0.019), the number of meals and dyspepsia (p=0.036, p=0.048) as well as a marginally significant association between inadequate sleep and dyspepsia (p=0.07). In multivariate model, the dyspepsia risk increased with anxiety symptoms (OR=2.8, 95% CI, 1.1-8.8). There was no significant association between sex (p=0,36), body mass index (BMI (p=0,738)) and dyspepsia.

Conclusion: Dyspepsia was reported by 35.5% of the respondents. This study demonstrates correlation between dyspepsia and anxiety symptoms, number of meals, inadequate sleep while there was no significant correlation with sex and BMI.

Keywords: Anxiety, Dyspepsia, Prevalence

References: Veldhuyzen van Zanten SJ, Bradette M, Chiba N, Armstrong D, Barkun A, Flook N et al. Canadian Dyspepsia Working Group. Evidence-based recommendations for short- and long-term management of uninvestigated dyspepsia in primary care: an update of the Canadian Dyspepsia Working Group (CanDys) clinical management tool. Can J Gastroenterol 2005;19:285-303

Q FEVER OUTBREAKS IN BULGARIA IN THE MIDST OF CORONAVIRUS PANDEMIC

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Introduction: Q fever, a worldwide zoonotic disease caused by Coxiella burnetii, is endemic in Bulgaria, where it has been reported as responsible for numerous sporadic cases, small and large epidemic outbreaks among humans and domestic ruminants from different regions in the country. The infectious agent presenting a high risk to human health and the symptoms are similar to those of coronavirus - fever, respiratory and cardiovascular problems and atypical pneumonia.

Aim: This study aimed an investigation of Q fever outbreaks in four regions in Bulgaria in the midst of coronavirus pandemic.

Materials and methods: Between February and October 2020 in NRL “Cell culture, rickettsia and oncogenic viruses” at NCIPD, Sofia were tested 576 clinical samples (serum and whole blood) from ambulatory and hospitalized patients suspected for Q-fever. Diagnosis of C. burnetii was performed by specific serological assay (anti-Coxiella burnetii Phase II IgG/IgM) and molecular examination (conventional PCR test for the detection the sodB C. burnetii gene).

Results: A total of 207 confirmed cases were reported in the study period from 7 province of the country. Among the registrated patients fever and flu-like symptoms with headache and cough were the most important symptoms. Anti-C. burnetii positive Ph.II IgM antibodies were registered in 65/207 (31.4%). When examined serum samples positive IgG result was proven at 56%. A positive PCR signal of C. burnetii-DNA was obtained from 54/207 (26%). A relatively high percentage affected were in active age 50 – 60 years old (55.5%). The male/female ratio was 1.7.

Conclusion: The obtained results showed small epidemiological outbreaks in 5 province during 2020. As a result of the experience in the laboratory was developed diagnostic scheme including complex methods to improve early laboratory diagnosis of C. burnetii, allowing taking proper treatment of suspected with Q fever patients. The outbreak investigations demonstrate the application of good control practices.

Keywords: Coxiella burnetii, outbreaks, serology diagnostic, conventional PCR

Acknowledgements: The project was partially supported by the Bulgarian National Science Fund (BNSF) (Grant No KP-06-H33/3 from 13/12/2019).

THE IMPACT OF LONG-TERM OPEN WATER RESIDENCE ON MENTAL HEALTH

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Introduction: Depression is a common disorder. It often leads to poor quality of life, impaired role functioning and high rates of suicidal behaviour and mortality. Depression is known to be a major contributor to the global burden of diseases and according to World Health Organization (WHO), it is the fourth leading cause of disability worldwide and the second most common leading cause of disability. Social anxiety disorder is persistent fear of or anxiety about one or more social or performance situations that is out of proportion to the actual threat posed by the situation. One of the most affected occupations of these two conditions in the economic sectors is precisely the maritime sector.

Aim: The purpose of the study is to identify the initial symptoms and manifestations of depression and anxiety in open water people and their relationship to the severity of the condition. At the same time, the research aims to investigate what would improve the status of workers to be used in the industry.

Materials and methods: A survey was conducted using a standardized scale to assess depression and anxiety. It was combined with additional questions related to the study of the current hygiene conditions of the working environment and their future improvement. Participants in the survey are 100 and they are all active working age.

Results: There is a tendency to exacerbate the initial symptoms of depression and anxiety as the age of the respondents increases. All this has to do with the longer duration of the contracts, which, combined with the older age of the respondents, can lead to the development of anxiety and depressive personality disorders at an older age.

Conclusion: Creating a guideline based on the results of this study would increase the age of onset of the first symptoms and improve working conditions for seafarers.

Keywords: depression, anxiety, seafarers

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Practice Guidelines for the management of Depression, Indian J Psychiatry, 2017 Jan; 59(Suppl 1): S34–S50

Acknowledgements: Department of Psychiatry, Medical University - Varna, Bulgaria & Nikola Vaptsarov Naval Academy, Varna, Bulgaria

NEUROLOGICAL COMPLICATIONS, CAUSED BY MEASLES VIRUS INFECTION

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Introduction: Measles is a contagious viral illness. Due to the neurotropic nature of the virus, a variety of neurological symptoms and complications can be developed, including encephalitis and subacute sclerosing panencephalitis (SSPE).SSPE is a progressive degenerative form of brain inflammation caused by various infectious agents, most commonly the measles virus.

Aim: To determine the role of the measles virus as a cause of subacute sclerosing panencephalitis (SSPE) and viral encephalitis in patients with data for measles infection.

Materials and methods: A total 14 specimens (7 serum samples and 7 cerebrospinal fluid, CSF) of patients with neurological symptoms and clinical diagnoses: Suspected SSPE" (in 3 patients) and "Encephalitis" (in 4 patients) in the period 2019-2020 were tested in the National Reference Laboratory (NRL)" Measles, Mumps and Rubella" at NCIPD. Serological (indirect ELISA test for the detection of specific measles IgG/IgM antibodies in serum samples and CSF) and molecular (RT-PCR for demonstration of viral RNA)methods were used. The tested patients were aged 11,40,37,9,1,17, respectively. A differential laboratory testing for other neurotropic viral agents causing brain inflammation (Herpes virus 1 and 2, Varicella zoster virus, EBV) was performed.

Results: Protective measles IgG antibodies were found in 5(71,4%) of serum samples. Among the tested CSF samples (n=7) of the same patients, positive results for measles IgG antibodies obtained in 1(14,2%) child on 9 years old, diagnosed as"Suspected SSPE". The proven IgG antibodies in CSF were with a Ratio of 3.6 compared to a Ratio of 3.2 in serum. It is evidence of the intrathecal synthesis of viral pathogenic antibodies in the central nervous system(CNS) following primary measles infection. Specific measles IgM antibodies, evidence of acute infection were not found. All samples(serum and CSF) were tested for measles viral RNA. PCR signal was not detected.

Conclusion: Although SSPE is a rare disease, we should be alert to the diagnosis. It is well known that the only way to eradicate SSPE seems to be by improving vaccine coverage,surveillance program, and eradicating measles.

Keywords: measles, SSPE, encephalitis,IgG antibodies

References: 1. Fisher DL, Defres S,Solomon T,2015. Measles-indused encephalitis. QJM 108: 177-182

DO MEDICAL STUDENTS PRACTICE WHAT THEY PREACH? COMPARISON OF LIFESTYLES BETWEEN FIRST- AND SIXTH-YEAR MEDICAL STUDENTS AT THE FACULTY OF MEDICINE, UNIVERSITY OF RIJEKA

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Introduction: Being a medical student requires a lot of time, effort and dedication which can lead to an unhealthy lifestyle. Medical students learn about health risk factors and how to avoid them throughout their education. The hypothesis was that a better understanding gained over years of studying would have a positive impact on the lifestyle.

Aim: The purpose of this study was to analyse and compare health risk factors which include sleep deprivation, alcohol consumption, insufficient physical activity, daily number of meals, late night eating between first and sixth-year medical students in Rijeka, Croatia

Materials and methods: A cross-sectional survey study was conducted among first and sixth-year medical students at Faculty of Medicine, University of Rijeka, and collected basic demographic data, dietary factors, and lifestyle factors. All statistical calculations were performed using STATA/IC ver.11.1. (StataCorp. 2009. Stata Statistical Software: Release 11. College Station, TX: StataCorp LP). Frequency distributions of various risk factors were determined for all students. We used Pearson's chi square exact test and Kruskal-Wallis rank test for group comparisons.

Results: The study was conducted 217 students (42.86% sixth year students). 69.35% first year and 69.89% sixth year students were females. There was a significant difference between first and final year students in the following parameters: 68.55% first year and 36.56% sixth year students reported lack of sleep ($p<0.001$), 25.81% first year and 15,05% final year students said that the do not practice any physical activity ($p<0.001$), 71,77% first year and 47,31% sixth year students reported no alcohol consumption ($p<0.001$), 17,74% first year students said they eat 5 or more meals per day in comparison with 31,18% final year students ($p=0.054$) and finally 54% first year and 39.78% sixth year students eat late at night ($p=0.028$).

Conclusion: The study has shown that as medical students gain more knowledge about health risk factors, they tend to change their lifestyle. Final year students led a healthier life in almost all the categories except in alcohol consumption.

Keywords: Lifestyle, Medical students, Risk factors

CLINICAL CHARACTERISTICS AND SEVERITY OF INFLUENZA A VIRUS IN 2018/2019 SEASON

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Introduction: All major respiratory epidemics among the population in the XX and XXI centuries are caused by the Influenza A virus. It has been estimated that these epidemics cause around 500,000 deaths annually worldwide. Underestimating the influenza infection can lead to its severe clinical course and complications.

Aim: The aim of this study is to present some severe clinical forms of the influenza infection observed in patients from the Department of Infectious Diseases at the Military Medical Academy-Sofia during the 2018/2019 winter season.

Materials and methods: A prospective study was conducted among hospitalized patients diagnosed with influenza at the Department of Infectious Diseases at the Military Medical Academy-Sofia between 1 December 2018 and 31 March 2019. The study criteria for inclusion were: (a) age over 12 years; (b) hospitalization; (c) patients with a history of influenza and ARI; (d) immunocompetent people. The following virological methods were used: Reverse Transcription-Polymerase Chain Reaction, EnzymeLinked Immunosorbent Assay (ELISA), and Influenza A/B Antigen Test 014L470 Flocked swabs. In some patients, additional microbiological, virological and serological studies were performed.

Results: During the under review period, 268 influenza patients aged 18 to 77 years were examined and treated at the Infectious Diseases Department of the Military Medical Academy-Sofia. A severe course was observed in 23.1% (62/268) of patients with influenza, and a mild to moderate clinical form was observed in 76.9% (206/268). In 93.5% (58/62) of patients with severe disease course, Influenza A virus was detected, and in 6.5% (4/62) of Influenza B virus was detected. Some patients experienced the following complications: pneumonia (20.9%; 13/62); involvement of the central nervous system (12.9%; 8/62), otitis media and sinusitis (11.2%; 7/62), myocarditis (4.8%; 3/62). The therapeutic treatment included antiviral drugs, antibiotics, pathogenetic and symptomatic agents.

Conclusion: The severe clinical forms dominate the co-morbidities and are complicated by the involvement of the upper and lower respiratory tract and the central nervous system. The timely diagnosis and treatment are key to managing this infection. The rapid variability of the influenza viruses is a prerequisite for their on-going further research.

Keywords: influenza, infection, complications, winter season, virus

POST - VACCINATION PERIOD AFTER LIVE MEASLES VACCINE

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Introduction: Measles is one of the most contagious diseases affecting humanity. Thanks to the vaccine, this disease is becoming less common in
human population. Measles can be prevented with MMR vaccine. The vaccine protects against three diseases: measles, mumps, and rubella. In Bulgaria it is mandatory. The first dose is given around the age of thirteen months, and reimmunization is at the age of twelve. In this study, we present the presence of IgG among 56 subjects born between 1996 and 2000. (ages 19 to 23 in 2019).

Aim: This research was done to determine the presence of active immunity for MMR in the “Military doctor” cadets.

Materials and methods: The ammount of the examined cadets is 56 – 36 of them are women (68%) and 18 men (32%). The method of examination is immune-enzyme analysis method called ELISA. When reading the results, any sample with value above 1.1 (calculated as a ratio between OD sample/ OD calibrator) is taken for positive. Other tests were used such as CLIA, VIRCLIA and CLIA, LIASON XL. With CLIA and VIRCLIA for positive is taken any sample with value above 1.1 (the index of antibodies is calculated as a ratio between RLU sample/RLU calibrator).

Results: The blood tests show positive samples for antiMumps IgG and antiRubella IgG in 100% of the cadets. In 52 (93%) of them the results for antiMeasles are positive. A negative sample can be seen only in 2% of the examined cadets and in 5% of them the results for antiMeasles IgG can be observed on the border between positive and negative.

Conclusion: A negative sample for antiMeasles IgG is found only in 1 out of 56 examined cadets.

Keywords: Measles, antiMeasles IgG, MMR, cadets

References: Medical Immunology, 7th Edition, Edited By Gabriel Virella

FEATURES OF THE LEVEL OF SECRETORY IGA IN THE ORAL FLUID OF THE PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction: Chronic Obstructive Pulmonary Disease (COPD) is one of such diseases [1,2]. Baseline therapy of COPD is represented by a combination of betta-2-agonists, anticholinergic bronchodilators and corticosteroids in inhaled formulations, which has direct contact with organs of the oral cavity [3]. It has been established that adverse effects of inhaled corticosteroids are inhibition of phagocytosis activity, a decrease in serum and secretory IgA (sIgA) levels in the oral fluid, and a decrease in tissue neutrophil succinate dehydrogenase activity, which indicates decompensation of protective factors [4,5].

Aim: to study the level of sIgA in the oral fluid in patients with COPD with the use of baseline therapy.

Materials and methods: 130 patients with COPD, having been treated by using baseline therapy, were examined. Control group - 20 somatically healthy patients. The immunological reactivity of oral tissues was studied by sIgA level in mixed saliva by the immunoenzyme method, using a reagent kit.

Results: Patients of the main group showed an increase in sIgA level (71, 663 [47, 283; 85, 612]) in comparison with the control group (27, 813 [20, 312; 36,052]) (p=0,001). The results obtained differed from the data presented in the literature, which had reported a decrease in sIgA levels with the use of IGCS. In our opinion, an increase in the level of sIgA may be the result of various mechanisms, namely: because of poor oral hygiene and significant antigenic tissue irritation by microorganisms (activation of the humoral immunity component, aimed at eliminating foreign invaders in order to normalize impaired homeostasis); elevated concentration of sIgA may be a factor in the autoimmune as related to endothelial dysfunction. In addition, such an increase may be a compensatory response of saliva as a result of the replacement of deficiency of immunoglobulins of other classes and factors of nonspecific protection.

Conclusion: Thus, more in-depth study of sIgA levels will open up new pathogenetic mechanisms of intraoral changes in case of COPD.

Keywords: mixed saliva, Chronic Obstructive Pulmonary Disease, secretory IgA.

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BLADDER MANAGEMENT ASSISTANCE PREDISPOSING FACTOR ANALYSIS IN SPINAL CORD INJURY PATIENTS IN THE SUBACUTE REHABILITATION PERIOD

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Introduction: Neurogenic bladder dysfunction is one of life-threatening conditions in spinal cord injury patients. Assistance necessity in bladder management depends on a variety of factors – injury etiology, completeness of injury, clinical manifestation of injury, bladder management method, patient personal factors.

Aim: The aim of the study collect and analyze data about bladder management methods and assistance predisposing factors for patients with spinal cord injury in the subacute rehabilitation period.

Materials and methods: Information was collected in 2020 from the medical records of 125 patients with a spinal cord injury admitted for primary rehabilitation course. The data regarding assistance necessity, bladder management method, spinal cord injury clinical manifestation, injury etiology, completeness of spinal cord injury was analyzed.

Results: At the moment of the discharge from the rehabilitation center 87 (69,6%) patients were able to performe bladder management without assistance, 38 patients (30,4%) needed assistance. Assistance necessity showed statistically significant difference in spinal cord injury etiology subgroups ($p = 0,021$), completeness of spinal cord injury subgroups ($p = 0,001$), clincal manifestation subgroups ($p = 0,001$), bladder management subgroups ($p < 0,001$). The most significant bladder management assistance prediction factors were shown the association of clinical manifestation factor – tetraplegia ($p < 0,001$) and completeness of injury factor – complete injury ($p = 0,001$).

Conclusion: Research findings suggest that bladder management assistance predominantly associated with traumatic spinal cord injury etiology, complete spinal cord injury (ASIA scale A), tetraplegia clinical manifestation. Among bladder management methods assistance predominantly was needed in patients group who perform clean intermittent catheterization, use an indwelling and suprapubic catheter and external collection devices. The most significant bladder management assistance prediction factors were tetraplegia and complete injury spinal cord injury.

Keywords: Rehabilitation, spinal cord injury, bladder management, assistance

INFECTIONS OF DIABETIC FOOT ULCERS AND EFFECTIVE TREATMENT OF INFECTIONS

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Introduction: Diabetes is a very common disease among the adult people in all over the world now-a-days. This is becoming the major cause of death and disability. Diabetic Foot is a growing problem worldwide.This problem is one of the dangerous complication of poorly controlled diabetes, forming as a result of skin tissue breaking down and exposing the layers underneath.

Aim: The goal of this project is to expand foot care capacity by increasing awareness, improving knowledges and access to quality diabetic foot care.

Materials and methods: Here used some experimental methods for completing this paper work, these are Collected data sources, Medical record, Identification method and Statistical method.

Results: Prevalence rates of diabetic foot ulcers based on these methods, result found that Patients who used VA Healthcare (Veterans Affairs) services with a diagnosis of diabetic foot ulcer, 24% patients of them had diabetes for 6 years or longer. Finally the results depends of different methods, and the life style of patients and their habit. Rates of diabetic foot ulcers ranged between 2.7% to 3.9% and its vary vary from method to method.

Conclusion: There is a high occurrence of foot ulcers within the population of people with diabetes. Foot ulcerations may lead to infections, lower extremity amputations and are major causes of disability to patients, often resulting in significant morbidity, extensive periods of hospitalization, and mortality. In order to diminish the detrimental consequences associated with diabetic foot ulcers, a high standard of care must be provided. Many of the etiological factors contributing to the formation of diabetic foot ulceration may be identified using simple, inexpensive equipment in a clinical setting, and early recognition of these factors along with prompt management of the ulcers are essential for successful outcome. Aggressive treatment of infections, correction of vascular occlusive disease, adequate wound care, and appropriate pressure mitigation are essential steps in the treatment protocol.

Keywords: Diabetes,Ulcer,Prevention,Infection,Amputation

ASSESSMENT OF FACTORS AFFECTING LUNG FUNCTION AND ORAL HEALTH AMONGST WORKERS IN A FACTORY.

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Introduction: The objectives of the study are - To study the socio-demographic profile, general health of workers, pulmonary function and it's abnormality associated with the duration of exposure in the factory and with other personal habits /addiction, to associate the abnormality in lung functions with the specific unit of the factory in which they were working , the association between oral lesions (pre-malignant or malignant lesions) and tobacco use.

Aim: This study is aimed to evaluate the factors affecting Lung Function and Oral Health amongst workers in a factory in Gujarat.

Materials and methods: A cross sectional study of 240 workers employed in a textile industry of Gujarat were undertaken for the study. Workers who gave informed verbal consent and had minimum one year of exposure in the factory were included in the study. A self-administered questionnaire was used for the study which included - Socio-demographic information, addiction history including history of tobacco use (chewing and smoking), alcohol consumption,current and past history and occupational history. Pulmonary function was examined by examining the Peak expiration flow rate(PEFR) by Wright's peak flow meter.The oral cavity was screened for oral lesions and signs of smoking or chewing tobacco. The data was recorded and analysed in Google spreadsheet using statistical methods.

Results: A positive association between type and duration of exposure, age, section of work with lung functions was found with odd's ratio of 7.86, 13.21, 9.654, 6.74 respectively. Out of the total 240 workers, 20.83% of the workers were found to have some oral pre-malignant lesion while the other 79.17% did not present with any lesion. The oral lesions found were – Submucosal Oral Fibrosis (56%), Leukoplakia (22%) and Ulcer (2%). 20% of the workers presented with stained teeth. Majority of the workers that presented with oral lesions had a history of tobacco consumption.

Conclusion: The results show that textile workers are highly susceptible to occupational health disorders primarily affecting the lung and oral cavity. This can be reduced by taking appropriate precautionary measures and conducting regular health checkups and health awareness programs for the workers.

Keywords: Occupational, diseases, industry, lung, oral

THE COVID-19 PANDEMIC AND THE NEW CHALLENGES RELATED TO BREAST CANCER SCREENING, PATIENT TREATMENT AND POST-TREATMENT SURVEILLANCE – A REVIEW OF THE LITERATURE

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Introduction: The Corona Virus Disease of 2019 (COVID-19) global pandemic has put new challenges to the treatment of patients with oncologic pathologies. New protocols for hygiene, patient interactions, hospital ward regulations were introduced. Social distancing measurements were also implied. The doctors of our time were faced with the challenges to uphold the rules of patient safety and quality of treatment, following the new rules.

Aim: To clarify the new safety protocols in oncological patient treatment and delineate the new safety recommendations in relation to the published research projects in international journals.

Materials and methods: A retrospective research on more than 16 published articles on the topic of Breast cancer management during the pandemic in journals with impact factor.

Results: 1. Pre-operative and post-operative results should be discussed via telephone. 2. Intraoperative breast reconstruction should be avoided.
3.Patients with Ductal carcinoma in Situ (DCIS) which are Estrogen receptor positive should start hormonal therapy and the operation should be postponed. 4. Shorter radiotherapy courses and intraoperative radiotherapy should be implied, if possible, during conservative surgery. 5. Patients that are with immunal surpression should be consulted via telephone. 6. Operations of stage M0 cases should be prioritized over M1 cases. 7. Pre-operative chemo- and hormone therapy should be implied more often in older patients. 8. Risk-lowering surgery such as Subcutaneus Mastectomy in patients with BRCA1/2 mutations should be postponed. 9. Patient tracking should be done completely via telemedicine. 10. Oncoplastic and reconstructive surgery should be limited.

Conclusion: The new pandemic has created an abundance of challenges to the healthcare systems around the world. With the new disease, risk evaluation has become a number one priority in all of the guidelines in oncological treatment, both proving the patients with adequate therapy and preventing the consequences of the new infection.

Keywords: COVID-19, Breast cancer

COMBINED KINESITHERAPY IN MULTIPLE SCLEROSIS WITH ELEMENTS OF ART THERAPY

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Introduction: Key components in neurorehabilitation are the adaptation and improvement of neuroplasticity, i.e. the capacity of the brain to make new nerve connections after lesion damage, and the control of lost functions to be taken over by other zones in the brain. Art therapy as an integrative therapy improves the mental and physical health and contributes to improving the general functional state that enriches the lives of individuals, families and communities through active creation of art, creative processes and enjoyable psycho-physical health.

Clinical case: Aim The aim of the study is to study the effect of applied kinesitherapy with elements of art therapy in maintaining the general functional state and independence of the patient. Materials and methods The study included an examination of a 52-year-old woman diagnosed with a chronic-remitting clinical form of multiple sclerosis in whom there was chronic pain along the spine, paraesthesia, diplopia, dysarthria, memory impairment, decreased concentration and attention, and periods of anxiety and fear. Motor activity is impaired which includes: paresis, impaired coordination, intention tremor and disturbed balance. Ten-day combined kinesitherapy with ten 2-hour art therapy sessions, twice per week, was performed. The applied kinesitherapy includes means for: maintenance of the cardiorespiratory activity with aerobic load in the form of ergometry or training; maintaining range of motion in the joints and overcoming muscle imbalance with passive exercises; proprioceptive-nerve muscle relief; active exercises; improving coordination with coordination exercises; improving balance with balance exercises on reduced support areas and lack of visual control; improving functional capabilities by recognizing different digits and shapes when placing the limb in a certain position on or over them; prophylaxis of complications. Art therapy includes: drawing simple geometric shapes, natural shapes in still life, drawing characters from fantasy, drawing landscapes. Results After the applied therapy there is an improvement of the functional status (postural stability, accuracy and coordination of movements), better emotional state, concentration and attention.

Conclusion: Proper multidisciplinary therapeutic approach in multiple sclerosis leads to positive results on the impaired functional and emotional status of the patient.

Keywords: Art therapy, kinesitherapy, rehabilitation, Multiple sclerosis

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