15th BIALYSTOK INTERNATIONAL MEDICAL CONGRESS FOR YOUNG SCIENTISTS

MAY 21st -22nd 2021



BOOK OF ABSTRACTS

15th Bialystok International Medical Congress for Young Scientists

Book of Abstracts



Białystok

2021

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Dear Colleagues,
It is indeed a special honour and pleasure to welcome virtually the participants of the 15th Bialystok International Medical Congress (BIMC) from Poland, Belarus, Lithuania, Hungary, Latvia and Portugal who want to exchange scientific experience and have a good time for a few days during our Congress.
We are truly happy and privileged to welcome you at Medical University of Bialystok. This is thanks to your continuous interest and kindness that BIMC has become one of the most vibrant congresses gathering hundreds of young scientists from different countries. I wish to warmly thank the Organizing Committee of the 15th BIMC for their enormous dedication, contagious energy and numberless efforts they put into making this event so unique. Let me extend special thanks to all members of faculty of the Medical University of Bialystok who agreed to sacrifice their time in order to share their experience and scientific advice during numerous scientific sessions.
We are currently living in difficult times of COVID-19 pandemic and it is a pity that we cannot meet each other in person. Given the situation, I would like to extend special thanks to all of you for engaging in research activities. Your dedication should be highly appreciated and I wish your work will be a source of personal and professional satisfaction. And last but not least, let's hope you'll all discover that doing a good science is just a lot of fun.
We are very fortunate to live in a beautiful city of Bialystok and I hope that some day, in near future, you will have an opportunity to visit this fabulous place.
Best regards,



Prof. Marcin Moniuszko, MD, PhD
Vice-Rector for Science and Development
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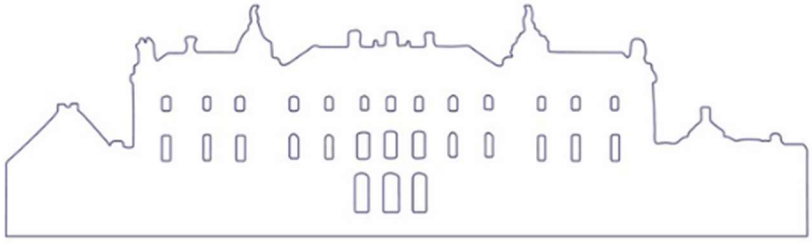
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BIMC 15th

2021 Białystok International Medical Congress for Young Scientists

MAY 21st, 2021 – Friday
9:00-12:00
ORAL SESSION I

Cardiology
Internal Diseases
Case Reports I
Interdisciplinary I

MAY 22nd, 2021 – Saturday
9:00-12:00
ORAL SESSION III

PhD II
Surgery and Gynecology
Case Reports V
Case Reports VI

MAY 21st, 2021 – Friday
13:00-16:00
ORAL SESSION II

PhD I
Case Reports II
Case Reports III
Case Reports IV
Public Health I

MAY 22nd, 2021 – Saturday
13:00-16:00
ORAL SESSION IV

Basic Sciences
Interdisciplinary II
Case Reports VII
Case Reports VIII
Public Health II

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Basic Sciences

TITLE: EVALUATION OF THE MESENCHYMAL STEM CELL-MEDIATED EARLY AND PROLONGED EFFECTS ON A HEALTHY LUNG TISSUE

Author(s): Adrian Janucik[1], Justyna Żebrowska[1], Sylwia Księżak[1], Arkadiusz Żbikowski[2], Alicja Walewska[1], Marlena Tynecka[1]

Tutor(s): Andrzej Eljaszewicz, Marcin Moniuszko

University: Medical University of Bialystok
[1] Department of Regenerative Medicine and Immune Regulation, Medical University of Bialystok
[2] Department of Medical Biology, Medical University of Bialystok

INTRODUCTION: Recently, mesenchymal stem cell (MSC)-based therapies have gained research interest as their mediated immunosuppressive and reparatory properties possess high therapeutic potential. Moreover, by their low immunogenicity, MSCs seem to be a promising option in the treatment of many inflammatory and degenerative diseases. Their therapeutic potential has already been proved in several inflammatory conditions such as asthma and pulmonary fibrosis. However, to date, the effects of MSCs administration on non-inflamed tissues, including lungs, remain elusive.

AIM OF THE STUDY: Here, we aimed to analyze the effects of MSCs administration to normal lungs.

MATERIALS AND METHODS: Wild type mice were administrated i.n. with adipose tissue-derived MSCs. The experiment was terminated at day 2 (short-term) and 9 (long-term) post-MSCs administration. H&E stainings were performed to evaluate lung inflammation. Total lung mRNA was isolated and subjected to the Next Generation Sequencing. The results were analyzed in "R" software, and the differential gene expression profiles were exported into Ingenuity Pathway Analysis (IPA) and Gene Ontology (GO) term enrichment tool.

RESULTS: Histochemical stainings showed no significant lung inflammation after the MSCs administration into the healthy mice's lungs in the short- and long-term models. Surprisingly, we discovered distinct gene regulatory patterns among analyzed time-points. In the short-term model, we found 674 uniquely expressed genes, whereas, in the long-term model, only 76 were evaluated as differentially regulated. However, we also noticed 79 up- and 25 down-regulated genes to be shared in these two models. Furthermore, IPA analyses combined with enriched GO terms showed that low-grade inflammation may be induced as a short-term effect of MSCs administration and is further regulated (long-term effect).

CONCLUSIONS: Taking together, we showed the safety of MSCs administration to the lungs. We found that MSCs administration to normal lungs induces changes in transcriptomic profiles. We hypothesized that short-term low-grade inflammation might be induced as an effect of differentiating MSCs clearance. More importantly, we found putative regulatory gene patterns and signaling pathways associated with the MSCs' early and prolonged mediated effects on healthy tissue.

TITLE: DETERMINATION OF ANTIBACTERIAL ACTIVITY OF CALLUNA VULGARIS STEM EXTRACTS DILUTED IN ETHANOL SOLUTION

Author(s): Krišjānis Villers

Tutor(s): Renāte Šukele, Rudīte Koka

University: Rīga Stradiņš University, Rīga, 2021

INTRODUCTION: One of the key issues of present day infectious disease medicine is the increasing number of drug resistant bacterial strains. Accordingly a lot of studies are devoted to exploring new antibacterial substances from medical plants that could serve as alternative against bacterial diseases.

AIM OF THE STUDY: Aim of the study is to determine optimal concentration of ethanol solution for *Calluna vulgaris* sterm extract antibacterial activity.

MATERIALS AND METHODS: Extracts of *Calluna vulgaris* were diluted with different concentrations of ethanos solution. Diluted extracts were tested for their antibacterial activities against *Staphylococcus aureus* (V256), *Escherichia coli* (V252), *Escherichia coli* (V4), *Staphylococcus aureus* (ref.), *Escherichia coli* (ref.), *Streptococcus agalactiae* (V171), *Serratia liquerfaciens* (V251), *Streptococcus uberis* (V243). The antibacterial activity of the plant extracts was evaluated using a disk diffusion assay. Inhibition zones for each bacteria were measured. The obtained data were statistically processed employing the IBM SPSS software using descriptive statistics and correlation analysis.

RESULTS: Results showed that in 75% the best antimicrobal activity was achieved with extract diluted in 30% ethanol solution, 12,5% with 50% solution and rest of 12,5% were equal for 30% and 50% solutions. The weakest results were for 70% ethanol solution diluted extract. Strong negative correlation was noted between ethanol concentration and antibacterial activity (r=-0,507, p=0,012, n=24).

CONCLUSIONS: Calluna vulgaris sterm extract diluted in 30% ethanol solution showed promising potential of antibacterial activities against *Staph. aureus* (V256), *E. coli* (V252), *E. coli* (V4), *E. coli* (ref.), *Serratia liquerfaciens* (V251), *Strep. uberis* (V243).

TITLE: NSPEF INCREASES THE EXPRESSION OF MAGE RECEPTOR ON MELANOMA CELLS

Author(s): Wojciech Szlasa

Tutor(s): Julita Kulbacka PhD Eng.

University: Wrocław Medical University, Wrocław, Poland

INTRODUCTION: Pulsed electric field (PEF) is currently used in various fields of molecular biology, genetics and medicine. In oncology, the immunomodulatory effects of PEF might find its application in enhancing the expression of specific cancer-therapy targets. In this field, PEF could be potentially used to induce the presentation and biosynthesis of membrane receptors, used for cellular therapies, like CAR-T or CAR-NK cells-based therapies. This approach, would allow to overcome one of the issues with cellular therapies of the solid tumors, which is the downregulation of therapy targets. Idea, that the application of PEF, could make the tumor visible for the immune system, shows a very promising field of research. In case of melanoma, MAGE receptors might be considered as the specific target for the immune system and CAR based therapies.

AIM OF THE STUDY: This study was aimed to analyze the response of melanoma cells to the various parameters of PEF in case of MAGE receptors expression.

MATERIALS AND METHODS: Initially, the viability of the cells following the application of the electric pulses was assessed. After the therapy, A375 melanoma cells underwent fluorescent staining to analyze the expression of MAGE receptors. Based on the screening studies, we have established the optimal protocol for the modulation of MAGE expression and analyzed the process in which the cells might be affected by the electric field to overexpress the melanoma-specific molecules.

RESULTS: We propose that the most effective PEF, to increase MAGE expression would be an increased number of the pulses (100 pulses), with a high nanosecond (200 ns) range of pulses, and its frequency in the kHz (10 kHz) range. Both of the analyzed receptors (MAGE A1 and MAGE 3) responded similarly to PEF treatment, but MAGE 3 expression remained higher after the stimulation.

CONCLUSIONS: nsPEF might be effectively used as the method for increased MAGE expression and presentation on melanoma cells.

TITLE: CANNABIDIOL TREATMENT CHANGES MYOCARDIAL LIPID PROFILE IN SPONTANEOUSLY HYPERTENSIVE RATS DESPITE LACK OF SIGNIFICANT ALTERNATIONS IN HAEMODYNAMIC PARAMETERS

Author(s): Aleksandra Chmielecka, Sylwia Dziemitko

Tutor(s): Ewa Harasim-Symbor PhD, M. Sc., Karolina Konstantynowicz-Nowicka PhD, M. Sc.

University: Medical University of Białystok
Department of Physiology Medical University of Białystok

INTRODUCTION: Hypertension is a potent risk factor for cardiovascular diseases, which are nowadays leading causes of death worldwide. Within time increased blood pressure (BP) induces cardiac contractile dysfunction, metabolic alternations and eventually heart failure, which makes hypertension an area for seeking safe therapies such as phytocannabinoids and the endocannabinoid system (ECS).

AIM OF THE STUDY: In the present study spontaneously hypertensive rats (SHRs) were used as an experimental model of genetically induced hypertension, where cannabidiol (CBD) was applied as a potential treatment (intraperitoneally administered for 2 weeks, 10 mg/kg) for elevated BP and related metabolic disturbances.

MATERIALS AND METHODS: Langendorff working heart system, Western blotting and gas liquid chromatography (GLC) were used to determine radiolabeled ^{3}H-palmitate uptake, incorporation and oxidation, protein expression and lipid fractions contents in the left ventricle, respectively.

RESULTS: Unexpectedly, 2-week CBD treatment failed to substantially diminish BP and improve haemodynamic parameters in hypertensive rats. Nevertheless, we noticed that CBD was effective in upregulating ex vivo ^{3}H-palmitate uptake and its incorporation into triacylglycerol (TAG) and cholesterol (Chol) with concomitant lowering free fatty acid (FFA), diacylglycerol (DAG) and phospholipid (PL) fractions, which was in agreement with in vivo studies and alternations in protein expressions (lipoprotein lipase, diacylglycerol acyltransferase 1 and adipose triglyceride lipase) in cardiac muscle of SHRs.

CONCLUSIONS: Our study reveals that 2-week CBD administration to the hypertensive rats substantially affects energetic substrate milieu in the cardiac muscle regarding to fatty acids uptake and their further utilization without parallel alternations in the cardiovascular parameters.

TITLE: ASSESSMENT OF IMMUNOMODULATORY MECHANISMS MEDIATED BY MESENCHYMAL STEM CELLS IN ALLERGIC LUNG INFLAMMATION

Author(s): Sylwia Księżak[1], Adrian Janucik[1], Justyna Żebrowska[1], Alicja Walewska[1], Arkadiusz Żbikowski[2], Marlena Tynecka[1]

Tutor(s): Marcin Moniuszko[1,3], Andrzej Eljaszewicz[1]

University: Medical University of Bialystok
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[2] Department of Medical Biology, Medical University of Bialystok
[3] Clinical Department of Allergic and Internal Diseases, Medical University of Bialystok

INTRODUCTION: Asthma is one of the most common chronic inflammatory diseases, affecting around 300 million people worldwide. Asthma is usually divided into eosinophilic (Th2-driven), neutrophilic (non-Th2-driven), and mixed. Although available treatment allows optimal control of the disease, some patients still do not respond and consequently develop severe disease with lung remodeling. Thus, there is a substantial need to develop a novel treatment to better control asthma symptoms.

AIM OF THE STUDY: Here we aimed to better understand immune modulatory mechanisms of mesenchymal stem cells (MSCs) in the regulation of allergic lung inflammation.

MATERIALS AND METHODS: Allergic airway inflammation was induced in C57BL6 mice by House dust mite extract (HDM) administration. Briefly, 10 µg/ml of HDM was administrated i.n. for two weeks (5 days followed by two days break). MSCs were administrated (i.n.) on the 6th and 13th day of the experiment. Mice were sacrificed after day 14. Hematoxylin & eosin (H&E) and Masson's trichrome staining were performed to assess lung inflammation and collagen deposition, respectively. Total RNA isolated from mice lungs was used for next-generation sequencing (NGS). The transcriptomic profiles were analyzed using Ingenuity Pathway Analysis (IPA) and R tool.

RESULTS: First, we confirmed decreased lung inflammation after MSCs administration. Interestingly, we found reduced collagen deposition after MSC application. Next, the transcriptomic profile analysis revealed significant changes in canonical and noncanonical pathways, including Th2, IL-7, and B cell receptor signaling pathways, dendritic cells maturation, p7056K, and Toll-like receptor signaling pathways. Moreover, we observed decreased gene expression associated with proliferation and migration of leucocytes and recruitment of eosinophils and neutrophils.

CONCLUSIONS: In conclusion, we confirmed the immune regulatory properties of MSCs in allergic lung inflammation. Moreover, we showed putative mechanisms associated with MSC therapeutic effects.

TITLE: STUDY ON THE RELATIONSHIP BETWEEN THE METABOLOME AND ALLERGIC FEATURES IN BEE VENOM-SENSITIVE PATIENTS

Author(s): Magdalena Krętowska, Zuzanna Parfienowicz

Tutor(s): Kamil Grubczak, PhD

University: Medical University of Białystok

INTRODUCTION: Due to the presence of bees worldwide, bee venom is one of the most common causes of severe allergic reactions in humans, frequently leading to anaphylaxis. In contrast to other members of the hymenoptera family, allergies to bee venom occur primarily in subjects with the highest exposure to being stung, namely beekeepers and their families. The most prominent allergens found in bee venom include hyaluronidases, phospholipase A2 and mellitin. On account of the distinctive composition of the venom, patients allergic to bee venom are considered to demonstrate a unique metabolite profile when compared to other hymenoptera hypersensitivity.

AIM OF THE STUDY: The aim of our study was to assess correlations between clinical allergy-related parameters and metabolites profile among patients allergic to bee venom.

MATERIALS AND METHODS: Plasma and whole blood from patients before treatment was used to evaluate parameters such as tryptase, total IgE, specific IgE, and morphology-based factors, namely absolute basophil and eosinophil numbers. Metabolome profile within patients' plasma was assessed using LC-MS and FIA at the Clinical Research Center, Metabolomics division.

RESULTS: The analysis of the metabolomic profiles allowed us to observe a positive correlation of sphingomyelins with tryptase levels, and a negative correlation with total IgE. Additionally, a significant part of phosphatidylcholines positively correlated with bee sIgE, sIgE/total IgE ratio, and tryptase level. Interestingly, bee venom allergy was also associated with a negative correlation of the absolute basophils number with most of the significant metabolites.

CONCLUSIONS: The results of our research indicate that patients allergic to bee venom possess a characteristic metabolomic profile demonstrating significant relationship to allergy-related parameters. The novelty of these data provides a basis for further studies to establish a direct role of selected metabolites in allergic reactions. Moreover, evaluation of their possible use as therapy biomarkers is of great importance in close future.

Cardiology

TITLE: INCREASED HEART RATE AS A RISK FACTOR FOR HYPERTENSION COMPLICATIONS IN PATIENTS WITH CHRONIC CORONARY SYNDROME

Author(s): Łojewski M., Choińska U., Święczkowski M., Mróz J, Koptielow J., Dąbrowski E. J.

Tutor(s): Ass. prof Marcin Kożuch, MD, PhD, Paweł Muszyński, MD

University: Department of Invasive Cardiology, Medical University of Bialystok, Poland

INTRODUCTION: According to WHO statistics 1.13 billion people suffer from hypertension (HT) and 17.9 million people die every year from cardiovascular diseases (CVD). In 2019 the European Society of Cardiology included the increased heart rate (HR) as a modifiable cardiovascular risk factor among patients with hypertension. However, there is still a lack of information on the pathophysiology behind the role of HR in HT.

AIM OF THE STUDY: Comparison of the occurrence of hypertension complications between patients with HR ≥85/min and <85/min among patients with chronic coronary syndrome.

MATERIALS AND METHODS: The study population consisted of 800 patients treated for HT and chronic coronary syndrome. Patients were chosen from data collected by the Department of Invasive Cardiology of the Medical University of Bialystok. Analysis of clinical data and laboratory tests was performed using Statistica software. P-value $p<0.05$ was considered as statistically significant.

RESULTS: The median ± SD for HR was 95.51±11.04 for patients with HR≥85 and 64.75±8.95 for those with HR<85. The patients with HR ≥85 were older, had higher diastolic pressure, pulse pressure, poorer metabolic status presented as higher glucose, uric acid and triglycerides concentrations. There was no significant difference in systolic blood pressure and mean arterial pressure. From hypertension complications, HR ≥85 was more frequently associated with left ventricle hypertrophy (OR: 1.7179; CI 95%: 1.0492 to 2.8127; p=0.0315), heart failure with reduced ejection fraction (HFrEF) (OR: 2.2460; CI 95%: 1.2758 to 3.9540; p=0.005) and atrial fibrillation (OR: 4.5150; CI 95%: 2.4637 to 8.2740; p<0.0001).

CONCLUSIONS: Increased HR is an important risk factor for HT complications, independent from systolic blood pressure. The reduction of HR in patients with hypertension should be advised in specific groups of patients, mainly with coronary artery disease, as it can lead to reduction in prevalence of hypertension complications.

TITLE: PENTRAXIN-3 AND ENDOCAN IN PATIENTS UNDERGOING CARDIAC REHABILITATION AFTER CABG

Author(s): Orzeł K., Włosińska M.

Tutor(s): DSc Małgorzata Knapp, DM Małgorzata Baranicz

University: Department of Cardiology, Medical University of Białystok, Poland

INTRODUCTION: PTX-3 is a parameter indicating cardiovascular damage and vascular inflammation. It has been proven to predict cardiac rehabilitation outcome after cardiac surgery. Some research suggested CR decreases PTX-3 in patients with cardiovascular diseases. Endocan is a novel endothelial marker of inflammation.

AIM OF THE STUDY: The aim of this study was to evaluate whether CR impacts plasma PTX-3 and endocan in patients after CABG and to establish correlations between PTX-3, endocan and other clinical variables.

MATERIAL AND METHODS: The prospective study enrolled fifty one patients after coronary artery by-pass grafting (CABG) who underwent 3- to 5-week long inpatient cardiac rehabilitation [65 ± 8 (mean ± SD) years old, male/female 41/10]. CR included: walking training 6 times/week, interval training with cycle ergometer or treadmill 5 times/week and respiratory exercises. Several laboratory markers such as C-reactive protein (hsCRP), brain natriuretic peptide, pentraxin-3 and endocan as well as ejection fraction and metabolic equivalents (METs) were assessed on a day of admission and a day before discharge.

RESULTS: Exercise tolerance increased during CR (METs from 4,43 ± 0,83 to 5,59 ± 1,52; $p<0.0001$). CR remarkably reduced BNP (from 895 ± 939; to 632 ± 635 pg/ml; $p<0,05$) and CRP (from 6,11 ± 6,3; to 4,55 ± 6,2 mg/l; $p<0,05$). However, changes of plasma levels of PTX-3 and endocan in the entire study population after CR were not statistically significant. There was a low negative correlation between weight and PTX-3 at baseline ($r=-0,32$; $p<0,05$). Patients with hypertension had lower PTX-3 levels (at baseline $r=-0,32$; after CR $r=-0,37$; $p<0,05$).

CONCLUSIONS: Based on the literature, PTX-3 and endocan seem to be very promising markers of inflammation in cardiovascular system. However, CR in patients after CABG has a slight impact on PTX-3 and endocan levels, therefore their prognostic value in this population is very limited. Nevertheless, it is crucial to understand that further long-term research on a larger group of patients needs to be conducted.

TITLE: PREDICTIVE POTENTIAL OF SERUM POTASSIUM LEVELS FOR EARLY ARRHYTHMIA-FREE SURVIVAL AFTER DIRECT CURRENT CARDIOVERSION IN NORMOKALEMIC ATRIAL FIBRILLATION PATIENTS

Author(s): Baiba Kokina[1]

Tutor(s): Prof. Oskars Kalejs[2]

University: [1] Faculty of Medicine, Riga Stradins University;
[2]Department of Internal Diseases, Riga Stradins University, Latvian Centre of Cardiology, Pauls Stradins Clinical University Hospital

INTRODUCTION: Successful atrial fibrillation (AF) termination by direct current cardioversion (DCCV) is often followed by challenge of early sinus rhythm maintenance resistance, even under circumstance of optimal pharmacotherapy. Causative role of potassium (K) in arrhythmogenesis has been established, including association of lower serum K levels with higher AF risk. Nevertheless, data regarding recurrent AF and more detailed analysis under normokalemic conditions is lacking.

AIM OF THE STUDY: To evaluate predictive potential of serum K levels for early arrhythmia-free survival in normokalemic AF patients after successful arrhythmia termination by DCCV.

MATERIALS AND METHODS: Prospective study was conducted including patients hospitalized in Latvian Centre of Cardiology. Eligibility criteria were diagnosed AF, successful DCCV (performed according to standardized protocol, accepted in hospital), available blood test with established serum K level (within maximum of 10 days), normokalemia (serum K within reference range 3.5-5.1 mmol/L, accepted in hospital). Patients signed informed consent to confirm participation in research. Data was acquired in face-to-face interview, in accordance with data collection protocol. Subsequent 1-month follow-up interview was conducted, with emphasis on maintenance of sinus rhythm. Statistical analysis was carried out using software SPSS, performing Kaplan-Meier survival analysis and logistic regression analysis to obtain main results. Subgroup defining K cutoff value of 4.5 mmol/L was selected. Significance level α=0.05 was set.

RESULTS: Data on 117 patients was analyzed. 89.8% of participants had persistent or longstanding persistent AF. Estimated mean K level was 4.7±0.5 mmol/L. Higher-normal K levels in range > 4.5 ≤ 5.1 were associated with significantly higher arrhythmia-free survival when compared to lower-normal range ≥ 3.5 ≤ 4.5 (p = 0.036). Higher K values were established to have a remarkable statistically significant impact increasing sinus rhythm maintenance odds within 1 month after DCCV (OR 9.000, 95%CI 1.002-80.802, p=0.050).

CONCLUSIONS: Normal-high serum K levels were established to be significantly associated with better early sinus rhythm maintenance outcomes, indicating it as a prognostic biomarker. Potential practical application for planning elective DCCV could be evolved.

TITLE: CLINICAL PRESENTATION OF UNSTABLE ANGINA: IS THERE A DIFFERENCE BETWEEN OBSTRUCTIVE AND NON-OBSTRUCTIVE CORONARY ARTERY DISEASE?

Author(s): Dziugile Kersnauskaite[1], Kristina Sulskute[1,]

Tutor(s): Emilija Petrulionyte[1,2], Aiste Pilkiene[1,2]

University: [1] Vilnius University, Faculty of Medicine
[2] Vilnius University Hospital Santaros Klinikos, Center of Cardiology and Angiology

INTRODUCTION: Despite the fact that the most common reason for unstable angina (UA) is an obstructive coronary artery disease (CAD), there are also UA caused by different pathophysiological pathways.

AIM OF THE STUDY: We aimed to compare the clinical presentation and ECG changes of UA for patients with and without stenosis of coronary arteries.

MATERIALS AND METHODS: We analyzed discharge summaries of 715 patients who were hospitalized with UA diagnosis at Vilnius University Hospital Santaros Klinikos during the period of 2017-2018. We divided patients into two groups: obstructive CAD - patients who underwent coronarography (CAG) and had at least one stenotic coronary artery (≥50% stenosis of diameter) and non-obstructive CAD - patients who underwent CAG and had no evidence of stenotic CAD (<50%). We considered T wave inversion, depression of ST-segment, newly found left bundle branch block as ischaemic changes.

RESULTS: Out of 715 patients with UA diagnosis 458 (64.05%; median age of 65.81[17]) were men and 257 (35.94%; 70.65[14]) - women. Obstructive CAD was present for 90.4% (n=414) men and 75.5% (n=194) women. Non-obstructive CAD was found for 9.6% (n=44) men and 24.5% (n=63) women. Physical activity-induced pain was found for 52.6% (n=320) obstructive and 39.3% (n=42) non-obstructive CAD patients. Those who had obstruction reported to have felt pain less than 20 minutes long in 18.4% (n=112) of cases; patients without obstruction felt pain longer than 20 minutes in 25.2% (n=27) percent of cases. Localization and type of pain did not differ significantly between these groups. Most common ischaemic changes for obstructive CAD were T wave inversion (29.1%, n=177) and ST-segment depression (17.6%, n=107) but it did not differ significantly from non-obstructive CAD.

CONCLUSIONS: There were more men with CAD than women. Vast majority of patients with UA diagnosis had obstructive CAD. Physical activity-induced pain was more common for obstructive CAD but patients in this group felt pain for a shorter period of time. Localization and type of pain did not differ significantly between two groups. Most common ECG changes for both groups without statistically relevant difference were T inversion and ST depression.

TITLE: DIFFERENCES OF EARLY INVASIVE MANAGEMENT STRATEGY IN PATIENTS WITH UNSTABLE ANGINA BASED ON SEX

Author(s): Kristina Sulskute[1], Dziugile Kersnauskaite[1],

Tutor(s): Emilija Petrulionyte[1,2], Aiste Pilkiene[1,2]

University: [1] Vilnius University, Faculty of Medicine
[2] Vilnius University Hospital Santaros Klinikos, Center of Cardiology and Angiology

INTRODUCTION: Evidence of sex-based differences in the pathophysiology, management and outcomes of unstable angina (UA) were reported more than 30 years ago and is still an issue when preliminary diagnosis has to be made according to clinical symptoms which differ between sexes. Increasing awareness of distinct clinical presentation may help to individualize diagnosis and treatment for each patient.

AIM OF THE STUDY: Our aim was to evaluate findings of coronary angiography, decision making process and frequency of revascularization procedures (PCI and CABG) among patients diagnosed with unstable angina based on sex.

MATERIALS AND METHODS: We analyzed 715 patients' case histories in Vilnius University Hospital Santaros Klinikos over the period of 2017-2018 with diagnosis of unstable angina. Due to signs that patients' diagnosis could be altered to MI (according to Fourth Universal Definition of Myocardial Infarction) 381 patients were eliminated from final analysis. $P<0.05$ was held as a statistically significant finding.

RESULTS: Out of 334 patients 227 (67,96%) were men and 107 (32,04%) – women. Median age was 64 (16,5) years in men and 68 (15,5) years in women. Out of all patients who had previous MI (n=113), men (n=90) had it more often than women (n=23) ($p<0,05$). More men (n=98) than women (n=29) had previous coronary artery stenting ($p<0,05$). 190 (83,7%) men and 74 (69,2%) women had significant (≥50% the diameter of artery) coronary artery stenosis ($p<0,05$). Significant stenosis of left anterior descending coronary vessel (LAD) was detected in 203 (60,78%) cases, right coronary artery (RCA) – 152 (45,51%), left circumflex (LCx) – 145 (43,41%), left main (LM) – 22 (6,59%). Males are more likely to have significant coronary artery stenosis in RCA ($p<0,05$). PCI was performed in 154 (46,11%) of cases: more in men (n=117) than in women (n=37) ($p<0,05$). LAD stenting was performed in 22,46% (75) patients, RCA – 16,77% (56), LCx – 8,38% (28), LM – 1,5% (5). Stenting and CABG did not differ significantly between sexes.

CONCLUSIONS: Unstable angina is 2,1 times more common in men. Men diagnosed with unstable angina are 4 years younger than women. More men had previous MI than women. More men had significant stenosis in coronary arteries. PCI more often performed in men than women.

TITLE: EFFECT OF BRANCHED ENDOVASCULAR AORTIC REPAIR ON PLATELET REACTIVITY IN PATIENTS WITH THORACO-ABDOMINAL AORTIC ANEURYSM

Author(s): Anna Burban, Aleksandra Idzik, Agata Gelo

Tutor(s): Aleksandra Gąsecka, MD, PhD, Prof. Tomasz Jakimowicz

University: 1st Chair and Department of Cardiology, Medical University of Warsaw

INTRODUCTION: Endovascular aortic repair (EVAR) is a modern treatment option in both elective and emergency aortic aneurysm. However, the presence of the graft may be associated with an increased risk of thrombosis, whereas double antiplatelet therapy (aspirin and clopidogrel) after the operation may increase the risk of bleeding.

AIM OF THE STUDY: Assessment of the effect of branched EVAR on platelet reactivity in patients with thoraco-abdominal aortic aneurysm.

MATERIALS AND METHODS: The study population comprised of 50 patients undergoing elective or emergency branched EVAR (Zenith t-Branch®) of thoraco-abdominal aortic aneurysm (mean age 70.9±5.7 years, 66% male). Patients who required oral anticoagulation, with end-stage renal disease or severe liver dysfunction were excluded from the study. Blood samples were collected 3 times: before the operation, within 24 hours after and at hospital discharge. Platelet reactivity was assessed using impedance aggregometry (Multiplate Analyzer) with arachidonic acid (ASPI), adenosine diphosphate (ADP) and thrombin receptor activating peptide (TRAP) as agonists. Clinical data regarding thrombotic and bleeding events were extracted from the hospital database.

RESULTS: There was a stepwise decrease in platelet reactivity after the operation, compared to baseline ($p<0.04$) in response to all agonists. There were no thrombotic events until discharge. After the operation, 23 patients required major red blood cell (RBC) concentrate transfusion (>=2 units). At admission, there was a negative correlation between platelets reactivity and the amount of RBC units transfused after the operation ($r<-0.32$, $p=0.03$ for ASPI, $r< -0.35$, $p=0.02$ for ADP). The only factor that was able to differentiate between patients who did and did not require major RBC transfusion was pre-operative platelet reactivity measured by ASPI test which predicted bleeding with 78% sensitivity and 59% specificity at a cut-off > 30 AUC units.

CONCLUSIONS: Platelet reactivity decreases after branched EVAR of thoraco-abdominal aortic aneurysm. The pre-operative platelet reactivity measured with ASPI test at a cut-off >30 AUC units is an independent and strong predictor of post-operative bleeding requiring transfusion of ≥2 RBC units - it increases the odds of bleeding tenfold.

TITLE: ARTERIAL STIFFNESS AND ENDOTHELIAL DYSFUNCTION ASSESSMENT IN PATIENTS WITH METABOLIC SYNDROME AND CARDIOVASCULAR RISK FACTORS

Author(s): Kristina Pugaciauskaite

Tutor(s): Jolita Badariene

University: Faculty of Medicine, Vilnius University, Lithuania

INTRODUCTION: Carotid-femoral pulse wave velocity (cfPWV) and peripheral arterial tonometry (PAT) are both non-invasive diagnostic techniques, which evaluate arterial stiffness and endothelial dysfunction. Although both methods are aimed at diagnosing early atherosclerotic disease, further studies are needed to determine whether they can be used interchangeably.

AIM OF THE STUDY: To measure the correlation between PWV values and reactive hyperaemia index (RHI) using PAT and compare it between patients with varying number cardiovascular risk factors.

MATERIALS AND METHODS: The study was conducted throughout 2007-2016 in Vilnius University Hospital Santaros Klinikos. 1854 patients were investigated, of which 1050 (50-65 years old) were women and 804 (40-55 years old) were men with metabolic syndrome diagnosed using the NCEP ATP III criteria. During this study, arterial stiffening by cfPWV was measured, endothelial function assessment by PAT was performed and RHI values were calculated for all patients. In addition, the prevalence and distribution of cardiovascular risk factors, namely dyslipidemia, primary arterial hypertension (PAH), positive family history, diabetes, high body mass index (BMI) and smoking were evaluated.

RESULTS: The median of RHI was 2,16 (interquartile range (IQR)=0,81) and median of cfPWV values were 8,7 (IQR=2). The distribution of RHI and cfPWV values among men and women differed significantly ($p<0,001$, $p=0,001$, respectively). Women had greater median values of both cfPWV and RHI. Median of cfPWV among women was 9,16 (IQR=2,1), whereas among men – 8,6 (IQR=1,9). Likewise, median of RHI in women group was 2,26 (IQR=0,84) and in men – 2,12 (IQR=0,72). The most common cardiovascular risk factors were dyslipidemia, BMI≥25 and PAH (97,5%, 97,5% and 96%, respectively), smaller number of patients had positive family history, were smokers or had diabetes (35,3%, 21,7% and 21,7%, respectively). Negative correlation between a total number of risk factors and RHI was statistically significant ($r=-0,077$, $p=0,001$). Similarly, correlation was found between cfPWV values and RHI ($r=0,166$, $p<0,001$).

CONCLUSIONS: The analysis of data showed the presence of higher RHI and cfPWV values among women rather than men. Furthermore, significant correlation was observed between cfPWV and RHI.

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CONCLUSIONS: The analysis of data showed the presence of higher RHI and cfPWV values among women rather than men. Furthermore, significant correlation was observed between cfPWV and RHI.

TITLE: ULTRASOUND GUIDED TRANSHEPATIC ACCESS FOR THORACIC DUCT CATHETERISATION – IS IT A SAFER APPROACH?

Author(s): Nikola Topuzov

Tutor(s): Adam Koleśnik MD

University: Students' Scientific Group "Anatomy", Medical University of Warsaw, Poland

INTRODUCTION: The thoracic duct is the main lymphatic drainage of the abdomen and lower limbs, thus a leak or impairment in its flow may lead to serious complications. Lymphorrhea leading to chylothorax is a rare condition arising from thoracic surgeries and traumas, yet its mortality rate reaches 50%. Plastic bronchitis is another complication of an underlying disease, which impairs the lymph flow. Such cases may be treated with lymphography guided selective thoracic duct ligation.

AIM OF THE STUDY: To assess the safety, topographic relations and accessibility to the retroaortic space of a potential transhepatic thoracic duct access.

MATERIALS AND METHODS: The study involved 18 healthy volunteers aged from 21 to 47 examined using LOGIQ F8 GE ultrasound at approximately the level of xiphoid process. The site of the access was characterised by the distance to the process, direction of the transducer and its angle. The ultrasound measurements involved the potential distance of a needle to the standard location of the thoracic duct and the thickness of the left lobe of liver in its way. All major vessels in the area, that could potentially be perforated were identified and measured.

RESULTS: The standard location of the thoracic duct was successfully identified in 16 cases. The site of access ranged from 2 to 9 cm below the xiphoid process, the direction of the transducer ranged from 0 to 60 degrees from sagittal plane and its angle from 60 to 90 degrees. In 2 cases (12.5%) the portal and hepatic veins overlapped making the access relatively unsafe. In 8 remaining cases the veins were also identified as a potential threat, but were easily avoidable. In 2 cases the coeliac trunk and its branches were identified as a potential threat.

CONCLUSIONS: The transhepatic thoracic duct access seems to be relatively safe, as major vessels are rarely an unavoidable obstacle. The only structure the needle would perforate is the liver with low risk of puncturing the aorta, the colon or the stomach. Puncturing the liver should also stabilise the needle and reduce the risk of its deflection, which may happen by puncturing the colon. The ultrasound-guided transhepatic access also provides with a good visibility of the anatomical structures on the route of the needle, unless there is excess gas in the abdomen.

Interdisciplinary I

TITLE: THE SYMPTOMS OF EYE DRYNESS IN STUDENTS OF WARSAW UNIVERSITIES DURING THE SARS-COV-2 PANDEMIC

Author(s): Katarzyna Zabłocka, Ewa Fudalej, Katarzyna Pokotycka

Tutor(s): dr n. med. Piotr Maciejewicz

University: Medical University of Warsaw

INTRODUCTION: The dry eye syndrome is a condition affecting tears and the ocular surface. The symptoms include dryness, burning, sandy or gritty sensation, eye redness, sensitivity to light or blurred vision. Eye surface is protected by the tear film, distributed over the globe during blinking. Prolonged use of screens reduces the rate of blinking, which can lead to dryness. Due to the SARS-CoV-2 pandemic, people started spending more time with electronic devices.

AIM OF THE STUDY: This study aims to check whether time spent in front of screens affects the symptoms of eye dryness.

MATERIALS AND METHODS: The study group consisted of 323 students (251 female and 69 male) of universities located in Warsaw aged 18-25. The participants were asked to fill out an online questionnaire, which included questions about time spent in front of screens now and in the previous year. The OSDI (Ocular Surface Disease Index) questionnaire has been used to ask about the symptoms of eye dryness now and a year ago.

RESULTS: The analysis revealed that the time spent with electronic devices this year compared to last year increased in 94.43% (305/323) cases, including: in 53.87% (174/323) by 3 to 6 h, in 24.15% (78/323) by 1 to 3h and in 16.4% (53/323) over 6h. The number of people for whom the value of answers to questions from the OSDI questionnaire, comparing the current and the previous year, increased in at least one question by at least one point, was 94.42% (288/305). The overall numerical point increase was as follows: from 1 to 4 points in 37.15% (107/288), from 5 to 8 points in 45.14% (130/288) and from 9 to 12 points in 17.71% (51/288) of participants. The average point increase in total, depending on the extension of the time spent in front of the screen, amounted to: for an extension from 1 to 3h: 4.9, from 3 to 6h: 5.77 and for above 6h: 6.06. The highest number of respondents showed a point increase in the question of soreness, burning and eye irritation - 70.83% (204/288), and the smallest in the question about eye problems while driving at night - 23.61% (68/288).

CONCLUSIONS: In the vast majority of respondents, the time spent with electronic devices increased. Most of them reported the appearance or worsening of dry eye symptoms. The amount of extra hours in front of a screen is likely to correlate with the severity of dry eye symptoms.

TITLE: FECAL MICROBIOTA TRANSPLANTATION IN PATIENTS WITH ACUTE AND CHRONIC GRAFT VERSUS-HOST DISEASE— SPECTRUM OF RESPONSES AND SAFETY PROFILE. RESULTS FROM A PROSPECTIVE, MULTICENTER STUDY

Author(s): Julia Wierzbicka, Marta Jezierska, Aleksandra Karpuk

Tutor(s): dr n. med. Jarosław Biliński

University: Medical University of Warsaw

INTRODUCTION: Allogeneic hematopoietic cell transplantation (alloHCT) is a potentially curative strategy for patients with selected blood diseases. Graft-versus-host disease (GvHD) reduces the effectiveness of this treatment. There is a correlation between the GvHD occurrence and gut microbiota composition. The fecal microbiota transplantation (FMT) is a promising approach in the treatment of acute GvHD.

AIM OF THE STUDY: Summary and analysis of the impact of FMT on acute and chronic GvHD and the ARB decolonization rate.

MATERIALS AND METHODS: It was a prospective, multicenter study enrolling patients who underwent alloHCT between 2010 and 2019 in the Department of Hematology, Transplantation and Internal Medicine of the Medical University of Warsaw. In the cohort of patients treated with FMT to decolonize ARB from the GI tract there were also patients with acute gut GvHD. A total of 16 FMTs were performed in 11 patients with aGvHD and in two patients with cGvHD. Each FMT was carried out intraduodenally via a nasoduodenal tube between 2016 and 2020.

RESULTS: Overall response rate in aGvHD patients reached 57%, including complete remissions in 42%. Median duration of response to relapse, death or last follow-up was 153 days. Median overall survival was 66 days in non-responders and 332 days in responders (HR 0.18, $p<0.005$). Both patients with cGvHD achieved stabilization and were alive at last follow-up. Severe adverse events were diagnosed in eight (56%) patients, including two early deaths, but most of them were unrelated to FMT. Septic shock, sepsis and Norovirus infection were possibly or certainly related to FMT. Complications after FMT were associated with poor overall performance status of the patients (ECOG>2). ARB decolonization reached 71%.

CONCLUSIONS: The study confirms very good efficacy of FMT in the treatment of acute gut GvHD and in the gastrointestinal tract decolonization from ARB. In contrast to previous studies, it revealed a higher rate of adverse events, especially in severely-ill patients, which means FMT should be planned earlier in the course of steroid resistant/dependent GvHD.

TITLE: THE RELATIONSHIP BETWEEN THE DARK TRIAD PERSONALITY TRAITS, BELIEVING IN CONSPIRACY THEORIES AND FALSE INFORMATION RELATED TO THE COVID-19 PANDEMIC

Author(s): Natalia Kapuśniak, Adrianna Boroń

Tutor(s): Paweł Dębski, PhD; Magdalena Piegza, PhD

University: Medical University of Silesia, Katowice, Poland, Faculty of Medical Sciences in Zabrze, Department of Psychiatry

INTRODUCTION: Belief in conspiracy theories concerning the COVID-19 pandemic is a serious problem for public health. I could be connected with not following pandemic restrictions what has consequences in a greater number of infected individuals and thus threatens more potential deaths.

AIM OF THE STUDY: The aim of the study was to examine correlations between the tendency to believing in conspiracy theories, false beliefs related to the COVID-19 pandemic and the intensity of the Dark Triad features.

MATERIALS AND METHODS: The online questionnaire was completed by 700 Poles (585 women, 110 men) with an average age of 24.7±6.34 years. Psychometric tools used in the questionnaire were Generic Conspiracist Beliefs Scale (as a measure of general belief in conspiracy theories), The Dirty Dozen Scale (used to measure the Dark Triad of personality features including narcissism, Machiavellianism and psychopathy), COVID-19 Conspiratorial Beliefs Scale (an own design scale examining false beliefs connected with COVID-19 disease) and a sociodemographic survey. Statistical methods used to analyse the data included Spearman's rank correlation coefficient, simple linear regression, backward stepwise multiple regression and Mann–Whitney U test.

RESULTS: The analysis of correlations revealed that there was a statistically significant positive relationship between believing in false information connected with COVID-19 and the level of psychopathy. Positive correlation between the general belief in conspiracy theories and the level of Machiavellianism was also observed. The regression analysis showed that there was a statistically significant, positive impact of psychopathy on belief in conspiracy theories concerning COVID-19. Positive, statistically significant dependency between Machiavellianism and general belief in conspiracy theories was also revealed. The examination of sex differences showed greater severity of psychopathy and Machiavellianism in a group of men.

CONCLUSIONS: Features such as psychopathy can increase a tendency towards false beliefs about the COVID-19 pandemic. In addition, Machiavellianism may increase the tendency to general believing in conspiracy theories.

TITLE: IMPACT OF COVID-19 ON AVAILABILITY OF MEDICAL SERVICES- RESULTS OF THE SURVEY

Author(s): Agnieszka Popławska, Joanna Jamiołkowska, Jędrzej Warpechowski

Tutor(s): Piotr Wojskowicz, PhD

University: 1st Clinical Department of General and Endocrine Surgery, Medical University of Białystok

INTRODUCTION: COVID-19 pandemic started in March, 2020 and lasts for over a year to this day. It's influence on the availability of medical services is undeniable. Health care services must now deal with overcrowding and personnel shortages. Much of primary health care is being delivered by telemedicine, therefore more and more people are obliged to seek help in emergency departments.

AIM OF THE STUDY: The aim of the study was to evaluate patients seeking help in the Emergency Department in terms of their access to medical care.

MATERIALS AND METHODS: Anonymous survey conducted at Hospital Emergency Department between December, 2020 and March, 2021. It was fulfilled by 200 patients, classified as a green group in the triage.

RESULTS: Taking the access to a general practitioner during COVID-19 pandemic into consideration, 35.5% of patients reported difficulty in accessing, 55,5% did not report any problems. What is more, 42% of patients asked about the availability of specialist appointments reported significant barriers in access. Also, 14% of patients reported that they would have come to the Emergency Department much earlier, if it weren't for the COVID-19 pandemic.

CONCLUSIONS: Due to COVID-19 pandemic, emergency departments are being overcrowded and many of those patients would have found help within the general practice or specialist care if it was more available. Patients arrive at emergency departments later than they should, what may result in poorer prognosis. Under the impact of a pandemic, the quality of health care may deteriorate significantly.

TITLE: INFLUENCE OF PERIOSTIN AND PRO-INFLAMMATORY CYTOKINES ON REMODELING IN COLORECTAL CANCER

Author(s): Bogumiła Strzałkowska[1]; Błażej Ochman[1]; Agnieszka Kula[1]; Miriam Dawidowicz[1]; Sylwia Mielcarska[1]

Tutor(s): Elżbieta Świętochowska PhD[1]; Paweł Kiczmer[2]

University: [1]Department of Medical and Molecular Biology, Faculty of Medical Sciences in Zabrze, Medical University of Silesia,
[2]Department of Patomorphology, Faculty of Medical Sciences in Zabrze, Medical University of Silesia

INTRODUCTION: Colorectal cancer (CRC) is an example of the link between inflammation and oncogenesis. The part of the neoplasm is the tumor microenvironment (TME). TME consists of extracellular matrix (ECM), blood and lymphatic vessels, and many cells: lymphocytes, tumor-associated macrophages (TAM), or cancer-associated fibroblasts (CAF's), which secretes pro-inflammatory cytokines and molecules involved in tumor differentiation, development, and progression. An important role plays periostin, which contributes to remodel stroma and establish a microenvironment. Periostin activates the Akt/PKB, TGF-β, and the FAK-mediated signaling pathways. By binding integrin receptors periostin increases cell mobility and survival, thus contributes to the formation of metastasis. TNFα, IFNγ, IL-1β, and IL-17 are all known to interfere with TME or periostin and stroma remodeling in other diseases.

AIM OF THE STUDY: The aim of the study was to assess the periostin level and the concentrations of pro-inflammatory cytokines: TNFα, IFNγ, IL-1β, and IL-17 in tumor and margin tissues of colorectal cancer and to investigate relations between these molecules.

MATERIALS AND METHODS: The material was 47 samples obtained from patients during surgery due to colorectal cancer. To assess the levels of the investigated proteins we used an enzyme-linked immunosorbent assay (ELISA). Data distribution was assessed using the Shapiro–Wilk test.

RESULTS: We found significantly higher concentrations of the periostin, IFN-γ, IL-1 β, IL-17, and TNFα in the tumor samples compared to surgical margin tissues. The tumor concentrations of periostin positively correlated with tumor IFN-γ, IL-1β, and TNFα. We observed a significant correlation between margin periostin and IFN-γ, IL-17, and TNFα in tumor and margin specimens. Additionally, periostin levels in the margin were correlated with IL-1β levels in margin tissues.

CONCLUSIONS: Our study contributes to the better understatement of the cross-talk between the immune cells and the stromal cells, which are important in tumor differentiation, development, and progression. It seems that the periostin targeted therapy in CRC could be a potentially good direction to verify in further research.

TITLE: THE IMPACT OF DISINFECTION IN THE COVID-19 PANDEMIC ON THE QUALITY OF LIFE AND CONDITION OF THE SKIN OF HANDS IN PATIENTS WITH HAND SKIN DERMATOSES

Author(s): Owsianko Natalia, Polecka Agnieszka

Tutor(s): Anna Baran, MD, PHD, Associate Professor, Iwona Flisiak, PROFESSOR, MD, PHD, HEAD OF THE DEPARTMENT

University: Medical University od Białystok, Department of Dermatology and Venerology

INTRODUCTION: During the COVID-19 pandemic disinfection became an integral part of everybody's life in order to avoid spreading the coronavirus. Due to its usage, many people struggle with the hands skin problems.

AIM OF THE STUDY: To analyze how using the disinfection affects the skin of the hand, especially of persons with hand skin problems, during COVID-19 pandemic.

MATERIALS AND METHODS: In 2021 an original anonymous online survey was carried among 164 respondents. They filled questions regarding usage of disinfectants and possible relations with hands skin condition. Statistical analysis was performed using Chi-Square test, statistically significant difference was at $p<0.05$.

RESULTS: The study group included 137 women and 27 men at the mean age of 26±0.23. There were 109 healthy subjects and 55 ones with hand skin dermatoses. In the respondents group nearly 70% felt pain and stinging while applying disinfectant. Almost 50% of all analyzed subjects claimed new symptoms over the hands. 42% of respondents with no skin problems before the pandemic have now reported symptoms related to disinfection. 60% of the group with hand skin dermatoses declared new dermatological signs that they didn't notice before COVID-19 pandemic. Over 70% of patients experienced more frequent exacerbations of hand skin diseases. They declared taking medications longer and more often during pandemic. From the moment the disinfection recommendations were introduced, the total number of subjects using emollients and daily use of moisturizers increased. Despite this, 70% of respondents reckon that using disinfectants affect their lives and most of this group are patients with hand skin dermatoses.

CONCLUSIONS: People have been using disinfectants every day for several months. Our survey showed that it has an impact on the course of hand skin diseases. Disinfection interrupts the hydrolipid barrier and it's important to use it as intended and take care of skin with emollients.

TITLE: MEDICAL REASONS FOR NOTIFICATION TO EMERGENCY DEPARTMENT OF UNIVERSITY HOSPITAL IN BIALYSTOK, POLAND

Author(s): Jędrzej Warpechowski, Joanna Jamiołkowska, Agnieszka Popławska

Tutor(s): Piotr Wojskowicz, MD PhD

University: Medical University in Białystok, 1st Clinical Department of General and Endocrine Surgery

INTRODUCTION: The Emergency Department is a place where many patients with various medical conditions are admitted almost every day. Healthcare professionals must be aware of that and be able to recognize first of all these conditions, that are life-threatening, may cause significant loss of health or disability.

AIM OF THE STUDY: The aim of our study was to evaluate various medical reasons that force patients to seek help in the emergency department of our University Hospital.

MATERIALS AND METHODS: Anonymous questionnaire, which was distributed among patients in the Emergency Department of University Hospital in Bialystok, Poland.

RESULTS: Unspecified malaise was the most often medical reason for coming to the emergency department (22%). 19 % of patients reported that an accident/random event was the reason for appearing in the emergency department. The same amount of patients reported exacerbation of pre-existing medical conditions as a reason of admission to the emergency department. 13 % of patients arrived due to sudden disease.

CONCLUSIONS: Majority of patients arrive at the emergency department with conditions that do not require immediate help, which sometimes complicates access for patients with serious medical conditions.

TITLE: WHAT MAKES PATIENT DEATH MORE EMOTIONALLY CHALLENGING? A SURVEY OF LITHUANIAN DOCTORS

Author(s): Miglė Kalinauskaitė, Karolina Janonytė

Tutor(s): Edgaras Dlugauskas, MD, PhD

University: Clinic of Psychiatry, Institute of Clinical Medicine, Faculty of Medicine, Vilnius University, Vilnius, Lithuania.

INTRODUCTION: Patient death (PD) is a stressful experience inseparable from the practice of medicine. Considering work-related stress, doctors are reluctant to seek professional psychological help.

AIM OF THE STUDY: To determine how often doctors face PD, whether they seek psychological help and which factors make PD more emotionally difficult.

MATERIALS AND METHODS: A cross-sectional anonymous survey of Lithuanian doctors was performed online in February 2021. The survey included questions about demographic data, attitudes toward psychological help, factors that can make PD more distressing, and a 0 to 10 scale measuring emotional impact of PD. Data was analysed with IBM Statistics SPSS 27.

RESULTS: The study included 136 doctors of various specialties. 118 (86,8%) were female and 17 male (12,5%), 41,5±10,4 years old on average. 66,2% of respondents encounter PD monthly or weekly. The frequency with which respondents encounter PD correlated weakly negatively with the 10-point impact scale (ρ=-0,314; p=0,000). Most commonly chosen factors that make PD more difficult were “having a close relationship with the patient”, “young age” and “sudden death”. The 10-point impact scale correlated weakly positively with such patient factors as young age, being a doctor, having children, treating them for a long time, sudden death, and suffering before death (ρ=0,211; 0,283; 0,191; 0,331; 0,254; 0,293). 93,4% of respondents talk to colleagues after PD, 59,6% - to family members, 34,6% - to friends. 13,2% report that it affects their relationships negatively. 85,3% of respondents agree that psychological help is beneficial, but only 14% seek it for work-related stress, and 7,4% regularly visit a psychotherapist. Work experience and age correlated weakly negatively with the belief that psychological help is beneficial (ρ=-0,238; p=0,005; ρ=-0,244; p=0,004).

CONCLUSIONS: Having a close relationship with the patient, them being young and dying suddenly make PD most distressing to doctors. Encountering PD more often weakens its emotional impact. Seeking support from people in one’s life, though common, can affect relationships negatively. Though most believe in benefits of psychological help, few seek it. Older and more experienced doctors are less likely to believe it beneficial.

TITLE: A COMPARISON OF PREOXYGENATION OUTCOMES IN EMERGENCY AND ELECTIVE SURGERY PATIENTS

Author(s): Miglė Kalinauskaitė[1]

Tutor(s): Greta Bružytė-Narkienė, Greta Timaitienė, Assoc. Prof. Eglė Kontrimavičiūtė[2]

University: [1]Faculty of Medicine, Vilnius University, Vilnius, Lithuania, [2]Clinic of Anaesthesiology and Intensive Care, Vilnius University, Vilnius, Lithuania.

INTRODUCTION: The goal of preoxygenation (PO) is to extend the safe apnoea time during intubation by creating an oxygen reserve in the lungs. The standard procedure for optimal PO is 100% O_2 delivery via facial mask for 5 minutes reaching an end tidal O_2 (EtO2) ≥ 90%.

AIM OF THE STUDY: To compare PO outcomes in patients undergoing emergency and elective surgery.

MATERIALS AND METHODS: After regional bioethics committee approval and registration on clinicaltrials.gov this prospective study collected patients' demographic data, comorbidities, known poor PO factors (facial hair, small mouth, etc.), and vital parameters. EtO2 was measured every 30 seconds for 5 minutes during standardized PO with 6 l/min 100% O_2. Data was analysed with IBM SPSS Statistics 27.

RESULTS: The study included 37 patients, 51% female, 49% male, 58±20 years old, with a mean BMI of 27,6±4,6 kg/m2. 18 patients had emergency surgery, 19 - elective. Regardless of the group, 17 participants (46%) did not reach optimal PO goal. Not reaching the goal was disproportionate between groups (27,7% emergency vs. 63% elective). A logistic regression was performed to ascertain the effects of emergency vs. elective surgery, gender, BMI, ASA, Mallampati score, number of systems affected by comorbidities, number of risk factors for poor PO, preoperative heart rate on the likelihood that the patient will achieve optimal PO. The logistic regression model was statistically significant, $\chi 2 = 17,194$, $p = 0,028$. It explained 50,8% (Nagelkerke R2) of the variance in PO outcomes and correctly classified 83,3% of cases. The only variable significant to the outcome was whether surgery was emergency or elective (p=0,016) and the emergency surgery group was 34,1 times more likely to reach optimal PO than the elective surgery group. The mean time to EtO2≥90% in the emergency surgery group was 180±66 seconds compared to 226±51 s for elective patients (p=0.345) (total average 196±64 s).

CONCLUSIONS: Almost half of the patients in this study did not achieve optimal PO. This was more common in elective patients and no other measured factors had significant influence. Knowing the importance of optimal PO, more emphasis should be put on conducting it effectively, especially in elective cases, when anaesthesiologists might not expect unsatisfactory outcomes.

Interdisciplinary II

TITLE: EYE-COVID – AN INNOVATIVE TRIAGE TOOL IN OPHTHALMOLOGY

Author(s): Alicja Ziontkowska, Dawid Wrzałek

Tutor(s): Marta P. Wiącek, MD, FEBO; Prof. Anna Machalińska, MD, PhD, FEBO

University: First Department of Ophthalmology, Pomeranian Medical University, Szczecin, Poland

INTRODUCTION: The new SARS-CoV-2 coronavirus causing the COVID-19 disease is both an important clinical problem and challenge for modern medicine. Due to the high concentration of patients in Ophthalmology Departments and Emergency Rooms, it was indicated to create an interactive tool based on the combined epidemiological, ophthalmological and internal interview for patients' triage to COVID-19 risk group.

AIM OF THE STUDY: The primary goal was to create the interactive tool that will enable the initial classification to the COVID-19 risk group based on general and ophthalmic condition. The secondary goal was to suggest an appropriate procedure according to the patients' categorization.

MATERIALS AND METHODS: A total of 199 patients with positive results of qRT-PCR test for SARS-CoV-2 viremia were recruited at the Emergency Room of the Unified Hospital. Next, all patients filled in ophthalmological and epidemiological questionnaires that specified the type, severity and onset time of the symptoms. Additionally, conjunctival swabs for SARS-CoV-2 viremia in all patients were taken. According to the mathematic transformation in statistical analysis a categorization model was created and interactive application was prepared.

RESULTS: The mean age of subjects was 54.9 ± 15.21 years. In 16 (8%) patients positive PCR result of conjunctival swab was noted. After exclusion of a linear association of the analyzed factors, non-linear relationship was confirmed. Consequently, advanced statistical methods out of machine learning and “data mining’” range were implemented. As a result, the algorithm classifying the individual to the group of low or high risk of potentially infectious tear film was created. The algorithm included following variables: age, BMI, contact with SARS-CoV-2 positive patient, use of permanent medication, fever, eye burning or redness. Next, the bioinformatics tool in the form of a web application was prepared.

CONCLUSIONS: The Eye-COVID application may allow to detect potentially infectious individuals and implement isolation procedures to prevent the spread of the pandemic. Moreover, this tool enables to identify a group of poorly symptomatic patients with potentially infectious discharge from the conjunctival sac. On the other hand, this solution may help to maintain continuity of ophthalmological care in pandemic era.

TITLE: IS MASKNE A DERMATOLOGICAL SIDE EFFECT OF THE SARS-COV-2 PANDEMIC? A SURVEY STUDY ON THE IMPACT OF PERSONAL PROTECTIVE EQUIPMENT ON FACIAL SKIN

Author(s): Gabriela Krych, Izabela Malczyńska

Tutor(s): Prof. Anna Baran, MD PhD, Prof. Iwona Flisiak, MD, PhD

University: Department of Dermatology and Venerology, Medical University of Białystok

INTRODUCTION: PPE is a necessary factor during SARS-CoV-2 pandemic and the improper use of it, may affect facial skin condition.

AIM OF THE STUDY: Analysis of the use and choice of PPE, following hygiene rules while using them and its impact on the formation of skin lesions on face, especially in the areas they cover.

MATERIALS AND METHODS: In 2020 two original anonymous online surveys were carried among 26 dermatologists and 360 volunteers with 60 questions about the use of PPE and skin lesions they experienced before and during pandemic. Chi-Square statistics were performed, with a p-value <0.05.

RESULTS: A group of 360 volunteers, 76,5% of whom were female and 23,5% were male. Median age of the patient is 26.08±0.94. All dermatologist were females. Each participant used PPE. A disposable mask (55%) was the most popular PPE among patients, yet dermatologists prefer FFP2/FFP3/N95 mask (30.8%). 4 out of 5 respondents noticed lesions. Around 70% of dermatologists have observed the unfavorable effects of wearing PPE during pandemic on the facial skin of their patients. More than half (53.8%) of dermatologists diagnosed maskne in their office. There was statistically significant difference between experiencing purulent lesions (48.6%), increased sweating (15.2%), itching (12.4%) and decreased excessive dryness (21%) before and during the pandemic around mouth, nose and cheeks area. Certain hygiene rules such as reusing disposable mask, touching the face, not sanitizing, or washing hands before and after putting and removing a mask was not followed by 98% of volunteers and 10% od dermatologists. Only 10% of the patients were consulted by dermatologists and got adequate treatment.

CONCLUSION: Maskne is a new social problem that needs to be solved. The pandemic indicated conversation about following general sanitary rules that protect us from infection, but hygiene of using PPE was unfortunately forgotten, causing skin lesions' formation. That research is to bring everybody's attention to improving the education on the proper use of PPE and the dermatological advantages of it.

TITLE: MYOPIA AND ITS PROGRESSION AMONG MEDICAL STUDENTS

Author(s): Ewa Fudalej

Tutor(s): Joanna Ciszewska, MD, PhD

University: Medical University of Warsaw

INTRODUCTION: Myopia is considered the most common ocular disorder worldwide. Its prevalence reaches up to 48% of adults in some Asian countries and around 30% in the USA. It is expected to increase dramatically within the next years (WHO, 2015). What causes myopia?

AIM OF THE STUDY: This study aims to identify factors, which can be related to myopia progression among medical students in Poland.

MATERIALS AND METHODS: The study group consisted of 1083 Polish medical students (880 female), who filled out an on-line questionnaire. Questions regarded their refraction value, presence of risk factors of myopia progression and applying the rules of visual hygiene. The inclusion criteria were: myopia of at least -0,5 D, age 19-26 and studying medicine in Poland. Excluded were 176 participants who provided insufficient or irrelevant data. The results were analyzed on spreadsheets and in the SPSS statistics program. The Kruskal-Wallis, Mann-Whitney U and ANOVA tests were used to search for relations.

RESULTS: The median refractive error among first year medical students was -2,625 D (Q1 = -4 D; Q3 = -1 D) and on the sixth year -3 D (Q1 = -4,25 D; Q3 = -1,75 D). Higher myopia was related to the year of study ($p=0,010$), but not to the age of students ($p>0,05$). Higher myopia was present among students who had myopic parents ($p=0,001$). The amount of time spent on close distance reading or the frequency of taking breaks to look ahead showed no relation to the refractive error ($p>0,05$). The sex of students was also irrelevant.

CONCLUSIONS: There are factors that influence the progression of myopia whilst studying medicine. According to the results, they may include the year of studying and genetic predisposition. Time spent on close distance reading or the frequency of taking breaks did not prove to influence the refraction value.

TITLE: FROM A SIMPLE DISEASE TO A LIFE THREATENING CONDITION - A RETROSPECTIVE ANALYSIS OF PATIENTS HOSPITALIZED FOR URTICARIA

Author(s): Aleksandra Morawska, Bartosz Pomichter, Anna Stepaniuk, Jowita Gursztyn

Tutor(s): dr hab. n. med. Anna Baran MD, PhD, Prof. Iwona Flisiak, MD, PhD

University: Students' Scientific Society at the Department of Dermatology and Venereology, Medical University of Bialystok

INTRODUCTION: Urticaria is a common clinical condition presenting with wheals, angioedema, or both. It has a lifetime prevalence of about 20%.

AIM OF THE STUDY: A five-year retrospective analysis of medical records of patients hospitalized for urticaria.

MATERIALS AND METHODS: Epidemiological and clinical data of patients hospitalized for urticaria at the Department of Dermatology were analyzed and compared to control group composed of 137 healthy individuals BMI and sex-matched. Statistical analysis was performed using Chi-Square test, a statistically significant difference was at $p<0.05$.

RESULTS: In the analyzed period 137 patients were hospitalized for urticaria, 93 females (68%) and 44 males (32%), of mean age 48.53. Half of the study group had systemic comorbidities, most often arterial hypertension (23%). 38% of patients have been previously diagnosed with an allergy, mostly to antibiotics (27%), such as penicilins (67%). Over 60% of patients suffered from acute and 38% from chronic urticaria. The majority presented skin lesions in a limited form, most often located on the lower limb (49%). Over 40% had wheals on the whole body. Causal factor was identified in 62% of all case, the most common were drugs (48%) and food (40%). There was statistical significance regarding CRP, leucocytosis, neutrophilia, and hyperglycemia between patients with urticaria and controls (all $p<0.05$). The patients were treated with antihistamines (94%), glucocorticosteroids (81%), and one patient with omalizumab.

CONCLUSIONS: Urticaria is a disease affecting people of all ages. It may generate high healthcare costs due to prolonged hospitalizations and often leads to a search for a cause, which in many cases cannot be identified. Urticaria has a significant impact on quality of life and affects performance at work and school, effective treatment is, therefore, required.

TITLE: PREGNANCY AND DIABETES: SHOULD AN OPHTHALMOLOGIST BE INVOLVED?

Author(s): Ewa Fudalej, Niezgoda Ł.

Tutor(s): Ciszewska J., MD, PhD, Medical University of Warsaw

University: Department of Ophthalmology, Warsaw Medical University, Warsaw, Poland

INTRODUCTION: Pregnancy among women with Diabetes Mellitus (DM) is an interdisciplinary challenge for physicians of diverse specialties, as it increases the risk of potentially irreversible complications. That includes vision loss due to diabetic retinopathy, which radically decreases the patients' quality of life.

AIM OF STUDY: The aim of this study was to assess the prevalence of and the knowledge about ophthalmic complications among diabetic women during pregnancy.

MATERIALS AND METHODS: The study group consisted of 68 women aged 22-50, who filled out an online questionnaire. The questions regarded the most recent pregnancy. The inclusion criteria (IC) were: women with DM (type 1, type 2, MODY), who are or have been pregnant. 22 of the replies have been disregarded due to incompatibility with the IC. The results were analyzed with a spreadsheet.

RESULTS: Among the respondents, 67% of women suffered from DM type 2, 22% from DM type 1 and 7% from DM MODY. 87% of women were aware, that pregnancy could influence their vision, but only 41% were referred to an ophthalmologist by their obstetritian-gynaecologist (OB-GYN). The majority of responders (77,9%) was not informed by their OB-GYN about the risk of possible new ophthalmic complications, or worsening of the current ones. The most common ophthalmic symptom reported by the patients was blurred vision. After labor, 13% of women suffered long term vision impairment.

CONCLUSIONS: Pregnant, diabetic women require ophthalmologic care and should be referred to an ophthalmology specialist. Additionally, they should be informed by the OB-GYN about the risks of pregnancy in their condition, so that this awareness encourages them to seek treatment if any ophthalmic symptoms occur.

TITLE: TO CALL OR NOT TO CALL? A SURVEY STUDY ANSWERING QUESTIONS REGARDING PATIENTS AND DOCTORS ATTITUDE TOWARDS TELEMEDICINE

Author(s): Anna Stepaniuk, Cezary Pawlukianiec, Magdalena Krawiel

Tutor(s): dr hab. n. med. Anna Baran MD, Prof. Iwona Flisiak, MD, PhD

University: Medical University of Bialystok, Department of Dermatology and Venerology

INTRODUCTION: During the COVID-19 pandemic health care systems worldwide rapidly implemented telemedicine solutions in order to avoid spreading the coronavirus among doctors and patients.

AIM OF THE STUDY: To analyse the knowledge, usage and attitude towards telemedicine among patients, dermatologists and other doctors during SARS-CoV-2 pandemic.

MATERIALS AND METHODS: In 2020 an original anonymous online survey was carried among 121 patients, 63 dermatologists and 50 doctors of other specialties. They filled general and specific questions regarding telemedicine. Statistical analysis was performed using Chi-Square test, statistically significant difference was at $p<0.05$.

RESULTS: In the patients group 58.7% suffered from a skin disease and more than half have been diagnosed with at least one disease other than dermatological. 79.3% have used telemedicine during the COVID-19 pandemic. However, 54.5% of our respondents viewed teleconsultations unfavourably. Furthermore, 96.6% of the dermatologists admitted that they had to schedule a visit at the office or ask for additional pictures. There was a statistical significance between dermatologists and other specialties doctors regarding telemedicine's ability to replace in office visits, use in treatment of elderly patients and duration of the teleconsultation compared to a traditional visit (all $p<0.05$).

CONCLUSIONS: Telemedicine is a useful tool for communicating with the patients but it needs to be evaluated in the context of potential limitations. It is worth mentioning that teleconsultations can delay proper diagnosis and treatment when the clinical picture requires further assessment which may lead to irreversible changes and have a potential deadly effect.

TITLE: ASSESSMENT OF THE LINKS BETWEEN METABOLOME PROFILE AND ALLERGY-RELATED PARAMETERS IN WASP VENOM HYPERSENSITIVITY PATIENTS

Author(s): Zuzanna Parfienowicz, Magdalena Krętowska

Tutor(s): Kamil Grubczak, PhD

University: Department of Regenerative Medicine and Immune Regeneration, Medical University of Bialystok

INTRODUCTION: Hymenoptera venom allergy is the most common cause of anaphylactic reactions in adults. The reason for such life threatening adverse effects is characteristic composition of the wasp venom. Despite being classified in the same group as hymenoptera, wasp and bee venoms are considered to act differently on the molecular and metabolomic level in the allergic patients. Here, for the first time, metabolome was evaluated in patients hypersensitive to wasp venom.

AIM OF THE STUDY: The aim of our study was to investigate metabolome among patients allergic to wasp venom, and moreover, to correlate metabolites with clinical parameters related to hypersensitivity.

MATERIALS AND METHODS: We evaluated parameters such as tryptase, total IgE, sIgE/total IgE ratio, and absolute basophil numbers using plasma and whole blood of patients prior therapy application. LC-MS and FIA were implemented to establish metabolome profile, performed at the Clinical Research Center, Metabolomics division.

RESULTS: We found that carnitine and its derivatives present a tendency for negative correlation with wasp sIgE and its ratio with total IgE. Furthermore, we noticed positive correlation between sphingomyelin group representatives and tryptase levels. Noteworthy, on the contrary, the specific IgE seems to negatively correlate with these compounds. Moreover, the absolute number of basophils demonstrated positive correlation with most of the significant metabolites detected.

CONCLUSIONS: To sum up, patients allergic to wasp venom present characteristic profile of metabolome. Considering reported correlations with allergy-related parameters metabolites seem to play a crucial role in the course of hypersensitivity. Further research is required for in-depth assessment of these data significance and possible use in disease detection and treatment monitoring.

TITLE: SELF-ASSESSMENT AND OBJECTIVE EVALUATION OF STEREOSCOPIC VISION AMONG DENTISTRY STUDENTS

Author(s): Anna Nowak

Tutor(s): Piotr Maciejewicz MD, PhD

University: Medical University of Warsaw

INTRODUCTION: Stereopsis is the ability to perceive depth and 3-dimensional structures. Stereoscopic vision is essential when performing the precise tasks that are performed daily by dentistry students and professionals. In recent years, augmented and virtual reality are becoming more and more popular in current dental practice as an educational, diagnostic or treatment tool.

AIM OF THE STUDY: Our study aims to compare the subjective assessment of stereoscopic vision with objectively measured stereopsis of 3rd-year dentistry students of the Medical University of Warsaw.

MATERIALS AND METHODS: The research compares stereoscopic vision examination and survey, conducted among 126 of 3rd-year dentistry students, 98 women and 28 men. In the survey, we collected the ophthalmology interview and asked about the subjective evaluation of stereopsis during daily activities and performing precise tasks. Additionally, we asked how students coped with the usage of augmented and virtual reality technology. We used the Stereo Fly Test to objectively determine the 3D vision among students. In this test the sensitivity of plates ranges from 40 to 800 seconds of arc; the higher the value, the poorer the stereoscopic vision.

RESULTS: 59% of students reported a refractive error, mainly myopia (82%). 8% of students have a medical history of strabismus, in one case concluded with strabismus surgery. In the Stereo Fly Test, 98% of participants were able to detect the depth difference in 400 seconds of arch, 90% in 200 seconds of arch, 80% in 100 and 55% in 40. Three students did not demonstrate any stereoscopic vision. On the contrary, 96% of students subjectively assessed their stereoscopic vision as very good or good in the survey. 57% of students used augmented and virtual reality, of which 97% rated the experience as good or very good.

CONCLUSIONS: In conclusion, the self-assessment of stereoscopic vision did not correlate with the objective examination of stereopsis. In major cases, the incomplete stereoscopic vision did not affect the precise tasks performing or augmented and virtual reality technology usage by 3rd-year dentistry students. We assume that the stereoscopic vision deficits could be compensated by previous, repetitive experience with the above-mentioned activities.

TITLE: THE IMPACT OF DOWN SYNDROME ON THE DENTOALVEOLAR MORPHOLOGY AND OCCLUSAL CONDITIONS

Author(s): Ewelina Dąbrowska, Damian Gruza

University: Medical University of Warsaw

INTRODUCTION: Down syndrome is one of the most common genetic disorders. Patients with trisomy of the 21st chromosome display a range of abnormalities of varying severity in the oral cavity and the orofacial complex.

AIM OF THE STUDY: The study aims to analyse and compare occlusion in children with Down syndrome in relation to healthy children in the same age group.

MATERIALS AND METHODS: The research material consisted of 22 children with Down syndrome and 33 healthy children unburdened by genetic defects, all aged 7-16. The extraoral examination included the analysis of facial features in relation to the sagittal, fronto-orbital and Frankfurt planes. During the intraoral examination the following features were assessed: Angle's class, canine class, overbite, overjet, incisor retrusion / protrusion. Abnormalities concerning the structure and number of teeth, dysfunction of the tongue, tension of the mimic and masticatory muscles were analysed as well.

RESULTS: The most common type of malocclusion among DS patients was bilateral partial crossbite - 59% vs 14% within the healthy group. A partial anterior openbite was also diagnosed more frequently (33% vs 5%). The prevalence of Angle class III was higher in children with Down syndrome (25% vs 15%). Incorrect overbite was observed in 68% of DS patients compared to 33% in the healthy group (p-value <0.013). 68% of DS patients exhibited incorrect overjet which was only observed in 37% of healthy patients (p-value <0.024). Hypodontia was diagnosed only among children with DS (50%). Muscular hypotonia occured in 55% of DS patients compared to 4% in the control group. Dysfunction of tongue muscles was also predominant in DS group (41% vs 6%).

CONCLUSIONS: Our study finds that there is a positive correlation between Down syndrome and the prevalence of various disharmonies in the stomatognathic system. They include malocclusion, teeth abnormalities concerning their number and structure, hypotonia of mimic and masticatory muscles. All of the above-mentioned abnormalities occur more frequently in children with Down syndrome compared to children unaffected by any genetic disorder.

TITLE: BIOASSAY-GUIDED ISOLATION AND IDENTIFICATION OF ANTIOXIDANT AND ANTI-TYROSINASE RARE FLAVONOID FROM *SCLERANTHUS PERENNIS*

Author(s): Jakub Gesek, Katarzyna Jakimiuk

Tutor(s): Michał Tomczyk

University: Department of Pharmacognosy, Medical University of Białystok, Poland

INTRODUCTION: The Caryophyllaceae family contains over 80 genera with more than 2600 species. One of them, genus *Scleranthus* L., comprises 11 species. The plants of *Scleranthus* are perennial herbs occupying mainly dry, sandy or disturbed habitats. The genus includes six endemic species such as *S. diander*, *S. pungens*, *S. minusculus*, *S. annuus, S. perennis,* and *S. uncinatus* widespread throughout the world. In folk medicine, *S. perennis* is used in veterinary to remedy animals that display fluctuating temperament. Although, the phytochemical composition and pharmacological activities of this plant have not been established so far.

AIM OF STUDY: Our study aimed to recognize the phytoconstituents of aerial parts of *S. perennis* and isolation and identification of bioactive compounds. Additionally, for the first time, we analyzed the antioxidant and anti-tyrosinase activities of extracts, fractions and the isolated compound obtained from *S. perennis*.

MATERIALS AND METHODS: Air-dried aerial parts of *S. perennis* were extracted by using organic solvents and then the rest of the aqueous residue was fractionated by liquid−liquid extraction with solvents of increasing polarity (Et_2O, EtOAc and *n*-BuOH). The EtOAc fraction was phytochemically studied, leading to the bioguided isolation of rare C-flavonoid (1). The structure of isolated compound was elucidated by analysis of UV, IR, ^{1}H NMR, ^{13}C NMR (1D and 2D techniques) spectra and mass spectrometry. All extracts, fractions and isolated compound (1) were also tested for their potential antioxidant (DPPH) and tyrosinase inhibitory activities.

RESULTS: Compound (1) was identified as 5,7-dihydroxy-3'-methoxy-4'-acetoxyflavone-8-*C*-*β*-D-xyloside-2''-*O*-glucoside based on chromatographical products of acid hydrolysis and spectral data. It was found that both Et_2O and EtOAc fractions are the most effective fractions in antioxidant and tyrosinase activity assays. Moreover, compound (1) showed comparable activity to the tested extracts or fractions.

CONCLUSIONS: The phytochemical and biological studies showed beneficial effects of all analyzed extracts, fractions and flavonoid compound suggesting that *S. perennis* could be a phytotherapeutic source of biological active polyphenolic compounds in natural drugs discovery.

TITLE: THE EFFECT OF RADIOIODINE THERAPY IN PATIENTS WITH SUBCLINICAL HYPERTHYROIDISM

Author(s): Barbara Emilia Nikitiuk, Paula Mantiuk, Karolina Niedzielska, Hubert Niewiński, Joanna Rucińska

Tutor(s): Saeid Abdelrazek

University: 1st Department of General and Endocrinological Surgery, Medical University of Bialystok

INTRODUCTION: Subclinical hyperthyroidism is a state of increased thyroid function with few or no clinical definitive signs or symptoms of hyperthyroidism, characterised by a decrease of serum thyrotropin (TSH) concentration below 0,1 mU/L, when serum levels of total and free thyroxine and triiodothyronin concentration are within reference ranges. The incidence ranges between 0.2% and 11.3%. The clinical diagnosis of subclinical hyperthyroidism is very difficult in the absence of the typical symptoms of hyperthyroidism therefore the use of radioisotope scan is important to confirm the provisional diagnosis. There is no strategy for the management of subclinical hyperthyroidism in Polish literature.

AIM OF THE STUDY: was to assess the influence of radioiodine (131I) therapy on the achievement of euthyroidism, prevention of adverse effects on the cardiovascular and prevent evolution to overt hyperthyroidism.

MATERIALS AND METHODS: We treated 1200 patients, aged 28–68 years; 89% of them were female and 11% male; 430 patients with multinodular goitre (MNG), and 770 patients with autonomous nodule (ATN). Some of the patients were treated with antithyroid drugs for 1 to 3 months before I131 therapy (90 patients). Malignant changes were excluded in all nodules by fine needle aspiration biopsy. All the patients had serum TSH levels <0.1 mU/l and effective T-half was more than 3 days at the time of treatment. The activity dose was calculated by the use of Marinelli's formula and ranged between 200 and 600 MBq. The absorbed dose (Gy) ranged between 180 and 300, and was proportional to thyroid volume. Follow up control was done every 6 weeks.

RESULTS: Euthyroidism achieved in 99% of patients with ATN and 94% of MNG; 1% of patients with ATN and 5% of patients with MNG develop hypothyroidism, 1% of the patients with MNG received 2nd dose of radioiodine. In all of the patients, the symptoms and signs of subclinical hyperthyroidism disappeared (palpitation, tachycardia, atrial fibrillation, exercise tolerance improved, the blood pressure normalised and the quality of life improved).

CONCLUSIONS: Our result is good and is in the range of the existing literature. The achievement of euthyroidism and the remission of the symptoms and signs of subclinical hyperthyroidism, were due to good diagnosis, well preparation of the patients; accurate measurement of administered activity, effective half-life, and well-organised follow up. We recommend early treatment of subclinical hyperthyroidism, and long period of follow up visits in our department to evaluate the long term effect of radioiodine therapy.

TITLE: DRUG HYPERSENSITIVITY REACTIONS IN CHILDREN

Author(s): Aleksandra Kwika

Tutor(s): Assoc. Prof. Beata Cudowska, Prof. Dariusz Lebensztejn

University: Department of Pediatrics, Gastroenterology, Hepatology, Nutrition and Allergology, Medical University of Bialystok

INTRODUCTION: Drug hypersensitivity reaction (DHR) is an abnormal immune-mediated reaction to medication. Symptoms can range from mild to severe and may include rash, anaphylaxis, and even serum sickness. It is a common problem in pediatric population in daily clinical practice and has a considerable impact on prescription choices. Main culprits can be difficult differentiation with infectious diseases and confirmation of diagnosis. Finally, a lot of clinical investigations show that numbers of prevalence of DHRs are overevaluated.

AIM OF THE STUDY: The aim of the study was to characterize the clinical picture of drug hypersensitivity reactions in children, with special attention to diagnosis.

MATERIAL AND METHODS: 56 children (33 boys, 23 girls) aged 5,4 to 17 years referred to our hospital with clinical history of drug hypersensitivity reactions (DHRs) were included to a four years retrospective study (2016-2020). Data to analysis involved information from medical documentation about suspected elicitors, cause of drug administration, clinical symptoms of drug hypersensitivity, time interval drug-symptoms reaction and outcomes of the additional laboratory tests.

RESULTS: The most frequently reported group of drugs were antibiotics (92,86%): amoxicillin/ clavulanate (33,93%), amoxicillin (30,36%), cefuroxime (7,14%), sulfamethoxazole /trimethoprim (5,36%), phenoxymethylpenicillin (5,36%). Maculopapular exanthema (69,86%), facial angioedema (9,59%) and urticaria (5,48%) are the most common manifestations of DHRs. Median of interval time from drug administration to symptoms appearance was 7 days. The most commonly applied diagnostic procedure was quantification of IgE antibodies (28,57%). The number of positive results (IgE concentration > 0.35 [kU/l]) was 25%. The other diagnostic tests included: C3, C4 compliment and tryptase level. All patients received recommendations to avoid medication which cause DHRs in the future. Simultaneously after reaction, the treatment was changed to different group of drugs with referral patients to an allergy outpatient clinic.

CONCLUSIONS: Drug hypersensitivity reactions in children are a serious medical challenge. Diagnosis of drug allergy has a strong impact on future therapeutic decisions and clinical picture. Therefore we should try to implement diagnostic algorithms in order to avoid misdiagnosis.

Internal Diseases

TITLE: EVALUATION OF RELATIONSHIPS BETWEEN LARGE-SCALE METABOLOMIC PROFILING AND SELECTED IMMUNOLOGICAL PARAMETERS IN HONEY BEE VENOM ALLERGIC PATIENTS SUBJECTED TO VENOM IMMUNOTHERAPY

Author(s): Wróblewska Dominika, Izdebska Wiktoria, Gronek Jacek

Tutor(s): Dr Maria Tomasiak-Łozowska, Prof. Marcin Moniuszko

Methodological collaboration: Dr hab. Michał Ciborowski

University: Department of Allergology and Internal Medicine, Medical University of Białystok

INTRODUCTION: Allergen-specific immunotherapy (AIT) is currently the only available treatment that can lead to allergen tolerance. AIT for insect venoms, also known as venom immunotherapy (VIT) has been proven effective for preventing further life-threatening allergic reactions to insect stings. To date, the mutual relationships between immunological markers of allergy or desensitization and metabolomic parameters were not studied in detail.

AIM OF THE STUDY: In this study we aimed to analyze metabolomic profiles in patients receiving honey bee venom immunotherapy and to assess potential correlations between different metabolites and selected immunological parameters (eosinophils, basophils, leukocytes, tryptase, specific IgE).

MATERIALS AND METHODS: The patients were qualified to venom immunotherapy based on their clinical symptoms, specific IgE and tryptase levels. Then they received VIT for at least 2 years and in the meantime blood samples were taken in five specific timepoints (before ultra rush; 24 hours after ultra rush; after 2-3 months when the dose of 411 mcg of the bee allergen has been achieved; after 1 year; after 2 years). We used mass spectrometry-based serum metabolite profiling to analyze metabolomic profiles of 22 patients allergic to bee venom receiving VIT. Peripheral blood eosinophil, basophil and leukocyte counts in peripheral blood as well serum tryptase and specific IgE levels were also measured.

RESULTS: At baseline, we found significant correlations among several metabolites (e.g. PC aa C40:3) and basophil counts. Moreover, at baseline specific bee IgE levels were strongly associated with PC aa C36:1, tryptase levels - with PC aa C28:1, eosinophils - with PC aa C40:4, white blood cells - with PC ae C42:4. After 2 years of VIT, specific bee IgE levels were strongly correlated with sarcosine, tryptase levels - with PC aa C32:0, and basophils - with PC aa 42:4. Finally, we observed statistically significant changes in levels of several phospholipids and aminoacids after 2 years of immunotherapy as compared to baseline (the most significant changes were noted for PC aa C34:2 and alanine).

CONCLUSIONS: Our results may contribute to better understanding of complex mechanisms of venom immunotherapy.

TITLE: PREDICTIVE CLINICAL AND LABORATORY FINDINGS IN COVID-19

Author(s): Karolina Parambul, Magdalena Staszyńska, Klaudia Wyszyńska

Tutor(s): Assoc. Prof. Anna Parfieniuk-Kowerda, MD, PhD; Diana Martonik MSc; Prof. Robert Flisiak MD, PhD

University: Department of Infectious Diseases and Hepatology, Medical University of Bialystok, Poland

INTRODUCTION: COVID-19 is a highly contagious viral disease challenging clinicians around the world. Despite mild clinical manifestation at the beginning, the infection may rapidly progress into a life-threatening condition that results in serious complications. Thus, there is an obvious need for the identification of the factors that determine potential unfavourable outcome of COVID-19.

AIM OF THE STUDY: The aim of this study was to evaluate the clinical and laboratory findings in COVID-19 patients in association with the severity of infection, in order to predict which groups of patients are at risk of poor prognosis.

MATERIALS AND METHODS: 115 patients (42,6% female) with RT-PCR-confirmed SARS-CoV-2 infection admitted to the Department of Infectious Diseases and Hepatology of the University Clinical Hospital in Bialystok between March and December 2020 were enrolled in the study. The patients were categorized into 5 groups according to the severity of SARS-CoV-2 infection. On admission the following data was collected: clinical symptoms, comorbidities and blood test results. Statistical analysis was performed with STATISTICA 13 software.

RESULTS: The mean age was 58,1 ±17,5 years. 73,9% patients were either overweight or obese. Hypertension was the most prevalent comorbidity (n=56), followed by type 2 diabetes (n=17), 13 patients had both conditions. The most common symptoms were cough (n=96) and dyspnea (n=87). The mean critical oxygen saturation was 87,1 ±8,1%. Lymphopenia was present in 33% cases. The severity of COVID-19 correlates negatively ($p<0,001$) with critical SpO2 ($Rs=-0,818$), percentage of lymphocytes ($Rs=-0,520$) and positively with IL-6 concentration ($Rs=0,519$) as well as age ($Rs=0,579$). Hypertension was significantly associated with severe illness and lower critical SpO2 ($p<0,001$).

CONCLUSIONS: Clinical and laboratory findings such as comorbidities, percentage of lymphocytes and IL-6 are useful prognostic indicators of the severity of COVID-19. A repeated analysis of these parameters may help to predict the severity of the disease, enabling earlier initiation of individualised treatment thus improving patients' prognosis and survival.

TITLE: EXTRAINTESTINAL MANIFESTATIONS OF INFLAMMATORY BOWEL DISEASE AND PATIENT KNOWLEDGE ABOUT THEM

Author(s): Natālija Prohorova

Tutor(s): Dr Poļina Zaļizko

University: Rīga Stradiņš University, Latvia

INTRODUCTION: Extraintestinal manifestations of inflammatory bowel disease are prevalent in both ulcerative colitis and Crohn's disease. Between 25-40% of IBD patients experience EIMs, commonly in the joints, skin, bones, eyes, kidneys, and liver. Patient knowledge of these manifestations is important because they affect activity of the disease and therefore doctor should be informed to adjust proper treatment. It is not clear whether patients are informed about these manifestations in Latvia.

AIM OF THE STUDY: To assess extraintestinal manifestations and patient knowledge about them.

MATERIALS AND METHODS: Study was a prospective cross-sectional and included patients from Pauls Stradins Clinical University Hospital, Latvia from January to November 2021. Inclusion criteria: histologically approved diagnosis of CD or UC and signed informed consent. Patients were interviewed and data from medical records was collected. The data was analysed using IBM SPSS Statistics 22.

RESULTS: 36 IBD patients were interviewed (19 males, mean age 40 years (SD=15.5, range 19 – 72)) 63.9% 23 UC and 36.1% 13 CD patients. Most common extraintestinal manifestations were anemia 41%, 13% arthritis, 1 patient had perianal fistulas, 1 patient had primary biliary cholangitis, 1 patient had autoimmune hepatitis, 3 patient fatty liver disease. There were patients with unclear eye and dermatological problems which were referred to specialists. 72% of patients did not know and said that doctors have not told them about possible extraintestinal manifestations and their connection with disease.

CONCLUSIONS: Patients in Latvia are not informed enough about possibility of extraintestinal manifestations of IBD and this information should be taken into account by doctors. The most common extraintestinal manifestations in our sample were anemia and arthritis.

TITLE: DIETARY RISK FACTORS OF CONSTIPATION DURING PREGNANCY

Author(s): Gintarė Urbanovičiūtė

Tutor(s): Assoc. Prof. Kristina Ryliškienė

University: Vilnius University

INTRODUCTION: Constipation is defined as infrequent, painful defecation, hard or lumpy stools, feeling of partial evacuation. Disorder is especially common in pregnant women. Constipation during pregnancy has adverse effects on the physical and mental health of the pregnant women and diminishes the quality of life. Multiple factors are associated with the prevalence of constipation, some of them can be avoided by developing good habits and adjusting diet.

AIM OF THE STUDY: To evaluate the prevalence of constipation and to identify dietary risk factors during pregnancy.

MATERIAL AND METHODS: A self-administered questionnaire was completed by 440 pregnant women during their scheduled gynecologic visits. Gathered information about women's nutrition included: food choice and frequency of consumption, coffee, alcohol and water intake, snacking and dinner eating habits. The respondents were divided into 2 groups: constipated (n=223) and not (n=217). All the results of evaluated risk factors were compared between those 2 groups.

RESULTS: 223 (50.7%) of total 440 pregnant women reported having constipation. Coffee and water intake were statistically significant ($p<0.05$) risk factors (less than 2 liters of water per day heightens the risk of being constipated). Alcohol consumption showed no link to constipation. Dietary habits and rate of consumption of following products were assessed: eggs, fish, meat, dairy products, fruits and vegetables, grains and cereals, baked goods. Statistically significant difference (($p<0.05$) between the frequency of consuming each of the products and risk of having constipation were found. Snacking between meals and eating regularly showed significant connection ($p<0.05$) to being constipated, while the choice to eat dinner or not does not seem to be of any importance.

CONCLUSIONS: Half of the participants reported being constipated during pregnancy. Diet (pattern of the most common products consumption) play significant role in development of constipation as well as habits of snacking and eating on a schedule. Liquid intake also has an important protective role in developing constipation during pregnancy.

TITLE: ANALYSIS OF EARLY CHANGES IN METABOLOMIC PROFILE OF HONEY BEE VENOM ALLERGIC PATIENTS SUBJECTED TO ULTRARUSH PROTOCOL OF SPECIFIC IMMUNOTHERAPY

Author(s): Izdebska Wiktoria, Wróblewska Dominika, Gronek Jacek

Tutor(s): Dr Maria Tomasiak-Łozowska, Prof. Marcin Moniuszko

Methodological collaboration: Dr hab. Michał Ciborowski

University: Department of Allergology and Internal Medicine, Medical University of Białystok

INTRODUCTION: Venom immunotherapy (VIT) is the most effective treatment available for patients with Hymenoptera venom allergy. VIT exerts an early, sustained and persistent protective effect and modifies the natural course of the disease. The ultrarush protocol (UR) of venom immunotherapy is an attractive approach allowing for rapid acquisition of tolerance by allergic patients.

AIM OF THE STUDY: The aim of the study was to analyze the early changes in metabolomic profile in patients subjected to ultrarush protocol of bee venom immunotherapy and to assess potential correlations between changes of metabolomic pattern and selected immunological parameters (such as levels of eosinophils, basophils, leukocytes, tryptase, specific IgE).

MATERIALS AND METHODS: The patients were qualified to venom immunotherapy based on their clinical symptoms and identification of specific IgE. VIT was started using the ultra-rush protocol. During the ultrarush protocol, patients received within first hours 6 injections of bee venom starting from 0.1 mcg to 50 mcg in order to reach a cumulative dose of 111.1 mcg. Blood samples were taken before and 24 hours after initiation of ultrarush. The metabolomes of 22 patients allergic to bee venom receiving VIT according to ultrarush protocol were analyzed by mass spectrometry. Peripheral blood eosinophil, basophil and leukocyte counts in peripheral blood as well serum tryptase and specific IgE levels were also examined.

RESULTS: 24 hours after initiation of ultrarush immunotherapy we observed statistically significant changes in basophil counts as well as in several phospholipids and aminoacids such as PC aa C36:0, PC ae C36:5, PC ae C38:6 and PC aa C38:0). At baseline and 24 hours after ultrarush, specific IgE levels for bee venom were significantly correlated with PC aa C32:1, PC aa C34:1, PC aa C34:3, PC aa C36:1 and taurine. Moreover, statistically significant correlations between tryptase levels and PC aa C28:1, PC ae C36:1, SM (OH) C14:1, SM (OH) C16:1 and SM (OH) C22:2 were also noted before and after ultrarush immunotherapy.

CONCLUSIONS: Our data reveal previously unknown associations between several metabolites and immune cells and mediators in the course of early stage of venom immunotherapy.

TITLE: HEADACHE ASSOCIATED WITH PERSONAL PROTECTIVE EQUIPMENT USE IN FRONTLINE HEALTHCARE WORKERS DURING COVID-19 PANDEMIC

Author(s): Reda Timofejavaitė

Tutor(s): Assoc. Prof. Kristina Ryliškienė

University: Vilnius University, Faculty of Medicine

INTRODUCTION: During COVID-19 pandemic personal protective equipment (PPE) has become mandatory in hospitals all over the world. Healthcare workers have noticed that PPE can cause negative effects, one of which is headache.

AIM OF THE STUDY: The aim of this study was to determine the association of PPE use with new-onset headache and exacerbation of pre-existing headache among frontline healthcare workers (working in COVID and emergency departments) in COVID-19 pandemic.

MATERIAL AND METHODS: A descriptive cross-sectional study was conducted in Lithuania in February 2021. The compiled questionnaire was distributed using social networks. Descriptive analysis was used on demographic data. Binomial logistic regression models were used to compare variables with the development of new-onset headache. A p-value <0.05 was considered statistically significant.

RESULTS: 214 frontline healthcare workers have completed the questionnaire: 91 (42.5%) reported new-onset headache, 74 (34.6%) - pre-existing headache. In pre-existing headache group 52 (24.3%) experienced headache with PPE use and 22 (10.3%) did not report headache with PPE. 49 (66.2%) participants reported aggravation and change of pre-existing headache with PPE use: 25 (33.78%) more headache days with PPE use; 16 (21.6%) – more severe headache, 18 (24.3%) – increase in headache attack duration; 26 (35.1%) – increase in pain medication use. The severity of headache while using PPE was rated as moderate (4-6 points out of 10) in numeric pain rating scale by 82 (38.3%) participants. Binomial logistic regression analysis stated that average PPE use duration (OR=1.63, CI: 1.25-2.12, p<0.001) is statistically significant and independently associated with new-onset PPE related headache. Pre-existing headache (OR=1.30, CI: 0.69-2.46, p=0.421), use of face shields (OR=1.73, CI:0.689-4.32, p=0.244) and protective eyewear (OR=1.26, CI: 0.66-240, p=0.483) was associated with PPE related headache, but not statistically significant.

CONCLUSIONS: Frontline healthcare workers with longer average PPE use duration are at greater risk to develop new-onset PPE associated headache. Pre-existing headache may be aggravated by PPE use and could be associated with higher risk of experiencing headache while using PPE.

TITLE: EFFECT OF LUMBAR NEUTRAL GAB HVLA TECHNIQUE ON MUSCLE ACTIVITY AND MOVEMENT AMPLITUDE IN CHRONIC NON-SPECIFIC BACK PAIN

Author(s): Viktoras Simanavicius

University: Klaipeda University

INTRODUCTION: Low Back pain is a societal problem, and it is especially relevant for developed countries. Health professionals claim that about 80 to 90 percent. Adults have felt or continue to feel back pain at least once in their lives. As a result, work capacity is lost. This problem is relevant to people of different professions. The back is the most sensitive part of the body, which can be the first to report any abnormalities in the body. It is very important that people understand and know how to protect their spine and avoid back pain, which can later lead to more complex problems. It is important to develop a conscious public attitude towards maintaining and strengthening health as a basic socially valuable living condition.

AIM OF THE STUDY: The aim of the study was to determine the effect on muscle activity and movement amplitude in chronic nonspecific back pain using Data LITE technology, after performing Lumbar Neutral Gap manipulation technique.

MATERIALS AND METHODS: The study was performed with the voluntary consent of the subjects. The study included patients who complained of prolonged back pain. Participants ranged in age from 45 to 60. A medical history, NRS was collected. Data LITE technology EMG and goniometer system was used for testing, with which muscle activity and range of motion were assessed. Manipulation of Lumbar Neutral gab technique HVLA was used in the treatment. Three manipulations were performed on different days per week for each patient. EMG and goniometer measurements were performed before manipulation and the day after the last manipulation.

RESULTS: The Lumbar Neutral gab technique reduced pain and improved lateral flexion and back extension amplitude for most. Also, muscle activity was higher in the majority after the study.

CONCLUSIONS: The Lumbar neutral gab technique of HVLA has been effective in reducing pain and increasing muscle activity which can be based on a reflexogenic response to manipulation. This reflexogenic effect is hypothetical in order to create a reflex mechanism that reduces pain and improves muscle hypertension and function improvement.

TITLE: EPIDEMIOLOGY AND MOLECULAR-GENETIC FEATURES OF MYELODYSPLASTIC SYNDROME OF THE CHILDREN'S POPULATION OF THE REPUBLIC OF BELARUS

Author(s): Padholina A. A., Golozhina M. E., Belash A. E.

Tutor(s): Migal N.V.

University: Belorussian State Medical University; National Scientific and Practical Centre for Childhood Oncology, Hematology and Immunology

INTRODUCTION: Myelodysplastic syndromes (MDS) are a heterogeneous group of neoplastic bone marrow diseases characterized by cytopenia, symptoms of dymyeloprosesis and a high risk of transformation to acute myeloid leukemia or acute lymphoblastic leukemia. While the incidence of MCF among all age groups is 0.22-13.2 per 100,000 population, the relative rarity of MDS among children (global incidence between 0.001 and 0.004 patients per 1,000,000 population) leads to a lack of data for epidemiological analysis, phenotypic and genotypic features of the diagnosis. At present, the only radical treatment for MDS is the transplantation of hematotic stem cells, in the case of AML or ALL development, such patients are provided with polychemotherapy prior to hematotic stem cells.

AIM OF THE STUDY: Study the epidemiological characteristics of the Ministry of Children's Affairs in Belarus, analyse the indicators of the primary diagnostic system, as well as an analysis of the flow structure and the outcomes of MDS, followed by comparisons for predictive correlations.

MATERIALS AND METHODS: In this study, the history of 13 MDS patients receiving treatment was analysed retrospectively National Scientific and Practical Centre for Childhood Oncology, Hematology and Immunology from 2000 to 2019. All calculations were done using SPSS Statistics for Windows version 23.0.

RESULTS: In the sample studied, it was found that girls predominate in MDS (69.23 per cent), while boys had MDS prevalence of 30.77 per cent. Structure of forms of MDS in the population considered: refractory anemia with excess of blast (RAEB) – 53.85%, refractory anemia (RA) - 23.08%, refractory anemia with an excess of blasts in transformation (RAEBt) – 23.08%. The most frequent form of MDS among girls was RAEB – 55.56%, RA was detected in 33.33% of girls, RAEBt was diagnosed in 11.11% of girls. Among boys, 50% are diagnosed with RAEB, and 50% with RAEBt. Mutations in the RUNX1 gene were found in 22.22% of girls (15.38% of all cases); mutations of the gene encoding FLT3 were found in 25% of boys (7.69% of all cases). For 22.22 per cent of girls, monosomy 7 (15.38 % of all cases) was found in 50 % of cases of boys diagnosed with MCH with trisomy 8 (15.38 % of all cases).

CONCLUSIONS: MDS is highly heterogeneous and the development of the disease is often closely related to genetic predisposition factors. Further in-depth research on molecular genetic factors in the development of MDS is necessary to identify risk groups, improvement of diagnostic criteria and optimization of treatment tactics for patients with this diagnosis.

TITLE: LIVER PATHOLOGY IN CHILDREN WITH EPSTEIN-BARR VIRUS INFECTION

Author(s): Kinga Półkośnik

Tutor(s): Kamila Kwiatek- Średzińska MD, Dariusz Lebensztejn MD PhD Professor of Pediatrics

University: Medical University of Bialystok, Department of Pediatrics, Gastroenterology, Hepatology, Nutrition and Allergology

INTRODUCTION: Epstein- Barr virus (EBV) infections in children are most often asymptomatic, but can also lead to infectious mononucleosis. Common complication of EBV infection in paediatric population is hepatitis, in most cases self- limiting.

AIM OF THE STUDY: The aim of the study was to evaluate the prevalence and the type of liver pathology in children diagnosed with EBV infection.

MATERIALS AND METHODS: Data from consecutive children diagnosed with EBV infection hospitalized in our department from 2016 to 2020 were retrospectively reviewed. Liver pathology was defined as elevated activity of liver enzymes (alanine transaminase (ALT) and/or aspartate transaminase (AST) and/or gamma-glutamyl transpeptidase (GGT)) in serum and/or pathological changes in transabdominal ultrasonography (USG).

RESULTS: EBV infection was diagnosed in 91 children in the years 2016-2020. Liver pathology was detected in 54 of 91 children (59,3%). 54 patients (59,3%) had elevated ALT serum activity, of which 31 (57,4%) more than 3 times upper limit of normal (ULN), 39 (42,9%) had elevated AST activity and 22 children (24,2%) had elevated GGT serum activity. Pathological changes in transabdominal USG (liver enlargement and/or gallbladder wall thickening) were found in 18 of 54 patients (33,3%) with elevated liver enzymes activity. Children with liver pathology were older, had lower platelet (PLT) count and higher creatinine concentration. There were no statistically significant differences between liver pathology existence and sex, body mass index (BMI), white blood cell (WBC) and red blood cell (RBC) counts, total bilirubin level and C-reactive protein (CRP) concentration.

CONCLUSIONS: Hepatic impairment is present in a significant proportion of children with EBV infection in the form of hypertransaminasemia, elevated GGT serum activity and pathological changes of the organ in ultrasound. It is more common in older children.

Public Health and Pharmacy I

TITLE: ATTITUDES ABOUT TESTICULAR SELF-EXAMINATION AMONG POLISH MALES

Author(s): Balcerek A.[1], Majchrzak N.[2], Rembisz M.[1], Kasperczak M.[1]

Tutor(s): Milecki T.[1], Antczak A[1]

University: [1] Department of Urology, Poznan University of Medical Sciences, Poland
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INTRODUCTION: Epidemiological data indicate an increased incidence of testicular cancer (TC), making it the most common malignant tumor in men from aged 15–45. Oncological and urological associations recommend that men with specific TC risk factors should regularly perform a testicular self-exam (TSE).

AIM OF THE STUDY: Discover the attitudes among Polish males regarding TSE and factors (environmental, social, educational) that affect intention to perform TSE.

MATERIALS AND METHODS: An original survey containing 21 questions was used to conduct a study among the Polish branch of VW (Volkswagen Poland) employees.

RESULTS: A total of 522 fully completed questionnaires were collected. The mean age of the surveyed respondents was 32 years. Information about TC and how to perform TSE was obtained by 34.4% (n = 185) of the men. It was shown that the following factors increase men's intention to perform TSE: TC in their family member ($p < 0.05$; HR = 5.9; 95% CI: 1.5–23.0), GP's(General Practitioner) recommendations ($p < 0.001$; HR = 6.8; 95% CI: 3.2–14.3), concern expressed by their partner ($p < 0.001$; HR = 3.3; 95% CI: 2.1–5.3), and social campaigns ($p < 0.001$; HR = 2.6; 95% CI: 1.5–4.6).

CONCLUSIONS: Approximately half of young polish males do not perform TSE. Access to information on TC prevention is limited. Further action is needed to improve men's awareness of TC and TSE.

TITLE: VACCINATIONS AGAINST SARS-COV-2 - GREAT FEAR OR GREAT OPPORTUNITY?

Author(s): Alicja Kawalec, Adrianna Biecka, Dominika Krupnik, Wojciech Grabowski

Tutor(s): Krzysztof Wilczyński, MD; prof. dr. hab Małgorzata Janas-Kozik, MD, PhD

University: Medical University of Silesia in Katowice, Faculty of Medicine

INTRODUCTION: The invention of the SARS-CoV-2 vaccine was undoubtedly a turning point in the pandemic. In less than a year, various formulations were developed, based on scientific worldwide cooperation on the scale never seen before. Despite the high chance of stopping the pandemic by vaccination, a large part of the population is still categorically unwilling to vaccinate. Arguments are raised that there are not enough studies to determine if vaccines are safe and efficient.

THE AIM OF STUDY: The aim of the study was to assess the readiness to be vaccinated and general feeling about vaccinations among students of various faculties from all over Poland.

MATERIALS AND METHODS: The study has been conducted by using a two-part, anonymous questionnaire. Each participant was asked to complete similar versions at three different time points of the pandemic. The first part required general information, collected data on exposure to COVID-19 infection and disease statistics among respondents and their relatives and included questions about subjective opinion about vaccination against SARS-CoV-2 and willingness to vaccinate. The second part consisted of multiple relevant research questionnaires, whereby each approach included Fear of COVID-19 Scale (FOC).

RESULTS: The median FOC score obtained by the participants (N=283) presented moderate decrease – part 1=14.92±4.86; part 2=14.53±4.65; part 3=13.52±4.69 ($p<0.001$). At the last point of our study, the lowest median score was obtained by medical students – 13.82±4.27, 40% of participants were already vaccinated with at least one dose and 91.5% were pro vaccinations. The number of participants who were eager to get vaccinated, grew from 83.6% to 88.7% ($p=0.03$) between the two last time points.

CONCLUSIONS: Even though the public opinion is largely inaccurate, which can also be shaped by inadequate media coverage, examined students appear to be relieved by the possibility of vaccination and use it widely. What is more, willingness to be vaccinated continuously grows among students from all faculties.

TITLE: REASONS NOT TO REACH HELP FROM EMOTIONAL HELPLINES AMONG PATIENTS HOSPITALISED IN MENTAL HEALTHCARE INSTITUTIONS IN LITHUANIA

Author(s): Augusta Valentukevičiūtė, Kotryna Liberytė

University: Faculty of Medicine, Vilnius University

INTRODUCTION: Lithuania remains one of the most suicidal country in the world. More than 5 emotional support helplines are available for people who are thinking of suicide or are experiencing a mental health crisis. These helplines are free charge, anonymous and confidential. What role do they play among the people, who are already having a professional support and treatment in mental healthcare institutions?

AIM OF THE STUDY: to access whether patients treated in mental healthcare facilities have heard of the possibility to contact emotional support lines and whether they know the main principles of these helplines. Evaluate the reasons for not seeking help from emotional support lines and examine the opinion of this type of support among these who have reached emotional helpline before.

MATERIALS AND METHODS: An anonymous questionnaire survey was conducted. The survey included 45 patients: 26 were treated in VmPSC (Vilnius City Mental Health Centre) I acute, 11 in the borderline conditions ward, and 8 in RPLC (Republican Center for Addictive Disorders) Motivational therapy and rehabilitation ward. The questionnaire included questions covering demographic data, questions about suicide, experienced crises, knowledge about the activities of emotional support lines, reasons for not contacting emotional support lines and assessment of the quality of helpline services.

RESULTS: 24 (53%) men and 21 (47%) women were interviewed, with a mean age of 43 ± 16,29 (80%) patients reported having heard of emotional helplines, but only 5 (14%) have actually contacted them. 38 (84%) patients said they know which phone number to reach the ambulance. The “Youth Line” is the helpline that most of interviewed patients know about – 17 (38%). Loss of a relative and divorce were the most common crises experienced by the interviewed patients, 16 (36%) and 13 (29%) respectively. In the event of crisis 21 (47%) patients would consult a specialist (psychologist, psychotherapist, psychiatrist), 13 (29%) would seek help from the family, 3 (7%) indicated that they would turn to emotional helplines. The majority of patients indicated that in the case of crisis they haven’t seek help from emotional helplines because they didn’t remember about the possibility of such help.

CONCLUSIONS: 80% of patients have heard of emotional helplines, but only 14% of them have sought such help.

TITLE: DISCRIMINATION BASED ON SEXUAL ORIENTATION: PREVALENCE AND LINKS WITH PSYCHOSOCIAL DISTRESS AMONG STUDENTS OF VILNIUS UNIVERSITY

Author(s): Augusta Valentukevičiūtė, Kotryna Liberytė

University: Faculty of Medicine, Vilnius University

INTRODUCTION: According to the survey done by European Union Agency for Fundamental rights in 2019, 43% of Lithuanian LGBTI repondents claimed to experience harassment due to being LGBTI in the 12 months before the survey (EU average – 38%). Other studies show a pattern, that LGBTI are more likely to commit suicide compared to heterosexual people. This and other data show that there might be a correlation between discrimination based on sexual orientation and psychological distress.

AIM OF THE STUDY: 1) To examine the cases of experienced and noticed cases of discrimination based on sexual orientation amon homosexual, bisexual and heterosexual Vilnius University students; 2) To compare our results with EU and Lithuania survey data; 3) To investigate discrimination cases in the Vilnius University and its possible impact on psychological stress.

MATERIALS AND METHODS: With help from University LGBT+ group, Lithuanian Gay League and internet website Gayline.lt a questionnaire among Vilnius University students was conducted. The form includes a CORE-OM test to assess psychological distress and several questions about sexual orientation, perceived and experienced discrimination on the grounds of sexual orientation in society, its frequency, nature, questions about perceived discrimination in the enviroment of Vilnius University. 331 valid forms were included, distinguishing 2 contrl groups (heterosexual men (N=40) and women (N=153)) and 4 research groups (homosexual men (N=41) and women (N=23), bisexual men (N=18) and women (N=56). Statistical analysis were performed with R.3.3.2 program Commander and IBM SPSS 21.0 program.

RESULTS: Among all study groups, homosexual (55%) and bisexual (39%) men claimed to experience discrimination on the grounds of sexual orientation over a 12-month period the most often. Bisexual women (21%) claimed to be discriminated on the grounds of sexual orientation the least. All CORE-OM values for bisexual people (both sexes) were higher. Values of risk subscale (to self or others) were higher in homosexual respondents. Psychological distress measures were higher in those respondents who: 1) claim to notice humiliating on the grounds of sexual orientation; 2) hear negative comments related with sexual identity; 3) hide their sexual orientation.

CONCLUSIONS: Homosexual and bisexual men were the most likely to experience discrimination. CORE-OM values were highest for bisexual respondents.

TITLE: CHARACTERISTICS OF HOSPITAL EMERGENCY DEPARTMENT PATIENTS - RESULTS OF A SURVEY.

Author(s): Joanna Jamiołkowska, Agnieszka Popławska, Jędrzej Warpechowski

Tutor(s): Piotr Wojskowicz, MD, PhD

University: Students' Scientific Group at the 1st Clinic of General and Endocrine Surgery**,** Medical University of Bialystok

INTRODUCTION: Hospital emergency departments are overcrowded and time to receive help is often extended. Identifying the social group most likely to be assisted in a hospital emergency department may enable this social group to receive more attention from general practitioners, which could ultimately relieve the workload of hospital emergency departments.

AIM OF THE STUDY: The aim of this study was to characterise a group of patients presenting to a hospital emergency department.

MATERIALS AND METHODS: An anonymous questionnaire was conducted among patients presenting to the hospital emergency department in Bialystok. Data collection from 200 participants took place from December 2020 to March 2021.

RESULTS: The age of the patients ranged from 18 years old to 90 years. The mean age of patients was 47.7 and the median was 46.5. 46.5% of men and 53.5% of women took part in the survey.
66.3% lived in a town with more than 20,000 inhabitants, 20.9% in a town with up to 20,000 inhabitants and 12.8% in a village. 52% had secondary education, 33.2% had higher education, 9.2% had primary education and 5.6% were students.

CONCLUSIONS: The majority of patients presenting to the emergency department were female, middle-aged with a secondary education. Therefore, this is a group that should be under special surveillance by general practitioners.

TITLE: WORKPLACE VIOLENCE AND DEPRESSION AMONG MEDICAL STUDENTS WORKING IN HEALTHCARE IN LATVIA

Author(s): Natālija Prohorova

Tutor(s): dr. Artūrs Miksons

University:RSU Psychosomatic Clinic, Rīga Stradiņš University

INTRODUCTION: According to the World Health Organization, healthcare workers are at high risk of being exposed to violence all around the world. 8-38% of healthcare workers suffer physical violence during their careers, while many more are subjected to psychological violence. Medical students might be even at higher risk because of lack of experience and knowledge. There is lack of studies about violence among medical students working in healthcare in Latvia.

AIM OF THE STUDY: The aim of the study was to assess violence distribution and depression among medical students working in healthcare in Latvia.

MATERIAL AND METHODS: This is cross-sectional study performed February to March 2021 via online survey. A validated Negative Acts Questionnaire Revised (NAQ-R) for workplace violence measurement was used and validated Patient Health Questionnaire (PHQ-9) for depression was used. Medical students working in healthcare in Latvia were included and medical students who never worked in healthcare for control group were included. Data was analysed using IBM SPSS Statistics.

RESULTS: 224 Respondents (103 working at the moment of the study, 35 stopped working recently, 86 control group) filled the questionnaire. Mean age was 22.6 (SD 3.03, range 18-38) 87.9% females. 35% of respondents have experienced violence in current job, 12,6% in one of previous jobs, 2.9% in all previous jobs and 1.9% in many of previous healthcare jobs. Mean score of NAQ-R was 35.05 (SD 12.99, Max 76) which shows that participants on average were “sometimes bullied” at workplace. 15.5% experienced violence more often in Covid-19 pandemic. There was no statistically significant difference observed on NAQ-R score depending in which healthcare profile student works, also on whether student work shift work, depending on work load and experience time in healthcare. Mean PHQ-9 score was 10.34 (SD 5.79) which indicates moderate depression on average student. There was statistically significant ($p=0.034$) difference of NAQ-R score among participants with different severity of depression. There was no correlation between NAQ-R score and PHQ-9 score.

CONCLUSIONS: Workplace violence is prevalent among medical students working in healthcare in Latvia. Covid-19 pandemic is a contributory factor for workplace violence in healthcare. This sample did not show correlation between experienced violence and depression.

TITLE: CHANGES IN PHYSICAL ACTIVITY, PSYCHOLOGICAL HEALTH BEFORE AND DURING THE COVID-19 PANDEMIC IN LITHUANIA

Author(s): Emilija Višinskytė

Tutor(s): Prof. Natalja Fatkulina, Ph.D.

University: Vilnius University, Vilnius, Lithuania

INTRODUCTION: Physical activity is one of the pillars of illness prevention. Unfortunately, one that many forsake in preference to sedentary activities. With this change preventable and costly health issues like cardiovascular diseases and mental health disorders have an opportunity at becoming an even greater risk. With the word at a standstill with the threat of the COVID-19 infection, physical activity and in particular exercise is in danger of being eliminated from the daily lives of those in lockdown.

AIM OF THE STUDY: To compare physical activity, psychological health before and during the COVID-19 pandemic.

MATERIAL AND METHODS: A survey was shared online twice. Once before (end of 2019) and the second time during (end of 2020) the pandemic. There were 5266 participants in the first and 2286 in the second survey. Physical activity was evaluated by the type of work people did, exercise and the number of hours per day given to particular activities. Psychological health was assessed by the feeling of depression symptoms in the past year. Statistical analysis was done using Microsoft excel.

RESULTS: In the first survey 29% of participants were men, the age varied from 16 to 98 years (M=38; SD+/-12). In the second survey 22% of surveyees were men, the age varied from 16 to 98 years (M=40; SD+/-13). Before the pandemic 47% of respondees stated that they work a sedentary job. This number rose to 49% during the pandemic, while the percent of workers who have a sitting/standing work arrangement decreased by 2. 32% of participant before the pandemic reported that they did not exercise compared to 36% of respondees during the pandemic. The number of people who exercise themselves changed from 35 to 51% as did the amount of people who work out at a fitness centre (from 27 to 9%). The number of h/d given to sedentary activities increased during the pandemic and the h/d for low, medium and high-intensity decreased. The number of people who felt depressions symptoms more commonly rose during the pandemic while the number of those who did not have these feeling at all fell.

CONCLUSIONS: Physical activity decreased during the pandemic. Depression symptoms were prominent during the pandemic when compared to before. Since the existing research suggest a link between physical activity and physical, psychological health it is important to implement ways for communities to stay active during the lockdown period.

TITLE: ASSOCIATIONS BETWEEN PHYSICAL ACTIVITY AND PSYCHOLOGICAL, PHYSICAL HEALTH DURING THE COVID-19 PANDEMIC IN LITHUANIA

Author(s): Emilija Višinskytė (Faculty of Medicine, Vilnius University, Vilnius, Lithuania)

Tutor(s): Prof. Natalja Fatkulina, Ph.D. (Institute of Health Sciences, Faculty of Medicine, Vilnius University, Vilnius, Lithuania)

INTRODUCTION: Many studies have linked physical activity to both physical and psychological health. Exercise has been investigated as a possible treatment for depression and anxiety with result that can compare to that of drugs. The ongoing pandemic has been a challenge not only to staying active but also to our mental health. Yet the aspect of mental health has not been the forefront of media outlets or government initiatives.

AIM OF THE STUDY: To analyze the associations between physical activity and psychological, physical health during the COVID-19 pandemic.

MATERIAL AND METHODS: 2286 people answered a survey online. Physical activity was assessed by the activity level in their work, exercise and the number of hours per day spend on different intensity activities. Physical health was determined by a self-reported evaluation of general wellbeing in the past year. Psychological health was assessed by the feeling of depression symptoms in the past year. Statistical analysis was done using Microsoft Excel, R Commander. Differences between results were deemed statistically significant when $p<0.05$.

RESULTS: In the survey 22% of respondents were men, the age varied from 16 to 98 years (M=40; SD+/-13). There was a significant link between the type of work and feelings of depression ($p<0.05$). People who had a sitting and those who had a sitting/standing job where more likely to experience depression symptoms a lot and a little bit more than usual. While those who had a job that required them to move a lot were most likely to have not had any feelings of depression. The type of exercise was tied to feelings of depression and general health evaluation ($p<0.05$). Those who did not exercise were more prone to common feeling of depression. Among those who did not have any depression symptoms 47% were professional athletes. 47% of those who exercised professionally, 23% who exercised themselves, 35% who worked out at a fitness centre and only 7% of those who did not exercise evaluated their health as great. Participants who gave more h/d for sedentary activities had worse health evaluations and more common depression symptoms.

CONCLUSIONS: Higher levels of physical activity throughout the day resulted in better health evaluation, less symptoms of depression. Guidelines and encouragements from governments, employers to stay physically active could have a significant impact on the overall wellbeing of the population.

Public Health and Pharmacy II

TITLE: THE ANTI-VACCINE MOVEMENTS - A TRIVIAL IDEA OR A SERIOUS PROBLEM OF OUR TIME?

Author(s): Sierka Oskar, Surma Stanisław

Tutor(s) : dr hab. n. med. Józefa Dąbek

University: Student Research Group at the Chair and Clinic of Cardiology of the Faculty of Health Sciences in Katowice, Medical University of Silesia in Katowice

INTRODUCTION: The anti-vaccine movement has been around, since the 19th century when Edward Jenner discovered the smallpox vaccine. Since the 1990s, anti-vaccination movements have been gaining more and more supporters, and the ideas promoted by their members are met with growing interest and recognition of the society.

AIM OF THE STUDY: The aim of the research was to find out about the knowledge of society as well as the degree of acceptance and reasons for the emergence of anti-vaccine movements.

MATERIALS AND METHODS: 700 (100%) participants took part in the study. The average age was 35.85 (± 16.2) years. The study was conducted using the proprietary questionnaire consisting of 58 questions.

RESULTS: 676 (96.57%) of the respondents encountered the anti-vaccination movements and the ideas propagated by these movements. In the group of 700 (100%) respondents, 30 people (4.29%) supported the anti-vaccine movement. Among those who denied the effectiveness of vaccinations, 14 (46.67%) people declared higher education, and 282 (40.29%) of the respondents confirmed that they know people who support anti-vaccination movements. The reasons for their creation were most often mentioned by the lack of sufficient knowledge about vaccinations (504; 72%) as well as the recklessness and lack of trust of patients in health care workers.

CONCLUSIONS: 1. Members of the study group have knowledge about the presence in the society of people who negate the effectiveness of protective vaccinations. 2. Despite access to information on vaccines based on scientific evidence, there is still a group of people who reject their effectiveness. 3. There is a need to educate the society on health risks resulting from abandoning the use of vaccines.

TITLE: SUBTROCHANTERIC FEMUR FRACTURE: DEATH RATE IN LITHUANIA

Author(s): Ugne Vaiciulyte

Tutor(s): Prof. dr. (HP) Vidmantas Alekna

University: Vilnius University

INTRODUCTION: The highest mortality from a hip fracture is in the first year after injury. Subtrochanteric fractures of the femurs (SFF) are rare compared to other hip fractures. More so, there is a lack of data on frequency and death rate in the group of SFF.

AIM OF THE STUDY: To evaluate death rates SFF in Lithuania.

MATERIAL AND METHODS: Data on the epidemiological situation of SFF in a period of 2011 and 2019 of patients over 40 years of age were obtained from the Institute of Hygiene. A total of 4165 patients with SFF were diagnosed (ICD-10 code S72.2). Recurrent data and cases diagnosed not in the hospitals were not included in the further study to select primary patients. Statistical analysis was done using Microsoft Excel 2010, R Commander. Differences between results were deemed statistically significant when $p<0.05$.

RESULTS: A total of 2165 patients were included in the study from 89 medical institutions in Lithuania, including 1846 women and 957 men (65.86% and 34.14%, respectively). The gender of 17 individuals was unknown. Mean age was 74.96 years (SD 13.58). In total 1577 of the patients with SFF passed away. 160 of those patients died in the hospital setting, the rest – after discharge from the hospital. Mean age of deceased patients was 79.47 years (SD 11.08). Those with SFF had a longer life expectancy than in general population: female had 2.6 years longer, male - 3.5 years. More women than men passed away (59.6 % and 49.7 %, respectively, $p<0.05$). Death rate did not correlate with hospitalisation duration nor season of the year when diagnosed ($p>0.05$). The majority of the patients (30.81%) passed away within the first 3 months of the hospitalisation.

CONCLUSIONS: Life expectancy of patients with SFF was longer compared to the general population. Death rates correlated with female gender, but seasonality and duration did. Most of the patients deceased within three months of the hospitalization.

TITLE: SUBTROCHANTERIC FEMORAL FRACTURE FEMUR EPIDEMIOLOGY IN LITHUANIA IN 2011-2019

Author(s): Ugne Vaiciulyte

Tutor(s): Prof. dr. (HP) Vidmantas Alekna

University: Vilnius University

INTRODUCTION: Since populations are aging worldwide, the incidence of the hip fractures are also increasing rapidly. Subtrochanteric femoral fractures (SFF) are rare compared to hip fractures, but information on their frequency is lacking.

AIM OF THE STUDY: To evaluate the epidemiological situation of SFF in Lithuania in 2011-2019.

MATERIALS AND METHODS: Data on the epidemiological situation of SFF in 2011-2019 of patients over 40 years of age were obtained from the Institute of Hygiene. A total of 4165 patients with SFF were diagnosed (ICD-10 code S72.2). Recurrent data and cases diagnosed not in the hospitals were not included in the further study to select primary patients. Statistical analysis was done using Microsoft Excel 2010, R Commander. Differences between results were deemed statistically significant when $p<0.05$.

RESULTS: A total of 2165 patients were included in the study from 89 medical institutions in Lithuania, including 1846 women and 957 men (65.86% and 34.14%, respectively). The gender of 17 individuals was unknown. Mean age was 74.96 years (SD 13.58). When comparing life expectancy and the patient's age at SFF, it should be noted that they were similar for the women (averages 79.9 years and 79.4 years, respectively), but differed for the men by 3 years (averages 69.5 years and 66.2 years, respectively). Risk of SFF over the age of 40 was 16/100,000 for the men and 23/100,000 for the women. The duration of hospitalization tends to increase from 2011 to 2019, but this was not statistically significant ($p>0.05$). For male patients, the frequency of fractures did not depend on the season of the year, but female fractures were more common in the fall and winter seasons ($p>0,05$). Hospitalization time increased significantly from 12.17 days in the 50-54 age group to 36.11 day in the older than 85 years patient group ($p<0,05$). Male hospitalization after fracture was shorter than female (24.59 and 31.40 days, respectively, $p<0,05$).

CONCLUSIONS: For women, SFF fractures were twice as common, occurred in older age, and coincided with women's life expectancy. In men, SFF fractures were less common, at the younger age, and on average three years earlier than the average life expectancy in men. Women and older patients were hospitalized for longer.

TITLE: WINTER SWIMMING – A NEW TREND OR AN EFFICIENT METHOD OF AVOIDING INFECTIONS? PARENTS' ATTITUDE TOWARDS IMMUNIZATIONS AND NATURAL METHODS OF STRENGTHENING IMMUNITY

Author(s): Dawid Lewandowski, Marta Jasiel

Tutor(s): dr n. med. Kacper Toczyłowski

University: Department of Pediatric Infectious Diseases, Medical University of Bialystok

INTRODUCTION: Natural methods of strengthening immunity have always been a popular topic. Nowadays, winter swimming seems to be the trendiest method of boosting immunity - photos of people swimming in freezing water have overwhelmed social media. But we cannot forget that vaccines are the only specific and the most effective method of avoiding infections.

AIM OF THE STUDY: In this study we analyzed parents' attitude towards vaccines and natural methods of boosting immunity. In addition, we compared responses received from parents surveyed in social media and parents surveyed in person.

MATERIALS AND METHODS: We created a 24-item anonymous questionnaire with questions concerning general attitudes toward vaccines, their safety, infectious diseases and immunity. The study was carried out in the Pediatric Infectious Diseases Department in Bialystok, Poland. Questionnaires were given to parents to fill out. They were subsequently collected or handed in the following day. Also, an online version of that questionnaire was collected on various Facebook groups engaging in topics of parenthood.

RESULTS: We collected 2464 online and 194 paper surveys. Twenty-six % of parents surveyed online answered that there is no need for vaccinating children, while in the paper version only 5% chose that answer. Parents surveyed online more often preferred “natural methods” of strengthening immunity over immunizations (31% vs. 11%, $p < 0.0001$). Both groups did not choose winter swimming as the most efficient method. Balanced diet, everyday physical activity, breast feeding, herbs and oral supplements, vitamins and probiotics were chosen as more efficient immunity boosters than winter swimming.

CONCLUSIONS: Generally, vaccines are considered the most effective support against infections. Parents answering online more often chose “natural methods” of strengthening immunity, but both groups evaluated their efficiency similarly. Winter swimming was one of the least chosen answers, which may suggest that this is rather a trendy, but insignificant activity. Anti-vaccination beliefs are overrepresented in social media, compared to reality, while people supporting immunizations do not express their opinions in social media so willingly.

TITLE: POLISH HIGH SCHOOL AND MEDICAL STUDENTS' PERCEPTION OF THE CREDIBILITY OF ONLINE MEDICAL INFORMATION IN THE ERA OF COVID-19 PANDEMIC

Author(s): Anna Rapiejko

Tutor(s): prof. dr hab. n. med. Piotr Lipiec

University: Medical University of Warsaw

INTRODUCTION: The Internet and social media are becoming increasingly important in providing medical knowledge, especially during the COVID-19 pandemic. High school (HS) and medical (M) students facing such information-rich environment, may not pay adequate attention to appropriate use and appraisal of information sources.

AIM OF THE STUDY: The study aimed to assess perception of HS and M students of the reliability of medical information found in the Internet and social media during the COVID-19 pandemic.

MATERIALS AND METHODS: Two anonymous online surveys were created and distributed through social media among Polish HS and M students in November 2020. The analyzed group consisted of 332 M students representing 12 medical universities and 563 HS students from schools across the country.

RESULTS: 33,7% of M and 12,6% of HS students use the Internet to obtain medical knowledge several times a day. 62,8% of all students believe that the COVID-19 pandemic increased this frequency. When asked about factors affecting the reliability of online medical information sources, both HS and M students rated the author's specialty overlapping with the issue as the most important one (M students 4.14 points on a 0-5 point scale, HS students 3.51). M students also indicated the author's scientific title (3.78) and the author's completed medical studies as well as place of work (both 3.53). 62,4% of M students believe that medical studies have significantly changed their perception of the credibility of online medical knowledge sources. 49,6% of HS students and 42,5% of M students, when encountering incorrect medical information on the Internet, never take any action or post any comment clarifying the issue.

CONCLUSIONS: The Internet and social media as a source of medical knowledge are widely used by HS and M students, with increasing frequency in the era of the COVID-19 pandemic. Students seem to understand the need to evaluate the credibility of online sources of medical information, however they often do not take any action when confronted with erroneous information.

TITLE: STRESS MANAGEMENT OF NURSES SERVING IN THE MILITARY MEDICAL SERVICE

Author(s): Laura Bartusevičiūtė

Tutor(s): Dr. Jonas Basanavičius, professor doctorate Aelita Skarbalienė, professor doctorate Artūras Razbadauskas

University: Klaipeda University, Lithuania

INTRODUCTION: Prolonged and constant stress is harmful to nurses' health and leads to organisational inefficiency, high staff turnover and decreased job satisfaction[1]. The use of stress coping techniques is directly related to the physical and mental health [2].

AIM OF THE STUDY: was to analyse the stress management of nurses serving in the military medical service.

MATERIALS AND METHODS: A survey using the quantitative research approach was carried out.Survey instrument consisted of three parts: demographic questions, the Perceived Stress Scale (PSS) [3], and the Modified Stress Coping Model[4]. The PSS served to understand nurses' perceived stress level. While the Modified Stress Coping Modelrevealed the stress coping techniques military nurses use.
In total 95nurses, serving in the military medical service and having a valid nurse's license, were involved in the study. Descriptive statistics and correlation analysis wereused for data analysis.

RESULTS: Nurses serving in the military medical service experience moderate level of stress and tend to use problem–solving stress coping techniques. However, avoidance techniques could be meet sometimes. The correlation between the stress level and some sociodemographic characteristics was found, i.e.longer period of service ($p<0,05$) and previous experience of working in civilian health facility ($p<0,05$) are related to the lower stress level.

CONCLUSIONS: Nurses serving in the military medical service experience moderate level of stress and use problem–solving stress technique to cope with it.

TITLE: THE RELATIONSHIP BETWEEN COMMUNICATION AND EMOTIONAL INTELLIGENCE

Author(s): Lina Gedrime

University: Klaipeda University, Vilnius University, Klaipeda State University of Applied Sciences

INTRODUCTION: Communication and emotional intelligence are particularly noteworthy for effective teamwork. If communication between health care professionals is not effective, patient safety is at risk for few reasons: the lack of important information, possible misinterpretation of the information, unclear orders given and received, and overlooked changes in patient status.

AIM OF THE STUDY: The study aimed to find out the level of communication and emotion competences of healthcare professionals and relationship between emotional intelligence and communication in primary care.

MATERIALS AND METHODS: A study was conducted in a sample of 241 healthcare professionals from different Lithuanian primary health centers in June-July 2019. A questionnaire-based survey was carried out. The Lithuanian version of Profile of Emotional Competence (PECIt) was used for measuring emotional competence of research participants, while Interpersonal Communication Skills Inventory was used for revealing the level of the main competences of research participants, i.e. speaking (sending clear message), listening, giving and getting feedback, and handling emotional interactions.

RESULTS: The results show quite strong significant correlations between every communication skill and emotional competences in the research. The analysis of the communication of people in different positions with colleagues and patients revealed that physicians find it easiest to communication with others. And the lowest results were for nurses. However, nurses find it easy to communicate with other nurses and assistances although having difficulty communicating with a head nurse of the department. On the other hand, the results showed that head nurses can easily communicate with colleagues and patients, but have difficulty communicating with subordinates, i. e. nurses.

CONCLUSIONS: The results of the study show that medical professionals with higher emotional intelligence have better communication skills.

TITLE: HOW PHYSICALLY ACTIVE WERE POLISH UNIVERSITY STUDENTS DURING COVID-19 PANDEMIC?

Author(s): Alicja Jodczyk, Przemysław Kasiak

Tutor(s): dr n. med. Daniel Śliż

University: Medical University of Warsaw

INTRODUCTION: The COVID-19 pandemic and the governmental restrictions influenced every domain of life. University classes transitioned to online- learning. Staying at home and closure of gyms could have changed Physical Activity (PA) of students and led to being largely inactive.

AIM OF THE STUDY: To assess how physically active were students of Polish universities during an average week of the pandemic.

MATERIALS AND METHODS: We designed an online survey and shared it via different social media channels (from 22nd February 2021 to 16th March 2021). It contained questions from IPAQ- Short Form and one author's question. We collected data from 1491 Polish students, 1200 met the study conditions (77,25% females, 22,25% males, 0,5% did not specify gender). 49,75% were medical university students. We measured BMI index and level of physical activity for every person. We calculated walking, moderate, vigorous, and total MET-min/week and grouped students into 3 categories: low, moderate, and high PA.

RESULTS: 41,42% (n=497) of students were in low, 33,17% (n=398) in moderate and 25,41% (n=305) in high PA category. Average sitting time was 9,27 h. Average BMI was 22,26 kg/m². 11,5% (n=138) participants were underweight (BMI<18,5), 69,91 % had normal weight, 14,67% (n=176) were overweight (BMI≥25,0) and 3,92% (n=47) obese (BMI≥30,0). Studying at a medical university was correlated with a higher amount of physical activity (p<0,1). Correlation between higher BMI and lower total MET-min/week value was not statistically significant (p>0,1). 71,92% (n=863) reported that the pandemic negatively influenced their PA level, 8,25% (n=99) did not see any changes and 19,83% (n=238) noticed a positive impact.

CONCLUSIONS: Over 40% of Polish students did not meet the criteria to be classified as 'moderate' which is defined as accumulating a minimum level of activity. Students spent most of the day sitting. Most of them saw negative changes in their PA during the pandemic. This can lead to a higher risk of cardiovascular disease and a range of chronic health conditions in the future.

TITLE: THE RISK FACTORS FOR GESTATIONAL DIABETES: CHUCB'S EXPERIENCE

Author(s): Sara Guimaraes

Tutor(s): Dr José Moutinho, Dr Sara Nunes

University: Beira Interior University

INTRODUCTION: gestational diabetes is the most common complication of pregnancy and its prevalence is increasing in the last decade. Since it's associate to diverse negative fetomaternal outcomes, is necessary to value the risk conditions of this pathology. Furthermore, and being pregnancy a state of controlled inflammatory stress, inflammatory parameters have been correlated with development of different obstetric pathologies and these must also be valued as possible predictive markers.

AIM OF THE STUDY: Determine the prevalence of gestational diabetes in pregnant women at the Centro Universitário Cova da Beira, as well as to investigate risk factors for the development of gestational diabetes and analyze the role of the inflammatory ratios as predictive markers.

MATERIALS AND METHODS: a retrospective cross-sectional observational study carried out using clinical processes of pregnant women, whose delivery occurred in CHUCB, Covilhã, between January, 2018 and December, 2019. Statistical analysis was performed using Microsoft Excel and IBM SPSS 25.0® software.

RESULTS: In the present study, the prevalence of gestational diabetes between January, 2018 and December, 2019 was 9,9%. The average age of pregnant women was 31,96 +/- 5,46 years of age and statistical association had been verified between gestational diabetes and pregnants with more than 35 years old ($p< 0,001$). Besides that, pregnant women with gestational diabetes presented statically significative association with the absent of university education ($p = 0,027$); obstetric background of abortion ($p = 0,003$); background of gestational diabetes in a previous pregnancy ($p < 0,001$); personal history of autoimune disease ($p = 0,002$) and body mass index ≥ 25 kg/m2 ($p < 0,001$). The analysis of the Odds Ratio determined that the most relevant risk factors were the gestational diabetes' background (OR: 7,576) and the previous IMC ≥ 25 kg/m^2 (OR: 4,009). Logistic regression showed similar values. No statistical associations were found between inflammatory parameters and the development of DG.

CONCLUSIONS: Access to specialized care during pregnancy, as well as planning, are essential for the maintenance of maternal-fetal health. Pregnant women with Gestational Diabetes´ background and with overweight or obesity must be object of a prenatal intervention more attentive towards early detection of Gestational Diabetes and prevention of the morbidities associated with it.

Surgery and Gynecology

TITLE: WHY DO POLISH WOMEN USE HORMONAL CONTRACEPTION? - A CROSS-SECTIONAL STUDY

Author(s): Karolina Czarnecka, Karolina Gasz

Tutor(s): Monika Grymowicz, MD

University: Department of Gynecological Endocrinology, Medical University of Warsaw, Warsaw, Poland

INTRODUCTION: The hormonal contraception is not only used as an effective pregnancy prevention but also as a treatment for many conditions. The latest data from the Central Statistical Office showed a shift in contraceptive methods choice in the population of Polish women. A steady increase in contraceptive prevalence, usage of condoms and hormonal contraception has been observed.

AIM OF THE STUDY: The aim of this study was to investigate indications for hormonal contraception, which type of contraceptives prevails and whether sociodemographic, health care characteristics and current COVID-19 pandemic have an impact on it.

MATERIALS AND METHODS: A cross-sectional survey was conducted among 1009 Polish women, aged 15-69, past and current hormonal contraceptive users. An anonymous questionnaire, containing 16 multiple-choice and close-ended questions was distributed online. Surveyed women were divided into two groups: the birth control group and the other indication group. Descriptive statistics and logistic regressions analysis were used. Categorical variables were compared using the chi-squared test.

RESULTS: Of 1009 women involved in the study, 774 women were current and 235 were past hormonal contraceptives users. The most common indications for taking hormonal contraception were respectively: birth control, dysmenorrhea, irregular menstruation, acne and heavy menstrual bleeding. Regardless of an indication, the prevailing form of hormonal contraception was combined oral contraceptive pill. The main reason for discontinuation was side effects. COVID-19 situation had an impact on the contraceptive decision of only 8% of respondents. Birth control group (n=860) and other indication group (n=149) do not differ in terms of age, income, education and having children. Women in the birth control group less often suffered from chronic illness, declared to be single and stated not to have or have sex less than couple times a month. One-third of birth control group used condoms as an additional form of contraception.

CONCLUSIONS: Combined oral contraceptive pill is widely used by Polish women as a birth control and as a treatment of numerous gynecological conditions. Women using hormonal contraceptives as a birth control are more likely to be in relationship, not suffer from a chronic illness and have sex at least couple times a month.

TITLE: PHARYNGOPLASTY WITH DORSAL PALATAL FLAP EXPANSION: EVALUATION OF A MODIFIED SURGICAL TREATMENT METHOD FOR OBSTRUCTIVE SLEEP APNEA SYNDROME – FIRST REPORT

Author(s): Polecka Agnieszka, Fiedorczuk Piotr, Stróżyński Adam

Tutor(s): Professor Olszewska Ewa, MD, PhD

University: Medical University of Bialystok

INTRODUCTION: A constant evolution of surgical techniques for pharyngoplasties has been observed based on a better understanding of the anatomy, the evolution of patient selection and surgical philosophy to perform a functional treatment for obstructive sleep apnea syndrome (OSAS).

AIM OF THE STUDY: To prospectively assess the effectiveness and safety of a new technique of the surgical approach, i.e., pharyngoplasty with dorsal palatal flap expansion (PDPE) for OSAS.

MATERIALS AND METHODS: A total of 21 participants (mean age 49,9, mean BMI 32,5) underwent the same procedures according to the study protocol: a medical history, visual analog scale for snoring loudness, BMI, endoscopy of the upper airways, polygraphy. All patients filled questionnaires: Epworth Sleep Scale (ESS), Short Form Health Survey 36 (SF-36). All patients failed CPAP therapy and were selected for PDPE under general anaesthesia. The same evaluation was performed 11±4,91 months postoperatively.

RESULTS: By polygraphy, 21 patients enrolled were divided into 4 moderate OSAS (15≤ AHI<30), and 17 severe OSAS (AHI ≥ 30). There was an improvement in all measured sleep study characteristics (AHI median: pre-45.7/h vs post-29.3/h, $p=0.011$, $r=0.394$; LOS median: pre-74% vs post-82%, $p<0.01$, $r=0.54$; T<90% pre-19,8% vs post-4.6%, $p=0.02$, $r=0.485$).
Mean ESS decreased from 10,76 to 6,24. The snoring loudness significantly decreased. No significance was obtained in the results of SF-36 pre- and postoperatively, however patients reported subjective improvement in sleep quality.

CONCLUSIONS: The results of this study demonstrate that PDPE is a safe and effective method for the treatment of OSAS in adults. PDPS allows to reduce the sphincter action of the transverse part of palatopharyngeal muscle. By creating dorsal palatal flaps and removal of fat pads from lateral palatal space, the control over lateral pharyngeal walls tension is possible. These changes made during the PDPE allow not only for bigger oropharyngeal space but also to stiffen the lateral wall to minimize the dynamic collapse and even alter the airflow dynamics in the upper airways.

TITLE: IMPACT OF COVID-19 PANDEMIC ON STAGING OF OVARIAN CANCER AMONG NEWLY DIAGNOSED PATIENTS – SINGLE-CENTER STUDY

Author(s): Gronostajska Izabela[1], Strosznajder Anna Kalina[1], Kubica Katarzyna[1], Lenartowicz Izabela[1], Naronowicz Gabriela[1]

Tutor(s): lek. Dobroch Jakub[2]

University: [1] Students' Scientific Group at the University Oncology Center, Medical University of Bialystok;
[2] Department of Gynecology and Gynecologic Oncology, University Oncology Center, Medical University of Bialystok

INTRODUCTION: In response to the COVID-19 pandemic, hospitals worldwide admit a smaller number of patients in comparison to previous years - including those with ovarian cancer and suspicion of malignancy. Ovarian cancer has poor prognosis and is often diagnosed in an advanced stage due to its asymptomatic progression. Reduced health care availability only delays further its diagnosis.

AIM OF THE STUDY: The study aimed to determine whether the staging of ovarian cancer among patients admitted during the coronavirus pandemic is of higher grade in comparison with patients diagnosed before the first pandemic wave.

MATERIALS AND METHODS: The study consisted of 77 patients with primary ovarian cancer admitted to the University Oncology Center in Białystok between 14.03.2019 and 14.03.2021. We divided patients into two groups, first one being diagnosed before the pandemic between 14.03.2019-14.03.2020, and the second – diagnosed during pandemic-associated restriction. Both groups were compared according to age, histopathologic type, FIGO staging and presence of symptoms (hydrothorax and ascites) in order to assess the advancement of neoplastic processes. Statistical analysis was performed with Mann-Whitney U test using StatSoft Statistica Software. Statistical significance level was set at 0,05.

RESULTS: Before the pandemic, 47 patients were admitted with a median age of 61. During the pandemic, 30 patients were admitted with a mean age of 59. There were no significant differences in the type of the ovarian cancer (p=0,40). In both groups the most common type was high grade serous adenocarcinoma. In the first group patients with FIGO III and IV accounted for 57,45% of the whole study group, where else in the second group patients with FIGO III and IV accounted for 66,67%. Although the percentage was higher in the second group, the difference was not statistically significant (p=0,43). Patients were similarly often symptomatic both before and during the pandemic. Hydrothorax or ascites appeared in 32% of patients from the first group and in 27% of patients from the second group (p=0,68).

CONCLUSIONS: In this single center study a smaller number of ovarian cancer diagnosis has been observed during the pandemic. Without regard to healthcare availability, ovarian cancer remains the disease that is diagnosed in the advanced stage due to its biology, clinical course and late-onset symptoms.

TITLE: TREATMENT EFFECTIVENESS IN SNORING AND OBSTRUCTIVE SLEEP APNEA PATIENTS

Author(s): Olszewska Natalia, Vasilenok Natalia, Fiedorczuk Piotr

Tutor(s): Ewa Olszewska, Professor, MD

University: Medical University of Bialystok

INTRODUCTION: Radiofrequency volumetric tissue reduction of lower turbinates, soft palate, and tongue base is widely used as a minimal invasive surgery for snoring and obstructive sleep apnea (OSAS).

AIM OF THE STUDY: To prospectively assess the efficacy and safety of radiofrequency bipolar diathermy for snoring and OSAS patients.

MATERIALS AND METHODS: All patients enrolled in the study (mean age 36.58±7.94, mean body mass index 27.61±3.33) underwent the same procedures according to the study protocol pre- and 2-3 months postoperatively: a medical history, endoscopy of the upper airways, polygraphy (sleep study type III). All patients filled questionnaires: Epworth Sleep Scale (ESS), the visual analog scale for snoring loudness (VAS), STOP-Bang, Pittsburgh Quality of Sleep (PSQI), Short Form Health Survey 36 (SF-36), and VAS for pain level in 1st, 3rd, 5th, 7th and 14th day postoperatively. Patients underwent multilevel surgery (palatoplasty and tongue base volume reduction with/without tissue reduction of lower turbinates) under local anesthesia as a single-stage procedure.

RESULTS: By polygraphy, patients were divided into mild (5≤Apnea/Hypopnea Index AHI<15) and moderate (15≤AHI<30) OSAS. There was a tendency to improvement in all measured sleep study parameters (AHI median: pre 12.3 vs post 8.2, Oxygen Desaturation Index median: pre 10.45 vs post 8.65, Lowest oxygen saturation median: 85% vs post 86%, Time with saturation <90% 0.2 % vs post 0.05%, mean snoring time pre 17.3 vs post 16.75). The mean ESS preoperatively was 5.5±6.15 and postoperatively 8±5.1. The improvement was observed in the VAS evaluation for snoring. The mean value of VAS preoperatively changed from 9.4 to 3.6 postoperatively. The improvement was also obtained in STOP-Bang, PSQI, and SF-36 questionnaires. Pain postoperatively was well tolerated. The most severe one was observed on the 1^{st} and between 5^{th}-7^{th}day.

CONCLUSIONS: Minimal invasive surgeries used for this study are safe, effective, and well-tolerated methods for primary snoring and mild obstructive sleep apnea syndrome in adults which can be performed as a single-stage procedure. It results in a decrease in snoring loudness and improvements in sleep parameters in the majority of cases.

TITLE: "ANALYSIS OF TREATMENT METHODS AND OUTCOMES FOR PERIANAL ABSCESS (PA) AND FISTULA IN ANO (FIA) IN INFANTS" – RESEARCH PAPER

Author(s): Natalia Hawryluk[1]

Tutor(s): dr n. med. Wojciech Choiński[2], dr n. med. Michał Puliński[2]

University: [1] Students' Paediatric Surgery Science Club, Department of Surgery, Collegium Medicum, University of Warmia and Mazury in Olsztyn
[2] Clinical Department of Paediatric Surgery and Urology, Department of Surgery, School of Public Health, University of Warmia and Mazury in Olsztyn

INTRODUCTION: Perianal abscess (PA) is a relatively common condition in children and occurs in 0.5 to 4.3% of the infant population. In the majority of cases, it is associated with fistula in ano (FIA). Surgical treatment of FIA includes fistulectomy, fistulotomy or, rarely, cryptotomy.

AIM OF THE STUDY: The aim of the study is to perform a retrospective analysis of treatment methods and outcomes for PA and FIA in infants at the Department of Paediatric Surgery and Urology of the Regional Specialised Children's Hospital in Olsztyn, Poland, in 2014-2019.

MATERIALS AND METHODS: From January 2014 to December 2019, 44 infants with diagnosed PA and FIA were treated. The majority of patients were boys: 41 (93%) and only 3 (7%) were girls. For PA, three different treatment methods were used: incision and drainage, fistulotomy or fistulectomy.

RESULTS: Out of 44 treated infants with diagnosed PA and FIA, 29 were treated only by incision and drainage. Among them, 19 were cured. FIA was identified in 9 patients and fistulectomy or fistulotomy was performed. In this group, there was 1 recurrence, which was retreated with fistulectomy and cured. In 6 patients, PA drained spontaneously; in 3 of them there was recurrence and FIA was diagnosed during another hospital stay. There were 7 fistulotomies and 14 fistulectomies performed and their efficacy was 100 vs 93%, respectively.

CONCLUSIONS: Fistulotomy is the most effective and safest method of FIA treatment in infants. In every case of perianal abscess diagnosis, a fistula in ano should be looked for.

TITLE: THE INFLUENCE OF POTENTIAL RISK FACTORS ON THE PREVALENCE OF OVARIAN CANCER AMONG POLISH PATIENTS

Author(s): Natalia Welc, Abdulaziz, G**.**

Tutor(s): Gąsiorowska E., MD, PhD

University: Department of Gynaecology, Obstetrics and Gynecologic Oncology, Division of Gynecologic Oncology, Poznan University of Medical Sciences, Poznan, Poland

INTRODUCTION: Ovarian cancer is the fifth most common cancer, the fourth most common cause of death from cancer, and the first from gynecological cancers among Polish women. It is very often asymptomatic in the early stages or presents symptoms that are not pathognomonic. There is no effective screening available. It frequently leads to late diagnosis, which highlights the meaning and purpose of this research.

AIM OF THE STUDY: Identification of relevant risk factors of ovarian cancer based on the comparison between results of the survey and published research.

MATERIALS AND METHODS: The surveys from 45 patients diagnosed with ovarian cancer and treated in the Department of Gynecologic Oncology were collected. They consisted of questions concerning basic information (age, height, blood type), gynecologic (menarche, menopause, pregnancies, breastfeeding, lifetime ovulatory cycles, miscarriages, endometriosis, PCOS, use of contraception, hormone replacement therapy), and general medical history (arterial hypertension, diabetes, use of painkillers). Subsequently, statistical analysis was performed. The results were compared to current research.

RESULTS: Analysis of collected surveys determined if examined factors affect the probability of coming down with ovarian cancer. The number of lifetime ovulatory cycles exceeded the median value of the study group in 57% of patients with advanced cancer (FIGO III/IV). A positive correlation between women's height and age of diagnosis was found. 54% of patients with advanced cancer declared the age of menarche lower than the median value of the study group (13,5 years). 48% of women presented blood type A and 15% blood type 0 (versus respectively 38% and 37% of these types in the Polish population). 13% of women never gave birth, 28% never breastfed. 15% of patients reported taking painkillers, 15% - oral contraception, 11% - hormonal replacement therapy.

CONCLUSIONS: The conducted study confirms the influence of numerous factors on the likelihood of ovarian cancer's occurrence. An extremely clear relationship with the number of lifetime ovulatory cycles and age of menarche should be noted. It is essential to continue exploring potential correlations, especially on larger population groups and educating women to raise awareness of ovarian cancer. The presented results ought to have an impact on the diagnostic and therapeutic process.

TITLE: RISK FACTORS FOR HYPERTENSIVE DISEASE IN PREGNANCY. CHUCB'S STUDY

Author(s): Joana Araújo da Silva

Tutor(s): Professor Doctor José Alberto Fonseca Moutinho; Professor Doctor Sara Monteiro Morgado Dias Nunes

University: University of Beira Interior – Faculty of Health Sciences

INTRODUCTION: Hypertensive diseases of pregnancy, such as preeclampsia, are one of the main causes of maternal and fetal morbidity and mortality, however, there are not any effective methods of predicting and preventing these disorders, which is why continuous research in this area is particularly important.

AIM OF THE STUDY: To identify the prevalence of hypertensive diseases during pregnancy in women assisted at CHUCB, the main risk factors involved in their development and the role of inflammatory indices as prognostic markers. The final goal is to adopt preventive measures in the management of pregnant women.

MATERIALS AND METHODS: Retrospective observational investigation, based on clinical processes of pregnant women and their respective clinical analyzes, whose delivery took place at CHUCB, between January 2018 and December 2019. 939 pregnant women were considered in this study. Comparative statistical analysis between groups was performed using IBM SPSS 25.0®.

RESULTS: The incidence of hypertensive diseases of pregnancy at CHUCB in the study period was approximately 5.3%. Pregnant women with any hypertensive pregnancy disorders (HPD) showed a statistical association with age ≥ 35 years ($p < 0.011$); body max index prior to pregnancy ≥ 25 kg/m² ($p < 0.020$); presence of family history of hypertension ($p < 0.005$); chronic hypertension ($p < 0.002$) or history of hypertensive pregnancy disorder ($p < 0.001$). The group of pregnant women with preeclampsia or eclampsia (PEE) showed a statistical association with age ≥ 35 years ($p < 0.034$); chronic hypertension ($p < 0.001$); history of hypertensive pregnancy disorder ($p < 0.001$) and gestational hypertension ($p < 0.001$). In the analysis of relative risk, the most prevalent risk factors were a history of hypertensive pregnancy disorder (OR:8,838) for HPD and the presence of gestational hypertension (OR:13,470) for the PEE group. It was not possible to identify known risk factors such as diabetes mellitus, gestational diabetes or autoimmune diseases. No associations were found in this study between inflammatory ratios (NLR, PLR, SII) and the development of hypertensive diseases of pregnancy.

CONCLUSIONS: The multifactorial nature of hypertensive diseases of pregnancy validates the necessity for preventive interventions and a holistic approach through changing lifestyles and multidisciplinary health care.

PhD I

TITLE: MICROGLIA-SURFACE FRACTALKINE RECEPTOR MEDIATES CHRONIC STRESS-INDUCED PAIN IN MICE

Author(s): Barbara Fulop, Agnes Hunyady, Nikolett Szentes

Tutor(s): Eva Borbely, Adam Denes, Nikolett Lenart, Zsuzsanna Helyes

University: Department of Pharmacology and Pharmacotherapy, Medical School and János Szentágothai Research Centre, University of Pécs, Hungary

INTRODUCTION: Neuroinflammation mediated by microglia-activation is known to play a role in the development and progression of chronic pain. The microglia-surface fractalkine receptor (CX3CR1) involved in mood disorders, stress and inflammatory pain. However, there are still no data about its role in stress-induced pain conditions.

AIM OF THE STUDY: Therefore, we studied the possible involvement of the CX3CR1 receptor in a mouse model of chronic restraint stress-induced pain.

MATERIALS AND METHODS: Male fractalkine receptor-deficient (KO) and C57Bl/6J wildtype (WT) mice were restrained in a plastic tube for 6 hours daily for two weeks. The cold tolerance of the paw was determined weekly by withdrawal latency from icy water, the mechanonociceptive threshold by dynamic plantar esthesiometry. Thymus and adrenal-gland weights were measured at the end of the experiments. IBA1 immunohistochemistry was performed to visualize the numerical and morphological changes of the microglial cells in stress- and pain-related brain regions.

RESULTS: Restraint stress induced significant, approximately 60-70% cold tolerance decrease from the first week in the WT, but significantly less in the KO mice. Mechanonociceptive threshold decrease (hyperalgesia) was 15-20% after two weeks in the stressed WT group, but not in fractalkine receptor deficient group. Chronic stress induced similarly decreased thymus and increased adrenal gland weights in both groups by the end of the experiment. Significantly increased number of Iba1-positive microglial cells was detected in the central amygdala in stressed WT, but not in KO mice. Stress-induced microgliosis was shown in the CA3 hippocampal area in both groups. Additionally, stress significantly increased activated microglia density in the CA3 and the somatosensory cortex in WT, but not in KO mice.

CONCLUSIONS: We provide evidence that microglia activation by the CX3CR1 receptor and consequent neuroinflammation mediate chronic stress-induced pain. These results suggest analgesic potentials of fractalkine receptor blocking drugs in these conditions.

TITLE: ASSESSMENT OF THE EFFICACY AND SAFETY OF F4H5 IN PATIENTS AFTER THE REMOVAL OF SILICONE OIL FROM THE VITREOUS CHAMBER

Author(s): lek. Wojciech Stec, lek. Barbara Pieklarz

Tutor(s): dr n. med. Paweł Kraśnicki, dr hab. Renata Zalewska prof. dr hab. Zofia Mariak

University: Department of Ophthalmology, Medical University of Bialystok

INTRODUCTION: Silicone oils are an important tool used in vitreoretinal surgery as long and short-term endotamponades. Complications of oil endotamponade use include emulsification, adhesion of fine oil droplets to the IOL, and the possibility of developing secondary glaucoma. One way to remove emulsified silicone oil after endotamponade is to use the biocompatible solvent F4H5 (Perfluorobutylpentane).

AIM OF THE STUDY: The aim of the study was to evaluate the efficacy and safety of F4H5 used as a solvent in patients after removal of silicone oil from the vitreous cavity.

MATERIALS AND METHODS: A retrospective study included 27 patients who underwent vitreous tamponade with silicone oil and were treated surgically at the Department of Ophthalmology in Białystok due to retinal detachment (25 patients) or a foreign body stuck into the retina (2 patients). The patients were divided into two groups. The first group consisted 13 patients aged 24 to 92 years, 5 women and 8 men, where F4H5 was used as a solvent, and the control group, 14 patients, aged 45 to 76 years, 8 women and 6 men who underwent standard surgery and removal of silicone oil from vitreous chamber. The efficacy and safety of the use of F4H5 were assessed on the basis of the examined parameters: best corrected visual acuity, intraocular pressure, need for anti-glaucoma treatment, number of corneal endothelial cells, presence of emulsified oil in the anterior chamber and in the vitreous chamber.

RESULTS: Statistically significant differences ($p < 0.05$) were obtained for the visual acuity parameter. There were no statistically significant differences in the parameters of intraocular pressure, anti-glaucoma treatment, presence of emulsified oil in the anterior chamber and in the vitreous chamber. The number of corneal endothelial cells is noticeable, which may decrease after the use of F4H5.

CONCLUSIONS: F4H5 is a safe solvent, helpful in removing emulsified silicone oil from the vitreous cavity. When using F4H5 to remove oil particles from the anterior chamber, the corneal endothelium may be decompensated.

TITLE: THE INFLUENCE OF MAXILLOFACIAL MORPHOLOGY ON TEMPOROMANDIBULAR JOINT DEGENERATIVE ALTERATIONS AND CONDYLE POSITION ASSESSED BY CBCT IN ORTHODONTIC PATIENTS-A PILOT STUDY.

Author(s): Sebastian Dygas, DDS, PhD student

University: Department of Orthodontics, Medical University of Bialystok

INTRODUCTION: The relationship between occlusion, craniofacial morphology and the appropriate position of the condyles in the temporomandibular joint (TMJ) has been the subject of debate for many years. The growing number of patients presenting temporomandibular joint disorders have renewed interest in this topic. One important group of such patients are those with radiologically detectable degenerative changes, indicating an ongoing process of remodeling of the bony components of the temporomandibular joint. Correct diagnosis in this group is crucial when planning orthodontic treatment, during which the initial position of the condyles is often changed. Currently, orthodontics specialists do not have a conclusive opinion on the relationship between cephalometric variables and the occurrence of intraarticular disorders and degenerative changes within the temporomandibular joint.

AIM OF THE STUDY: The aim of the study was to investigate the differences in the facial morphological characteristics and condyle-fossa relationship of patients exhibiting skeletal class II deformity with and without temporomandibular joint degenerative disease.

MATERIALS AND METHODS: Twenty-four patients with skeletal class II malocclusion were included in this study; these patients were classified into two groups (twelve patients each) on the basis of the condylar features shown in cone-beam computed tomography (CBCT) scans: normal group and degenerative joint disease group. Condylar spatial analysis was performed and cephalometric parameters were acquired.

RESULTS: Degenerative joint disease group patients presented higer values of basal angle (ML/NL), mandibular plane angle (ML/NSL) and overjet, lower values of overbite. This group was also characterised by significantly lower values of superior (SS) and posterior (PS) articular joint space in both joints.

CONCLUSIONS: Maxillofacial morphology may have a substantial impact on the prevalence of TMJ changes as well as the malposition of the condyles in articular fossa.

TITLE: CHOLESTEROL END-CAPPED POLY(*N*-ISOPROPYLACRYLAMIDE)S AS A FIRST STEP OF CREATION OF NEW DRUG DELIVERY CARRIERS

Author(s): Sylwia Milewska, Paweł Misiak, Izabela Kurowska, Karol Rogowski

Tutor(s): Dr hab. Katarzyna Niemirowicz-Laskowska; Prof. Halina Car, Dr Iwona Misztalewska-Turkowicz; Agnieszka Z. Wilczewska

University: Department of Experimental Pharmacology, Medical University of Bialystok

INTRODUCTION: According to the International Agency for Research on Cancer WHO data shows that the cancer burden rises to 18,1 million new cases and 9,6 million cancer deaths in 2018. Therefore, proper and effective treatment for patients with cancer is extremely important. Nowadays, nanotechnology have attracted widespread interest due to the possibility of application in many medical areas, especially in cancer treatment. Delivering a therapeutic compound to the target place, at the right time, and in the right amount is the general features of smart drug delivery system (SDDS) and one of the major challenges of modern medicine. Among the different classes of drug carriers, thermoresponsive polymers are the most often investigated. It is due to the flexibility in the control of chemical composition and functions of macromolecules, and in the control of the stimulus which may be either internal or external.

AIM OF THE STUDY: The aim of the study is investigation of a series of cholesterol end-capped poly(*N*-isopropylacrylamide)s polymers with different-average molar masses. Study of ability to self-organization into micelles and biological properties.

MATERIALS AND METHODS: The polymers were synthesized by RAFT-MADIX polymerization and characterized by different physicochemical techniques. Hemolysis test was used to assess hemocompatibility of proposed carriers. The influence of the structural and morphological features of polymers, on the viability of fibroblast and glioblastoma cells was tested using the neutral red uptake assay and LDH release assay.

RESULTS: Based on results from physicochemical analysis, stable micelles of sizes around 20 nm were obtained. Hemolytic activity tests confirmed that the obtained systems are non-hemolytic. Fibroblast and glioblastoma cells viability measurements revealed their high compatibility with the representative of host physiological cells and significant toxicity to pathological ones.

CONCLUSIONS: The application of well-defined polymeric nano-systems creates new approaches in cancer treatment which are used to improve the right management of oncological patients.

TITLE: ASSESSMENT OF NUTRITIONAL BEHAVIOR AMONG PATIENTS TREATED IN THE INFERTILITY TREATMENT CLINIC

Author(s): Adrianna Zańko

Tutor(s): Robert Milewski

University: Department of Statistics and Medical Informatics, Medical University of Bialystok

INTRODUCTION: Many factors affect fertility, including lifestyle components such as diet. In the context of nutrition for fertility, there is no ideal diet that will answer all problems. However, based on the latest research, some recommendations can be made on the basis of which lifestyle adjustments can be made to improve fertility. It has been known for a long time that the attitudes of women and men to lifestyle changes and their eating behaviors differ. By examining this approach, analyzing the diet - we are able to determine what may be a problem for each of the genders.

AIM OF THE STUDY: The aim of the study was to assess and compare the differences in nutritional behaviour between men and women, treated in the infertility treatment clinic .

MATERIALS AND METHODS: After achieving the permission from Bioethics Committee, there were done surveys among 52 patients from KRIOBANK, which is an infertility clinic in Białystok. In the group - 18 people were men and 34 women.. The results were analyzed in programe named Statistica 13.1.

RESULTS: There were statistically significant differences in the frequency of consumption of several food products between women and men. The women consumed less frequently white bread, rice and pasta ($p = 0.03$), lard, tallow and bacon ($p = 0.04$), fast food ($p = 0.007$), and alcohol ($p = 0.04$). In the women's diet there was a greater amount of plant-based beverages ($p = 0.02$). Men more often than women engaged in additional physical activity ($p = 0.03$). A positive correlation was found between the interest in their diet and the consumption of sweets and crisps among women ($p = 0.01$; $R=0,46$) as well as a positive correlation between the interest in their diet and alcohol consumption among men ($p = 0,02$; $R=0,6$).

CONCLUSIONS: Despite the alleged interest in their own diet, there were numerous nutritional errors among both sexes. Men had a worse nutritional profile and women were less eager for additional physical activity, which may be an important indicator for planning further education. Further research in this direction is worth considering.

TITLE: THE INFLUENCE OF A POLYPHENOL-RICH EXTRACT FROM CHOKEBERRIES ON THE CONCENTRATION OF ACETYLCHOLINESTERASE IN THE BRAIN UNDER LOW-LEVEL AND MODERATE EXPOSURE TO CADMIUM – AN EXPERIMENTAL STUDY IN A RAT MODEL

Author(s): Agnieszka Ruczaj

Tutor(s): prof. Małgorzata Michalina Brzóska, PhD

University: Department of Toxicology, Medical University of Białystok

INTRODUCTION: Cadmium (Cd) is one of the toxic metals of great importance as everyday exposure to this element is growing. This xenobiotic can damage numerous organs and systems, including the nervous system. The concentration of acetylcholinesterase (AChE) in the brain is one of the parameters that allow assessing the neurotoxic effect of Cd exposure. Chokeberry (*Aronia melanocarpa* L. berry) extract, rich in polyphenolic compounds, has already been proven to have a protective impact against Cd accumulation in the body and some effects of its toxic action.

AIM OF THE STUDY: Taking into consideration Cd neurotoxicity and the protection of chokeberry extract against Cd accumulation in the brain, the study aimed to assess the impact of low-level and moderate chronic exposure to Cd on AChE concentration in the brain tissue and the potential protective effect of the extract.

MATERIALS AND METHODS: Female Wistar rats were divided into 6 groups – a control, two groups exposed to Cd at the concentration of 1 and 5 mg Cd/kg diet, a group which received a 0.1% aqueous chokeberry extract as the only drinking fluid, and groups treated with the 0.1% chokeberry extract during the exposure to Cd for 3, 10, 17, and 24 months. The experimental model reflected the low-level and moderate human exposure to Cd during the whole life (1 and 5 mg Cd/kg diet, respectively). The concentration of AChE was assayed in the aliquots of the brain homogenates with the use of ELISA Kit for Acetylcholinesterase (by Cloud-Clone).

RESULTS: The exposure to the 1 and 5 mg Cd/kg diet for 3 and 10 months had no impact on the concentration of AChE in the brain, whereas the longer treatment (17 and 24 months) resulted in a decrease (by 54-66%) in its concentration. The administration of 0.1% chokeberry extract alone did not modify the concentration of AChE, while its co-administration under the 17- and 24-month treatment with Cd completely prevented this xenobiotic-induced decrease in the value of this parameter.

CONCLUSIONS: The results show that chronic low-level and moderate exposure to Cd may lead to a decrease in the concentration of AChE in the brain and simultaneous consumption of *A. melanocarpa* berries extract can protect against this effect. It can be concluded that the consumption of chokeberry products under exposure to this xenobiotic may have a beneficial impact on the activity of AChE and in this way counteract its negative effect on the brain.

TITLE: HYPOTHERMIA FOR NEONATAL HYPOXIC ISCHEMIC ENCEPHALOPATHY: HOW CAN WE OPTIMIZE THIS THERAPY TO FURTHER IMPROVE OUTCOMES?

Author(s): Izabela Lehman, Karolina Karcz

Tutor(s): prof. dr hab. n. med. Barbara Królak-Olejnik

University: Department and Clinic of Neonatology, Wroclaw Medical University, Poland

INTRODUCTION: Therapeutic hypothermia (TH) is a recommended medical intervention that can reduce neurologic consequences in infants with hypoxic-ischemic encephalopathy (HIE).

AIM OF THE STUDY: Retrospective analysis of the patient profile and the qualification process for inclusion of TH during 4 years of the hypothermia center at the University Clinical Hospital in Wrocław, has been conducted. Adverse events during the hypothermia procedure were also evaluated.

MATERIAL AND METHODS: The study group consisted of neonates qualified for therapeutic whole-body hypothermia hospitalized in the Department of Neonatology at University Hospital in Wrocław from 2016 to 2021. Neonates underwent the TH procedure after meeting biochemical and neurological eligibility criteria. Neurological assessment was standardized according to the Thompson scale.

RESULTS: Since the beginning of the center, 19 patients have undergone the hypothermia procedure. 10 newborns were transferred from other hospitals, 9 were born in the hypothermia center. The average gestational age was 39+ 3/7 weeks. APGAR score at 1./3./5./10th minute averaged 2/3/4/5 points. Cord blood pH meeting biochemical criteria ranged from 6.76 to 7.16. All neonates required ventilation at 10 minutes of life. Meconium aspiration syndrome occurred in 4 patients. The cooling process was started at 3 hours of life on average. All neonates were monitored with aEEG; 74% had abnormal recordings and 53% had seizure changes. Thomsen scale scores ranged from 5 to 22 points. All neonates underwent brain magnetic resonance imaging, and hypoxic-ischemic or hemorrhagic lesions were present in 38% of neonates. The most common complications were bradycardia, hypotension, coagulopathy (thrombocytopenia, thrombosis), and seizures during the baby's rewarming period. 18 neonates were discharged home in good condition; 1 neonate died.

CONCLUSIONS: Therapeutic hypothermia for HIE has been shown to be safe and effective in reducing death and disability in survivors. Our experience suggests that current protocols for TH are near-optimal, and that the key to better neurodevelopmental outcomes is earlier diagnosis and initiation of hypothermia after birth. Complications during the cooling procedure are very common, but they are transient and treatable. Most patients who undergo hypothermia are discharged home in good condition.

TITLE: A-LIPOIC ACID REDUCES OXIDATIVE DAMAGE IN THE ADIPOSE TISSUE OF HIGH FAT DIET FED RATS

Author(s): Patrycja Dajnowicz

Tutor(s): dr Ewa Żebrowska, dr Mateusz Maciejczyk, prof. dr hab. Adrian Chabowski

University: Department of Physiology, Medical University of Bialystok

INTRODUCTION: Reactive oxygen species (ROS) production causes oxidative damage to macromolecules, including DNA, proteins, carbohydrates and lipids. Oxidative stress plays a prominent role in the development of numerous diseases, such as obesity and insulin resistance. One of the substances with antioxidant activity, which could be potentially applied in the treatment of above mentioned diseases is α-lipoic acid (ALA). It increases insulin sensitivity and decreases inflammation mediators concentration in the blood, but its impact on adipose tissue with distinct metabolic activity (subcutaneous (SAT) and visceral adipose tissue (VAT)) functioning is still unknown.

AIM OF THE STUDY: The aim of the study was to assess the effect of α-lipoic acid on concentration of oxidative damage products (advanced glycation end products - AGE, advanced oxidation protein products - AOPP, malondialdehyde - MDA and lipid hydroperoxides – LOOH) in SAT and VAT of high fat diet fed rats.

MATERIALS AND METHODS: The experiment was performed on Wistar male rats: CD – rats fed a control diet containing 10.3 kcal% fat, 24.2 kcal% protein, and 65.5 kcal% carbohydrate for 10 weeks; HFD – rats fed a high fat diet containing 60 kcal% fat, 20 kcal% carbohydrate and 20 kcal% proteins for 10 weeks; CD+ALA – rats received ALA for 4 weeks; HFD+ALA – rats fed HFD and received ALA for 4 weeks. In the SAT and VAT were assayed concentrations of AGE, AOPP, MDA and LOOH spectrofluorimetrically and spectrophotometrically.

RESULTS: In HFD animals, concentration of AGE, AOPP, MDA and LOOH was higher when compared to CD group. Increase of AGE and LOOH concentration was more significant in SAT when compared to VAT, while greater increase of AOPP and MDA concentration was observed in VAT when compared to SAT. α-lipoic acid reduced all the oxidative damage effects of HFD. Impact of α-lipoic acid activity was more noticeable in VAT as compared to SAT.

CONCLUSIONS: ALA decreases HFD induced oxidative damage more effectively in VAT as compared to SAT.

TITLE: ANALYSIS OF WHOLE LUNG TRANSCRIPTOMIC PROFILES OF NEUTROPHILIC AND EOSINOPHILIC INFLAMMATION AFTER MESENCHYMAL STEM CELL ADMINISTRATION

Author(s): Marlena Tynecka[1], Adrian Janucik[1], Alicja Walewska[1], Sylwia Księżak[1], Justyna Żebrowska[1], Arkadiusz Żbikowski[2]

Tutor(s): Prof. Marcin Moniuszko MD, PhD[1,3]; Andrzej Eljaszewicz PhD[1]

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INTRODUCTION: Asthma is one of the most frequent chronic respiratory diseases, affecting around 300 million people worldwide. Available treatment allows to establish most cases; however, some patients do not respond to available therapy or develop resistance. Therefore, the development of novel therapeutic strategies is required. Mesenchymal stem cells (MSCs) were shown to suppress airway inflammation; however, the mechanisms remain elusive.

AIM OF THE STUDY: Therefore, we aimed here to better understand the mechanisms of MSC-mediated regulation of eosinophilic and neutrophilic airway inflammation in the experimental asthma models.

MATERIALS AND METHODS: C57BL6 mice were challenged for two weeks with 10, and 100 µg/ml house dust mite (HDM) extract to induce eosinophilic and neutrophilic airway inflammation, respectively. Adipose tissue-derived MSCs were administrated to mice intranasally on day 6 of the experiment. Mice were sacrificed on day 15, and lungs were collected. Hematoxylin & eosin (HE) and Masson's Trichrome staining were performed to assess airway inflammation and collagen deposition, respectively. Total RNA isolated from the lung was included in next-generation sequencing. Transcriptomic profiles were analyzed using Ingenuity Pathway Analysis (IPA) and "R" software. Data were presented using Graph Pad Prism.

RESULTS: First, we confirmed that adipose tissue-derived MSCs reduce eosinophilic and neutrophilic airway inflammation, while collagen deposition was decreased only in mice with neutrophilic inflammation. Interestingly, we found a total of 314 differentially regulated genes in eosinophilic and 1149 in neutrophilic inflammation. The analysis of canonical and noncanonical pathways revelated the downregulation of IL-7 and B cell receptor signaling and dendritic cell maturation. By some contrast, MSCs administration to neutrophilic lung inflammation caused significant changes in lipid mediator metabolism. Finally, we also observed changes in gene expression related to epithelial barrier integrity and airway remodeling.

CONCLUSIONS: In summary, we confirmed that adipose tissue-derived MSCs might limit both eosinophilic and neutrophilic airway inflammation. Moreover, we found different putative mechanisms of MSCs-mediated regulation of eosinophilic and neutrophilic asthmatic lung inflammation.

PhD II

TITLE: BODY COMPOSITION IN TERM NEWBORNS BORN OUT OF A PREGNANCY COMPLICATED BY GESTATIONAL DIABETES MELLITUS. INITIAL REPORT

Author(s): Karolina Karcz

Tutor(s): prof. dr hab. n. med. Barbara Królak-Olejnik

University: Department and Clinic of Neonatology, Wroclaw Medical University, Poland

INTRODUCTION: Maternal metabolic disorders, including Gestational Diabetes Mellitus, have been associated with multiple adverse pregnancy outcomes and have been recognised as a significant factor affecting development and nutritional status of the fetus.

AIM OF THE STUDY: The aim of the study was to evaluate the anthropometric measurements and body composition of newborns born to mothers with Gestational Diabetes in comparison to newborns born to mothers with normal glucose tolerance in pregnancy, in the first week of their lives.

MATERIALS AND METHODS: 70 newborns were enrolled in the study, including newborns of mothers with Gestational Diabetes treated with diet (GDM G1) (n = 21), newborns of mothers with Gestational Diabetes treated with insulin (GDM G2) (n = 29) and newborns of healthy mothers (n = 20). Body composition analysis was performed with the non-invasive electrical bioimpedance method (BIA) in the first week of life. Statistical analyses were performed with statistical significance level set at $p<0.05$.

RESULTS: The maternal interview has indicated a satisfactory degree of glycemic control in all the study groups. Significant difference in incidence of concomitant maternal hypothyroidism has been found between the study groups ($p<0.05$). Compared between 3 study groups, neonatal body composition analysis has revealed no significant difference ($p>0.05$). Presence of maternal hypothyroidism seems to have influence on neonatal anthropometric measurements and body composition in the first week of life.

CONCLUSIONS: Body composition does not differ significantly between newborns born out of pregnancies complicated by Gestational Diabetes and newborns of non-diabtetic mothers, what might be attributed to good glycemic control. Further research on the role maternal hypothyroidism is needed.

TITLE: EVALUATION OF THE USEFULNESS OF THE YFILER PLUS PCR AMPLIFICATION KIT (THERMO FISHER SCIENTIFIC) IN DETERMINATION OF KINSHIP AND IN ANALYSIS OF DNA MIXTURES

Author(s): Agnieszka Gołaszewska

Tutor(s): Professor Witold Pepiński, PhD

University: Department of Forensic Medicine, Medical University of Bialystok, Poland

INTRODUCTION: Applications for Y-STRs include genotyping of male DNA from sexual assault cases as well as patrilineage studies and deficiency paternity cases where the father of a male child is missing but a paternal male relative's profile is used as a reference to support/exclude relatedness. The Yfiler Plus kit simultaneously amplifies 27 polymorphic loci and shows a high discriminatory capacity, which is important in forensic genetics. It is not uncommon that the collected evidence comes from different males of the same patrilineage. In such cases they can be differentiated with rapidly mutating loci (RM Y-STRs) of which seven are included in the Yfiler Plus kit: DYF387S1a/b, DYS449, DYS518, DYS570, DYS576, DYS627.

AIM OF THE STUDY: The aim of the study was to determine the frequency of mutations in the RM Y-STR loci and to assess the sensitivity of the Yfiler Plus kit in the analysis of DNA mixtures.

MATERIALS AND METHODS: DNA was isolated with the GeneMATRIX Swab-Extract DNA Purification Kit (Eurx) from buccal swabs collected from 147 father – male offspring pairs with paternity established autosomally at the level of at least 99.9999% at the Department of Forensic Medicine UMB. DNA was quantified using the Quantifiler Duo DNA Quantification Kit and the 7500 Real-Time PCR System. The Yfiler Plus markers were amplified in the GeneAmp PCR System 9700 thermal cycler. Electrophoresis and genotyping were performed using the 3500 Genetic Analyzer (Thermo Fisher Scientific).

RESULTS: Mutation frequencies for the seven RM Y-STR markers were determined. The limit of detection (LOD) and the limit of quantitation (LOQ) were established. Complete haplotypes were observed in the range of 0.125 to 2 ng DNA. Repeated testing of the same sample in a method precision study showed repeatable and reproducible results. The analysis of DNA mixtures from two males showed that the determination of a full haplotype of the minor component is possible in a ratio of 1:4. The female DNA PCR inhibition test showed that it was possible to obtain a full haplotype of 0.8 ng male DNA in the background of 6400 ng female DNA.

CONCLUSIONS: The method fulfills its requirements in the assumed acceptance criteria and provides with reliable and reproducible results.

TITLE: INFLAMMATORY FACTORS IN HEMODYNAMIC OVERLOAD OF HEART RIGHT ATRIUM - PRELIMINARY CLINICAL AND ECHOCARDIOGRAPHICAL RESULTS

Author(s): Natalia Sot, MD, Paweł Muszyński, MD

Tutor(s): Tomasz Andrzej Bonda, MD, PhD

University: Department of General and Experimental Pathology, Medical University of Bialystok, Poland

INTRODUCTION: Heart failure is a prevalent disorder involving a worldwide population, characterized by unfavourable hemodynamic effects including volume overload of cardiac cavities. The knowledge of its pathomechanisms is constantly growing with a special focus on the relation between heart failure and immunological reaction. The connection of inflammation with heart remodelling was proved, however, we need more studies to provide evidence of its association with overload.

AIM OF THE STUDY: The aim of the study was to analyze the inflammatory factors related to heart muscle remodelling in the atrial tissue during the hemodynamic overload.

MATERIALS AND METHODS: The analysis included preliminary clinical and echocardiographic data gathered from patients admitted into the Department of Cardiac Surgery from whom the atrial appendage tissue was taken for Western Blot analysis including the NLRP3 inflammasome and Caspase 1 assessment. The comparison between a group of patients with enlarged right atrium defined as right atrium area (RAA) ≥ 18 cm^2 (n=7) and normal as right atrium RAA < 18 cm^2 (n=9).

RESULTS: The patients with enlarged right atrium tended to more frequently suffer from ischemic heart disease and to be admitted for coronary artery bypass surgery. The echocardiographic assessment showed that the enlarged right atrium was connected with increased left atrium area, increased left ventricle posterior and septal wall thickness, increased right ventricle basal and mid diameter, decreased TAPSE and increased inferior vena cava dimension, without statistical significance reached. The WBC and CRP were slightly elevated in the group of patients with enlarged right atrium.

CONCLUSIONS: The early results of the study indicate that the enlarged right atrium coexistence with the cardiac remodelling signs such as a change in ventricular dimensions and thickness.
The Western Blot results may reveal the role of the novel elements in the immunological cascade initiated by hemodynamic overload including NLRP3 inflammasome.

TITLE: THE PRELIMINARY CLINICAL AND ECHOCARDIOGRAPHIC RESULTS OF THE ANALYSIS OF THE MITOCHONDRIAL FUNCTION IN ATRIAL FIBRILLATION AS A POSSIBLE INTERVENTION TARGET

Author(s): Paweł Muszyński, MD, Natalia Sot, MD

Tutor(s): Tomasz Andrzej Bonda, MD, PhD

University: Department of General and Experimental Pathology, Medical University of Bialystok, Poland

INTRODUCTION: Atrial fibrillation (AF) is one of the most common arrhythmias, remaining an important problem for public health, with an impact on both quality and quantity of life, mostly due to the cardioembolic mechanism. The interest in the search for exact pathomechanisms of atrial fibrillation, which could be used as an intervention target is constantly growing. Nowadays, prevention focuses on the treatment of comorbidities, such as hypertension. However, the latest research suggested the preventive effect of some anti-diabetic agents, creating the necessity of further research to cognize the exact mechanism. The proposed hypothesis is involving the restoration of mitochondrial function as a possible pathway.

AIM OF THE STUDY: The goal of the study was to analyse the mitochondrial dysfunction occurring in atrial fibrillation, allowing for an experimental intervention on tachy-pacing AF model in a further part of the study.

MATERIALS AND METHODS: The 16 patients of planned 40, admitted to the Department of Cardiac Surgery (Medical University of Bialystok) were included to the analysis. The clinical data and echocardiographic measurements were compared between patients with AF (n=5) and without AF (n=11). The atrial appendage tissue of every patient was acquired for subsequent Western Blot (W-B) investigation.

RESULTS: The patients with AF were more frequently admitted for mitral valve replacement. The incidence of hypertension, diabetes mellitus and heart failure were non-statistically significantly higher among individuals with AF. The left atrium (LA) diameters including LA a-p (LAX), minor, major axis dimension (4-CH) and LA area were higher among patients with AF. There was a non-significant trend towards poorer right ventricle (RV) function parameters including RV thickness, AcT, TAPSE, sPAP and RV fractional area change.

CONCLUSIONS: The preliminary results suggest that AF may be connected with right ventricular function. However, there is a need for increasing the study population before drawing final conclusions. The W-B investigation may allow for the connection of mitochondrial dysfunction and the pathogenesis of AF.

TITLE: OXIDATIVE STRESS AND ANTIOXIDATIVE STATUS IN OBSTRUCTIVE SLEEP APNEA

Author(s): Fiedorczuk Piotr, Stróżyński Adam

Tutor(s): prof. dr hab. n. med. Ewa Olszewska

University: Medical University of Białystok, Poland

INTRODUCTION: Individuals with obstructive sleep apnea syndrome (OSAS) demonstrate oxidative stress in the uvular mucosa that correlates with OSAS severity. It is suspected that enzymatic and non-enzymatic antioxidative barriers are protecting mild and moderate OSAS patients from free radicals imbalance.

AIM OF THE STUDY: The main objective was to verify whether an imbalance in the oxidative/antioxidative in uvular mucosa occurs in OSAS.

MATERIALS AND METHODS: A total of 71 participants (mean age 45.23, mean body mass index 30.62) were divided into non-OSAS group (apnea-hypopnea index—AHI<5) and OSAS group (mild and moderate, 5≤AHI<30). Laryngological examination, Epworth Sleep Scale questionnaire (ESS), and home sleep study type III (polygraphy) were performed. During palatoplasty under local anesthesia, the specimen biopsy (enlarged uvular mucosa) was obtained to assess total oxidative status (TOS) and total antioxidative status (TAS) assay. Both parameters were determined in duplicate using commercially available enzyme-linked immunosorbent assay (ELISA) kits by Immundiagnostik AG. The severity of oxidative stress was estimated based on the value of oxidative stress index (OSI), calculated as the ratio of TOS and TAS. Statistical analyses were performed using the software Statistica 12, Shapiro-Wilk, and Mann-Whitney tests.

RESULTS: By polygraphy, 40 patients were included in the non-OSAS and 31 in the OSAS group (mild and moderate). There was a difference in oxidative/reductive status in the mucosa of the uvula of non-OSAS and mild and moderate OSAS individuals. The values of TOS and OSI in the OSAS were higher than the non-OSAS group (TOS p=0.00123, r=0.384, OSI p= 0.00233, r= 0.361) whereas no difference was found in TAS across both groups (OSAS vs non-OSAS 3.835±0.150 vs 3.832±0.171).

CONCLUSIONS: Intermittent hypoxia associated with OSAS may lead to accumulation of free radicals nevertheless the enzymatic and non-enzymatic antioxidative barriers stay protected in mild and moderate OSAS. Further study should include severe OSAS patients to investigate the changes in oxidative stress caused by the severity of hypoxia.

TITLE: IT WILL BE EASIER WITH THE SECOND CHILD" – DOES MOTHER'S EXPERIENCE IN BREASTFEEDING AFFECTS SUCCESSFUL NURSING WITH THE NEXT CHILD?

Author(s): Karolina Karcz, Izabela Lehman

Tutor(s): prof. dr hab. n. med. Barbara Królak-Olejnik

University: Department and Clinic of Neonatology, Wroclaw Medical University, Poland

INTRODUCTION: Breastfeeding is the healthiest and the most recommended way to feed newborns and infants. However, it is estimated, that only 37% of infants younger than 6 months of age are exclusively breastfed, currently. The success of lactation is dependent on various factors, including e.g. dietary restriction and experience with breastfeeding the previous babies.

AIM OF THE STUDY: The main aims of this study were: 1) to assess how mothers's experience with breastfeeding affects the course of lactation; 2) to find the correlation between dietary restrictions while nursing and the duration of lactation period.

MATERIALS AND METHODS: The study was based on a survey questionnaire concerning the experience with lactation (mainly the length of breastfeeding in each of respondent's offspring respectively), mother's nutrition while nursing, with emphasis on dietary restrictions. The analysis included 1,074 responses from mothers who have ever breastfed a child. Statistical analysis was performed with the significance level set at $p<0.05$.

RESULTS: In general, 29.14% of all mothers indicated they had ever followed an elimination diet while nursing their children. Logistic regression revealed no significant correlation between dietary restriction while nursing and the duration of breastfeeding in the 1st child ($p=0.421$), however there was a statistically significant correlation with using the milk formula ($p<0.001$). Among mothers who followed an elimination diet, the U Mann Whitney test revealed a statistically significant difference in the duration of lactation between the groups who started dietary restriction due to the doctor's advice versus due to the peer pressure ($p=0.008$).

CONCLUSIONS: Elimination diet is still a common prophylactic practice among breastfeeding mothers and might affect the course of lactation. Previous experience with breastfeeding has an impact on nursing the next children. All nursing mothers should receive a reliable nutritional counselling.

TITLE: TARGETING PAIN IN THE LONG-TERM TREATMENT OF CERVICAL DYSTONIA WITH BOTULINUM TOXIN A

Author(s): Michał Marciniec

Tutor(s): Anna Szczepańska-Szerej, MD, PhD, Assoc. Prof.

University: Chair and Department of Neurology, Medical University of Lublin, Lublin, Poland

INTRODUCTION: Cervical pain is one of the most common non-motor symptoms of cervical dystonia (CD) and affects from 54.6% to 88.9% of patients. To date, minority of studies investigated the relevance of pain in a long-term botulinum toxin (BoNT) therapy of CD.

AIM OF THE STUDY: The aim of the study was to define an impact of cervical pain on the disease severity and disability, as well as to assess antinociceptive BoNT efficacy in a long-term treatment of CD.

MATERIALS AND METHODS: In this case-control study, CD patients who received stable doses of BoNT for at least 3 years were assessed with the use of validated scales (TWSTRS, Tsui, PNRS). Participants were divided into two groups depending on the occurrence of CD-related pain.

RESULTS: We examined 50 participants who received a mean of 24 injection cycles (6–51) of BoNT during a mean treatment period of 10.3 years (3.0–23.5). Participants with cervical pain (68.0%) were characterized by higher scores in all scales used in this study: TWSTRS severity ($p=0.030$), disability ($p<0.001$), total ($p<0.001$) and TSUI score ($p=0.046$). Pain reduction following BoNT injection lasted longer than muscle relaxation in 85.3% of patients. Pain improvement between first and last BoNT injection cycle was reported by 76.5% of patients with CD-related pain.

CONCLUSIONS: The presence of cervical pain in CD may increase the severity of muscular symptoms and disease-related disability. BoNT has a noticeable antinociceptive effect in the long-term treatment of CD.

TITLE: BACTERIAL CO-INFECTIONS AMONG PATIENTS WITH COVID-19 ADMITTED TO ICU

Author(s): lek. Mateusz Bartoszewicz, lek. Damian Kuźmiuk

Tutor(s): dr n. med. Sławomir Lech Czaban, Prof. dr hab. n. med. Jerzy Robert Ładny

University: Emergency Medicine Department, Health Sciences Department, Medical University of Białystok, Poland

INTRODUCTION: The novel severe-acute-respiratory-syndrome-coronavirus-2 (SARS-CoV-2) causes Coronavirus Disease 2019 (COVID-19), which was first identified in Wuhan, China in December 2019. Since then, more than 48 million cases have been registered worldwide, with more than 1,231,000 deaths. COVID-19 patient co-infection, with a variety of pathogens, has been confirmed since its global spread. Co-infections are one of the most serious medical problems today, with higher mortality rates. Few reports have focused on bacterial infections in COVID-19 patients so far.

AIM OF THE STUDY: The aim of the study is to analyse bacterial co-infections among patients with COVID-19 admitted to the ICU of University Clinical Hospital in Białystok to examine the epidemiology of contagion, consequently, improve antimicrobial stewardship in COVID-19 patients.

MATERIALS AND METHODS: We report partial results of our research. The first 30 COVID-19 patients were admitted to the ICU for acute respiratory failure (RT-PCR positive for SARS-CoV-2) from 30th September to 11th November 2021. We examined respiratory, blood, rectal, urine microbiological investigations conducted during hospitalization. Identification of pathogens was performed on samples included: tracheobronchial secretions (TBSs), bronchioalveolar lavages (BALs), blood culture, rectal swab, urine culture.

RESULTS: Most of the patients were positive for bacterial infections, including strains of Acinetobacter baumannii and Staphylococcus aureus. Antimicrobial susceptibility tests revealed that A. baumannii strains were highly resistant to all antibiotics evaluated, with the exception of colistin. The presence of comorbidities had a significantly worse prognosis connected with longer ICU length of stay and invasive mechanical ventilation. The most common comorbidities were Arterial hypertension and Diabetes.

CONCLUSIONS: In COVID-19 patients, the presence of bacterial pulmonary infection is linked to a more serious disease path, including a decreased risk of survival and avoidance of invasive mechanical ventilation. Rapid detection of co-and superinfections could increase survival while also allowing for selective antimicrobial treatment, enhancing antimicrobial stewardship in the pandemic.

TITLE: THE IMPACT OF THE COVID-19 PANDEMIC ON THE LEVEL OF PHYSICAL ACTIVITY, EMOTIONAL STATE AND HEALTH HABITS OF WOMEN IN THE EARLY POSTPARTUM PERIOD

Author(s): Daria Kołomańska-Bogucka, Sabina Tim

Tutor(s): dr hab. Agnieszka Mazur-Biały

University: Jagiellonian University Collegium Medicum

INTRODUCTION: The COVID-19 pandemic is not only a serious global health problem, it can also have negative effects on aspects of mental health. The period of pregnancy and puerperium is a time of many changes in women's lives, which requires physical, mental and social adaptation to a new role.

AIM OF THE STUDY: The aim of the study was to analyse the level of physical activity, depressive disorders and health behaviors in women in early puerperium in the period before and during the COVID-19 pandemic.

MATERIALS AND METHODS: 514 obstetricians who were on the 1-8 day of childbirth participated in the study: 252 women in the period from December to March 2020 (control group-Gr.Con.) and 262 women from May to September 2020 (group Covid19-Gr.Cov19.). The average age of women from Gr.Con. was 30.7±4.58 years and from Gr.Cov19 31.4±4.36 years. The research tools were the original questionnaire, the Pregnancy Physical Activity Questionnaire, the Edinburgh Postnatal Depression Scale and the Health Behavior Inventory.

RESULTS: The studies did not show an increase in the incidence of depressive disorders during the pandemic period, before the pandemic this percentage was 33.33% and during the pandemic 28.74% ($p > 0.05$). There was also no impact of the pandemic on the level of health habits ($p>0.05$), which was respectively 85 (95%CI: 83.38-86.07) in Gr.Con. and 86 (95%CI: 83.38-86.55) in Gr.Cov19. At obstetricians from Gr.Cov19. the median average total weekly energy expenditure for physical activity was 150.4MET, while in Gr.Con. 170.7MET. However, there was no impact of the pandemic on the level of total physical activity ($p=0.083$). Patients who gave birth during the pandemic period compared to women giving birth before the pandemic, spent significantly less energy on passive rest ($p=0.038$) and on movement ($p<0.001$). Women with emotional disorders from Gr.Cov19. also spent significantly less energy on transport than patients from the Gr.Con. ($p=0.005$). A similar relationship was observed in women from Gr.Cov19. with medium and high level of health habits ($p=0.033$ and $p<0.001$, respectively). Moreover, patients with a low level of health-related behavior from Gr.Cov19. spent significantly less energy on passive rest than from Gr.Con. ($p=0.014$).

CONCLUSIONS: The pandemic affects the relationship between the various components of physical activity and the emotional state and health habits.

Case Report I

TITLE: COVID-19 AND PULMONARY ASPERGILLOSIS IN PATIENT AFTER LUNGS TRANSPLANTATION

Author(s): Jędrzej Warpechowski, Aleksandra Bowtruczuk, Anna Łokić, Ewelina Wojciechowska, Małgorzata Gryciuk

Tutor(s): Assoc. Professor Edyta Zbroch, MD, PhD

University: Medical University of Białystok

BACKGROUND: Aspergillosis is an opportunistic fungi infection, caused by Aspergillus, affecting patients with an immune system weakened by such factors as immunosuppressive drugs used after organ transplant. On the other hand, COVID-19, caused by coronavirus SARS-CoV-2, is an infectious disease involving mainly the respiratory system. Although the recent studies show no evidence of the effect of immunosuppressant therapy on SARS-CoV-2 infection, it is proven that it may have more severe outcome in patients with pre-existing lung disease.

CASE REPORT: A 58-year old man was admitted to the Department of Internal Medicine and Hypertension due to COVID-19 associated pneumonia. Patient with recognized hypertension, type 2 diabetes, chronic kidney disease, paroxysmal atrial flutter treated with pulmonary veins isolation and pulmonary fibrosis which resulted in left lung transplant in 2017. Since then the patient was treated with tacrolimus and mycophenolate mofetil. Laboratory tests showed elevated creatinine and inflammatory biomarkers, mild anaemia, hyponatremia, and hyperkalemia. Patient was treated effectively with antibiotics and dismissed home in a good general health state. After a week the patient was hospitalized again due to deterioration of health state with fever, exertional dyspnea and productive cough. He presented lung crackles, lower legs edema, elevated creatinine and inflammatory biomarkers levels, anemia, hyponatremia, hyperkalemia and high INR. Performed CT showed heterogeneous tuberous mass widely connected with pleura and unidentified mass in the inferior pole of hilium, inflammatory consolidations and fluid in pleural cavity. After the result of sputum culture - Aspergillus flavus - voriconazole was administered. After 29 days of hospitalization, the patient was discharged with recommendations to continue antifungal treatment. Next hospitalization was planned in 3 weeks in Silesian Centre for Heart Diseases in Zabrze.

CONCLUSIONS: Even though immunosuppressant therapy is indispensable in patients after organ transplantation, it is also a crucial risk factor of infections. This case shows the possibility of developing various pulmonary diseases in a short period of time which proves the necessity of thorough diagnostics process in every case of infection symptoms in immunosuppressed patients.

TITLE: EXPLAIN THE INEXPLICABLE - RECURRING EPISODES OF HYPOGLYCAEMIA WITH UNDETECTABLE INSULIN LEVELS IN A PATIENT WITH TYPE 1 DIABETES MELLITUS

Author(s): Anna Maria Ziółkowska

Tutor(s): Janusz Pachucki, MD, PhD

University: Medical University of Warsaw

BACKGROUND: Factitious hypoglycemia is a deliberate attempt to induce low blood glucose levels and it is one of possible representations of factitious disorder imposed on self, formerly known as Munchausen syndrome. Patients affected by this disorder undertake risky, damaging activities in order to draw attention, sympathy or reassurance to themselves as well as interactions with health professionals.

CASE REPORT: 35-year-old man was admitted to the hospital for total pancreatic resection due to recurrent episodes of symptomatic hypoglycaemia. The patient had been treated with insulin for type 1 diabetes mellitus since the age of 19. Interestingly, as the time passed, the patient required gradually lower doses of hormone from an insulin pump, until eventually it was no longer needed. During hospitalisation the eligibility for surgery was reassessed. The patient's results (very low insulin and C-peptide levels) combined with symptomatic episodes of hypoglycaemia, documented during monitored fasting tests, suggested the diagnosis of neuroendocrine tumour. On multiple imaging studies, the only abnormality appeared to be a mass/lymph node in the caudal region of the pancreas found in endoscopic ultrasonography. The patient was suspected of self-injecting insulin analogues undetectable in the method used (Roche Elecsys assay). Therefore, insulinemia was checked with Siemens analyser which detected significant insulin concentration. In the meantime, when the patient ran out of insulin analogues, he started injecting human recombinant insulin which was detected also by Roche analyser. Eventually, the patient was diagnosed with factitious disorder imposed on self.

CONCLUSIONS: When diagnosing the causes of hypoglycaemia, we should bear in mind the limitations of the diagnostic equipment as well as the so-called ‘principle of limited trust’ with regard to the information provided by patients. It is a good idea to use different methods of assessment, as in this case. What is more, frequent hospital admissions should increase the physicians’ vigilance, as the actual cause of the problem may be different from that indicated by the symptoms the patient reported.

TITLE: AN UNEXPECTED ROUND SHADOW IN THE RIGHT VENTRICLE OF PATIENT WITH COVID-19

Author(s): Małgorzata Gryciuk, Joanna Rucińska, Dorota Artyszuk, Dominika Jarmoc, Aleksandra Kiełczewska

Tutor(s): Assoc. Prof. Edyta Zbroch, MD, PhD

University: Medical University of Białystok

BACKGROUND: Pulmonary embolism (PE) is a blockage in one of pulmonary arteries. In most cases, PE is caused by a blood clot originated from a deep venous system due to hypercoagulation. Recent studies show that COVID-19, caused by novel coronavirus (SARS-CoV-2), is a risk factor of thrombotic complication. SARS-CoV-2 binds with angiotensin-converting enzyme 2 receptor to gain entry to cells leading to endothelial damage and therefore development of thrombosis.

CASE REPORT: A 62-year-old man was admitted to the Infectious Diseases and Neuroinfections Department due to pneumonia caused by SARS-CoV-2 infection. The diagnostic imaging of chest revealed the ground-glass pattern - the most common finding in COVID-19. Laboratory tests revealed elevated level of inflammation markers, D-dimers and fibrinogen. On the 14th day of the hospitalization, the patient was transferred to the Department of Internal Medicine and Hypertension. The physical examination indicated peripheral oedema and crackling sounds over the base of the lungs. The blood oxygen saturation on room air was 66%. Oxygen therapy, low molecular weight heparin, hydroxyzine and antibiotic treatment was administered. A trans-thoracic echocardiography revealed a round shadow in the right ventricle - suspicion of the thrombus in the right heart. The angio-CT was immediately performed to assess pulmonary arteries again. It showed a peripheral distal pulmonary embolism. Due to those findings, the heparin dose was increased what resulted in developing heparin-induced thrombocytopenia (HIT). The occurrence of such complication was an indication to discontinue heparin treatment and to administer fondaparinux. As a consequence, the patient was transferred to Cardiac Intensive Care Unit in order to continue the treatment.

CONCLUSIONS: SARS-CoV-2 causes COVID-19 pneumonia, but is also associated with a high risk of thrombotic complication. Even though the patient was treated with prophylactic dosage of heparin, he developed pulmonary embolism and increasing of the dose of heparin resulted in heparin-induced thrombocytopenia. It not only proves the necessity of watchful observation of coagulation parameters in patients with COVID-19, but also reminds about potential complications of heparin treatment.

TITLE: ANTERIOR MYOCARDIAL INFARCTION IN 36 YEAR OLD WOMAN COMPLICATED WITH SEVERE HEART FAILURE AND PERICARDITIS

Author(s): Claudia Bojczuk, Gabriela Naronowicz, Paulina Janiak

Tutor(s): Magdalena Rog Makal, MD, PhD

University: Medical University of Bialystok

INTRODUCTION: When discussing myocardial infarctions one mostly thinks about people in elderly age. Studies both in the United States and in other developed nations have reported rising hospitalization rates for myocardial infarction (MI) in younger women. The proportion of MI admissions for young women (35-54 years old) increased from 21% in 1995-1999 to 31% in 2010-2014. Most women who present with an acute coronary syndrome will have acute plaque rupture as the cause, however other causes include myocarditis, aortic dissection, stress induced cardiomyopathy and some genetic disorders like familial hypercholesterolemia.

CASE REPORT: A 36 year old woman with a family history of cardiovascular diseases and accompanying chest pain was admitted to the ICCU due to ST elevation myocardial infarction of anterior wall. Coronary showed 100% occlusion of the LAD, thus PCI with a drug eluting stent was performed. Echo revealed severe heart failure with an EF of 26% and tricuspid regurgitation with a high probability of pulmonary hypertension. Laboratory results showed high levels of troponin I (>50,000 ng/L), CK (2681 IU/L), CKMB (298 IU/L), NT-proBNP (9203 pg/mL) and fibrinogen (630 mg/dL). Upon further observation, the patient experienced chest pain upon deep inspiration thus early infarct-associated pericarditis was diagnosed and treated. Coronary heart disease and heart failure treatment was administered and patient was discharged. The follow-up visit was scheduled for ECHO assessment in order to decide upon ICD implantation. . Due to family history of MI and high cholesterol, further workup and genetic testing to exclude familial hypercholesterolemia should be performed.

CONCLUSIONS: Younger patients are less likely to be diagnosed with myocardial infarction especially if symptoms are non-specific. Delayed diagnosis and treatment may lead to further complications, especially heart failure with further therapeutic consequences.

TITLE: COINCIDENCE OF DISSEMINATED ZOSTER AND LIMPHOPROLIFERATIVE DISEASE

Author(s): Marta Dziewicka, Maciej Cechowski, Marita Wysocka

Tutor(s): Assoc. Prof. Anna Baran, MD PhD, Prof. Iwona Flisiak, MD PhD

University: Department of Dermatology and Venerology, Medical University of Bialystok

BACKGROUND: Disseminated herpes zoster is a manifestation of neurotropic viral disease which often occurs in patients with VZV (varicella zoster virus) history and compromised immunological response due to malignancy, transplantation or treatment. Onset is similar to the typical course of disease, but within days it can scatter on multiple organs and lead to severe complications.

CASE REPORT: A 73-year-old man, recently undergoing diagnosing of chronic limphoproliferative disease, was transferred from the Hematology Department to the Dermatology Department due to numerous vesicles on erythematous base accompanied by neuralgia which initially have appeared on the left arm and forearm. After few days they disseminated on the face, head, back, trunk and lower limbs. Laboratory tests revealed increased CRP level and high white blood cell level. Based on overall clinical picture, disseminated herpes zoster was diagnosed. Systemic treatment with acyclovir, tazocin in combination with topical agents resulted in clinical improvement. The patient was transferred for further hematological diagnosing.

CONCLUSIONS: Herpes zoster is generally a mild condition, nevertheless it may be a first symptom of chronic diseases or malignancies, especially limphoproliferative. Thus consideration detailed diagnostic is crucial, because unattended it may lead to various complications such as neuralgia, nerve palsy or even life threatening visceral disseminated VZV.

TITLE: THE PATIENT WITH A SEVERE, COMPLEX VALVULAR HEART DISEASE AND SYSTEMIC ATHEROSCLEROSIS

Author(s): Bartosz Zambrzycki, Michał Łuczaj

Tutor(s): Dr hab. n. med. Anna Lisowska

University: Department of Cardiology, Medical University of Bialystok

BACKGROUND: Advanced valvular heart disease can cause cardiac failure, stroke or death due to sudden cardiac arrest. Atherosclerotic disease is a systemic disease and in many cases, significant coronary, carotid and peripheral artery stenosis, co-occur.

CASE REPORT: This case report presents the medical history of a 71-year-old male with heart failure, paroxysmal atrial flutter after ineffective ablation, atherosclerotic disease of coronary and peripheral arteries and progressive valvular disease in the form of aortic valve stenosis and mitral and tricuspid regurgitation. Due to poor general condition, invasive treatment of the patient was a high-risk therapy. At first, the patient was disqualified from the cardiosurgical treatment of valvular disease and the decision was made to surgically treat peripheral artery disease. The patient was eventually qualified for an implantation of the aortic valve, surgical repair of mitral and tricuspid valve and and a coronary artery bypass grafting (LIMA-LAD, SV-OM) which was complicated by cardiorespiratory failure. Because of that, the patient was hospitalized in the intensive care unit for 23 days. A year after that surgery patient had an episode of cardiac arrest and implantation of cardioverter-defibrillator was performed. The patient is currently stable and he is in general good condition, with heart failure symptoms in NYHA class III. The decision is made to qualify him for left atrial appendage closure to prevent stroke and systemic thromboembolism.

CONCLUSIONS: This case report illustrates therapeutic challenges in managing patients with co-occurrence of atherosclerotic disease, cardiac failure and advanced valvular heart disease.

TITLE: ATYPICAL CASE OF COEXISTENCE POLYMORPHOUS LIGHT ERUPTIONS AND ERUPTIVE LICHEN PLANUS IN A PATIENT WITH NECROBIOSIS LIPOIDICA

Author(s): Agnieszka Popow, Weronika Buczyńska

Tutor(s): Julia Nowowiejska MD; Assoc. Prof. Anna Baran MD, PhD; Prof. Iwona Flisiak MD, PhD

University: Department of Dermatology and Venereology, Medical University of Białystok

BACKGROUND: Necrobiosis lipoidica (NL) is a skin disease usually located on pretibial surface of lower limbs and manifests with yellow-brown lesions with central atrophy, teleangiectasia and elevated rim. Polymorphous light eruptions (PMLEs) occur after exposure to ultraviolet radiation (UV) and manifests as multiform erythematous-papulo-vesicular pruritic rash on the sun-exposed parts of the body. Eruptive lichen planus (LP) is characterized by flat, violaceous papules located usually on upper and lower limbs and is accompanied by pruritus.

CASE REPORT: A 59-year-old woman with a long history of necrobiosis lipoidica was admitted to the Department of Dermatology for diagnostics due to newly appeared two different types of lesions. Patient presented with erythematous-papular lesions on the skin of neck, shoulders, upper back and confluent around the neckline, persisting for two weeks. The other type of lesions was an eruption of numerous shiny papules on upper and lower limbs and sacral region with visible Koebner's sign with accompanying pruritus suggesting the diagnosis of LP. The ANA 3 panel came out negative, therefore lupus erythematosus was excluded. Basing on the histopathological examination of two skin samples (from two different locations) and clinical picture, the diagnosis of PMLEs on the skin of upper parts of the body and LP on the limbs was made. After administered treatment with clobetasol and cetirizine the condition improved and the patient was discharged home.

CONCLUSIONS: The coincidence of those three different dermatoses posed diagnostic difficulties. This unusual coexistence has not been reported yet. Correlation of clinical picture and histopathological findings is necessary. Despite the different etiology the same treatment was effective.

TITLE: DIAGNOSTIC DIFFICULTIES IN PATIENTS WITH EXERCISE DYSPNEA – CASE REPORT

Author(s): Ejdys K.

Tutor(s): Anna Lisowska DSc, Anna Szyszkowska MD, Prof. Karol Kamiński

University: Department of Cardiology, Medical University of Bialystok, Poland

BACKGROUND: Pulmonary Hypertension (PH) is a group of diseases with different pathophysiological mechanisms in which the common denominator is elevated mean pressure in Pulmonary Artery (mPAP) ≥ 25 mmHg. Chronic thromboembolic pulmonary hypertension (CTEPH) is a disease of obstructive pulmonary artery remodelling as a consequence of major vessel thromboembolism. Proper diagnostics in suspicion of this illness is essential to assess the type PH and to choose the appropriate therapeutic methods.

CASE REPORT: A 46-year-old woman with pulmonary embolism (PE) in October 2020 treated with rivaroxaban was admitted to the Clinic in aim to diagnose PH. Patient reports episodes of exercise dyspnea (NYHA II) and nonspecific chest pain. Physical examination exposed no abnormalities. Laboratory findings revealed increased concentration of NT-proBNP and hypercholesterolemia. Additional functional and imaging tests were performed including lung scintigraphy, echocardiography, ergospirometry and Doppler ultrasound of lower extremities. In ECHO – impaired function of right ventricle and high risk of PH was found (mPAP = 46.5 mmHg). Lung scintigraphy revealed defects in accumulation of the radiotracer in both lungs typical for PE. Ergospirometry was finished in seventh minute because of fatigue and severe dyspnea, VO2 peak = 17 ml/kg/min, VE/VCO2 slope = 43.10. Doppler ultrasound of lower extremities and spirometry with DLCO didn't show any significant abnormalities. On the basis of laboratory, functional and imaging tests there was stated a suspicion of CTEPH. In order to rule out the antiphospholipid syndrome (APS) serological tests were performed - IgM and IgG antibodies against phospholipids were negative. Current anticoagulant treatment with rivaroxaban was maintained. In aim to qualify for the surgical treatment patient was directed into Department of Pulmonary Circulation, Thromboembolic Diseases and Cardiology in Otwock.

CONCLUSIONS: Diagnostic pathway in patients with suspicion of CTEPH and its cause is difficult and requires cooperation of doctors with various specialties (cardiology, pulmonology, allergology, rheumatology, nuclear medicine, radiology). Basis of pharmacological treatment are oral anticoagulants, but we also have specific drugs - riociguat and surgical treatment – pulmonary endarterectomy.

TITLE: COEXISTENCE OF ACUTE MYOCARDIAL INFARCTION AND ISCHEMIC STROKE AS A COMPLICATION OF LEFT VENTRICULAR THROMBUS IN A YOUNG WOMAN WITH NEWLY DIAGNOSED DILATED CARDIOMYOPATHY

Author(s): Tomasz Cader[1]

Tutor(s): Agnieszka Wójcik MD, PhD[2], Piotr Bienias MD, PhD[2]

University: [1] Students' Scientific Association by Department of Internal Medicine and Cardiology, Medical University of Warsaw, Warsaw, Poland;
[2] Department of Internal Medicine and Cardiology, Medical University of Warsaw, Warsaw, Poland

BACKGROUND: Thromboembolic events due to intracardiac thrombus might cause life-threatening complications. They are also a clinical challenge, especially in young patients with no history of heart diseases.

CASE REPORT: 34-year-old obese, cigarette smoking female with type 2 diabetes mellitus and no previous history of cardiac diseases was referred to our department due to ST-elevation myocardial infarction. The patient complained of a typical severe dull squeezing chest pain and dyspnoea. Urgent coronarography revealed acute thrombus in a large marginal branch, without atherosclerotic plaques. Successful aspirational thrombectomy was performed. Typical dynamics in troponin levels were observed. Echocardiography showed general hypokinesis of the left ventricle (LV) with ejection fraction (EF) approx. 15-20% with signs of low cardiac output syndrome and moderately large thrombus in apical part of LV. The early post-infarction period was uneventful. At the 7th hospitalization day, the patient woke up with left sided hemiparesis (NIHSS 18 points). The patient was urgently transferred to the specialized neurological ward where she was successfully treated with mechanical thrombectomy of the right middle cerebral artery. Control CT and MRI of the brain showed unobstructed brain vessels. Afterwards the patient with NIHSS 3 points was transferred back to our unit. Throughout the hospitalization the patient was rehabilitated, received typical pharmacological treatment including heparin. Cardiac MRI confirmed dilated cardiomyopathy (DCM) with severe hypokinesis of the left and right ventricle (LVEF 14%, RVEF 22%), signs of recent infero-lateral myocardial infarction, while no signs of previous infectious myocarditis or toxic damage were visualized.

CONCLUSIONS: This is a case of newly diagnosed and probably genetic-derived DCM complicated with LV thrombus which led to thromboembolic myocardial infarction (type 2) followed by ischemic stroke. Both thromboembolic events were successfully treated by specific thrombectomy.

TITLE: HOW TO BE POSITIVE WHEN VASCULITIS IS ANCA-NEGATIVE?

Author(s): Weronika Przybyszewska, Aneta Bauer

Tutor(s): Stanisław Niemczyk, M.D., Ph.D.

University: Students' Scientific Circle by the Department of Internal Medicine and Nephrology at the Military Institute of Medicine in Warsaw

BACKGROUND: Vasculitis is a group of rare disorders characterised by the presence of specific antibodies. ANCA antibodies are a commonly used markers but in some patients they may be absent which leads to a diagnostic challenge.

CASE REPORT: A 62-year-old man was transferred from the regional hospital to the Department of Nephrology at the Military Institute of Medicine in Warsaw for further diagnosis and treatment. A few days earlier patient was admitted due to malaise, arthralgia and oliguria. Patient's medical history included chronic sinusitis, type 2 diabetes mellitus and chronic renal disease in stage G4. The lab results revealed increased creatinine level and urine analysis showed massive proteinuria and hematuria. CT scan of the thorax presented diffuse ground glass opacities and masses in the paranasal sinuses. The preliminary diagnosis of rheumatoid arthritis was put forward and patient was started on methylprednisolone which led to a transient clinical state improvement. On admission to the Department patient presented a transient weakness of the right upper limb. The left hemisphere ischemic stroke was suspected which was later confirmed by the imaging tests. Patient was then put on acetylsalicylic acid and the symptoms completely resolved without further focal injuries. The laboratory exams excluded the presence of ANCA, aCCP, anti-GBM and anti-dsDNA antibodies. Due to clinical presentation and additional examinations results patient was diagnosed with pulmonary renal syndrome in the course of vasculitis without ANCA antibodies. Patient was started on steroids and cyclophosphamide according to the CYCLOPS protocole. Few months later patient's condition deteriorated and peritoneal dialysis was started due to end-stage renal disease. Due to persisting symptoms the treatment proved to be ineffective and patient was qualified for the regimen with rituximab which eventually led to disease remission.

CONCLUSIONS: Vasculitis is a rare diagnosis but should always be considered in patients presenting multiorgan dysfunction.

TITLE: VENOUS THROMBOSIS AS A DISTANT COMPLICATION OF DIABETIC KETOACIDOSIS

Author(s): Paulina Sytek, Paulina Wietrzak

Tutor(s): Aleksandra Uruska MD, PhD, DSc

University: Poznan University of Medical Sciences

BACKGROUND: Type 1 diabetes mellitus (T1DM) is a chronic disease characterized by an insulin deficiency resulting from the destruction of pancreatic β cells. The most dangerous complications of T1DM include ketoacidosis and severe hypoglycemia. We report an adult patient who developed medial gastrocnemius vein thrombosis as a distant complication of diabetic ketoacidosis (DKA).

CASE REPORT: 28-year-old woman was admitted to the Clinic of Internal Medicine and Diabetology because of metabolic uncontrolled diabetes with hypoglycemic episodes. The patient had suffered from T1DM for 22 years and was treated with intensive functional insulin therapy at the moment of admission. Medical history also included android obesity, mixed hyperlipidemia, eating disorder, and borderline personality disorder. One month before the patient had been hospitalized due to severe DKA complicated with severe respiratory insufficiency and acute renal insufficiency. Since the hospitalization, the patient has developed pain in the right lower leg and right foot. Physical examination revealed soreness, slight edema, and reduced temperature at the right lower leg and right foot. Pulse in the dorsalis pedis artery and the posterior tibial artery was palpable. Doppler ultrasound revealed right medial gastrocnemius vein thrombosis. Diagnostic imaging was unremarkable for any arterial circulatory disorders. The treatment included anticoagulants and compression therapy. The patient was discharged home in good health and followed up at the outpatient clinic.

CONCLUSIONS: The case highlights the role of venous thrombosis prophylaxis which should be considered in every patient with severe DKA. Arterial thrombosis is a common complication of DKA but few reports present adult patients with venous thrombosis complicating DKA. The prevalence of venous thrombosis in adults who developed DKA is also poorly known, especially as a distant complication.

TITLE: INFLAMMATION OF THE LIMPHOCELE, AFTER REMOVAL OF THE LEFT INGUINAL LYMPH NODES- CASE REPORT

Author(s): Paulina Śliwińska, Daria Giczan, Paulina Januszewska, Blanka Mitera, Miłosz Nesterowicz, Joanna Herbin

Tutor(s): Elżbieta Czykier, MD, PhD, Assoc. Prof. Department of Histology and Embryology

University: Medical University in Białystok, Poland

BACKGROUND: Surgical tumor treatment, including cancerous ones, often requires removal of surrounding lymph nodes. Ablation of lymph nodes demands to make a surgical connection between afferent lymphatic vessels (that carry lymph to the lymph node) and efferent lymphatic vessels (that take lymph away from lymph node). The lack of connection between those vessels leads to the appearance of a new reservoir of lymphatic fluid in place of disconnected vessels. This reservoir is called lymphocele.

CASE REPORT: A case of 83 years old female patient with a surgical pudendum cancer treatment a month earlier. The surgery included a bilateral ablation of inguinal lymph nodes. The patient was discharged from the hospital in good condition. After few days, during a follow-up visit, a limphocele was in the left inguinal region. After next follow-up visits and several attempts of remove the limphocele, there was a decision of the insertion of a pig-tail drain tube. One month after, she contacted the University Clinical Center of Oncology because the drain tube has fallen out and there was reddening in pudendal and pubic regions. The culture was collected from both surgical and drainage wounds. The culture-compatible targeted antibiotic therapy was applied. During the mentioned antibiotic therapy the reservoir of lymph was punctured allowing a serous fluid outflow. Then, the pig-tail drain tube was placed again. The patient was sent home with a new pig-tail drain tube and with a medical health improvement. She was advised to continue an antibiotic treatment and come for a follow-up visit after five days.

CONCLUSIONS: A reservoir of a lymph fluid called a lymphocele is a post-surgical complication of lymphadenectomy and can lead to inflammation of that reservoir, what has exactly has happened in this particular case.

TITLE: NECROTIZING INFLAMMATORY SKIN LESIONS IN THE COURSE OF INVASIVE MENINGOCOCCAL DISEASE FOLLOWED BY PLEURAL TBC- A CASE REPORT

Author(s): Joanna Betlejewska

Tutor(s): Professor Joanna Zajkowska

University: Department of Infectious Diseases and Neuroinfections, Medical University of Białystok, Poland

BACKGROUND: Meningococcal infections occur all over the world in people of all ages, but most often in children from 3 months to 2-5 years. The second peak incidence is for adolescents and young adults (15-24 years). In Europe, the disease is mainly caused by serotypes B and C. Invasive meningococcal disease is the most common form of meningococcal infection.

CASE REPORT: A 22-year-old female with a history of invasive meningococcal disease with septic shock, MODS, intracranial bleeding and DIC was transferred from the ICU to the Infectious Disease Department. On admission the patient had a lot of extensive skin defects covered with scabs on the limbs and buttocks. Broad-spectrum antibiotic therapy was continued. Gradual healing of lesions on the limbs was observed, but the lesion on the buttock was large and oozing. The patient was consulted by a dermatologist who recommended local treatment. The therapy brought good results.
After two years, the woman was hospitalized again. She reported dyspnoea on exertion and weakness. The patient was admitted to the Department of Lung Diseases and Tuberculosis. Chest X-ray revealed fluid in the left pleural cavity. High acute phase proteins (CRP, fibrinogen) were found in laboratory tests. The patient was treated with Amoxicillin/Clavulanic acid and Ciprofloxacin, but without improvement. Pleural fluid analysis revealed exudate with lymphocytosis. Fluid culture was negative. She was transferred to the Department of Thoracic Surgery. The patient underwent diagnostic videothoracoscopy, which showed fibrothorax with fluid that had to be evacuated. The patient was operated on and tuberculosis etiology was established. She was transferred to the Department of Lung Diseases and Tuberculosis and successfully treated with Ethambutol, Pyrazinamid, Ryfampicin, Izoniazyd and Vitamin B6.

CONCLUSIONS: The patient probably had an immunodeficiency that could not be confirmed by clinical tests. We are unable to identify population with such immunodeficiencies and predict the severe course of the disease. To prevent severe illness, the entire population should be vaccinated.

Case Report II

TITLE: A GIRL WITH DOUBLE CAUSE OF PRECOCIOUS PUBERTY- CASE REPORT

Author(s): Sebastian Ciężki, Anna Muszyńska

Tutor(s): Beata Sawicka MD PhD, prof. Artur Bossowski MD PhD

University: Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Białystok, Poland

BACKGROUND: Precocious puberty occurs when the signs of puberty appear too early. The cause of central precocious puberty is early maturation of the entire hypothalamic-pituitary-gonadal axis. Congenital adrenal hyperplasia due to 21-hydroxylase deficiency is one of the genetic diseases that leads to impaired adrenal function. Deficiency or absence of this enzyme is the cause of insufficient cortisol production and increased adrenal androgen secretion.

CASE REPORT: A 4,5- year- old girl was admitted to the hospital to diagnose the reason for precocious puberty. In recent months, an acceleration in the rate of growth has been noticed. What more, the appearance of pubic hair has been observed for 1,5 years. A change from deciduous to adult teeth has been noted recently. Physical examination revealed high height and weight (both above 97th percentile), acne, advanced puberty and enlargement of the clitoris. The patient's bone age was 11 years. In laboratory tests androgen level was increased. Steroid profile in 24-hour urine collection evidenced simple virilizing form of non-classic congenital adrenal hyperplasia with 21-hydroxylase deficiency. It was finally decided to treat the patient with hydrocortisone orally. Three years of therapy have resulted in the inhibition of androgen secretion, growth rate deceleration and puberty progression reduction. At the age of seven, the patient had an accelerated growth rate and breast enlargement. Bone age was estimated at 12 years. To distinguish between central and peripheral precocious puberty a GnRH stimulation test was performed. Because of central puberty the girl was qualified for treatment with an GnRH analogue. Treatment with hydrocortisone was unsuccessful, so non-standard dexamethasone medication was included. Finally this treatment resulted in inhibition of gonadotropin and androgen secretion.

CONCLUSIONS: 1/A single patient, precocious puberty may result from a number of causes. 2/Furthermore, this case is an example that if the standard therapy with hydrocortisone does not work, non-standard treatment with dexamethasone may lead to improvement of the patient's clinical condition. 3/Proper treatment of precocious puberty improves the patient's final growth.

TITLE: A RARE CASE OF PIRIFORMIS PYOMYOSITIS IN 14-YEAR-OLD BOY

Author(s): Natalia Hawryluk

Tutor(s): Michał Puliński MD PhD

University: Collegium Medicum, University of Warmia and Mazury in Olsztyn, Poland

BACKGROUND: Piriformis pyomyositis is defined as a subacute infection of skeletal muscles caused by transitory bacteriaemias associated with systemic infectious symptoms. Pyomyositis of the piriformis muscle is an uncommon condition, an infection very rarely reported in the paediatric age group. In this case study, the 14-year-old boy with pyomyositis of the piriformis muscle and symptoms of sciatica is presented.

CASE REPORT: A 14-year-old boy was admitted to the neurology department with symptoms of right sciatica for 2 days, which appeared after intense exercise. He was in a stable, severe general condition. The severe pain in his lower back radiated to the right buttock, leg and foot. Neurological examination of the right lower limb revealed a reduced muscle power and tension signs were positive. The inflammatory markers were elevated. He was feverish, the antibiotic therapy was started with ceftriaxone i.v., after serological examination S. aureus was cultured therefore cloxacillin was added. On day 3 the MRI was done and it revealed pyomyositis of piriformis muscle, lesion of 75x35mm and the inflammated sacroiliac joint. After two days the patient's condition worsened, so the controlled MRI was performed. The dimensions of the abscess enlarged by 91 x 65 mm. The decision of surgical treatment had been made. During the surgery, under ultrasound control, the piriformis abscess was opened and drained transrectally. A drain was left and sutured to skin around the anus. In the next days, the patient's clinical condition was gradually improving. The control MRI 6 days after the surgery revealed the regression of lesions. The inflammatory markers decreased. After 21 days of hospitalization patient was discharged with continuation of antibiotic therapy (trimethoprim + sulfamethoxazole p.o.) at the maximum dose for 3 weeks. During the follow-up, the patient faced significantly reduced pain symptoms.

CONCLUSIONS: Pyomyositis is a rare condition but it is essential to be aware of this condition and to consider abscesses and pyomyositis of the pelvic muscles as a differential diagnosis in patients presenting with radicular pain. Early diagnosis and correct treatment could save the patient from severe complications such as septic shock.

TITLE: PRENATAL MANAGEMENT OF FETAL PAROXYSMAL TACHYCARDIA COMPLICATED BY FETAL HYDROPS

Author(s): Vitartaite M., Vaiciulyte D.

Tutor(s): Vilda Baliuliene

University: Lithuanian University of Health Sciences, Academy of Medicine, Faculty of Medicine, Kaunas, Lithuania

BACKGROUND: The rate of fetal tachycardia is approximately 0.5% of all pregnancies and it is an important cause of fetal morbidity and mortality.

CASE REPORT: A 33-year-old woman, gravida III, presented at 37 weeks of gestation due to the lack of fetal movements. She had vaginal delivery and miscarriage in anamnesis. At 34 weeks of gestation fetal paroxysmal tachycardia 300 bmp, fetal hydrops, ascites, pericardial effusion and heart failure (HF) were detected. Treatment with intravenous propafenone 140 mg was started, fetal heart rate (HR) was normal for several hours, but atrial flutter was monitored 5 hours later. Additional doses of propafenone 150 mg and metoprolol 50 mg were given orally. There was no therapeutic effect, mother refused emergency c-section and further cardiological treatment. Next day echoscopy showed no movements, fetal HR was 307 bpm. Intravenous digoxin 0.25 mg was initiated, the dose was repeated 2 hours later. Fetus vital functions after 9 hours: HR 142-144 bpm, normal heart rhythm, HF and hydrops disappeared, umbilical and brain circulation normal. Mother's vital functions remained stable. She was discharged. Further treatment with oral digoxin 0.25 mg a day and sotalol 80 mg twice a day until the end of pregnancy was prescribed. After readmission she was monitored in the ICU and got additional intravenous digoxin 0.25 mg with verapamil 40 mg and oral sotalol 80 mg. Despite this treatment fetal state was deteriorating. Caesarean section under spinal anesthesia was performed. Hemodynamics of mother remained stable. Newborn's APGAR scores of 1st and 5th minutes were 7 and 8 respectively.

CONCLUSIONS: Fetal tachycardia has a high risk for developing low cardiac output, hydrops and sometimes fetal death or adverse neurological effect after birth. Digoxin is an antiarrhythmic drug which has a positive inotropic effect and could be safe to use when HF occurs. Sotalol is often added while treating with digoxin, because digoxin alone is poorly transferred to the fetus in the presence of hydrops and quicker control of arrhythmia is achieved. If the fetus is at term of delivery, emergency delivery and antiarrhythmic therapy must be provided to a newborn. If the fetus is nonhydropic, vaginal delivery can be taken into the consideration.

TITLE: CARDIAC FIBROMA PRESENTING AS VENTRICULAR TACHYCARDIA- A CASE OF 5-YEAR-OLD PATIENT WITH GORLIN-GOLTZ SYNDROME

Author(s): Alicja Skrobucha, Adrianna Góźdź

Tutor(s): MD Ewa Płodzień

University: Medical University of Warsaw

BACKGROUND: Primary cardiac tumours in paediatric population are rare and mainly benign. Cardiac fibroma is the second most common primary heart tumour after rhabdomyoma in children. Cardiac tumours affecting children are often associated with genetic disorders, for example about 3% of patients with Gorlin-Goltz syndrome have a cardiac fibroma. Cardiac fibroma may be associated with ventricular arrythmia, as presented in our case of 5-year-old boy.

CASE REPORT: From birth, a patient had a noticeable dysmorphic features and then the developmental delay was observed. In the fifth year of life he was hospitalised for several episodes of ventricular tachycardia. The heart rate of one of them reached 270 bpm. The patient also had a polymorphic ventricular arrhythmia throughout the observation period. The episodes of ventricular tachycardia were unresponsive to pharmacological treatment. Tachycardias subsided only after electrical cardioversions. Despite treatment escalation, the polymorphic ventricular arrhythmia could not be reduced. Echocardiography revealed an arrhythmogenic tumour, located in the left ventricle. The patient was operated on and a partial resection of the tumour was performed. After excision of the tumour, ventricular tachycardia subsided and a polymorphic ventricular arrythmia was significantly diminished. Histopathological examination confirmed the diagnosis of cardiac fibroma. Some of patient's abnormalities like syndactyly correlated with the diagnosis of cardiac fibroma and with his mother's oncological history gave rise to the suspicion of Gorlin-Goltz syndrome. Genetic tests confirmed this diagnosis.

CONCLUSIONS: Cardiac tumours are not common in paediatric population but their clinical consequences may be severe. Dysmorphic features correlated with a heart defect are an indication for genetic counselling.

TITLE: "THE CHILD 1 PER 240 000"- A CASE OF A 14-YEAR OLD BOY WITH ACTH-DEPENDENT HYPERCORTISOLISM

Author(s): Barbara Emilia Nikitiuk, Marta Pasławska

Tutor(s): Beata Sawicka, MD, PhD, Prof. Artur Bossowski, MD, PhD

University: Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Bialystok

BACKGROUND: Cushing's disease which affects 2.4 million people annually, is a condition in which the pituitary gland releases too much adrenocorticotropic hormone (ACTH). One of the most important symptoms of the disease in children is inhibited growth, increased body weight and skin changes eg. acne.

CASE REPORT: Our aim of the study is to introduce diagnostic process and treatment of pituitary microadenoma that caused ACTH-dependent hypercortisolemia in 14-year old child. We analysed the clinical case of a 14- year old boy with ACTH-dependent hypercortisolemia. 14-year old boy was referred to the Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Bialystok due to obesity 76 kg (90-97 centile) and short stature 155 cm (3-10 centile). Past medical history of the patient included surgery of left inguinal hernia. Physical examination revealed ginecomastia, acne and stretch marks on the back. Laboratory tests indicated HOMA index 4,3, ACTH at 8:00 132 µg/ml (>0,08 µg/ml N), morning cortisol 771 nmol/l (138-690 nmol/l N), night cortisol 365 nmol/l (0,0-3,86 nmol/l N) and cortisol after 1mg DXMT 145 nmol/l (<50 nmol/l N). General parameters remained on a normal level. MRI examination showed microadenoma (6x4 mm) in the right side of the glandular plate. Further examination of this change was completed by scintigraphy Tc99m which showed a possible overexpression of somatostatin receptors in the area of pituitary gland. Ophthalmological consultation revealed reduction of the field of view to 30 degrees. Patient was referred to Neurosurgical Clinic in Warsaw (Children's Health Centre) for transphenoidal microadenoma resection. Boy is obligated to substitute hydrocortisone everyday with dose increase during stress or fever.

CONCLUSIONS: Cushing's disease is ACTH-dependent disease which gives many metabolic complications and can lead to life-threatening conditions. The treatment includes normalization of hormone levels and hence withdrawal of metabolic disturbances and clinical symptoms. Pituitary microadenoma is a rare cause of ACTH- dependent hypercortisolism in children however small tumors can be omitted by MRI. Therefore scintigraphy should be concerned when MRI is inconclusive.

TITLE: ACUTE APPENDICITIS IN NEWBORN

Author(s): Anna Olszanicka, Maria Burda, Karolina Barczak, Michał Wojnowski

University: University of Rzeszow

BACKGROUND: The aim of the study is to describe a rare case which is acute appendicitis in a newborn baby. Acute appendicitis is common cause of acute abdomen in children. The smaller the child, the less characteristic the symptoms. The most common of these is increasing abdominal pain intensified in the lower right, preceding fever, nausea, vomiting or anorexia. Acute appendictis is rarely considered in newborns and infants as the etiological factor of acute peritonitis. However, the presented patient with a genetic defect, severe pregnancy and postpartum complications developed the above disease entity.

CASE REPORT: A newborn male from third pregnancy, third delivery, born at 37 weeks gestation, by average Caesarean section with a body weight of 3360. He will receive 6 points on the Apgar scale at the 1st minute of life, 6 points at the 3rd minute of life and 8 points at 5 and 10 minutes of age. After birth, the child required respiratory support. In the physical examination, generalized edema, reduced muscle tone, facial dysmorphism. After initial stabilization, the child was transported to the neonatal intensive care unit, monitored, complete parenteral nutrition implemented. In the first day of life, due to significant hypercapnia and lack of respiratory drive, the child was intubated and connected to a respirator. On the second day of life, enteral nutrition was introduced with a replacement preparation with an increased degree of protein hydrolysis. On day 11 of life signs of food intolerance were found, green backlog was observed in the stomach probe, and blood was present in the stool. Imaging tests were commissioned: abdominal USG and X-ray of the abdominal cavity. After surgery, the child was qualified for laparotomy. Intraoperatively, gangrenous perforated appendix with diffuse peritonitis was found. The appendix was removed and peritoneal drainage performed.

CONCLUSIONS: Acute appendicitis is a common phenomenon in childhood, but this diagnosis is rarely considered in the differential diagnosis of acute abdomen in the neonatal period. The clinical picture of neonatal acute appendictis is unspecific and may lead to delayed diagnosis and misdiagnosis of necrotizing enterocolitis, which is a much more common condition in the neonatal period.

TITLE: CONGENITAL SYMPTOMATIC CYTOMEGALOVIRUS INFECTION

Author(s): Chodak Weronika, Czyczerska Magdalena, Garbino Karolina

Tutor(s): Alina Kowalczykiewicz-Kuta, MD, PhD

University: University of Opole

BACKGROUND: Cytomegalovirus infection is the most common congenital infection, occurring in approximately 0.6% of live births worldwide. It occurs due to the presence of a virus in the mother's blood (viremia) during pregnancy and then vertically transmitted to the fetus. The vast majority of newborns with congenital cytomegaly (cCMV) do not have any clinical symptoms at birth. Symptoms of the disease vary from mild, non-specific, or multi-organ involvement. The most frequently observed manifestations are petechial rash, jaundice, hepatosplenomegaly, and neurological symptoms. On ophthalmologic examination, 10% of patients with cCMV have chorioretinitis accompanied by optic atrophy. cCMV is also the leading cause of hearing loss and neurological disability in children worldwide. About half of infants with cCMV manifestation are born with features of intrauterine hypotrophy, and one-third are preterm infants. According to the data, the mortality rate of cytomegaly is probably <5%.

CASE REPORT: A newborn born from the second pregnancy, second birth, the female was born by cesarean section for the indications - impending intrauterine asphyxia. After birth, the child was diagnosed with intrauterine hypotrophy and microcephaly. Increasing yellowing of the skin integuments and the appearance of numerous petechiae on the scalp, trunk, and limbs were observed. On the second day of life, an ultrasound of the abdominal cavity revealed splenomegaly, characteristic of cytomegalovirus. A quantitative RT-PCR test was also performed, which confirmed CMV infection.

CONCLUSIONS: Despite the 30% mortality rate in CMV-infected neonates, screening for viral infections is not routinely performed. It is predominant to inform patients about the effects and prevention of the condition. Additionally, it is postulated in the medical community that patients with flu-like manifestations which may suggest CMV disease should be serologically tested and monitored to confirm or rule out cytomegaly.

TITLE: EARLY CLOSURE OF AN ARTERIOVENOUS FISTULA IN THE LUNG OF AN INFANT BOY

Author(s): Piotr Sikorski, Agata Mormul

Tutor(s): Ewa Płodzień, MD, PhD

University: The Children's Memorial Health Institute / Department of Cardiology, Medical University of Warsaw, Poland

BACKGROUND: Solitary pulmonary arteriovenous malformation (PAVM) diagnosed in a newborn is a very rare condition reported only several times while most multiple PAVM cases are hereditary conditions associated with Osler-Weber-Rendu syndrome. This disorder is characterized by right-to-left shunt that leads to dyspnea and cyanosis. Diagnostic tools, that clinicians may use, are: chest x-ray, angio-CT and contrast echocardiography.

CASE REPORT: An infant boy was prenatally diagnosed by ultrasound with arteriovenous malformation of the right lung and cardiomegaly. The patient was a second child, born from the second gestation with an APGAR score of 9 in 37 Hbd, by natural labor. After birth, he was intubated and immediately transported to the Children's Memorial Health Institute. On admission, he was in critical condition. He was hypoxemic (saturation 72%) and with general cyanosis. Due to declining saturation (below 60%) and blood pressure 60/30 mmHg, dopamine was administered. Normalization of blood pressure and saturation was obtained. Diagnostic cardiac catheterization was performed and revealed a large fistula (7.5 mm in diameter) between the interlobar branch and the right inferior pulmonary vein, and a small blood reservoir in the lower right lobe. The patient was urgently qualified for the closure procedure and the malformation was closed with the Amplatzer® Duct Occluder. The procedure was performed without complications. Saturation increased from 57% up to 97% (on 100% oxygen ventilation). A follow-up chest X-ray showed reduced lung aeration in the upper part of the left lung, which resolved within few days. Catecholamine infusion was gradually decreased, and the patient was extubated. The boy was discharged after 10 days.

CONCLUSIONS: PAVM can be a serious condition leading to desaturation, cardiomegaly, and congestive heart failure. Although it is very rare in infants, it should be prenatally diagnosed to allow preparation for the malformation closure procedure. Percutaneous occlusion should be the first-line treatment.

TITLE: PRENATALLY DIAGNOSED COMPLEX CYANOTIC HEART DISEASE

Author(s): Piotr Sikorski, Agata Mormul

Tutor(s): Ewa Płodzień, MD, PhD

University: The Children's Memorial Health Institute / Department of Cardiology, Medical university of Warsaw, Poland

BACKGROUND: The double inlet left ventricle is a rare congenital disease that involves chambers and valves of the heart. The heart of patients with this condition develops only the left ventricle to which both atria are connected. Additionally, other cardiac defects may be presented.

CASE REPORT: The patient is a three-year-old boy with a complex congenital heart disease. He was diagnosed prenatally with a double inlet left ventricle (DILV), transposition of the great arteries (TGA), hypoplastic aortic arch (HAA), and small atrial septal defect (ASD). He was born from the first gestation in 41 Hbd by cesarean section in February 2017. After two weeks, the Norwood procedure was performed with modified Blalock-Taussig shunt (B-T shunt), interatrial sept excision, closure of patent ductus arteriosus, angioplasty that connect the aortic arch and pulmonary trunk. Later, due to narrowing of the B-T shunt, a stent was placed inside percutaneously. In September 2017, the patient was readmitted due to high fatigability. Balloon angioplasty of the aortic arch was performed twice, and finally, in January 2018, a stent was placed there due to re-coarctation. In February 2018, the Glenn procedure was performed and the B-T shunt was closed. The third stage of the surgical treatment, the Fontan procedure, was scheduled for June 2020, but due to the SARS-COV-2 pandemic, it was postponed.

CONCLUSIONS: Prenatal diagnosis of this rare condition is crucial for survival of infants because it allows the doctors to prepare adequate treatment. Only an early operation performed by qualified surgeons with the support of an interdisciplinary team of physicians can give the patient a chance of survival.

Case Report III

TITLE: SUSPECTED PITUITARY ADENOMA SECRETING BOTH THYROTROPIN AND PROLACTIN – A CASE REPORT

Author(s): Radziszewska M., Idzik A.

Tutor(s): Agnieszka Żyłka MD, PhD

University: Department of Oncological Endocrinology and Nuclear Medicine of Maria Sklodowska-Curie National Research Institute of Oncology in Warsaw

BACKGROUND: Thyrotropin (TSH)-secreting pituitary adenoma is a rare cause of hyperthyroidism, representing 0.5-1.0% of all pituitary adenomas. Most TSH-secreting adenomas produce only TSH. However, 20-25% of them secrete one or more other hormones, predominantly growth hormone or prolactin. The co-secretion of TSH and prolactin is five times more common in women than in men.

CASE REPORT: A 48-year old woman reported to Department due to newly-found thyroid nodules in 11.2019. She had no prior history of endocrine diseases. There, patient undergone a neck USG assessment, in which 3 thyroid nodules were found. In the right lobe-1 hypoechoic lesion with the diameters of 4.3x6.9x8.4mm with blurred borders (the biopsy was indicated). The two other nodules were not alarming. The woman had undergone a fine needle aspiration (FNA) biopsy–the results revealed a Bethesda Category III. A follow-up USG and FNA were recommended after 6 months. The patient's thyroid hormone levels were examined in 11.2019 and 12.2019. The lab results revealed elevated fT3 and fT4, while the THS remained within normal limits.In order to find the source of excessive fT3 and fT4, thyroid scintigraphy with radioiodine was done in 01.2020. It revealed no hot nodules and the uptake after 24 hours was 44%. We excluded chronic autoimmune thyroid disease such as Graves' disease due to negative TRAb, ATG and ATPO. Moreover, further blood tests revealed hyperprolactinaemia.In 08.2020 the patient started to complain of hot flushes, hyperhidrosis and palpitations. It was difficult to estimate if symptoms presented were connected with the elevated free thyroid hormones and hyperprolactinemia especially that patient was in premenopausal period.The MR of the brain was performed in 11.2020. It revealed a hypointense lesion in the left lobe of anterior pituitary. It was classified as an adenoma. The patient will be admitted into our department in 05.2021 to undergo a series of hormonal test to exclude or confirm a pituitary adenoma secreting both thyrotropin and prolactin and to exclude thyroid hormone resistance syndrome.

CONCLUSIONS: Although a pituitary adenoma secreting both thyrotropin and prolactin is a rare occurrence, the constellation of findings in this patient require a thorough disease-oriented diagnostic process. During the planed hospital stay TRH stimulation tests will be performed in order to exclude or confirm this diagnosis.

TITLE: CHONDROMALACIA AS A CONSEQUENCE OF THE KNEE JOINTS INJURY – CASE REPORT

Author(s): Chudzicka A., Paulina Śliwińska

Tutor(s): Elżbieta Czykier, MD, PhD, Assoc. Prof.

University: Department of Histology and Embryology, Medical University in Białystok, Poland

BACKGROUND: Knee joint is the largest articulation in human body, it is classified as a complex joint (modified hinge joint). It joins femur with tibia. The joint is cocreated by sesamoid bone – patella, and two menisci. It is strengthened by exterior (collateral and capsular ligaments) and interior ligaments (anterior and posterior cruciate ligaments).

CASE REPORT: 55-year old female patient was admitted to orthopaedic clinic because of the pain in both knee joints caused by fall on both knees while climbing the stairs. The injury took place the day prior to the visit. During physical examination pressure soreness of both joints and considerable flexion limitation was stated. RTG image of both knees was normal. Analgesics were prescribed. Pain of both knee joints was gradually fading though movement limitation still remained. A year after the injury patient again came to orthopaedic clinic because of great flexion limitation in both knee joints. Physical examination revealed atrophy of medial heads of quadriceps femoris muscle in both knee joints and instability in articulations. Repeated radiography did not show any changes but MRI indicated chondromalacia of both knee joints. Rehabilitation of both knee joints (non-weight bearing exercises, exercise pedal and manual therapy) and diet rich in collagen was recommended. Restoration of medial heads of quadriceps femoris muscle, improvement in stability and recovery of flexion movement in both knee joints were achieved.

CONCLUSIONS: Neglection of rehabilitation of both knee joints in posttraumatic period lead to atrophy of medial heads of quadriceps femoris muscle (as earliest in phylogenetic development), resulting in instability of both joints. This in turn brought on nutritional disruption of joints cartilages and resulted in chondromalacia, what caused inability to perform full movements in both knee joints.

TITLE: UNSUCCESSFUL RADIOIODINE TREATMENT FOR TOXIC MULTINODULAR GOITER: A CASE REPORT

Author(s): Kamarauskaitė R.

Tutor(s): Žydrūnė Visockienė

University: Vilnius University

BACKGROUND: Toxic multinodular goiter (TMNG) is the second most common cause of hyperthyroidism after Graves' disease and research shows that radioiodine therapy (RAI) is a highly effective treatment for hyperthyroidism related to TMNG. We present a case of failed RAI therapy that was eventually successfully treated by thyroidectomy.

CASE REPORT: A 78-year-old female, came to see the doctors about dyspnea during light effort and compressive symptoms. She was diagnosed with diffuse toxic goiter 3 years ago and was treated with methimazole since then. Attempt to stop the treatment provoked the re-occurrence of disease. Neck and chest computer tomography (CT) with contrast showed increased thyroid gland volume with multiple nodes in both lobes. Thyroid nodules accumulated Technetium-99m on two-dimensional thyroid scintigraphy with single photon emission CT. Thyroid function tests showed significantly decreased thyroid stimulating hormone secretion (0,02 mU/l (n.0,4-4,0)) and increased serum concentration of free thyroxine (1,24 pmol/l (n. 0,1-0,9)). Therefore, TNMG was diagnosed. Due to recurrent thyrotoxicosis, single calculated radioiodine dose of 399 MBq was administered (24-h radioactive iodine uptake was 38%) as the patient refused surgery. Patient continued methimazole for 6 months following radioiodine therapy until hypothyroidism developed and then was stopped. Two years post radioiodine treatment, the patient developed relapse of hyperthyroidism with persistent paroxysmal atrial fibrillation and compressive symptoms. Despite adequate RAI treatment, nodes remained in both thyroid lobes and neck volume increased causing dyspnea. The patient finally agreed and was referred for surgery due to compressive symptoms. After an uncomplicated thyroidectomy, patient was prescribed 50 mcg of L-thyroxine per day and after a week dose was increased to 100 mcg per day.

CONCLUSIONS: This reported case does not discredit the use of radioiodine treatment for TMNG, but simply emphasizes that even adequate treatment with methimazole and RAI can sometimes fail. In that case, surgical treatment may be required for persistent hyperthyroidism.

TITLE: LIFE- THREATENING BRAIN ABSCESS - CASE STUDY

Author(s): Muszyńska A. , Betlejewska J. , Oszmian M , Bielecka E.

Tutor(s): dr Katarzyna Kapica-Topczewska

University: Department of Neurology, Medical University of Białystok, Poland

BACKGROUND: Brain abscess is a rare, life-threatening disease. It is a focal lesion within the brain parenchyma, caused by bacteria or fungi. The symptoms include signs of increased intracranial pressure, fever and focal neurological deficits. Therapy is usually a combination of pharmacotherapy and surgery.

CASE REPORT: 61-year-old man was referred to Neurosurgery Department because of right-sided hemiparesis and a focal lesion of the left temporal lobe detected on MRI. The patient underwent a neurosurgery. Intraoperatively a brain abscess was diagnosed. After operation antibiotics were administered and improvement of patient state was observed. Brain CT shown dental abscesses. All of them were removed. The patient was transferred to the Department of Infectious Diseases for further intravenous antibiotic therapy with Vancomycin, Ceftriaxone and Metronidazole. On the thirteenth day of hospitalization, the patient experienced a seizure. He was transferred to Neurology Department due to epileptic state with no reaction to given medication. Patient's state at admission was severe, he was unconscious, with hypotension and low saturation. Brain CT has shown an increase of brain oedema. Lab tests indicated features of septicemia. The patient was transferred to Intensive Care Unit due to cardiopulmonary failure because of septic shock. He was intubated and mechanically ventilated, sedated with midazolam and stabilized with catecholamines. Targeted antibiotherapy was used. During hospitalization patient's condition gradually improved. Antibiotherapy, passive oxygen therapy and rehabilitation were used. After numerous consultations and stabilization of the patient's condition, he was transferred to the Rehabilitation Department in Ełk.

CONCLUSIONS: Brain abscess is potentially fatal, but with early diagnosis and proper treatment it may be cured. It is significant not to neglect stomatologic infections and sinusitis as they may be one of the factors causing the brain abscesses.

TITLE: ATYPICAL CLINICAL FORM OF ALLERGIC CONTACT DERMATITIS DUE TO HAIRSPRAY

Author(s): Karny A., Nesterowicz M.

Tutor(s): Prof. Anna Baran MD, PhD; Julita Krahel MD; Prof. Iwona Flisiak MD, PhD

University: Department of Dermatology and Venerology, Medical University of Bialystok

BACKGROUND: Allergic contact dermatitis (ACD) is a common skin disease, affecting up to 27% of the European population, which usually occurs with erythemato-edematous lesions including vesicles. It is associated with hypersensitivity to potentially harmless substances. Erythema multiforme (EM) is atypical manifestation of ACD with noneczematous morphology. It can be caused by such factors as plant substances, topical medications, metals or various chemical compounds. Skin lesions may be limited to the site of contact with the allergen or generalized. Originally, they frequently present typical morphology, which after a few days changes into EM-like ACD. Usually, in the first days after the contact, eruptions occur only in the area directly exposed to the substance and then become more scattered. Furthermore, features of EM are not frequently verified in the histopathological picture.

CASE REPORT: A 70-year-old female patient was admitted to the Department of Dermatology for EM-like skin lesions 24 hours after the application of a new hairspray. On physical examination, erythemato-edematous lesions were visible, mostly on the entire scalp and facial skin. They were accompanied by itching and burning sensations. On the skin of the neck, upper limbs, subpectoral and inguinal folds, locally confluent foci of "target-like" morphology were observed. The patient was weakened and had dyspnoea. The treatment with topical and intravenous corticosteroids, and oral antihistamines resulted in significant clinical improvement.

CONCLUSIONS: EM-like ACD is rare, but it ought to be emphasized that it may occur instead of typical ACD lesions. In the case described, it was most probably caused by hairspray ingredients, i.a. locust bean gum, propylene glycol or fragrances. No case of EM-like ACD due to hairspray has been reported so far. In addition, it is rare for an allergen causing these atypical skin lesions to induce general symptoms as well.

TITLE: ANEMIA INDUCED BY LONG-TERM INTAKE OF FLAX SEED - CASE REPORT

Author(s): Kożuchowska A., Nesterowicz M., Mitera B.

Tutor(s): Elżbieta Czykier, MD, PhD, Assoc. Prof.

University: Department of Histology and Embryology, Medical University in Białystok, Poland

BACKGROUND: Anemia is a set of signs which are caused by decreased below norm level of hemoglobin concentration, hematocrit or erythrocytes. Anemia can be caused by decreased red blood cell production, increased red blood cell breakdown or blood lost. One of the potential causes of anemia is iron deficiency.

CASE REPORT: A 83-years old female, which had undergone an operation (Freud's method) due to carcinoma of corpus uteri ten years ago as well as radiotherapy sought medical attention because of progressive weakness and decrease in exercise tolerance. Physical examination revealed paleness of body integuments and mucous membranes, while laboratory tests shown microcytic anemia and iron deficiency (HGB 7,4 g/d). The patient was hospitalized in Internal Medicine Ward With Cardiological Profile Independent Municipal Hospital in Bialystok. Anemia had been confirmed during the hospitalization. Sinus rhythm with increased heart rate to 89 bpm was observed on EKG. Chest X-Ray had not showed any pathological changes. Abdominal USG revealed slight increase in echogenicity and stenosis of the liver. Two units of packed red blood cells was given on the admission day. Then every second day of hospitalization the patient received Venofer i.v. (Iron (III) oxide-hydroxide and saccharose complex) under control of laboratory tests. The patient was discharged after all parameters of full blood count came back to normal. She was recommended to take iron preparation (Sorbifer Durules) as well as give up on flax seed which had been previously taken by the patient every day on an empty stomach for 10 years (as advised by Department of Oncology after radiotherapy due to carcinoma of the corpus uteri).

CONCLUSIONS: Long-term (in this case 10-years-long) supplementation of flax seed lead to impairment of iron absorption and in result development of microcytic anemia.

TITLE: 46 XY, FEMALE. COMPLETE ANDROGEN INSENSITIVITY SYNDROME: A CASE REPORT

Author(s)*:* Kruczyk B., Grądzik A.

University: Medical University of Warsaw, Poland

BACKGROUND: Androgen insensitivity syndrome (AIS) is an inherited disorder of sexual development caused by mutations in the androgen receptor encoding gene.

CASE REPORT: A female patient born in 1984, weighing 68 kg and measuring 171 cm, at the age of 17, was diagnosed with complete androgen insensitivity syndrome, during the diagnosis of primary amenorrhea. She was assigned grade 7 in the Quigley scale. Cytogenetic analysis showed a 46 XY karyotype. Gynecological examination revealed a blind ending vagina and a lack of uterus. Physical examination revealed normal breast development and scanty pubic and axillary hair. The patient kept seeing herself as a woman. At the age of 18*,* the patient underwent laparoscopic gonadectomy. Before the surgery, the testosterone level was 5.6 ng/ml, and after 0.6 ng/ml. Macroscopic histopathological examination of the gonads revealed a cyst and many lumps. Microscopic evaluation has suggested a tubular adenoma. After the procedure, the patient was under medical supervision and was taking orally 1 mg of estradiol daily. At the age of 24 patient was diagnosed with osteoporosis, T-SCORE was -2.6 SD, later in 2012 -2.76 SD. The patient received sodium alendronate and ibandronic acid. The level of FSH was 35.50 mlU / ml, and LH was 13.05 mlU/ml.

CONCLUSIONS: Quigley grades 6 and 7 correspond to complete androgen insensitivity. The genitals are completely feminized, and newborns at birth are assigned as females. The diagnosis is usually established during the diagnostics of primary amenorrhea. CAIS is associated with high risks of gonad carcinogenesis and therefore a gonadectomy must be performed. Hormone replacement therapy (HRT) is required after gonadectomy in order to maintain secondary sexual characteristics. Due to the high risk of osteoporosis patient requires calcium and vitamin D supplementation and bone density control. The prognosis is good, and gonadectomy and HRT usually give satisfactory long-term results.

TITLE: BRAIN TUMOR DUE TO NATALIZUMAB TREATMENT OF MULTIPLE SCLEROSIS?- A CASE REPORT

Author(s): Janosz P., Wądołowska P.

Tutor(s): prof. Alina Kułakowska, PhD Katarzyna Kapica- Topczewska

University: Medical University of Bialystok

BACKGROUND: Multiple sclerosis is autoimmune demyelinating disease. Various therapies are used to reduce inflammatory response in the central nervous system, including monoclonal antibodies like natalizumab, which prevents autoaggressive T lymphocytes from migration through the blood-brain barrier, thus it is associated with side effects resulting from reduced immune response in CNS, such as progressive multifocal leukoencephalopathy due to reactivation of JC virus. There are a few case reports in literature of gliomas possibly associated with natalizumab treatment of MS, which may result from reduced brain immune surveillance.

CASE REPORT: A 62 year old female was diagnosed with multiple sclerosis at the age of 40. Patient met both clinical and radiological criteria of the second-line treatment and has begun natalizumab treatment after 12 years of disease (52 year old, EDSS 4.0). She has been JCV negative. At the age of 59 (7 years of natalizumab treatment) suspicious brain lesions were detected in MRI findings in the left parietal lobe suggesting low grade astrocytoma or tumefactive form of multiple sclerosis. In order to make a definitive diagnosis, stereotactic brain biopsy was performed, which revealed low grade glioma in the frontoparietal area and parts of the corpus callosum.

CONCLUSIONS: To our knowledge, there were only two other cases of gliomas possibly associated with natalizumab therapy in the literature. Both were high grade gliomas (glioblastoma multiforme) and developed after relatively short time after natalizumab treatment onset (2 years; 7 months), as opposed to our case report (low grade glioma after 7 years of natalizumab treatment). One of the patients described in literature died in a short time after diagnosis (13 months), but the other survived. Our patient is still alive. This is only a case report, so we cannot say anything about a possible causal link between onset of natalizumab therapy and glioma. However, our case highlights the importance of awareness of possible unknown side effects of natalizumab treatment of multiple sclerosis.

TITLE: SECONDARY ADRENAL INSUFFICIENCY AFTER SUSPECTED LYMPHOCYTIC ADENOHYPOPHYSITIS

Author(s): Idzik A., Radziszewska M.

University: Department of Oncological Endocrinology and Nuclear Medicine, National Institute of Oncology

BACKGROUND: Lymphocytic hypophysitis (LYH) is a neuroendocrine disorder with autoimmune inflammation of the pituitary gland. In one type of LYH, lymphocytic adenohypophysitis (LAH), an early destruction of the ACTH-producing cells could lead to development of long-lasting secondary adrenal insufficiency.

CASE REPORT: A 30-year-old patient with a history of chronic autoimmune thyroiditis, insulin resistance, hypercholesterolaemia and obesity was diagnosed with secondary adrenal insufficiency due to an isolated corticotropin deficiency after a suspected lymphocytic adenohypophysitis. She was admitted for a cortisol stimulation test with synthetic corticotropin (Synacthen). Previously, patient was hospitalized in 2016 to diagnose chronic fatigue, drowsiness and dizziness –secondary adrenal insufficiency due to reduced cortisol levels along with inadequately low ACTH levels was detected. Additionally, a pineal gland cyst (12x6x7mm) was discovered. Since diagnosis patient used hydrocortisone in a dose of up to 20mg per day for 3 years. In 2019 she discontinued therapy due to weight gain. Soon the symptoms returned, with additional menstrual disorders and transient hyperprolactinaemia. In 01.2021 a test with 250µg of Synacthen was performed, in which a normal increase in cortisol concentrations was observed in the 30th and 60th minute (cortisol concentration- 21.38µg/dL and 24.8 µg /dL, respectively), which confirmed adequate adrenal reserve. However, decreased levels of cortisol in the morning were observed twice (4.54ug/dL - on admission and 5.52 µg /dL - next day) with lower concentration of ACTH (26.2pg/mL) - confirming the secondary adrenal insufficiency after 5 years since the suspected LAH.

CONCLUSIONS: After suffering from pituitary inflammation, the insufficiency of the corticotropic axis due to isolated ACTH deficiency may persist for years. Adequate hydrocortisone substitution seems to be of key importance. It is vital to ensure the patient is informed to use steroid cover for stressful situations, even with adequate adrenal reserve.

TITLE: FIRST-DEGREE ATRIOVENTRICULAR BLOCK IN THE REITER'S SYNDROME

Author(s): Mitera B., Nesterowicz M., Kożuchowska A., Śliwińska P.

Tutor(s): Elżbieta Czykier, MD, PhD, Assoc. Prof.

University: Department of Histology and Embryology, Medical University in Białystok, Poland

BACKGROUND: Reiter's syndrome is characterised by a triad of symptoms: conjunctivitis, urethritis and arthritis. Joints manifestations are characterised by asymmetric inflammatory arthritis of large joints (knee joints and ankle joints). It occurs 20 times more often in men than in women. Clinical signs of Reiter's syndrome concern the joints, genitourinary system, organs of vision, skin and mucous membrane.

CASE REPORT: 45-year-old patient was admitted to the hospital due to pain in the sacral area, knee joints, pain and swelling of both Achilles tendons and easy fatigue. The low back pain appeared 5 months after the viral infection. As a result, the patient took nonsteroidal anti-inflammatory drugs and indometacin, what reduced his complaints. Periodic burning in the urethra and frequent urination occurred 4 months before the patient was admitted. He was diagnosed with prostatitis and then doxycycline was administered, and after that the patient was given metronidazole and tinidazole, and the conditions stopped. Three weeks before the hospitalization, exertional palpitation, easy fatigue and first-degree atrioventricular block in electrocardiography occurred. Physical examination revealed muffled heart sounds, especially the first heart tone at the apex and in the Erb's point. The locomotive organ of the patient was affected by swelling and tenderness of both Achilles tendons and ankle pain during movement. Laboratory investigation revealed ESR 32/62. *Chlamydia trachomatis* was found in a swab from the conjunctival sac of both eyes and the urethral discharge. ECG showed normal electrical axis of the heart, regular sinus rhythm and first-degree atrioventricular block (PQ interval - 0,3 s). X-ray image of the sacroiliac joints showed extending of joint space, roughness of the articular surfaces on the side of hip bones with a minor tendency to sclerotization, mostly in the left joint.

CONCLUSIONS: Taking into consideration the clinical picture, increased ESR, radiographic changes in sacroiliac joints, prostatitis in the history of presenting complaint and presence of *Chlamydia trachomatis*, incomplete Reiter's syndrome with first-degree atrioventricular block was diagnosed.

TITLE: WHEN GUIDELINES ARE OF NO USE - MEDICAL TREATMENT DILEMMA BETWEEN HAS-BLED AND CHA_2DS_2–VASC HIGH SCORES

Author(s): Niedzielska K., Markowska M., Domin M., Niebudek P., Gryciuk M.

Tutor(s): Assoc. Professor Edyta Zbroch, MD, PhD

University: Medical University of Białystok

BACKGROUND: Haemoptysis is the expectoration of blood from the lung parenchyma or airways. The most common causes of haemoptysis are acute respiratory tract infections, asthma, bronchiectasis, chronic obstructive pulmonary disease or malignancy. Also, pulmonary embolism is worth remembering, nevertheless it is considered as a moderately frequent cause. Rivaroxaban is an oral anticoagulant drug, a selective inhibitor of active factor X. The side effects of rivaroxaban include, among others, nosebleeds, bruising, bleeding gums. More serious hemorrhagic complications are not frequently observed.

CASE REPORT: An 85-year-old man with a history of COVID-19 admitted at the Emergency Department with acute onset haemoptysis. Due to the chronic pulmonary thromboembolism, post-thrombotic syndrome and permanent atrial fibrillation patient was given rivaroxaban (15mg) and acetylsalicylic acid (75 mg). The patient was also diagnosed with heart failure with mid-range ejection fraction (EF=48%) and chronic kidney disease in G3a stage (GFR=53,9ml/min). Previous medical history included several episodes of epistaxis caused by higher doses of rivaroxaban (20mg). Additionally an acute episode of upper gastrointestinal bleeding causing severe anaemia (Hb=4mg/dl) along with pulmonary embolism occured three months prior. In the Emergency Department, the patient presented, except haemoptysis, severe oedema of lower limbs. Laboratory tests demonstrated moderate anaemia, elevated D-dimers (2360 ng/ml), INR=1,36. CT-angiography revealed filling defects in the segmental arteries of the right lower lobe, that indicated chronic pulmonary embolism. After the discontinuation of anticoagulant medications and diuretics administration the symptoms disappeared. On the sixth day of the hospitalization apixaban was given with great effect.

CONCLUSIONS: The patient had high score in HAS-BLED scale, that indicated the risk of bleeding, whereas high score in CHA_2DS_2–VASc scale indicated high risk of thrombotic episode. This case is a pure example where medical guidelines are insufficient. The right treatment in such a situation depends on experience of the physician.

TITLE: A IATROGENIC KAPOSI'S SARCOMA AFTER CYTOSTATIC THERAPY IN A PATIENT WITH AN ADVANCED MAMMA CARCINOMA

Author(s): Sandersfeld M.

Tutor(s): Prof. Dr. Laszlo Gyula Fekete, Dr. Laszlo Fekete, Dominik Schwarzkopf-Kolb

University: Department of Dermatology, UMFST Targu Mures, Romania

BACKGROUND: Kaposis's sarcoma (KS), described by Kaposi Mór in 1872, is a multifocal mesenchymal neoplasia which affects mostly the skin. There has been four epidemiological forms described: classic KS (Mediterranean), endemic KS (African), KS appearing during HIV infection and iatrogenic KS.

CASE REPORT: In our present case we have a rare encounter with the iatrogenic KS during the treatment with cytostatics. We want to present the case of a 74 year old woman diagnosed with invasive ductal breast cancer, stage IV. She followed a treatment with a combination of cytostatics for 8 months and subsequently found the appearance of multiple pink-purple colored tumorous formations which had a hard consistency. They appeared on the upper and lower limbs bilaterally and were clinically as well as histologically confirmed to be KS. As the KS can occur in different clinical forms, we have a broad spectrum of differential diagnostics to be made including angiosarcoma, angioma, spindle cell melanoma and so on.

CONCLUSIONS: The appearance of KS in patient's suffering from a carcinoma in an advanced stage and treated with cytostatics, is rare. Therefore, it is important to underline it's existence through the rare cases that can be found, to enhance early diagnosis in other patients.

Case Report IV

TITLE: HYPERTRIGLYCERIDEMIA-INDUCED PANCREATITIS DURING PREGNANCY

Author(s): Agnė Norbutaitė

Tutor(s): Sandra Strainienė, Agnė Dikčiūtė, Ieva Stundienė, Ilona Savlan

University: Centre of Gastroenterology, Hepatology and Dietetics, Vilnius University, Faculty of Medicine

BACKGROUND: Acute pancreatitis is a rare condition during pregnancy with an incidence of 3/10 000. Hypertriglyceridemia is the third most common cause of gestational pancreatitis after gallstones and alcohol abuse, and accounts for 4 % of all cases. Hypertriglyceridemia-induced pancreatitis usually occurs in pregnant women with pre-existing lipid metabolism abnormalities.

CASE REPORT: A 30-year-old pregnant woman in the 18th week of gestation was admitted to the emergency department complaining of severe pain in the upper abdominal region, nausea and vomiting. She had a history of two episodes of acute pancreatitis and familial hypertriglyceridemia. The palpation of the epigastric and left hypochondriac region was painful. Blood analysis showed elevated levels of total cholesterol 16.19 mmol/l, triglyceride 47.96 mmol/l, decreased high-density lipoprotein 0.49 mmol/l and elevated lipase activity 593 U/L. Abdominal ultrasound revealed a small amount of peripancreatic fluid. The patient was diagnosed with acute hypertriglyceridemic pancreatitis and hospitalized to our tertiary center. Initial treatment included diet, pancreatic enzyme replacement therapy, proton pump inhibitors, crystalloid infusion, non-steroidal anti-inflammatory drugs, antiemetics and omega-3 fatty acids. Plasmapheresis procedures were performed to reduce triglyceride levels. Five days later, the patient was discharged home in good condition. In 2 weeks, she returned to the emergency room with severe abdominal pain. Blood analysis showed significantly increased cholesterol and triglyceride levels, for which plasmapheresis was repeatedly performed. Due to the high risk to the mother and the fetus, labor was induced at the 37th week of pregnancy. A female newborn weighing 4000 g was delivered, and the patient was discharged home on the third day after giving birth.

CONCLUSIONS: Hypertriglyceridemia-induced pancreatitis requires early diagnosis and treatment as it may lead to severe complications, including premature delivery, increased maternal and fetal morbidity and mortality. Its management during pregnancy remains a challenge. Proper diet, omega-3 fatty acids and plasmapheresis, along with standard therapy of pancreatitis, are safe and effective treatment options.

TITLE: APPENDICEAL MALIGNANCY MASKED AS CHRONIC PELVIC PAIN SYNDROME AND OVARIAN TUMOR IN 33-YEAR-OLD WOMAN

Author(s): Bałdyga Paulina[1], Kisielewska Lidia Natalia[1], Floraszek Mateusz[1], Trocka Daria[1], Kołcz Aleksandra[1]

Tutor(s): lek. Dobroch Jakub[2]

University: [1] Students' Scientific Group at the University Oncology Center, Medical University of Bialystok
[2] Department of Gynecology and Gynecologic Oncology, University Oncology Center, Medical University of Bialystok

BACKGROUND: Chronic Pelvic Pain Syndrome (CPPS) can be caused by gynecological, urological or gastrointestinal disorders. After excluding common causes, more advanced diagnostics should be conducted. Low-grade appendiceal mucinous neoplasm (LAMN) is a rare, heterogeneous disease which clinical course might be masked as chronic inflammation.

CASE REPORT: A 33-year-old woman was admitted to the Gynecologic Oncology Unit with a suspicion of ovarian tumor associated with CPPS. She was directed from a local hospital because of escalating symptoms. She had a history of cesarean section with removal of theca lutein cyst 2 years earlier. Since then she has complained about pelvic pain and received further antimicrobial therapies for suspected pelvic inflammatory disease (PID) and gastrointestinal diseases. Imaging diagnostics showed 10-cm-diameter pelvic cyst and laboratory results revealed increased level of inflammation markers and CA-125. The patient was qualified for the explorative laparotomy. During the operation adnexal mass with right ovary and fallopian tube were removed as well as inflammatory appendix and adhesions. Frozen section revealed no malignant lesion in the resected material. Final pathology report determined diagnosis as LAMN with unspecified surgical margins positivity. The patient was referred to the oncological surgery unit in order to establish further treatment plans. After operation pelvic disturbance surceased completely. No indications for secondary surgery were identified as there were no suspicious lesions in postoperative magnetic resonance results and no symptoms were alleviated. Strict oncological follow-up was recommended. Until now, the patient presents no symptoms of recurrence neither of neoplasm nor inflammation.

CONCLUSIONS: CPPS can mask severe diseases either of genitourinary system or gastrointestinal tract, including malignancies. Multidisciplinary approach could lead to faster and more precise diagnosis in complicated cases. Exhaustion of diagnostics and treatment possibilities should lead to change of search direction - in this case, a rare neoplastic lesion of the appendix. This is particularly important among patients suffering from severe pain.

TITLE: THREE CASES OF EXTREMELY RARE SMALL CELL BLADDER CANCER

Author(s): Kacper Orzeł, Rafał Wojcieszuk

Tutor(s): PhD Grzegorz Młynarczyk

University: Department of Urology, Medical University of Białystok, Poland

BACKGROUND: Small cell carcinoma typically can be found in the lungs. However, infrequently it may originally localise in the urinary bladder. Therefore, it requires different therapeutic approach than other forms of bladder cancer.

CASE REPORT: Patient 1: 80-year old male with dysuria and heamaturia arrived at the Emergency Department. USG showed a solid lesion on the right wall of the bladder. TURBT was performed at the Department of Urology. Histopathological examination of the resected lesion revealed SCCB. CT did not show any metastases. The patient refused receiving neoadjuvant chemotherapy and died 4 months later. Patient 2: 65- year old male, admitted to the Department due to bilateral hydronephrosis, massive macroscopic heamaturia and suspicion of bladder neoplasm, underwent TURBT as well as percutaneous nephrostomy. The pathologist confirmed that the lesion was an invasive urothelial carcinoma with small cell carcinoma component. CT revealed irregular external bladder contour and extensive nodular thickness of the bladder wall. No metastatic changes were found. The patient was treated with three courses of neoadjuvant chemotherapy: Gemcitabine + Carboplatin followed by cystectomy. Patient 3: 72-year old female with first-time heamaturia was admitted to the Emergency Department. During palpation a huge abdominal mass was discovered and confirmed by USG. At the Department of Urology the patient underwent TURBT. Histopathological examination of the lesion revealed SCCB. A massive tumour of the bladder was found in CT. During laparotomy the lesion could not have been resected due to an extensive infiltration. The oncologist did not decide to start adjuvant chemotherapy. The patient died three months after first symptoms.

CONCLUSIONS: SCCB is highly aggressive and usually diagnosed at an advanced stage what entails a poor prognosis. Although no standard treatment has been established yet, neoadjuvant chemotherapy followed by radical tumour resection seems the most effective. Therefore, an individualised multidisciplinary treatment should be implemented immediately in order to increase patients' chances of survival.

TITLE: ACUTE PULMONARY EMBOLISM AFTER CESAREAN SECTION: A CASE REPORT

Author(s): Migle Jurgelenaite, Migle Vitartaite

Tutor(s): Deimante Hoppenot

University: Lithuanian University of Health Sciences

BACKGROUND: During the pregnancy, the risk of venous thromboembolism (VTE) is 5-10 times greater (compared to non-pregnant women) where it peaks during and shortly after delivery due to a hypercoagulable state. Moreover, the frequency of VTE increases with Cesarean section (CS), which could lead to a long-term deep vein insufficiency.

CASE REPORT: We report the case of a 34-year-old obese woman with acute dizziness presented to the Emergency department (ED). The patient delivered a healthy baby via CS five weeks ago (sixth pregnancy and fifth labor). She was also diagnosed with acute thrombosis of right femoral and popliteal veins as well as acute thrombosis of left ulnar and cephalic veins two weeks after CS and was treated with LMWH twice daily at therapeutic doses. At ED, a head computed tomography scan (CT) ruled out any brain vascular pathology; abdominal ultrasound did not show gynecological pathology. Chest CT pulmonary angiography revealed multiple filling defects bilaterally within the pulmonary vasculature with acute pulmonary emboli and diagnosis of pulmonary embolism (PE) was established. Compression venous US showed thrombosis of the right saphenous and femoral vein as well as bilateral popliteal vein thrombosis. The patient was hospitalized and i.v. treatment with unfractionated heparin via continuous infusion pump was initiated later followed by warfarin administration. Unfortunately, the tests for thrombophilia were not performed. The patient was discharged from the hospital on the 14th day of hospitalization, taking 10mg of warfarin. She was seen 9 months later and had no recurrent PE, CTEPH nor deep vein thrombosis and anticoagulant was stopped.

CONCLUSIONS: Women are at increased risk of VTE during pregnancy and the postpartum period. Use of appropriate medical imaging is essential when DVT or PE are suspected in this group of patients. Furthermore, testing for thrombophilia (including antiphospholipid antibodies and lupus anticoagulant) should be considered in patients as we presented.

TITLE: DISSEMINATED PAPULES ON THE CHEST IN A PREGNANT WOMAN – GROVER'S DISEASE. CASE REPORT

Author(s): Sankowska Małgorzata

Tutor(s): Magdalena Misiak-Gałązka, MD, PhD

University: [1] Department of Dermatology, Medical University of Warsaw, Poland

BACKGROUND: Skin lesions in pregnant women might be skin dermatoses specific to this period whereas other occur during pregnancy as well as are common in the general population. Grover's disease also known as transient acantholytic dermatosis, is characterized by papular or papulovesicular pruritic skin lesions of the trunk and proximal extremities. The occurrence of Grover's disease during pregnancy is extremely rare. Etiology has not yet been firmly established. However, there is a plausible evidence that chronic diseases or drugs can induce the symptoms. The typical patient profile concerns a man aged between 50 and 60 years old. The diagnosis is mainly based on histopathological examination which is decisive in ambiguous cases and should be supported by dermoscopy.

CASE REPORT: A 32-year-old healthy patient, in III trimester of pregnancy made an appointment in dermatology outpatient clinic due to disseminated pruritic papules on the chest. Skin lesions had appeared a few weeks before doctor's appointment. The results of routine laboratory tests were within normal limits, including serum bile acid level. Therefore, intrahepatic cholestasis of pregnancy was excluded. Dermoscopy revealed characteristic yellow-brown polygonal structures. In histopathological examination acantholysis and dyskeratosis were reported. Based on clinical-histopathological correlation Grover's disease was finally diagnosed. Because of patient's pregnancy, emollients were applied and successfully reduced pruritus.

CONCLUSIONS: Being typical of elderly men, Grover's disease should be included in the differential diagnosis for the pruritic papular skin eruptions associated with pregnancy. Detailed patient's history, precise physical examination, skin biopsy and dermoscopy combined all together provide important diagnostic tool towards Grover's disease. It is crucial to identify such cases and have knowledge on how to conduct treatment with caution during patient's pregnancy.

TITLE: INTRAHEPATIC CHOLESTASIS OF PREGNANCY: CASE REPORT

Author(s): Justė Petkevičiūtė

Tutor(s): prof. dr. Diana Ramašauskaitė

University: Faculty of Medicine, Vilnius University, Lithuania

BACKGROUND: Intrahepatic cholestasis of pregnancy (ICP) is usually developing in the third trimester of pregnancy and is resolving after delivery. This disease is characterized by pruritus, especially on the palms and soles, and elevated serum bile acid concentration. Ursodeoxycholic acid is a basic treatment. With higher bile acid concentration, early delivery is recommended to reduce fetal demise risk.

CASE REPORT: A 35 year old woman (I pregnancy, I delivery) first noticed a bloody vaginal discharge at 26 weeks of gestation and arrived to the hospital. Low-lying but not previa placenta was found during ultrasound. After 2 days bleeding has increased and woman applied to the Perinatal Center. At 31 weeks of gestation the short cervix 2,6 cm was diagnosed. At 33 weeks of gestation elevated liver enzymes - ALT 387 U/l, AST 250 U/l and shortening cervix were discovered. A patient complained pruritus on the palms and soles, worsening at night. She was hospitalized and ICP was suspected. Gastroenterologist prescribed ac. Ursodeoxicholici 1000 mg/d because of elevated liver enzymes - AST 230 U/L, ALT 384 U/L and elevated bile acid 15,4 µmol/L. ICP was diagnosed. During hospitalization bloody vaginal discharge repeated and short cervix 2,1 cm diagnosed. Because of this reason Sol. Dexamethasoni 12 mg intramuscularly 2 times every 12 hours was prescribed for fetal lung maturation and there was no bleeding after the procedure. After 14 days of hospitalization, pruritus disappeared, bile acid – 10,1 µmol/L and liver enzymes levels – AST 219 U/L, ALT 373 U/L decreased. At 35 weeks of gestation patient was monitored, fetus nonstress test was reactive. Pruritus repeated at 36 weeks of gestation. Laboratory results remained the same until labour. At 37 weeks of gestation patient arrived for labour induction. Fetus development corresponded to gestational age. Amniotomy and oxytocin have been used for labour induction. A newborn female was born with the help of vacuum – assisted vaginal delivery. Newborn weight was 3120 g, height – 53 cm, rated 8/8 by Apgar. Amniotic fluid was clear.

CONCLUSIONS: The patient had typical ICP symptoms and it was easy to diagnose although management was challenging. In this case, bile acid concentration and liver enzymes levels remained elevated until delivery despite active treatment with ursodeoxycholic acid.

TITLE: SIMULTANEOUS RADICAL TREATMENT OF TRIPLE-NEGATIVE BREAST CANCER AND CERVICAL CANCER: CASE REPORT

Author(s): Katarzyna Uchimiak, ONKOMA Student Research Group

Tutor(s): Roman Dubiański, MD, PhD, Maria Sklodowska-Curie National Research Institute of Oncology

University: Medical University of Warsaw

BACKGROUND: Breast cancer (BC) is the most common malignancy among females worldwide and the leading cause of cancer-related death among women. Triple negative BC (TNBC, no expression of estrogen and progesterone receptors and no overexpression of HER2 receptor) is a BC subtype with the least favourable prognosis. Multiple primary malignancies (MPMs) defined as the diagnosis of at least 2 unrelated primary malignancies in a single patient within 6 months occur rarely and remain described mainly as case reports. Typically, the treatment is sequential, and the process begins with the most aggressive tumor. In this report we present a case of synchronous TNBC and cervical cancer with simultaneous and radical treatment of both diseases and achieved pathological complete response (pCR) of BC.

CASE REPORT: A 56-year-old woman with stage III TNBC received neoadjuvant chemotherapy to be followed by modified radical mastectomy (MRM) and radiation therapy. Within a month from initiating the treatment the patient was also diagnosed with primary stage IB cervical cancer. The BC-related chemotherapy was continued with additional radiochemotherapy and high dose-rate brachytherapy of cervical tumor. In a post-MRM histopathology report a pCR of BC was achieved with no lymph node metastases. After 6 months no signs of cervical intraepithelial neoplasia were reported in Pap test. To date, the patient remains alive and well with no disease recurrence observed.

CONCLUSIONS: As the frequency of MPMs appears to be growing, it is crucial to highlight possible treatment strategies for affected patients. The presented case is an example of successful, simultaneous, aggressive treatment of two primary tumors, which may comprise a valuable source for future research on MPMs therapeutic solutions.

Case Report V

TITLE: ABDOMINOPLASTY AFTER BARIATRIC TREATMENT - CASE REPORT

Author(s): Paulina Śliwińska, Małgorzata Wasilczuk, Oliwia Froń, Aleksandra Chudzicka, Miłosz Nesterowicz, Monika Olszańska

Tutor(s): dr. n med. Piotr Wojskowicz, lek. Hend Malla

University: 1st Clinic of General and Endocrine Surgery, Medical University of Bialystok

BACKGROUND: We state obesity when adults' BMI is higher than 30 kg/m^2. Each year an amount of obese people is rising. WHO research has shown that there were more than 650 million of obese people in the world in 2016. Decrease in body weight is not always associated with the complete return to normal everyday functioning and social life. The appearance of excess skin folds makes it difficult to care for, degrades mobility and social life of people who have won the fight against obesity. Abdominoplasty is extremely important for these patients to return to full health.

CASE REPORT: A 38-year-old patient, 170 cm high,is struggling with obesity since childhood. In 2016, he was admitted to the Department of Endocrinology, Diabetology and Internal Medicine. The patient weight was 255 kg, he was diagnosed with morbid obesity (BMI=88,24 kg/m^2) and its complications. After a surgical consultation, he was qualified for Sleeve Gastrectomy and recommended Bioenteric Intragastric Balloon insertion. The same year, in order to prepare the patient for the surgery the BIB has been inserted. In 2017, a sleeve gastrectomy was performed using the laparoscopic method. After the surgery he lost 125 kg and the excess of skin and subcutaneous folds has appeared. In 2019, the abdominal fold was surgically excised. In 2020, the patient's body weight was 85 kg. Another abdominal plastic surgery was performed.

CONCLUSIONS: Abdominoplasty is a complementary procedure in the treatment of obesity: it's an additional method of decrease of body weight and forms body shape. It contributes to the improvement of hygiene, well-being and social life of patients.

TITLE: FUNCTIONING ADRENAL TUMOR WITH COEXISTING MENINGIOMAS - CASE STUDY

Author(s): Maciej Święcicki, Maciej Chlabicz, Maksymilian Lech

University: Medical University of Białystok

BACKGROUND: Meningiomas are usually benign intracranial tumors derived from meningothelial arachnoidea cells. They appear mostly in elderly women and are often associated with NF2 mutation. Functioning adrenal tumor, on the other hand, is any adrenal tumor that produces hormones - catecholamines in pheochromocytoma and steroids in adenomas - causing relevant symptoms. The idea was to find a connection between those two neoplasias that were found in our patient, who also presented with many unspecific symptoms.

CASE REPORT: We present a case of a 66-year-old female who suffered from reoccurring jitter of the left half of her face. Physical examination also uncovered lateral vision field depletion on the left side. Imaging tests revealed 2 meningiomas, one of them surrounded by oedema - which justified the resection - and one adrenal mass, radiologically resembling pheochromocytoma. Yet, laboratory research gave no clue about the real nature of the tumor. Despite its inscrutable constitution, there were signs of secretory activity, so treatment had to be conducted. The used method was retroperitoneal laparoscopic adrenalectomy. Histopathological studies were unclear and have neither confirmed adenoma nor pheochromocytoma. Removal of the larger meningioma was then performed. The dura mater was cut open and the tumor was removed in two steps - the greater mass of the tumor first, and then the remnants that have grown into their surrounding, including the olfactory tract. Resected tumor was described as meningothelial meningioma, but it was uncertain which category of malignancy should it be assigned to.

CONCLUSIONS: The tumors may have been resected, but none of them could explain the patient's neurological symptoms - we also found no association between the tumors themselves, still not being sure if our patient has some hereditary neoplasm syndrome or not. All of this makes our case a good example of tricky diagnosis and highlights the importance of genetic tests in predicting the patient's prognosis when clinical examination and histopathology is not enough.

TITLE: THERAPY OF PATIENTS WITH ACROMEGALY

Author(s): Dominik Straszak

Tutor(s): dr n. med. Mateusz Tabin

University: Uniwersytet Medyczny w Lublinie, Katedra i Zakład Syntezy i Technologii Chemicznej Środków Leczniczych

BACKGROUND: Acromegaly is a rare disease of adulthood caused by growth hormone excess, usually caused by pituitary gland tumor. Symptoms includes. deformations of osteoarticular system, cardio- and hepatomegaly, increased risk of thyroid gland and colon cancer. The basic method of acromegaly treatment is transsphenoidal removal of the pituitary gland adenoma. In pharmacotherapy somatostatin analogues are the first choice, while dopaminergic agonists or growth hormone receptor antagonists are used as adjuvants. Radiotherapy is presented as a palliative method.

CASE REPORT: A 40-year-old woman was admitted to the Endocrinology Department of the 4th Military Hospital in Wrocław on March 2021 for evaluation after surgery of GH-secreting macroadenoma. A patient was hospitalized in the department a year before - then she was diagnosed with acromegaly (in MRI of the pituitary gland showed a heterogeneous mass od size 16 x 12 x 18 mm which partially compress the optic junction) and secondary hypothyroidism. Then six-month course of somatostatin analogues was presented and surgical treatment recommended. In May 2020 she underwent pituitary adenoma removal. 3 days after the this procedure she developed malaise and dizziness. After hospitalization of that reason, post-surgical secondary adrenal insufficiency was diagnosed and hydrocortisone replacement therapy was introduced with the clinical and laboratory improvement. Currently, she does not report any disturbing symptoms. During the current stay, the secretory function of the pituitary gland was assessed. Based on the studies performed so far, the patient is diagnosed with secondary adrenal insufficiency and secondary hypothyroidism. Persistent acromegaly was diagnosed in view of the elevated IGF-1 concentration and luck of suppression of growth hormone in oral glucose tolerance test. In addition to hormonal substitution, continuation of somatostatin analogues was recommended for further treatment.

CONCLUSIONS: The patients was diagnosed with persistent acromegaly. Surgical treatment got tangled up in secondary adrenal insufficientia. Continuation of farmacological treatment with somatostatin analogues was presented and further control planned.

TITLE: LEFT SCROTAL INFLAMMATORY SWELLING AS A RARE COMPLICATION OF ACUTE NECROTIZING PANCREATITIS: A CASE REPORT

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Tutor(s): Dr. med. Kaspars Zeiza [2,3], Dr. med. Antons Rudzāts [2,3]

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BACKGROUND: An inguinoscrotal swelling due to acute necrotizing pancreatitis is a very rare complication resulting from an effusion of pancreatic juices into the inguinal canal. This clinical case describes one of the rare complications of acute necrotizing pancreatitis.

CASE REPORT: A 44-year-old male with past medical history of alcohol abuse and bilateral, possible congenital inguinal hernia. The patient was hospitalized with a 3-day history of fatigue, nausea, bilateral scrotal swelling and pain, worsening abdominal pain and fever up to 38°C. Laboratory investigations revealed elevated serum levels of banded neutrophils, CRP, glucose, procalcitonin and lipase, and decreased level of platelets. The diagnosis of alcohol induced acute necrotizing pancreatitis and ascites was confirmed. Initially the patient received conservative intensive care at the ICU due to development of multiple organ failure. The edema of the right scrotum gradually disappeared within a few days. Later the patient underwent repeated focused open US-guided pancreatic necrosectomies and drainage of the left retroperitoneal cavity, as well as incision and drainage of the left hemiscrotum due to persistent swelling of the left scrotum. Purulent exudate was drained through the placed sterile glove drain of the left scrotum. Culture of this exudate revealed multidrug-resistant coagulase-negative *staphylococci*, *Corynebacterium sp., Enterobacter cloacae* and *Enterococcus faecium*. During the intrahospital 2-month period, partial reduction of the left scrotal swelling occurred, however purulent discharge from the scrotal drainage persisted. Repeatedly consulting with urologist and considering the patient's negative dynamic of inflammation of the left scrotum and inguinal canal, the patient underwent a left side funiculo-orchiectomy, open left inguinal hernia repair with *Bassini* technique, and additional lavage and drainage of the *bursa omentalis*. After 72-day period in a good overall health condition the patient was discharged from the hospital.

CONCLUSIONS: Clinicians should be aware of the scrotal inflammatory swelling as a rare complication in cases of acute necrotizing pancreatitis with previous history of bilateral inguinal hernia. In the course of time, less radical treatment options should be identified.

TITLE: AN UNCONVENTIONAL APPROACH TO THE RARE UNRESECTABLE TUMOR – A CASE STUDY OF SINONASAL NEUROENDOCRINE CARCINOMA THERAPY

Author(s): Filipowicz Paulina

Tutor(s): Agnieszka Żyłka MD, PhD; Department of Oncological Endocrinology and Nuclear Medicine, Maria Sklodowska-Curie National Research Institute of Oncology

University: Faculty of Medicine, Medical University of Warsaw, Poland

BACKGROUND: Sinonasal neuroendocrine carcinoma is a rare neoplasm of epithelial origin. Due to its aggressive character and nonspecific symptoms, the diagnosis is often established in an advanced stage and is associated with a poor prognosis.

CASE REPORT: A 37-year-old man presented to the emergency department due to a sudden deterioration of visual acuity in the right eye. CT scan and MRI with contrast revealed a tumor located in the anterior cranial fossa, cranial base, nasopharynx, paranasal sinuses, nasal cavity, and orbits with extensive infiltration. Pathological examination of the biopsy specimen showed a sinonasal poorly differentiated neuroendocrine carcinoma T4N1M0. Due to the advanced stage, the possibility of resection and effective radiotherapy was ruled out. The histological type of cancer was a premise for enrollment of the patient for chemotherapy in the EP scheme (cisplatin and etoposide). Twelve days after the first course, the patient was admitted to the hospital due to an episode of impaired consciousness, progressing symptoms of frontal lobe syndrome, and pneumocephalus. The patient underwent endoscopic endonasal skull base reconstruction. After recovery from the surgery, the treatment was continued and the patient received a total of 6 courses of chemotherapy. The response was scarce, therefore radical radiotherapy was selected as the next line treatment. Subsequent lack of effect led to 177Lu-DOTA-TATE therapy after detection of somatostatin receptors in 68Ga PET/CT. One cycle was administered; however, treatment was discontinued due to insufficient response. The genetic panel did not show any targets for tyrosine kinase inhibitors but revealed IDH2 mutation as a potential aim for targeted therapy.

CONCLUSIONS: There is a lack of compromise regarding the therapeutic strategies in patients with sinonasal neuroendocrine carcinoma. The common approach includes surgery and chemo- and/or radiotherapy. The presented case shows therapeutic challenges in an unresectable tumor. Due to an extensive infiltration and proximity of critical structures, the surgery was not possible. Establishing the treatment plan required medical consultation of the interdisciplinary team and led to the implementation of unconventional therapy with hot somatostatin analogues. Nevertheless, no treatment was effective in this case.

TITLE: DIFFICULTIES WITH KIDNEY TRANSPLANTATION QUALIFICATION OF A HIGH IMMUNIZED PATIENT – A CASE REPORT

Author(s): Alicia Garcia de los Huertos y Komuda

Tutor(s): Jolanta Gozdowska MD PhD

University: Medical University of Warsaw

BACKGROUND: The immunization of patients with kidney insufficiency reduces the chances of being qualified for transplantation as well as it increases the risk of organ rejection.

CASE REPORT: A case of a 40-year-old patient with end-stage kidney failure due to reflux nephropathy, who was treated with hemodialysis since 1986, underwent complete nephrectomy and subsequently, kidney transplant from a deceased donor, in 1990. After two years, the transplanted organ had to be removed due to recurring infections and chronic rejection. Since then, the patient has been treated with hemodialysis for 20 years. The major concern was the vascular access, many arteriovenous fistulas were made, in 2013 a GoreTex subclaviculoiliac vascular prosthesis, that had recurrent thrombosis events. In 2015 the patient underwent a cystoprostatectomy, due to recurrent infections, despite urethral atresia. Due to high immunization (PRA max 100%, lowest 86%), he wasn't qualified for kidney transplantation. Because of the fistula malfunctioning, he was reported for urgent transplantation. The operation took place the 5th of July 2019. The kidney was transplanted into the peritoneum, with urine drainage to the Bricker loop. The following immunosuppression treatment was applied: thymoglobuline induction, glucocorticoids, mycophenolate mofetil, and tacrolimus. During two months the patient was oliguric (diuresis 100-300 ml). The patient was treated with hemodialysis. HLA antibodies were monitored, and DSA were found. Two weeks after the transplantation a surgical biopsy was made and the histopathological exam showed acute antibody-mediated rejection and acute thrombotic microangiopathy. There were used infusions of methylprednisolone, intravenous immunoglobulins (2g/kg) and rituximab. The kidney started functioning after two months.

CONCLUSIONS: High immunization lowers patients' chances, but does not rule out the possibility of organ transplantation. However, the risk of rejection is high. A good solution would be desensitization, thanks to which patients would have a chance for earlier transplantation.

TITLE: POST-REPERFUSION SYNDROME IN PATIENT WITH ACUTE LOWER LIMB ISCHEMIA - A CASE REPORT

Author(s): Hubert Żywno, Cezary Pawlukianiec

Tutor(s): Lek. Sylwia Barańska, Dr hab. Jerzy Głowiński

University: Department of Vascular Surgery and Transplantation, Medical University of Bialystok

BACKGROUND: Acute lower limb ischemia is defined as sudden decrease in limb perfusion which can be hazardous for the limb viability and is usually connected with the development of particular symptoms including sudden pain, weakened or lack of pulse, paraesthesia, or decreased temperature and pallor of the ischemic limb. The main cause of this vascular emergency is thromboembolism underlying atherosclerosis or atrial fibrillation. During restoration of blood flow in previously ischemic vessels a post-reperfusion syndrome may occur and significantly worsen a patient's prognosis. Herein, we present a fatal case of post-reperfusion syndrome that was developed quickly after surgical management of acute lower limb ischemia caused by riding embolism.

CASE REPORT: 68-years old man was admitted to the vascular surgery department due to development of sudden, severe pain of both lower limbs with accompanying sensory and movement disturbances. Earlier that day, the patient underwent percutaneous coronary intervention as a treatment for acute heart infarction. At the admission the patient was in severe general condition. Physical examination findings revealed cold, pale, and marbled skin as well as lack of pulse on both lower limbs. Doctors informed the patient about high risk of the proposed surgical procedure, because of poor general condition and prolonged extensive ischaemia. The patient agreed for the proposed treatment. Live-saving thrombectomy of both common iliac, external iliac, common femoral, deep femoral arteries and right superficial femoral artery was performed. Furthermore, Absolute Pro stent was implanted into the left common iliac artery. The blood flow was restored. At the closing stage of surgery, sudden cardiac arrest had occurred. Despite reanimation the patient died.

CONCLUSIONS: The main cause for the poor patient prognosis was prolonged ischemia due to riding embolism of bifurcation of the aorta. Sudden restoration of blood flow in previously ischemic parts of the body resulted in the development of post-reperfusion syndrome which led to the intensified oxidative stress, breakdown of the patient cardiovascular homeostasis, and subsequent cardiac arrest. Patients should be informed about the enormous risk of the surgical treatment for prolonged acute ischemia and their decision should be well-considered.

TITLE: MECKEL'S DIVERTICULUM – A RARE CAUSE OF INTESTINE INTUSSUSCEPTION AND ISCHEMIA IN ADOLESCENT

Author(s): Anna Pliszka, Klaudia Możdżeń

Tutor(s): Anna Ogorzałek M. D.

University: University of Rzeszow

BACKGROUND: Meckel's diverticulum is most common congenital malformation of gastrointestinal tract, which results from failure of the proximal part of vitelline duct regression. It is usually located in the distal ileum, within 60–100 cm of the ileocecal valve. Most of cases are asymptomatic and discovered by instance during other surgical procedures. In some people Meckel diverticulum gets inflamed and manifests itself initially as periodic, intermittent abdominal pain, with vomiting, fever, diarrhea, bloody stool as later symptoms. Intussusception caused by Meckel's diverticulum is an indication to its resection. The aim of this work is to make clinicians aware of a rare cause of intestinal intussusception and show that they should react immediately to avoid complications like peritonitis or bowel perforation.

CASE REPORT: Female Patient, 15 years old girl admitted to ER with strong abdominal pain. USG was performed, which revealed fluid in subhepatic recess, around the spleen and free fluid between intestinal loops. In suspicion of peritonitis she was transferred to Pediatric Surgery Clinic, where decision about urgent surgery was made. During the procedure ileocecal intussusception of necrotic ileum with Meckel's diverticulum was discovered. The 30 cm of intestine loops was resected, then the end to end anastomosis was made. Peritoneal cavity fluid culture revealed presence of anaerobic bacteria – *Clostridium innocuum* and *Prevotella disiensis*. The targeted antibiotic therapy was implemented – cefuroxime aksetil, amikacin, metronidazole. Postoperatively without complications, discharged home a week after surgery in good condition.

CONCLUSIONS: Although intussusception due to Meckel's diverticulum is a rare cause of intestinal obstruction, clinicians should be aware of it in their practice, because symptoms are not specific. Symptomatic Meckel's diverticulum is an indication to surgery to avoid serious complications. The earlier surgery is made, the better prognosis for patient is.

TITLE: A 51-YEAR-OLD PATIENT WITH METASTASIS TO THE FRONTAL BONE AS THE FIRST MANIFESTATION OF FOLLICULAR THYROID CANCER

Author(s): Aleksandra Matysiuk

Tutor(s): Agnieszka Żyłka MD, PhD

University: Medical University of Warsaw, Department of Oncological Endocrinology and Nuclear Medicine, Maria Sklodowska-Curie National Research Insititute of Oncology

BACKGROUND: Follicular thyroid cancer (FTC) arises from follicular cells of the thyroid. It is the second most common type of thyroid cancer, making up about 10 to 15% of all thyroid cancers. Usually occurs in adults aged 50 and older. Thyroid metastases at early stage are uncommon. Cranial metastases occur very rarely, with incidence of 2.5-5.8% and usually are located in occipital and temporal areas.

CASE REPORT: In April 2017, a 51-year-old female was admitted to the hospital due to recently discovered mass in the right frontal region. The patient underwent surgery in which solid mass fixed to the frontal bone and dura mater was successfully removed. At the time, differential diagnosis included malignant meningioma or osteosarcoma. One month later the patient was admitted to the hospital with the diagnosis of secondary malignant tumor of brain and meninges. The patient underwent palliative radiotherapy. In the meantime, histopathological examination of resected tumor revealed a metastasis of FTC. Due to that, in July 2017, the patient underwent total thyroidectomy. Biopsy of thyroid confirmed presence of FTC. In right lobe FTC angioinvasion was discovered. In November 2017, the patient was admitted to the Warsaw Oncology Center in order to carry out scintigraphy. The images revealed numerous pathological concentrations of radioactive iodine in the bones of the neck, cranium, thoracic vertebral column, left femoral joint, right scapula and left humerus. The patient was qualified for radioiodine therapy and since December 2017 three courses of 131I therapy took place. A diagnostical post-therapeutic scintigraphy revealed a significant reduction in the uptake of radioiodine in the bone metastases and the patient observed a significant reduction of pain. This case reminds us that sometimes metastases can be the first manifestations of cancer.

CONCLUSIONS: It is extremely uncommon for FTC to metastasize into frontal bone, nevertheless it shows that a variety of tumors should be taken into consideration when proposing a diagnosis. Radioiodine therapy is the only solution in patients with bone metastases that are not manageable with surgical resection and in this case the treatment helped to reduce the size of metastases and to relieve the pain.

TITLE: ANTERIOR MYOCARDIAL INFARCTION IN 36 YEAR OLD WOMAN COMPLICATED WITH SEVERE HEART FAILURE AND PERICARDITIS

Author(s): Claudia Bojczuk, Gabriela Naronowicz, Paulina Janiak

Tutor(s): Magdalena Rog Makal, MD, PhD

University: Medical University of Bialystok

INTRODUCTION: When discussing myocardial infarctions one mostly thinks about people in elderly age. Studies both in the United States and in other developed nations have reported rising hospitalization rates for myocardial infarction (MI) in younger women. The proportion of MI admissions for young women (35-54 years old) increased from 21% in 1995-1999 to 31% in 2010-2014. Most women who present with an acute coronary syndrome will have acute plaque rupture as the cause, however other causes include myocarditis, aortic dissection, stress induced cardiomyopathy and some genetic disorders like familial hypercholesterolemia.

CASE REPORT: A 36 year old woman with a family history of cardiovascular diseases and accompanying chest pain was admitted to the ICCU due to ST elevation myocardial infarction of anterior wall. Coronary showed 100% occlusion of the LAD, thus PCI with a drug eluting stent was performed. Echo revealed severe heart failure with an EF of 26% and tricuspid regurgitation with a high probability of pulmonary hypertension. Laboratory results showed high levels of troponin I (>50,000 ng/L), CK (2681 IU/L), CKMB (298 IU/L), NT-proBNP (9203 pg/mL) and fibrinogen (630 mg/dL). Upon further observation, the patient experienced chest pain upon deep inspiration thus early infract- associated pericarditis was diagnosed and treated. Coronary heart disease and heart failure treatment was administered and patient was discharged. The follow-up visit was scheduled for ECHO assessment in order to decide upon ICD implantation. . Due to family history of MI and high cholesterol, further workup and genetic testing to exclude familial hypercholesterolemia should be performed.

CONCLUSIONS: Younger patients are less likely to be diagnosed with myocardial infarction especially if symptoms are non-specific. Delayed diagnosis and treatment may lead to further complications, especially heart failure with further therapeutic consequences.

Case Report VI

TITLE: THREE SURGERIES - ONE DISEASE. LOWER LIMB THROMBOSIS CAUSED BY PAES IN A YOUNG CYCLIST

Author(s): Weronika Mądra, Maciej Mancewicz

Tutor(s): dr hab. n. med. Jerzy Głowiński, lek. med. Sylwia Barańska

University: Department of Vascular Surgery and Transplantation, Medical University of Bialystok, Poland

BACKGROUND: PAES is caused mainly by congenital, sometimes bilateral, anatomical abnormalities around the popliteal artery within the popliteal fossa. Combined with an active lifestyle may lead to severe symptoms. Abnormalities create disturbances in blood flow and generate symptoms of limb ischemia below the pressure point, often during plantar flexion. Entrapment of the popliteal artery is usually manifested by intermittent claudication, skin sensory disturbance in shin and majorly affects young athletes. Too late diagnosis may cause limb amputation or death. Our patient was operated on 3 times. We believe this case is noteworthy due to the difficult course and rarity of the disease.

CASE REPORT: A 24-year-old cyclist was admitted to the Department of Vascular Surgery and Transplantation with acute ischemia of the right lower limb. His symptoms included five days of pain in the lower limb, sensory disturbance in the shin, and intermittent claudication over a distance of 100 meters. He reported heavy training prior to the onset of symptoms. The pulse below the right groin was absent on physical examination. Doppler USG and angiography of lower limbs showed a thromboembolic lesion in the right superficial femoral artery and the popliteal artery, approx. 11 cm long and extensive collateral circulation. SFA and popliteal artery thrombectomy was performed, followed by a short-term improvement in blood supply. A redo surgery was needed the next day due to thrombosis recurrence. Thrombectomy and angioplasty of the popliteal artery using a drug-eluting balloon were performed successfully. MRI showed medial displacement of the popliteal artery adjacent to MG tendon band, with medial gastrocnemius head displaced laterally. The patient was qualified for a planned surgery during which the popliteal artery was reconstructed using a saphenous vein patch. The artery pressed against tibia was released from cross tendons of calf muscles. We achieved proper blood supply of the limb, pulse present on the dorsal artery of foot. Anticoagulant treatment was administered during the two hospitalizations. The postoperative course was without complications. Follow-up 6 months after surgery, no deviation, no recurrence of PAES.

CONCLUSIONS: Early diagnosis plays the key role in PAES treatment. Please note that symptoms of limb ischaemia manifest both during and after physical exercise. Then, tests such as functional Doppler ultrasound, functional arteriography and ankle-brachial index enable diagnosis before changes in endothelium and thrombus formation occur. Young age and symptoms associated with intense exercise were relevant. Thrombosis in such a young age itself suggests a cause other than sclerosis or AF.

TITLE: ARTERIAL HAEMORRHAGE AFTER CARDIAC RESYNCHRONISATION THERAPY DEFIBRILLATOR IMPLANTATION

Author(s): Natasha Ahmed

Tutor(s): Dr Marciej Grymuza MD

University: Cardiology Department, Cardiology Clinic of Karol Marcinkowski University of Medical Sciences in Poznań, Poland

BACKGROUND: Heart failure (HF) is a fatal and life threatening condition. For this reason, medications become redundant and invasive procedures to implant electronic devices, like cardiac resynchronization therapy defibrillator (CRT-D), become necessary in most severe cases. Purpose of CRT implantation is to correct the irregularity in intra-cardiac electricity conduction and as a result enhancement of muscle contractility and improvement of blood flow.

CASE REPORT: A 69 year-old patient was admitted to have a CRT-D implanted. His medical history consisted of myocardial infarction in 1997 and 2003, coronary artery bypass graft in 2004, percutaneous coronary intervention of the left circumflex artery in 2010, hypertension, diabetes mellitus, atrial fibrillation (AF) with left bundle branch block and NYHA II HF. The patient takes rivaroxaban for AF, which was stopped 24 hours before the implantation. Two hours after implantation, the patient reported swelling and pulsating pain in the left subclavical region. Physical examination showed the patient to be pale, diaphoretic with blood pressure of 85/59; therefore he was in shock. Complete blood count and a CT angiogram revealed a haemorrhage in the costocervical trunk, which branches off the subclavian artery, formed a haematoma. For management, angiography as conducted for stent graft implantation, and 3 units of blood transfusion was given. The next day, CT revealed no active bleeding, therefore clopidogrel was given for the stent. Four days later, rivaroxaban was resumed. Additionally, antibiotics were given as prevention for device infection. The further clinical course was uneventful.

CONCLUSIONS: Venous bleeding can occur during cannulation whilst implanting a CRT-D, however, arterial bleeding is extremely rare. Ultimately, rather than discharging patients on the same day of CRT-D implantation, they should be monitored for a few days after. This case highlights the vigilance and precautions that need to be taken to prevent these fatalities.

TITLE: SEVERE COMPLICATION AFTER EARLY CESSATION OF TICAGRELOR THERAPY FOR DRUG-ELUTING STENT IMPLANTATION

Author(s): Natasha Ahmed

Tutor(s): Dr. Bartłomiej Perek MD, PhD

University: Poznan University of Medical Sciences, Poland

BACKGROUND: Antiplatelet agents are commonly prescribed after cardiovascular events. One of them, Ticagrelor, inhibits ADP-mediated P2Y12 dependant platelet activation and aggregation. Of note, it is not recommended as monotherapy but with aspirin, it is used in high-risk patients following percutaneous coronary intervention (PCI). Dual antiplatelet therapy is of paramount importance during the first weeks after coronary procedures, known as the reendothelialization period.

CASE REPORT: A 52-year old man was admitted urgently with unstable angina. Medical history includes hypertension, diabetes mellitus, obesity, and a prior STEMI. The STEMI occurred 12 years ago and was treated with bare-metal stent implantation to the right coronary artery (RCA), which required repeat intervention 4 years later. For the current angina symptoms, an emergent coronary angiography was performed, revealing complete occlusion of the RCA along with significant stenosis in the left anterior descending and left circumflex arteries. Subsequently, PCI was conducted, and two drug-eluting stents (DES) containing sirolimus, were implanted. The patient was discharged on the afternoon of 31st December 2020 with a 90 mg prescription of ticagrelor. However, due to lack of availability in the nearest pharmacy, the patient did not take it and unfortunately 22 hours later, was re-admitted urgently. He presented with acute chest pain which radiated to the upper extremities and jaw. Acute thromboses in the previously implanted stents were found. The ejection fraction of the patient had reduced from 45% estimated during the initial hospitalisation to 30% once he was readmitted. The further clinical course was uneventful.

CONCLUSION: Although the patient is at fault for his non-compliance regarding antiplatelet agents, physicians need to make sure people are discharged with an appropriate amount of medication. Despite DES implantation, which has a 0.3-1% risk of early thrombosis, cardiologists cannot rely purely on patient accountability and should ideally give a few doses after discharge, especially during holiday periods.

TITLE: ENDOVASCULAR AORTOILIAC REPAIR USING AN ILIAC BRANCH ENDOPROSTHESIS – WHAT FUTURE BEHOLDS FOR VASCULAR SURGERY

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BACKGROUND: Abdominal aortic aneurysm (AAA) is a focal enlargement of the infrarenal aorta, which occurs over the time course of several years. With the general mortality of ruptured AAA reaching up to 90%, it is a very often fatal and challenging diagnosis for a vascular surgeon. Endovascular aneurysm repair (EVAR) has revolutionized the treatment of AAA. Moreover, novel techniques like iliac branch devices further expand the arsenal of minimally invasive vascular surgery.

CASE REPORT: The patient is a 60-year-old male who presented with pain in the abdominal and right groin area that lasted throughout the whole night. Past medical history – MI that was treated with percutaneous coronary intervention. The patient uses aspirin daily. Performed CTA – rAAA (10 mm.) that includes both iliac arteries (8.8 and 7.1 mm). Due to stable haemodynamics, an endovascular approach was chosen. Endovascular Aortoiliac with left branch iliac stent-graft was implanted. The right internal iliac artery was coiled. Post-op patient spent 3 days in the ICU. During the time in the ICU patient developed a sub-febrile fever and due to a haemoglobin level of 86 and past medical history of MI, 2 units of erythrocyte mass were administered. Then he was transferred to the department of vascular surgery and spent 12 days there. With no additional symptoms and a stable situation, the patient was successfully released home.

CONCLUSIONS: Iliac branch technology represents one of the methods by which complex anatomy can be treated with an endovascular approach in a manner analogous to open repair. The iliac bed is an appealing region to perfect such minimally invasive techniques, as a technical failure in the setting of an iliac aneurysm most frequently results in an occluded internal iliac artery, which is how most aneurysms were managed before the endovascular era. All in all, EVAR compared to open repair, leads to lower mortality rate, lower rates of complications and shorter hospitalization.

TITLE: LONGITUDINAL EXTENSIVE TRANSVERSE MYELITIS IN DEVIC'S DISEASE - A CASE REPORT

Author(s): Katarzyna Tarasiuk, Paulina Matys

Tutor(s): Katarzyna Kapica-Topczewska, MD, PhD

University: Department of Neurology, Medical University of Bialystok, Poland

BACKGROUND: Neuromyelitis Optica (NMOSD, Devic's disease) is a rare inflammatory, demyelinating disease of the central nervous system (CNS) that predominantly affects the spinal cord and the optic nerves. The IgG antibodies against the aquaporin channel 4 (AQP4-Ab) play a direct role in the pathogenesis.

CASE REPORT: A 50-year old woman, with a history of asthma, was transferred to the Department of Neurology from the Department of Neurosurgery, where she was hospitalized because of severe paraparesis due to transverse myelitis Th7-Th8. On admission, the patient presented the following neurological symptoms: sensory deficit on the trunk and lower limbs below T5, spastic tetraparesis with predominant weakness in the lower limbs and sphincter disturbance (urine retention and constipation). Her vision was normal and no signs of optic neuritis were detected. Patient initial problems began six months ago when lower back pain occurred and then, after two months, the patient presented sensory deficit in the region of left lower limb and weakness of right lower limb. Over the next two months, the signs worsened, leading to sensory deficit in both lower limbs and spastic tetraparesis. Magnetic resonance imaging (MRI) revealed hyperintense lesion in the thoracic and lumbar spinal cord extending from T2 to L1 and lesions in the cervical spinal cord. MRI of the brain showed subcortical and periventricular lesions, without enhancement after gadolinium administration. During the diagnostic approach, positive AQP4-Ab were found in serum and cerebrospinal fluid, and the patient was diagnosed with the longitudinal extensive transverse myelitis in the course of NMOSD. The patient's neurological condition improved after 5 courses of plasmapheresis. Then treatment with azathioprine in combination with prednisone was introduced to prevent NMOSD relapses.

CONCLUSIONS: However, NMOSD is very rare disease in Polish population, we should always remember about it in clinical practice, especially when we meet a patient with the longitudinal extensive transverse myelitis and bilateral optic neuritis. The accurate diagnosis of NMOSD enables introduction of an appropriate treatment and prevention of disability progression.

TITLE: EXTRASUPRARENAL PARAGANGLIOMA LOCATED RETROPERITONEALLY BETWEEN AORTA AND INFERIOR VENA CAVA - CASE REPORT

Author(s): Olszańska M., Nesterowicz M., Śliwińska P., Wasilczuk M., Froń O., Wiśniewski K.

Tutor(s): Prof. Piotr Myśliwiec, MD, PhD; Piotr Wojskowicz, MD, PhD

University: 1st Clinical Department of General and Endocrine Surgery, Medical University of Bialystok, Poland

BACKGROUND: Pheochromocytomas are rare neuroendocrine tumours that produce catecholamines. They can originate mainly in adrenal medulla or rarely extrasuprarenal in paraganglia (paragangliomas). Paragangliomas are most commonly located at the bifurcation of the common carotid, the jugular foramen, aortic arch, and retroperitoneum. Without adequate preparation, the release of excessive amounts of catecholamines can produce life-threatening cardiovascular complications. All paragangliomas have a metastatic risk and an approach based on risk stratification.

CASE REPORT: A 50 year-old female patient incidentally diagnosed with a tumour during MRI scan. The patient had periodic hypertension. Physical examination was normal. CT confirmed a retroperitoneal mass 3.5 x 2.6 x 3.2 cm encased between the aorta and inferior vena cava. A catecholamine-secreting tumour was suspicioned, due to raised urine normetanephrines. The patient underwent surgical management. The complete resection of the tumour performed laparoscopically in general anaesthesia took 4,5 hours. To our best knowledge this was the first operation of that type in the region. Pathologist identified encapsulated paraganglioma. Early postoperative period was unremarkable. In good general and local condition the patient was discharged the following day.

CONCLUSIONS: Paragangliomas are rare, difficult to diagnose tumours. The presented case shows extremely rare retroperitoneal localisation of paraganglioma and a successful laparoscopic operation. So long there are no signs of metastatic disease, but all paragangliomas have a metastatic potential, so follow-up of patients is essential.

TITLE: TRAUMATIC COMMON CAROTID ARTERY-TO-INTERNAL JUGULAR VEIN FISTULA – CASE REPORT

Author(s): Mateusz Floraszek

Tutor(s): Dr Sylwia Barańska

University: Medical University of Bialystok, Poland

BACKGROUND: The arteriovenous fistula (AVF) is an abnormal connection between the artery and vein. It occurs congenital, after the erosion of the arterial aneurysms or trauma. AVFs can be located in all of the peripheral arteries, however, fistulas at common carotid artery (CCA) are extremely rare.

CASE REPORT: 50 years old man was admitted to the emergency department as he suffered a shotgun on the left front part of his neck. At admission, he was in generally good condition with minor bleeding from the wound, left shoulder pain, without neurological symptoms. He was transferred to the Otolaryngology Department for further diagnosis. Doppler ultrasound examination was conducted which revealed partly-haemolysed hematoma sized 28x16x30mm located next to the left CCA. Additionally, Computed tomography angiography (CTA) was performed and confirmed the presence of a hematoma. The next day, CTA was repeated. It showed an AVF between the CCA and the internal jugular vein (IJV). The patient was directed to the Vascular Surgery Department for a surgical treatment. During the physical neck examination, there was no tremor above the fistula, however, during the auscultation, there was a continuous, loud murmur. The patient was treated by an endovascular approach with implantation of the stent graft to the left CCA. Intraoperative digital subtraction angiography showed proper blood flow in the common and internal carotid artery and no contrasting of the left IJV. As there were no postoperative complications and the patient was in good condition, he was discharged home after three-day hospitalization.

CONCLUSIONS: AVFs between CCA and IJV should always be treated early to prevent further complications like neurological symptoms, cerebral congestion, congestive heart failure. Endovascular treatment with the use of stent grafts seems to be the best approach as it has a lower rate of complications and the patient recovers faster comparing with the classical methods.

TITLE: PITUITARY ADENOMA - A SILENT KILLER?

Author(s): Weronika Cyranka [1], Monika Zbroja[1],

Tutor(s): Maryla Kuczyńska [2]

University: [1] Students' Scientific Society at the Department of Interventional Radiology and Neuroradiology, Medical University of Lublin
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BACKGROUND: Pituitary adenomas account for 5-20% of primary central nervous system tumors in adults. Due to the histological type, there are nonfunctional and hormone-secreting adenomas. The symptoms of these tumors depend on the type of hormone it produces and its size.

CASE REPORT: A 63-year-old man was admitted to the hospital due to the limited contact and a droopy left eyelid. He was treated for depression. The patient underwent a computed tomography examination of the head, which showed widened outlines of the pituitary gland and tissues in the area of the left cavernous sinus with modeling and attrition of the sphenoid sinus wall. Additionally, merging ischemic zones in the parietal, frontal, temporal and occipital areas, as well as small malacic cavities in the deep structures of both temporal lobes were visualized. Due to the ambiguous picture of the pituitary gland, the patient underwent a MRI of the head. On the basis of the obtained image, an asymmetric enlargement of the pituitary gland sized 22 x 20 x 19 mm was found. Inversion into the sphenoid sinus and cavernous sinus on the left side, and up to the level of the optic junction were visible. Within the pituitary gland, a diffuse high-signal zone was visible on the T1w and T1w fat-sat images - this image corresponded to the presence of methaemoglobin. The MR image suggested fresh haemorrhagic changes in the pituitary gland, most likely due to the macroadenoma. The MR examination confirmed ischemia and malformations as well as cortico-subcortical atrophy diagnosed by CT.

CONCLUSIONS: The incidence of pituitary adenomas has increased in recent years. They are often diagnosed accidentally during postmortem examination or imaging studies of the brain. Magnetic resonance imaging allows for an accurate assessment of the morphology of the pituitary gland, which enables the implementation of appropriate treatment and improvement of the patient's condition.

TITLE: TRAGEDY IN THREE ACTS - CASE REPORT OF A PATIENT WITH GIANT OBESITY AND ATTEMPTS TO TREAT IT

Author(s): Wiktoria Izdebska, Weronika Gniado, Aleksandra Chudzicka, Bartłomiej Kazimierski

Tutor(s): dr. n med. Piotr Wojskowicz

University: 1st Department of General and Endocrinological Surgery, Medical University of Bialystok, Poland

BACKGROUND: According to the WHO survey, in 2016 over 1,9 billion adults were overweight, including 650 million with obesity. Every year those numbers rise, even though obesity is a preventable disease. The main determinant of obesity is BMI over 40 kg/m2 and is bound to numerous complications.

CASE REPORT: A 37-year-old patient, 176 cm of height and diagnosed with obesity received treatment of sleeve stomach resection, reaching his maximal weight of 289 kg . First day post-operation he spent in the Intensive Care Unit due to respiratory failure during the procedure. After the sleeve resection he lost 60 og. 14 months later, weighing approx. 175 kg, he received a SADI-S (single anastomosis duodeno–ileal bypass with sleeve gastrectomy), after which he lost 75 kg. Third operation of our patient was resection of a lipoma of a left thigh and plasty of arguments after losing a significant amount of body mass.

CONCLUSIONS: The most effective treatment of giant obesity is bariatric surgery. Yet, proving the best possible surgical care, improvement of patient's health state depends on them.

TITLE: ADVANCED SYNCHRONOUS ENDOMETRIAL AND OVARIAN CANCER (SEOC) IN 56-YEAR OLD PATIENT - CASE REPORT

Author(s): Renik W.[1], Morawska A.[1]

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BACKGROUND: Synchronous primary tumors of the female reproductive organs are relatively rare, however synchronous ovarian and endometrial cancer (SEOC) is the most common combination. The etiology remains unclear. The prognosis in SEOC reaches up to 85.9% which is better than in ovarian cancer alone. Vaginal bleeding, as the early symptom of endometrial cancer, may result in detection of patients at earlier stages. Surgical treatment is the baseline therapy.

CASE REPORT: A 56-year-old postmenopausal woman presented to the University Oncology Center of Bialystok with increased abdominal girth, early satiety and a several kilograms weight loss in a month. Ultrasonography showed large masses with cystic and solid components in both ovaries. Preoperative CA125 level was 1162.70 U/ml. The intraoperative histopathological exam revealed high grade ovarian cancer. Patient underwent total hysterectomy, bilateral salpingo-oophorectomy, bilateral pelvic and para-aortic lymphadenectomy, omentectomy, and appendectomy. The final histological report and immunohistochemistry confirmed two independent primary cancers of ovaries(FIGO IIIB) and endometrium(FIGO IA). The further treatment was complicated by an abscess of the retroperitoneal space which was surgically drained. The patient has received adjuvant chemotherapy combined of carboplatin, paclitaxel, and bevacizumab. During therapy a significant decrease of CA125 level and complete response in radiological imagining was observed.

CONCLUSIONS: Tumors located in the female reproductive system need proper differentiation between primary tumors and metastases by practised pathologist. Precise diagnosis has a significant impact on staging and overall survival. In the described case aggressive management with adjuvant chemotherapy was used due to advanced stage of cancer which provided a satisfactory therapeutic effect. This case proves that even unfavorable prognosis may result in good outcomes, when the adequate treatment is applied.

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TITLE: THROMBOEMBOLIC COMPLICATIONS AFTER COVID-19 - CASE REPORT

Author(s): Monika Zbroja[1], Weronika Cyranka[1]

Tutor(s): Katarzyna Jarczak-Ciupera[2], Małgorzata Drelich[3] ([2]1st Department of Radiology and Nuclear Medicine, Medical University in Lublin; [3]Department of Clinical Physiotherapy of the Chair and Department of Rehabilitation and Orthopedics, Medical University in Lublin)

University: Medical University in Lublin

BACKGROUND: The SARS-CoV-2 pandemic has become our daily reality. Unfortunately, the number of complications that are affecting younger and younger people is rising. These include, among others, prolonged fatigue, exertional dyspnea, neurological disorders and thromboembolic complications.

CASE REPORT: A patient, aged 35, 2 weeks after completing his isolation following COVID-19 infection, came to the ED with pain and swelling in his left lower limb, cough, dyspnoea and weakness. Next he was referred to the hospital with suspected venous thrombosis in the left lower limb and pulmonary embolism. On initial laboratory tests, D-dimers were at the level of 22,000. In chest computed tomography (CT) scanning and after intravenous injection in angio option features of central pulmonary embolism were seen with a narrow thrombus of the "horseman" type in the bifurcation of the pulmonary trunk and right and left pulmonary arteries. Filling defects were presented in the middle and inferior lobar branches of the right pulmonary artery, up to segment 10P, further in the artery supplying the middle lobe, up to segment 3P. On the left side, filling defects were presented in the left upper lobar artery to segment 3L, in the left lower lobar artery to segments 9L, 10L. Doppler ultrasound showed massive thrombosis of the femoral, popliteal, posterior tibial and fibular veins. High-dose of anticoagulant therapy was instituted, and the patient was discharged home after 2 weeks. After next 2 weeks, thrombosis of the femoral vein, popliteal vein, and proximal segments of the posterior tibial and fibular veins still persisted in follow-up examination.

CONCLUSIONS: COVID-19 represents a clinical situation that still lacks clinical experience. It poses unique challenges to diagnostic pathways such as thromboembolic complications, that more frequently occur in young patients. The effects can be life-threatening, so proper and fast treatment is essential.

TITLE: LIFE-THREATENING COMPLICATIONS AFTER COVID-19 VACCINATION - CASE REPORT

Author(s): Katarzyna Drelich, Olga Pustelniak

Tutor(s): Maryla Kuczyńska MD (Department of Interventional Radiology and Neuroradiology, Medical University of Lublin)

University: Students' Scientific Society at the Department of Interventional Radiology and Neuroradiology, Medical University of Lublin

BACKGROUND: COVID-19 is the disease caused by a new coronavirus called SARS-CoV-2. The most common symptoms of this disease are fever, dry cough, dyspnea and fatigue. In Poland, vaccination against COVID-19 began in December 2020. People are vaccinated with three types of vaccines from companies: Pfizer, Astra-Zeneca and Moderna. To date, many millions of people worldwide have been vaccinated. However, adverse events have been described that may be vaccine-related, ranging from mild allergic reactions to death.

CASE REPORT: A 41-year-old patient was admitted to the ED due to headache, fever and disturbed consciousness. 12 days earlier, she had received a dose of Astra-Zeneca's SARS-CoV-2 vaccine. She reported that after vaccination, she had headache, high temperature, blood pressure fluctuations, nausea, and vomiting that persisted until the day she was reported to the hospital. She underwent a neurological examination that revealed the presence of neck stiffness symptom, right limb paralysis and a positive Babinski's sign. A CT scan was performed in which a hyperdense area of heterogeneous density, measuring approximately 58x62x55mm, was observed in the left temporoparietal region with an associated zone of hemispheric edema-a hematoma with partial hemolysis or bleeding into the cystic tumor was suspected. The delayed/venous postcontrast phases of the angio-CT showed persistent lack of contrast of the sigmoid and transverse sinus on the left side and a segment of the left internal jugular vein. The CT image suggested vein thrombosis. The patient underwent brain MR imaging, which showed extensive ischemia in the subacute phase, with a vaguely circumscribed hematoma, approximately 45 mm in diameter, emanating in the parietotemporal region, with penetration into the ventricular system. Thrombosis of the sigmoid and transverse sinus on the left side was confirmed. The patient underwent craniotomy due to hemorrhagic stroke. Additionally, Doppler ultrasound revealed massive deep vein thrombosis of the left lower limb.

CONCLUSIONS: Vaccination against COVID-19 is very important in the fight against the epidemic, but it is quite often followed by complications. In individual cases, post-vaccination complications are very serious and can manifest as stroke, intracerebral hematoma and deep vein thrombosis.

TITLE: EFFECTIVE TREATMENT OF METASTATIC KAPOSI'S SARCOMA WITHOUT SKIN LESIONS IN THE KIDNEY TRANSPLANT RECIPIENT

Author(s): Sylwia Kozak, Aleksandra Gładyś

University: Department of Internal Diseases and Oncological Chemotherapy, Medical University of Silesia in Katowice, Poland

BACKGROUND: Kaposi's sarcoma (KS) is one of the most typical malignancies after kidney transplantation, strongly associated with HHV-8 virus infection. More than 90% of patients had primary skin changes, that make the diagnosis easier and faster. The lack of skin lesions is considered rare, especially in the iatrogenic type of sarcoma, including patients on immunosuppression; and may cause a diagnostic challenge due to the variety of organ involvement, imitating other diseases. The aim of this case presentation is to raise attention to atypical clinical manifestation of this malignancy.

CASE REPORT: We present a case of a 33-year-old woman – kidney transplant recipient, diagnosed with disseminated stage of KS. The patient was on immunosuppression regimen since the age of 17 years due to chronic glomerulonephritis. The woman was diagnosed with KS in clinical stage IV during check-up at the nephrology ward, two years after transplantation, before planned arteriovenous fistula closure presenting signs and symptoms of progressive dyspnea and fatigue during ten months. The detection of the enlarged cervical lymphatic nodes and pulmonary metastases in X-ray were the first symptoms of KS. There were no skin lesions. A cervical lymph node biopsy revealed Kaposi sarcoma cells, CD34(+), CD31(+), vimentin(+), fascin(+), S-100(-), SMA(-), CD68(-). The CD23 and CD21 staining were positive in the dendritic cells of preserved lymphoid follicles of the lymph node. The patient completed 9 cycles of chemotherapy with liposomal doxorubicin (Caelyx), commonly used for the treatment of KS. Complete remission (CR) was confirmed by PET-CT scan. The patient remains in CR with functioning graft for 7 years.

CONCLUSIONS: The cancer was diagnosed with about 10 months delay due to the lack of skin lesions. Regardless of late diagnosis in dissemination stage of the disease the patient was successfully treated with chemotherapy.

TITLE: CASE REPORT: COMPLICATED TREATMENT OF PERIPHERAL ARTERY DISEASE

Author(s): Mindaugas Mikutavičius

Tutor(s): Associate Professor Kęstutis Laurikėnas, M.D Artūras Mackevičius

University: Vilnius University, Faculty of Medicine, Lithuania

BACKGROUND: Peripheral arterial disease (PAD) - blood circulation disorder related to narrowing of extremities arteries due to atherosclerosis. The prevalence of PAD increase with age over 55 years. Most PAD patients have at least one comorbidity. Although about 50% of patients are asymptomatic, the most common symptom of PAD is claudication pain during physical activity. PAD treatment may include lifestyle changes, medications, or surgical treatment (bypass).

CASE REPORT: A 72-year-old man was admitted to Republican Vilnius University hospital because of left foot ischemic rest pains. 6 months ago, the patient underwent a femoral-popliteal bypass due to the same symptoms. Computed tomography with angiography (CTA) - femoral-popliteal bypass failed. A decision was made to perform iliofemoral bypass grafting. The surgery went well, but after 7 days the patient's condition deteriorated (suspected septicemia) and post-operative wounds became infected. Necrectomy of non-healing wounds and endovascular embolization due to rectal bleeding was performed. Repeated CTA showed a failure of the iliofemoral bypass and amputation of the left leg was performed due to lack of opportunities for reconstruction. Due to non-healing wounds in the abdominal wall and left groin, it was decided to perform a vacuum, but despite treatment, the patient died due to exhaustion of vital functions.

CONCLUSIONS: Undiagnosed and untreated PAD can cause serious and even fatal complications. The most common complication of PAD is limb amputation, however, their frequency is not particularly high. The most serious complications can lead to heart attack, stroke, or death. This case represents various rare complications that can occur after PAD treatment, especially for patients with many related chronic diseases.

TITLE: CHOLECYSTECTOMY AFTER ROUX-EN-Y GASTRIC BYPASS SURGERY

Author(s): Kaliszuk K., Cichocka A., Moroz M.

Tutor(s): Dr n. med. Wojskowicz P.

University: Medical University of Bialystok, Poland

BACKGROUND: One of the main treatments for obesity is bariatric surgery, in the case of our patient - Roux-en-Y Gastric Bypass. These operations give a satisfactory healing effect, but they are also related to increased risk of developing some other diseases, including more frequent occurrence of gallstones.

CASE REPORT: A 58-year-old female patient was admitted to the emergency department with abdominal pain located in the epigastric region, radiating to the back. Symptoms appeared in the morning of the same day. Patient did not report any other complaints. She passed stool and gases properly, also denied vomiting and nausea. In 2014 the patient underwent Roux-en-Y Gastric Bypass surgery, furthermore in 2016 she had operation of stitching intermesenteric space due to undefined obstruction. One year after bariatric surgery, our patient lost 75 kg - from 165 to 90 kg. Moreover for 10 years she has been suffering from hypertension. During current admission, after USG and MR cholangiography examination without contrast cholelithiasis was diagnosed. As a part of treatment the patient underwent cholecystectomy.

CONCLUSIONS: Significant weight loss in a short period of time predisposes to increase incidence of cholelithiasis, especially when it comes to weight loss after bariatric surgery, rather than following a low-calorie diet. That’s what happened to our patient. Observation of these kinds of cases gives us knowledge about the potential increased risk of gallstones. It also indicates that patients after bariatric surgery should be overseed carefully due to potential development of this disease.

TITLE: ACUTE ISCHEMIA OF THE GLANS PENIS AFTER CIRCUMCISION SURGERY – PRESENTATION OF UNCOMMON COMPLICATION

Author(s): Maciej Mancewicz, Olga Malinowska

Tutor(s): dr n. med. Grzegorz Młynarczyk, dr n. med. Konrad Rogowski, dr n. med. Jacek Kudelski, prof. dr hab. Barbara Darewicz

University: Department of Urology, Medical University of Białystok, Poland

BACKGROUND: Circumcision is a fairly common urological procedure which is the surgical removal of the foreskin, the tissue covering the glans of the penis. It is a comparatively safe procedure with a low probability of complications. Most complications are minor and can be cured easily. An extremely rare complication after circumcision can be acute ischemia of glans penis which not treated properly may result in irreversible necrosis and as a consequence partial excision of the penis. On the day of surgery, 4 hours after discharge our patient came due to bruising and swelling of the glans and foreskin of the penis. Presentation of a rare complication after circumcision with discussion of possible mechanisms of this event, available methods of treatment, and literature overview.

CASE REPORT: A 23-year-old man was admitted to the hospital for the surgical treatment of phimosis. The procedure was performed without any visible complications. 4 hours after the patient's discharge, he returned due to bruising and swelling of the glans penis accompanied by local pain. During physical examination no pressure or stricture at the site of suture placement has been found. Due to unknown mechanism of the found complication, revision of the wound was performed and sutures were removed with no local improvement. Doppler USG has not shown any features of thrombosis and disruptions of blood flow in the examined area of glans penis. Further treatment was discussed with a vascular surgeon and based on similar described rare cases. During the hospitalization were used intravenous infusion with pentoxyphiline and lignocaine, antithrombotic therapy with low molecular heparin and aspirin. Hyperbaric therapy was maintained for 15 days. After intensive therapy satisfactory local effect was achieved. After discharge from the department, the patient was ordered oral pentoxifylline and aspirin for four weeks.

CONCLUSIONS: It is always a great challenge to face and deal with extremely rare complications especially after a procedure that seems to be easy to perform such as circumcision. Fortunately the available literature data may guide other urologists how they should treat such patients. The main cause of ischemia has not yet been identified. Due to its rarity, acute glans ischemia should increase the physician's alertness and prompt reaction to the diagnosis.

TITLE: DIFFERENT FACES OF ECHINOCOCCOSIS: A CASE REPORT

Author(s): Migle Jurgelenaite, Migle Vitartaite

Tutor(s): assoc. prof. Deimante Hoppenot, MD Vilma Hofertienė

University: Lithuanian University of Health Sciences

BACKGROUND: Echinococcosis diagnosis is mainly based on serological and radiologic findings. However echinococcal lesions may produce widely varied imaging appearances and can be easily misdiagnosed as malignancies, especially in nonendemic regions.

CASE REPORT: A 50-year-old male (farmer, heavy smoker) started to complain about memory loss and dizziness, cough, and chest tightness. Whereas the symptoms progressed, the contrast-enhanced brain MRI was performed in Sep 2016 which showed an intra-axial nodular 2,7 x 3,7 x 3,6 cm lesion in the left parietal lobe with irregular ring enhancement (hyperintense on T1 and hypointense on T2) as well as several small cortical-subcortical lesions, surrounded by a thin line of contrast enhancement. In 2006 the patient was diagnosed with liver and lung echinococcosis (positive IgG for *E. granulosus*). The albendazole was prescribed but after six months of treatment, the patient stopped it and did not come for follow-up until Sep 2016. Feb 2017 Chest CT revealed multiple bilateral heterogeneous soft-tissue density spiculated nodules and masses with irregular shapes some of which 10 cm of diameter with intra-lesional calcifications and cavitations. Abdominal CT showed an enlarged liver with a 22,0 x 18,2 cm heterogeneous cystic lesion in the right hepatic lobe, with irregular margins and scattered foci of calcification, with direct spread to the retroperitoneum and the lower lobe of the right lung. Chest MRI showed heterogeneous infiltrative irregular masses. Lesions in the RUL were heterogenous SI on T1 and T2 - weighted images with a thin wall cystic component. IgG for *E. granulosus* and *E. multilocularis* was positive. The chemotherapy with albendazole was prescribed de novo and taken till now. The lesions started to diminish in size, the memory came back, dizziness and cough disappeared.

CONCLUSIONS: Radical surgery is the first line of treatment, therefore the early diagnosis is very important. Benzimidazoles are widely used to treat this disease but currently, there is no cure for advanced forms. It also remains unclear how long the treatment should be continued due to the difficulty in detecting the viability of the parasites in vivo.

TITLE: POLYTRAUMA WITH BONE FRACTURES, RUPTURED SPLEEN AND CARDIAC TAMPONADE: CASE REPORT

Author(s): Donata Vaiciulyte, Migle Vitartaite

Tutor(s): Jurgita Grigaitiene

University: Vilnius university

BACKGROUND: The term “polytrauma” refers to multiple injuries that involve multiple organs or systems. The management of the patients who have suffered multiple injuries has been improving during the past century. We present a case of a patient who experienced polytrauma including bone fractures, ruptured spleen and cardiac tamponade.

CASE REPORT: A 57 year old woman presented to the Emergency department after she experienced epilepsy attack and fell down the stairs. The patient has a history of epilepsy, mitral valve replacement and she has been taking warfarin for 16 years. She was in rehab after a traumatic subarachnoid hemorrhage with no neurological deficit. On admission to the regional hospital, woman was conscious (GCS 15/15), drowsy, experienced pain in the abdomen, legs, hands and face, but cardiovascular system and respiration were normal. Wounds on the right hand and femur were observed. X-ray showed right distal femur and right elbow dislocated and splintered, multiple foot, hand, jaw and pubis fractures. Free fluid in RUQ and Douglas pouch was observed during FAST. The patient was transferred to the Trauma center where additional observation revealed hemoptysis, BP 149/105, HR 111 bpm. Additional FAST showed that spleen might be ruptured and unidentified findings in the pericardial sac. Full-body CT scan revealed 1,1 cm of fluid around heart, ruptured spleen, hematoma in obturatorius muscle. The hemodynamics of the patient were deteriorating and the woman was taken to the operation room for splenectomy. Blood test results were INR 4,38, APTT 54 s, SPA 10% and tranexamic acid 1 mg was injected IV. After surgery patient was taken into the ICU and an immediate 2d echo revealed hyperkinetic LV, 3.8 cm fluid by RA - cardiac tamponade. A cardiac surgeon performed US-guided drainage of 250 ml and patient’s hemodynamics were quickly improved. Overall 4 units of RBC were transfused and angioembolization of arteria obturatoria was performed. The next day the patient’s femur was externally fixated. The patient remained stable during hospitalization.

CONCLUSIONS: Early and adequate treatment of severely injured patients can only be successful if its management starts at the beginning of the accident. The trauma team should be prepared to manage severe injuries and follow standardized guidelines to detect and correct changes that can be life-threatening.

TITLE: EXPERIENCES OF A SINGLE SURGEON WITH SIMULTANEOUS BILATERAL TOTAL KNEE ARTHROPLASTY

Author(s): Maksims Mihailovs, Dārta Jakovicka

Tutor(s): Asoc. prof. Pēteris Studers; Dr Justs Sauka

University: Riga Stradins University

BACKGROUND: Total knee arthroplasty is an effective procedure for patients suffering from knee pain. Since a significant number of patients are known to have bilateral disease, several studies support the concept of simultaneous bilateral total knee arthroplasty (BTKA) because of its shorter hospital stay, faster recovery, and lower cost. However, BTKA is associated with a higher risk of complications, such as increased intraoperative blood loss, venous thromboembolism, and neurologic damage. The aim of our study was to present the experience with simultaneous BTKA at the Hospital of Traumatology and Orthopaedics in Riga.

CASE REPORT: We report two case reports of patients with bilateral knee osteoarthritis. Both patients had severe deformity of the knee joints. During simultaneous BTKA, both patients were placed in the supine position with a pneumatic tourniquet on both legs. Combined spinal and epidural anaesthesia with local infiltration anaesthesia was used. The surgery was performed by a single surgeon. 1. Female, 55 years old. Diagnosis - bilateral gonarthrosis. Had bilateral pain in knees for 2 years. X-ray findings: bilateral knee OA with mechanical axis deviation of both legs: 7° varus deformity on the right and 12° valgus on the left side. Performed surgery - BTKA. After rehabilitation, the range of motion was 110°/0°/0° (flexion/extension). The postoperative period was without complications. Hospital stay - 10 days. 2. Female, 62 years old. Diagnosis - bilateral gonarthrosis. Had bilateral pain in knees for 7 years. X-ray findings: bilateral knee OA with varus deformity in both legs with mechanical axis deviation: 15° on the right and 12° on the left side. Performed surgery - BTKA. After rehabilitation, the range of motion was 100°/0°/0°. No complications in the postoperative period. Hospital stay - 14 days.

CONCLUSIONS: Bilateral total knee arthroplasty should be performed by a highly experienced team of specialists. This study shows that BTKA is recommended for the treatment of bilateral knee pathology. Both patients had significant improvement in function and no complications during the early postoperative period.

Case Report VIII

TITLE: AUTOIMMUNE HEMOLYTIC ANEMIA WITH COLD AGGLUTININ AS A RARE MANIFESTATION OF EPSTEIN-BARR VIRUS INFECTION

Author(s): Chodak Weronika, Czyczerska Magdalena

Tutor(s): Agata Chobot MD, PhD

University: Department of Paediatric, University of Opole, Poland

BACKGROUND: Infectious mononucleosis is one of the most common manifestations of Epstein-Barr virus infection. Although cold agglutinin occurs in more than 60% of patients with infectious mononucleosis, it is rare to develop autoimmune hemolytic anemia (1-3% of infected patients). Antibodies form in a cold type of autoimmune hemolytic anemia belong mainly to IgM, but also to IgG, IgA class, against polysaccharides found on erythrocytes, due to which they agglutinate at low temperatures what leads to complement activation and hemolysis. Characteristics of hemolytic anemia are high: percentages of reticulocytes, LDH activity, free bilirubin concentration, and low haptoglobin concentration.

CASE REPORT: 7 years old boy, referred from GP. He was admitted to the hospital due to the yellowness of the skin and whites of the eyes. His upper respiratory tract was infected for 3 days. When he was 3 years old, he was diagnosed with diabetes type 1. During admission to the hospital, he was in good condition. In physical examination, no further abnormalities were found. Results of laboratory tests showed a high level of CRP and procalcitonin and features of hemolytic anemia. In USG examination of the revealed splenomegaly. The serological examination confirmed an active EBV infection. Due to progressive anemization, warm blood was drawn for clot and 2 times for EDTA, and hemolytic anemia with cold agglutinin was confirmed. Methylprednisolone and Clemastinum were administered. Then packed red blood cell transfusion was made. In check-up examination, there were packed red blood cells not seen features of hemolysis and the level of hemoglobin was normal.

CONCLUSIONS: Although hemolytic anemia with cold agglutinin occurs rare, it can be a serious threat to health and life. It should always be considered in differential diagnosis hyperbilirubinemia and anemia during active viruses infection such as EBV.

TITLE: UNEXPECTED PROLONGED NEUROMUSCULAR BLOCKAGE IN A PEDIATRIC PATIENT

Author(s): Viktorija Kenstavičiūtė, Roberta Buginytė

Tutor(s): Vilma Kakštienė

University: Lithuanian University of Health Sciences, Lithuania

BACKGROUND: Mivacurium is a selective, short-acting, non-depolarising muscle relaxant, which is used to facilitate tracheal intubation and provide skeletal muscle relaxation during surgery or mechanical ventilation. A standard intubating dose of 0.2 mg/kg in children (aged 2–12) causes complete neuromuscular depression in 1.5-2 minutes and spontaneous recovery is 95% complete in approximately 20 minutes. As mivacurium is hydrolyzed by pseudocholinesterase (PCE), a deficiency in this enzyme may result in a prolonged blockage. In this case, we present an unexpected prolonged neuromuscular block in a child after a single dose of mivacurium.

CASE REPORT: A 7-year-old boy underwent bilateral adenotonsilectomy. The patient had not been anaesthetized in the past and there was no family history of adverse reactions to anesthesia. He did not take any medication and denied drug allergies. Physical examination revealed a healthy 32 kg male. For induction of general anesthesia 0.05 mg fentanyl and a single dose of 3 mg mivacurium were infused, followed by endotracheal intubation 2 minutes later. In this case, only half of the recommended dose (0.09 mg/kg) of neuromuscular blocker was used. Anesthesia was maintained with 1 MAC (minimum alveolar concentration) sevoflurane *in oxygen*. Surgery lasted 50 minutes uneventfully and anesthesia was continued in the operating room for another 20 minutes. However, complete recovery from anesthesia was complicated by respiratory failure due to residual action of mivacurium. For safe extubation, he was transferred to the intensive care unit. The P-SIMV- Ventilation Mode was continued, and consciousness was additionally sedated with intravenous midazolam 2.5 mg and propofol 50 mg doses. Full spontaneous respiration was restored after 230 minutes after a single bolus of 0.09 mg/kg mivacurium with safe extubation.

CONCLUSIONS: It is currently not practical to screen for all presurgical cases of pseudocholinesterase deficiency if the patient has no family history of this disorder. Usually, for faster non-depolarising neuromuscular-blockage recovery, neostigmine is used as an antidote. However, the current use of this antidote is still under discussion because it may potentially prolong the mivacurium induced neuromuscular-blockage and should only be used when the majority of neuromuscular activity has returned.

TITLE: EMERGING ROLE OF DIFFERENTIAL DIAGNOSIS IN CRANIOSYNOSTOSIS - PHENOTYPIC ANALYSIS OF FOUR PATIENTS WITH MUENKE SYNDROME

Author(s): Głuszak Paweł [2,3]

Tutor(s): MD PhD Marzena Wiśniewska [1,3]

University: [1] Department of Medical Genetics, Poznan University of Medical Sciences
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BACKGROUND: Craniosynostosis is defined as a premature fusion of skull sutures, resulting in abnormal head shape. It occurs frequently throughout various genetic syndromes, often related to *FGFR* gene mutations. Muenke syndrome is caused by a pathogenic mutation in the *FGFR3* gene. Patients are characterised by craniosynostosis with typical facial dysmorphia and other phenotypic features including hearing loss, developmental delay, neurologic abnormalities and limb defects. Phenotype often varies even across patients from the same family. Muenke syndrome is rare in comparison to other craniosynostosis syndromes, and is often not included in differential diagnosis. In Poland, there is also no reimbursed multigene panel that would help to establish a proper diagnosis of patients with craniosynostosis. These issues result in a long-standing diagnostic journey of patients without proper multidisciplinary management.

CASE REPORT: We present case reports of four non-related patients with a molecular diagnosis of Muenke syndrome. Patient age ranges from 6 months to 17 years. Patients present with craniosynostosis, facial abnormalities. Other dysmorphic features - abnormalities in the central nervous system, ocular defects and mild psychomotor delay, occur in patients with different intensity. In the youngest patient diagnosis was made in the second week of life, in the oldest - in the seventeenth year of life after multiple medical interventions and consultations.

CONCLUSIONS: Presented cases depict phenotype and proper management of patients with craniosynostosis, especially Muenke syndrome. The presentation overviews the most common craniosynostosis syndromes and importance of Muenke syndrome in differential diagnosis. Our work emphasizes the importance of multigene panels in order to shorten the diagnostic path of patients with craniosynostosis.

TITLE: PRIMARY AMENORRHEA - DELAYED PUBERTY OR GENETIC MALE? A CASE REPORT

Author(s): Oklińska Joanna, Jadczak Klaudia

Tutor(s): Sawicka Beata MD PhD, prof. Bossowski Artur MD PhD

University: Department of Pediatrics, Endocrinology, Diabetology with Cardiology Division, Medical University of Bialystok, Poland

BACKGROUND: Morris syndrome, also known as testicular feminization is a genetically determined disorder of sexual development mostly caused by a mutation in the androgen receptor gene (AR gene). AIS (androgen insensitivity syndrome) is identified in women with a normal phenotype and primary amenorrhea. During the fetal period, due to the abnormal action of androgens (testosterone and DHT) male genitalia do not develop and female internal and external genitalia develop. This syndrome occurs with an incidence of 1:20,000- 1:99,000 individuals with a 46,XY karyotype.

CASE REPORT: 16-year-old 8 months female patient was admitted to the Department of Pediatrics, Endocrinology, Diabetology and Cardiology at the Medical University of Bialystok because of primary amenorrhea. Physical examination showed no significant abnormalities except for absence of pubarche and adrenarche. Hormonal studies revealed high androgen levels and elevated gonadotropin levels. Due to high level of testosterone, the diagnostics was extended to genetic testing - the result was a normal male karyotype - 46,XY. Mutation of AR gene was confirmed. On pelvic imaging gonads were found; no structures characteristic for uterus and ovaries were visualized. Based on these findings, androgen insensitivity syndrome was diagnosed. The patient is considered for preventive gonadectomy because of high risk of development of gonadal tumors in patients with AIS.

CONCLUSIONS: Patients with AIS have female gender identification. Delayed puberty should be one of indications for genetic testing during the diagnostic process. Preventive gonadectomy should be considered in female patients with a 46,XY karyotype as a prevention of gonadal tumors.

TITLE: A NATURAL HISTORY OF A BOY WITH THE LARGEST INTERSTITIAL DELETION 7P14.3P21.2

Author(s): Maciej Korniluk

Tutor(s): Renata Posmyk, MD, PhD; The Head of Department of Clinical Genetics

University: Medical University of Bialystok, Poland

BACKGROUND: Deletions of the short arm of chromosome 7 are rare chromosomal findings. There were only several reported cases with similar deletion. The patients manifested especially craniofacial deformations, delayed psychomotor development, abnormal ears, limbs deformations, urogenital defects. The deleted region contains a number of genes, for instance *HOXA* cluster, where mutations lead to hand-foot-genital syndrome (HFGS). The most interesting findings were additional, bilateral tags on the neck in our patient, haven't been seen yet in previously reported cases.

CASE REPORT: The newborn boy, from the first pregnancy of healthy and nonconsanguineous parents was born at 38th week of gestation by cesarean section. Birth weight was 2400g (<4th centile), length 52cm (85th centile), head circumference 33cm (20th-25th centile). The Apgar scores were 4 at 1st minute, 7 at 5th and 8 at 10th. Routine ultrasound examination at 11-13 weeks' gestation showed increased risk of Trisomy 21 and Trisomy 18 (NT- Nuchal Translucency = 4,5mm (>99th percentile)). Few days later NT was normal (2,3mm) and invasive prenatal diagnostic procedures have not been undertaken. Moreover, ultrasound examination during the 3rd trimester showed fetal growth restriction and shortening of long bones. After birth nasal oxygen ventilation was needed due to a frequent desaturation episodes, especially during feeding. Laryngeal stridor and sucking problems were also noted. Dysmorphic features were evident and included: asymmetric palpebral fissures with a ptosis of left eyelid, small, low-set and dysmorphic ears, shortening of long bones. The patient's limbs and urogenital defects like hypospadias and cryptorchidism were similar with these presented in hand-foot-genital syndrome. Due to a set of dysmorphic features a karyotype was performed after birth. Results showed interstitial deletion 7p14.3p21.2 of 15 Mb. When examined at 7 months, the infant sat with the support and was spoon-fed by the parents. The patient was under intensive rehabilitation therapy.

CONCLUSIONS: Lack of 7p14.3p21.2 region belongs to the largest deletions, which were found so far. Further reports are necessary in delineation of phenotypic spectrum. To date, our patient has been found as an only child with additional tags on the neck.

TITLE: 4-WEEK-OLD INFANT WITH A PRENATALLY DIAGNOSED UNILATERAL HYDRONEPHROSIS - CASE REPORT

Author(s): Filip Kamiński, Marta Miejska

Tutor(s): Grażyna Chmaj, MD, PhD

University: University of Rzeszów, Students' Scientific Group of Pediatric Surgery and Pediatric Urology, Poland

BACKGROUND: Hydronephrosis refers to dilation of the renal pelvis and calyces caused by the accumulation of urine as a result of outflow obstruction and involves atrophy of the kidney structure. Prenatal ultrasonography may reveal a fetus with dilated kidneys, which occurs in 1 per 100 pregnancies. Hydronephrosis is the most common urologic abnormality identified during prenatal ultrasonography in the second and third trimesters - it represents 50% of all urological abnormalities found in antenatal USG. Prenatal unilateral hydronephrosis should undergo a semi-urgent postnatal evaluation, within 1-3 weeks.

CASE REPORT: A 4-week-old male newborn was admitted to the Department of Pediatric Surgery due to left-sided hydronephrosis. The preoperative ultrasonographical examination revealed a significantly enlarged left kidney, which measured 97 x 49 x 34mm. The left kidney's volume was more than three and a half times that of the right kidney's (right kidney: 21,5ml vs. left kidney: 80,8ml). The pelvicalyceal system was vastly extended, the renal pelvis was dilated up to 48mm (APD), whereas the renal parenchyma was narrowed to 2,5mm. Hypofunction of the left kidney was also detected by conducting the renal scintigraphy, which showed only 28% share in infiltrating. The obstruction of the ureteropelvic junction was the cause of hydronephrosis. Resection of the pelviureteral segment was performed with ureteroplasty according to the Anderson-Hynes procedure with a satisfactory result.

CONCLUSIONS: Ultrasonography is of fundamental importance to pediatric urology. Hydronephrosis is the most frequently discovered fetal urologic irregularity, but its severity and clinical consequences can differ greatly. The treatment depends on the extent of enlargement of the pelvicalyceal system. Surgical operation is essential. Ureteroplasty, according to Anderson-Hynes procedure, is one that can be chosen to treat this condition. A decision about the way of treatment is crucial and it should be conducted to each patient individually.

TITLE: RIGHT SIDED CONGENITAL DIAPHRAGMATIC HERNIA IN ONE DAY OLD NEONATE

Author(s): Carolyne Maksim

Tutor(s): Prof.dr hab Wojciech Dębek

University: Student's Pediatric Surgery Society at the Department of Pediatric Surgery at Medical University of Bialystok, Poland

INTRODUCTION: Congenital diaphragmatic hernia (CDH; protrusion of abdominal contents into the thorax) is found to be a highly polygenic disease of very high neonatal mortality (25-50%). It occurs in 1:3,300 live births and is the main reason for neonatal respiratory distress. This is primarily caused by the abnormal lung development, and increased arterial muscularization resulting in pulmonary hypoplasia and persistent pulmonary hypertension. Right-sided CDH, is most commonly connected to liver displacement into the thorax, which results in extremely high mortality. Right-sided CDH is very difficult to diagnose prenatally because liver ultrasound echogenicity is similar to that of the lungs.

CASE REPORT: A 1 day old neonate born naturally at 35 weeks gestation in a pregnancy complicated by lower limb thrombosis and maternal urinary tract infection, presented with dyspnea and cyanosis (rated 5/5/6/7 points on Apgar score). Further physical examination showed an extensive subcutaneous hematoma, darkening of skin, and a respiratory murmur inaudible on the right side of the lung fields. Due to lung insufficiency and a O2 saturation of 85% the patient was intubated, ventilated and immediately sedated in the NICU. A central venous line was connected and the patient was referred for surgery with the diagnosis of a complete right diaphragmatic hernia that was confirmed on USG. The peritoneal cavity was opened with a cut below the right costal arch. The liver, small intestine, and ascending colon were moved down to the abdominal cavity and a 5x6cm semi-continous non-absorbable goratex patch was sewn to the residual part of the diaphragm. The surgery was performed without complications, however due to severe inadequate lung function the patient passed away 2 days later from respiratory insufficiency.

CONCLUSIONS: The main problem in this severe case of CDH was the lack of prenatal diagnosis, it is usually identified prenatally around 24 weeks gestation. A proper diagnosis allows effective treatment of the fetus – laparo- and uteroscopic closure of the trachea, improving maturity of the lungs and thus increasing the chances of survival in the newborn.

TITLE: PRESENTATION OF SEVERE HIRSUTISM IN A YOUNG WOMAN WITH POLYCYSTIC OVARY SYNDROME

Author(s): Gabriela Naronowicz, Emilia Szerenos, Gabriela Sokolowska

Tutor(s): Agnieszka Łebkowska MD, PhD

University: Department of Internal Medicine and Metabolic Diseases, Medical University of Bialystok, Poland

BACKGROUND: Hyperandrogenism (HA) is the main feature of polycystic ovary syndrome (PCOS). Androgen excess symptoms, including hirsutism, alopecia, or acne, may be frequently accompanied by ovulatory disturbances (OM), polycystic ovarian morphology (PCOM), obesity and insulin resistance sequelae. Hirsutism is characterized by excessive terminal hair growth that appears in a male pattern in women. Differential diagnosis of PCOS includes other endocrinopathies, such as non-classic congenital adrenal hyperplasia (NCCAH), Cushing syndrome and thyroid dysfunction.

CASE REPORT: A 26 year old patient was admitted to the Department of Metabolic Diseases of Medical University of Białystok due to excessive hair growth especially on her face, chest, abdomen and menstrual irregularities. She presented with obesity (BMI: 42.3 kg/m^2; waist circumference: 128cm), pale abdominal striae and significant hirsutism with a modified Ferriman Gallwey score of 30. Initial laboratory findings revealed impaired glucose tolerance in oral glucose tolerance test. Hormonal diagnostic showed increased LH/FSH ratio, elevated total testosterone (T) concentration (2.98 nmol/L, reference range 0.25-2.75nmol/l), free androgen index 6.57 (nadir <5) and dehydroepiandrosterone sulfate concentration (587ug/dl, reference range 148-407ug/dl). Hypothyroidism and hyperprolactinemia were excluded. NCCAH in 250-ug adrenocorticotropic hormone stimulation test was excluded. Cortisol rhythm, 24h urine cortisol excretion and suppression test with 2mg of dexamethasone were normal. Urine steroid profile revealed increased T, delta 5-androgens metabolites and 17-OH-progesterone metabolites, suggesting an ovarian-adrenal source of androgens. MRI of pelvis revealed polycystic ovarian morphology. CT of abdomen excluded tumors of adrenals. Clinical and laboratory HA, OM and PCOM allowed us to diagnose PCOS according to Rotterdam criteria. In treatment, oral contraceptives - combination of ethinylestradiol with drospirenone, metformin of prolonged release and finasteride, a 5-alpha reductase inhibitor were initiated. As adjuvant therapy, permanent face hair reduction by depilation was recommended.

CONCLUSIONS: Although PCOS is a very common endocrine disorder, extremely severe HA is rare and other major causes should be taken into differential diagnosis.

TITLE: PARACETAMOL SELF-POISONING IN A 16-YEAR OLD GIRL

Author(s): Robert Klimkowski

Tutor(s): Assoc. Prof. Beata Cudowska, Prof. Dariusz Lebensztejn

University: Department of Pediatrics, Gastroenterology, Hepatology, Nutrition and Allergology; Medical University of Bialystok, Poland

BACKGROUND: Paracetamol (acetaminophen) is a widely available and used over-the-counter (OTC) drug with analgesic and antipyretic properties. It is generally safe if taken in the recommended therapeutic dose, but is frequently used for intentional self-poisoning being one of the most common causes of drug intoxication in children. Overdose of paracetamol lead to severe liver and kidney failure.

CASE REPORT: A 16-year old girl was referred from the regional hospital due to vomiting in the 40th hour after the confirmed episode of intended and suicidal attempt of drug ingestion in a dose of 9750 mg of paracetamol (182 mg/kg) and 1125 mg of tramadol (21 mg/kg). On the admission she complained of dizziness, epigastric pain, nausea and vomiting. In physical examination: a yellow discolouration of the sclera and tenderness in epigastric region. The laboratory results revealed elevated aminotransferases activity, total bilirubin concentration with disorders of coagulation. The peak of the highest values occurred on the second day: alanine aminotransferase activity (ALT) 6248 U/l, total bilirubin concentration 4.04 mg/dl with direct fraction 1.17 mg/dl, gamma-glutamyl transpeptidase (GGT) 15 IU/l, prothrombin time 26.2 s, international normalized ratio (INR) 2.42. Liver transplantation King's College Criteria were not fulfilled. The treatment consisted of n-acetylocysteine administration, started on the 2nd day, after the disclosure of drug intake, fluid imbalance correction and vitamin K infusion. Patient was discharged home in the 9th day of hospitalization, in a general good condition, with the value of ALT activity 485 U/l and normalization of other biochemical parameters.

CONCLUSIONS: The unlimited access to paracetamol as on OTC drug should be reconsidered together with the education about its side- and toxic effects. In the case of paracetamol poisoning, early diagnosis and treatment with n-acetylocysteine has the crucial role in reducing the toxic effects of acetaminophen.

TITLE: MIRIZZI'S SYNDROME IN A PEDIATRIC PATIENT - A CASE REPORT

Author(s): Michał Wojnowski, Anna Olszanicka, Marlena Baran, Katarzyna Kuźniar

Tutor(s): Dr. Anna Ogorzałek

University: University of Rzeszow, Poland

BACKGROUND: Gall bladder stones are less common in the pediatric population than in adults. There is an increase in the number of cases due to increase in the prevalence of obesity among children. Mirizzi's syndrome is a rare complication chronic gallbladder stones defined as compression of the wedges in the gallbladder.

CASE REPORT: Presentation and analysis of a patient with Mirizzi syndrome and discussion of diagnostic and treatment procedures based on the available literature. A 13-year-old boy with symptoms of hepatitis and jaundice was referred to the Department of Pediatric Surgery. Laboratory tests revealed elevated levels of bilirubin and high levels of liver enzymes. Magnetic resonance cholangiopancreatography (MRCP) showed an enlarged gallbladder and a dilated cystic duct with a signal defect in the lumen. ERCP procedure with sphincterotomy was performed. Due to the progression of jaundice, a control MRCP was performed, which revealed an enlarged, bent gallbladder with an unthickled wall and dilatation of the intrahepatic bile ducts. The expansion of the CBD and CHD, as well as the deposits in their light, were not visible. On the other hand, the features of pressure on the CBD and CHD by the gallbladder were found. The patient was qualified for laparoscopic cholecystectomy. Intraoperatively, a large bladder was found, fused with the bottom of the bile duct. Due to difficulties in anatomical evaluation, it was decided to convert to laparotomy. The gallbladder was removed and an intraoperative contrast examination of the bile ducts was performed. The postoperative period was uneventful. A gradual decrease in bilirubin levels and normalization of liver damage markers were observed. The patient was discharged home in good condition.

CONCLUSIONS: Gallbladder stones are rare in children, but may have complications, such as Mirizzi's syndrome. The diagnostic test of choice is USG of the abdominal cavity, MRCP can also be performed in patients with an unclear ultrasound image. The diagnosis of gallbladder stones in a child does not always mean the implementation of surgical treatment. In the presented case, due to the presence of complications, the appropriate procedure was to perform a cholecystectomy. This example shows how important an active diagnostic process and appropriately selected treatment are.

Notes

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