17th Białystok International Medical Congress for Young Scientists

17th BIMC

26 - 28 MAY 2023



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Basic Sciences

Title: Analysis of influence of prenatal exposition to testosterone and serum testosterone level in patients with multiple sclerosis treated with natalizumab and fingolimod.

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INTRODUCTION: Multiple sclerosis (MS) is a chronic inflammatory demyelinating disease of the CNS. Exposition to low levels of testosterone (T) during the prenatal period represent risk factors for developing MS. High serum T levels in adult patients can be a protective factor in MS. T plays also a role in formation and repair of myelin in the CNS suggesting its neuroprotective role.

AIM OF THE STUDY: In this work we studied a link between T levels and clinical progression of patients treated for relapsing-remitting form of MS (RRMS).

MATERIALS AND METHODS: We enrolled 33 patients with RRMS treated with natalizumab and fingolimod. Digit Ratio (DR) was measured. Serum T concentration was measured with electrochemiluminescence. Neurological outcome was determined using EDSS. For assessment of cognitive functions we used SDMT, MoCA, FSMC and MFIS. Since patients suffering from MS frequently cope with depression. We measured its severity with BDI.

RESULTS: We found a correlation in female patients between serum T level and progression in MFIS and a correlation in female patients between DR and FSMC . In male patients we observed an association between serum T level and progression in SDMT and between T and progression in MFIS . There is a relation in all male patients between DR and progression in BDI.

CONCLUSIONS: Our observations indicate an existing link between exposition to T and outcome of patients with RRMS. The data may provide useful information for the use of DR and serum T level as a marker for response to different MS therapies.

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Basic Sciences

Title: Assessment of platelet-rich plasma properties in regulation of adipose-derived mesenchymal stem cells activity

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INTRODUCTION: Adipose-derived mesenchymal stem cells (AD-MSC) demonstrate substantial regenerative and immunomodulatory properties. In accordance, their potential applications extend beyond tissue repair and include areas of autoimmunity, allergy and oncology. Increasing number of studies focus on discovering novel effective therapies involving AD-MSC. The key issue is establishing protocols for induction of expected activity of these cells. Platelet-rich plasma (PRP) consists numerous biologically active substances. Considering its accessibility, PRP is a promising tool for modulating AD-MSC

AIM OF THE STUDY: The aim of the study was to evaluate the effects of PRP on the function of ADMSC

MATERIALS AND METHODS: AD-MSC were obtained from the patients undergoing abdominoplasty, and incubated with PRP at selected concentrations for 48 hours. Changes in viability, proliferation and cell cycle status were analyzed using flow cytometry. Concomitantly, AD-MSC were visualized using confocal microscopy, and their microenvironment analyzed with immunoenzymatic technique

RESULTS: First, PRP was found to significantly increase proliferation rate of AD-MSC, supported additionally by changes in cell cycle status. At concentrations of 0.2mg/ml and more, improved viability was also demonstrated. Intensified expansion of AD-MSC was unambiguously confirmed in confocal microscopy. Moreover, concentrations of 0.04-0.2mg/ml seemed to be relatively safer in context of absent IL-6 production and LDH activity. Noteworthy, observed effects were reduced when protein elements of the PRP were inactivated

CONCLUSIONS: Here, we presented beneficial effects of PRP on the activity of human AD-MSC, indicating simultaneously crucial role of protein elements in the observed phenomenon. Further studies are of great importance to implement to test above combination on models of tissue damage, cancer and autoimmunity

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Basic Sciences

Title: Changes in the brain after carbon monoxide poisoning.

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INTRODUCTION: Carbon monoxide is the most common cause of poisoning, which manifests itself in disorders of consciousness and loss of consciousness. Complications may include the development of brain changes.

AIM OF THE STUDY: To describe MR imaging findings in patients after acute carbon monoxide poisoning.

MATERIALS AND METHODS: For 7 years, 76 patients after acute carbon monoxide poisoning with persistent neurological symptoms were referred to the Department of Interventional Radiology and Neuroradiology for brain MR. In all patients the level of carboxyhemoglobin (COHb) was determined and brain MR examinations were performed according to the same protocol. In 15 patients, because of progression of clinical symptoms, control brain MR was performed.

RESULTS: In all patients mean value of COHb was 28.64%.In 28 patients brain MRI scans showed no change and their average value was 26.50% COHb. In the remaining 48 patients MR brain abnormalities were diagnosed, including changes of basal ganglia, white matter or cortex and their average value was 29.32% COHb. In 15 patients first brain MR result was normal, whereas in 9 of them bilaterally changes in white matter were diagnosed in control MR examinations.

CONCLUSIONS: In patients with persistent neurological symptoms after acute carbon monoxide poisoning there are changes in brain MRI. They correlate with the concentration of COHb. Between patients with progression of neurological symptoms after carbon monoxide poisoning late changes in the white matter of the brain can occur. MRI is the method of choice for imaging the brain in patients after acute carbon monoxide poisoning.

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Basic Sciences

Title: Changes in the level of transforming growth factor β in the testes of Spontaneously Hypertensive Rats.

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INTRODUCTION: The Spontaneously Hypertensive Rats (SHR) is the most commonly used model of hypertension. Hypertension increases the risk for a variety of cardiovascular diseases leading to many health implications. This condition affects around 700 million men of reproductive age. It was also reported that these men present an increased risk for reproductive disorders (e.g., erectile dysfunction and decreased sperm quality). Moreover, a recent study found a link between these disorders and hypertension-related inflammation.

AIM OF THE STUDY: Therefore, the purpose of this study was to compare the level of transforming growth factor β (TGF-β) in testicular tissue of SHRs - an animal model for hypertension and Wistar Kyoto rats (WKYs) used in the present study as a control group.

MATERIALS AND METHODS: Testes were carefully isolated from SHRs and WKYs in two age stages: juvenile (5-week-old) and maturating (10-week-old). In the next step, they were homogenized, and the level of TGF-β, using an ELISA kit, was measured. The statistical differences between groups were analyzed through one-way ANOVA followed by Tukey’s post hoc t-test (Graph Pad Prism 6 software, La Jolla, CA, USA).

RESULTS: The results showed statistically significant increases in the testicular level of TGF-β in 10-week-old SHR rats when compared to 5-week-old animals as well as 10-week-old normotensive rats.

CONCLUSIONS: An elevated testicular level of TGF-β in hypertensive rats might be associated with damage to this reproductive organ, probably caused by developing hypertension (including the inflammation process). This question needs further study.

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Basic Sciences

Title: Evaluation of caffeine effects on in vitro model of non-small cell lung cancer (NSCLC).

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INTRODUCTION: Caffeine, as an ingredient in coffee or tea, is probably the most popular substance worldwide. The caffeine's effect on human organisms is multidirectional and still not fully understood. While neuroactive and cardiological effects of caffeine are well-known, those regarding immunomodulation and potential anti-cancer activity are yet to be researched. Non-small-cell lung cancer (NSCLC) accounts for about 85% of all lung cancers. Lung cancer is the most frequently diagnosed malignant tumor and the leading cause of cancer-related deaths.

AIM OF THE STUDY: Our study aimed to assess the effects of caffeine on NSCLC activity.

MATERIALS AND METHODS: NSCLC cell lines (A549 and H2030) were incubated with caffeine at different concentrations. Evaluation of proliferation and viability after 24, 48, and 72 hours was performed using flow cytometry. Healthy donors' immune cells were cultured for 24 hours or 5 days to establish caffeine influence on activation status and proliferation rate, respectively.

RESULTS: Application of caffeine in NSCLC revealed high efficacy in inhibiting lung cancer cell expansion in a dose-dependent manner. Interestingly, seemingly similar cancer types responded differently to the tested conditions. Decreased proliferation was accompanied by significant viability reduction, suggesting apoptotic pathway induction. Furthermore, caffeine affected viability of the immune cells at highest concentration used. Nevertheless, lower doses of 2 to 10mM were considerably safe and promoted activation of monocytes.

CONCLUSIONS: We demonstrated an anti-cancer impact of the caffeine on NSCLC cells and relative safety towards healthy cells. However, further studies are needed to explain mechanisms of the observed actions and ambiguous effects on different cancer types.

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Basic Sciences

Title: Investigating liver levels of hexokinase enzyme in genetic model of hypertension.

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INTRODUCTION: The Spontaneously Hypertensive Rats (SHR) is a unique genetic model of severe hypertension. Moreover, similarly to hypertensive patients, these animals are hyperglycemic and hyperinsulinemic. Interestingly it was reported that in the hearts of hypertensive animals, the activity of hexokinase (HK) significantly increased. However, to the best of our knowledge, there is no data available regarding the liver content of this enzyme in the SHR and normotensive rats (Wistar Kyoto Rats – WKY).

AIM OF THE STUDY: This study aimed to compare liver levels of HK in young and mature SHR and its normotensive control strain (WKY), to check if there are any differences between them.

MATERIALS AND METHODS: Liver tissue samples were collected from young (5-week-old) and mature (10-week-old) male SHR (n = 6) and WKY (n = 6) to determine the level of HK using ELISA kits.

RESULTS: The results showed statistically significant increases in the liver level of HK in the 5- and 10-week-old hypertensive rats when compared to age-matched controls.

CONCLUSIONS: In conclusion, elevated liver content of HK in both young and mature SHR compared to their control, probably indicate increased liver metabolism of glucose, which might also be connected with intensified oxidative stress in this tissue previously observed. However, confirmation of this hypothesis will require further investigation.

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Basic Sciences

Title: Priming of human monocytes for enhanced lipopolysaccharide response by nanoparticle air pollutants: expression of IL1, IL6, and tumor necrosis factor.

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INTRODUCTION: Air pollutants trigger an inflammatory response in the airways. We assessed ex vivo responses of human monocytes (M) and monocyte-derived macrophages (MDM) to carbon black (CB), urban dust (UD), and nanoparticulate carbon black (NPCB), focusing on their pro-inflammatory properties.

AIM OF THE STUDY: The objective of our study was to assess inflamatory responses of human monocytes (M) and monocyte-derived macrophages (MDM) exposed to to carbon black (CB), urban dust (UD), and nanoparticulate carbon black (NPCB).

MATERIALS AND METHODS: The human primary M were isolated from peripheral blood mononuclear cells by gradient centrifugation and purified using magnetic CD14+ beads. M were differentiated into MDM by 100 ng/ml phorbol 12-myristate 13-acetate. M were plated at a density of 0.15×106and treated with 100 mg/ml CB, UD, or NPCB for 24 h. After centrifugation, the supernatants were analyzed with the Multi-Analyte Inflammatory Cytokine ELISArray Kits (Qiagen, Manchester, UK).

RESULTS: Only NPCB increased IL1b in M, while IL6 and TNFa were unchanged. The transition of M cells by PMA highly increased inflammatory response resulting in a 2-3 times increase in both interleukins and TNFa. In MDM only NPCB significantly increased TNFa.Lipopolysaccharide (LPS; 100 ng/ml) induced a strong proinflammatory reaction and elevated all measured parameters about 10 times. Slightly higher, yet not significant values were observed when PM-pretreated M were treated with LPS. In MDM however, both UD and NPCB increased IL1b which is important in acute-phase responses to infection and injury, and NPCB additionally elevated multifunctional proinflammatory cytokine - TNFa.

CONCLUSIONS: We have shown, that the production of proinflammatory interleukins IL1b and IL6, and TNFa is only slightly increased by PM, but macrophages primed with UD and NPCB increase their inflammatory responsiveness to LPS stimulation.

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Basic Sciences

Title: The effect of finerenone on selected hemostasis parameters in normoglycemic and diabetic mice.

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INTRODUCTION: Finerenone is a novel third-generation nonsteroidal, selective mineralocorticoid receptor antagonist used for the treatment of chronic kidney disease with albuminuria in patients with type 2 diabetes. Clinical trials (FIDELIO DKD, FIGARO DKD) showed that finerenone decreased death from cardiovascular causes in patients with type 2 diabetes and chronic kidney disease. However, the influence on hemostasis in these beneficial effects remains unknown.

AIM OF THE STUDY: In our previous study we showed potent antithrombotic activity of eplerenone which is a second-generation mineralocorticoid receptor antagonist. Therefore, the aim of the present study was to investigate whether novel mineralocorticoid receptor antagonist finerenone also affects the hemostasis.

MATERIALS AND METHODS: Study was conducted with male normoglycemic and streptozotocin (180 mg/kg, i.p.) induced diabetic mice. Finerenone (10 mg/kg, p.o.) was administrated for 14 days once daily. T-TAS system with microchip coated with tissue factor was used to assess the effect on thrombus formation. Analysis of platelet secretion to ADP was performed with flow cytometer. The fibrin net density was estimated in clot formed in platelet poor plasma. Activity of the plasma fibrinolysis system was assessed using euglobulin clot lysis time (ECLT).

RESULTS: Finerenone decreased fibrin net density in diabetic mice which indicates reduced activity of coagulation system. Finerenone did not affect thrombus formation on tissue factor, platelet secretion to ADP, and ECLT.

CONCLUSIONS: Finerenone only slightly affects hemostasis. Comparing with eplerenone its activity toward hemostasis is negligible. The mechanism of beneficial effects of finerenone in the cardiovascular system requires further studies.

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Cardiology

Title: Air Pollution and Cardiovascular Mortality in Poland: A panel time-series analysis of 80 million person-years (EP-PARTICLES study).

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INTRODUCTION: Air pollution is one of the leading environmental risk factors affecting the population worldwide. We investigate the impact of "Polish smog" a new type of air pollution characterized by extremely adverse cardiovascular health effects.

AIM OF THE STUDY: Analysis of the short and mid-term impact of air pollution on cardiovascular (CV) mortality.

MATERIALS AND METHODS: We collected daily data on air pollution from the Voivodeship Inspectorate for Environmental Protection for the years 2010-2020. Causes of death with ICD-10 codes I00-I99 were extracted for analysis. We used panel standard time-series with Poisson distribution regression models. Odds ratios (ORs) with interquartile ranges (IQRs) were reported for each type of air pollutant and lag structure was analyzed. Study funding - B.SUB.23.290.

RESULTS: We observed 831,246 deaths, including 377,344 due to CV diseases. The overall standardized death rate was 533.3 cases/100,000 inhabitants/year, with an increasing trend over each year. The IQR increase in concentrations of PM2.5 (OR=1.034, 95%CI 1.029-1.04,P<0.001) was associated with an increase in CVD mortality on the day of the exposure and this effect was persistent up to LAG6. The detrimental influence of PMs was also observed in the mid-term (OR=1.056, 95%CI 1.047-1.064;P<0.001).

CONCLUSIONS: The mortality rate due to CV diseases continues to rise. Our study highlights the negative impact of air pollution, both in the short and mid-term. Areas previously assumed to be free from pollution may actually be at high risk, emphasizing the need for careful monitoring of air quality. Developing effective strategies to prevent the adverse health effects of air pollution should be a priority of public health.

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Cardiology

Title: AngioScore: artificial intelligence for determination of SYNTAX Score

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INTRODUCTION: SYNTAX Score evaluates coronary artery disease (CAD) severity and calculates the risk associated with invasive CAD treatment, based on the coronary artery lesion characteristic. Using online calculators, SYNTAX Score determination is subjective, depends on the experience of a medical professional and requires manual input of all assessed parameters.

AIM OF THE STUDY: We aimed to create artificial intelligence-based tool for objective and efficient SYNTAX Score determination. A prototype of online application AngioScore was trained to independently assess coronary angiograms in terms of nine SYNTAX Score parameters (diseased segment, total occlusion, bifurcation, trifurcation, aorto-ostial lesion, severe tortuosity, length >20mm, heavy calcification, thrombus).

MATERIALS AND METHODS: Using AngioScore, 100 randomly selected coronary artery lesions were independently assessed by two investigators. Once the lesion was marked, AngioScore determined initial SYNTAX Score. Next, parameters requiring manual correction were recorded.

RESULTS: A total of 900 parameters was assessed with 83.7% accuracy. Parameters of the lesions located in the right coronary artery were assessed with 82.1% accuracy, in the left anterior descending artery – 85.7%, and in the circumflex branch – 82.5%. 19% of the lesions were assessed fully correctly. In 34% of the lesions – 8 of 9 parameters were assessed correctly, in 31% – 7 parameters, in 16% – 6 or less parameters. Parameters that most often required corrections were: diseased segment (55%), bifurcation (33%), severe tortuosity (23%).

CONCLUSIONS: AngioScore prototype showed promising results regarding accuracy of SYNTAX Score determination. Further development of our tool may lead to faster and more objective way to assess coronary artery lesions.

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Cardiology

Title: Epidemiology of valvular disease among patients admitted for invasive coronary diagnostic

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INTRODUCTION: Valvular heart diseases (VHD) are the leading cause of cardiovascular morbidity and mortality worldwide, and the resulting burden of disease is projected to increase in the coming decades. The main pathomechanism of valvular heart diseases include degeneration and rheumatic disease. The incidence of VHD varies through time and development status of the country. The effect of ageing of the population, similar to that noticeable in Poland, plays crucial role in changes of epidemiology and have to be evaluated due to essential impact on society.

AIM OF THE STUDY: Comparison of the frequency of individual valvular disease among patients admitted for invasive diagnostics.

MATERIALS AND METHODS: The study was conducted on a group of 2,553 people, who underwent invasive diagnostics in the years 2006-2016 at the Department of Invasive Cardiology of the University Clinical Hospital in Bialystok.

RESULTS: Aortic stenosis was the dominant defect in the study group in 2006-2016 (mean 27.50%). In second place was mitral regurgitation (mean 19.22%). The least common defect was mitral stenosis (mean 2.1%) with noticeable decrease in prevalence through time (peak in 2008 = 5,13%; minimal value in 2013 = 0,33%). The percentage of remaining defects has been almost constant over the years. The total number of patients with significant valvular disease has increased over time (from 142 to 337 yearly).

CONCLUSIONS: Aortic stenosis and mitral regurgitation remains the most common valvular defects in adults. The decrease in incidence of mitral stenosis may be caused by more frequent use of antibiotics (decrease of rheumatic disease).

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Cardiology

Title: Expression level of hsa-miR-92a is higher with in patients with more advanced atherosclerotic plaque.

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INTRODUCTION: Atherosclerotic plaque progression is an important pathophysiological proces leading to coronary arteries disease. Many aspects of this process still needs to be revealed. It was revealed that microRNA particles, transcription regulators actively participate in this process. For instance, the particle miR-92a downregulates a protective factor KLF2.

AIM OF THE STUDY: In this pilot study we investigated the expression levels of hsa-miR-92a in plasma of patients with advanced atherosclerotic lesions in comparison with patiens with non-advanced atherosclerosis.

MATERIALS AND METHODS: Patients were admitted to the Invasive Cardiology Unit for coronary angiography. A sample of blood was obtained from every patient before coronary angiography. Blood was then centrifuged and plasma was aliquoted. In every plasma sample the expression level of hsa-miR-92a was assessed by qRT-PCR method. The advancement of the atherosclerotic lesions were assessed upon the results of coronary angiography.

RESULTS: It has been revealed, that the patients with more advanced atherosclerotic plaque presented higher expression level of hsa-miR-92a than patients with less advanced lesions (112,1 ± 59,1 vs 46,3 ± 43,8; p = 0,024).

CONCLUSIONS: This result, although obtained on a small sample of patients might suggest that the advancement of atherosclerotic proces might be reflected by plasma hsa-miR-92a expression level.

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Cardiology

Title: How the air we breathe affects the occurrence of arrhythmias - air pollution on hospitalized morbidity due to atrial fibrillation (EP–PARTICLES study)

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INTRODUCTION: Atrial fibrillation (AF) is the most common arrhythmia and environmental conditions are one of its risk factors. The type of pollution that occurs in Poland, called “Polish smog” - due to its composition and the conditions in which it is formed - is characterized by extremely adverse health effects.

AIM OF THE STUDY: Analysis of the impact of air pollution on triggering atrial fibrillation episodes.

MATERIALS AND METHODS: The study included data on hospitalizations from the voivodeships of Eastern Poland for the years 2011-2020. The time-stratified panel data using Poisson regression techniques has been estimated. The association between PMs and the occurrence of AF is presented as odds ratios (OR) with 95% confidence intervals (CI). ORs for each pollutant at days with lag from 0 to 6, 0-6, and 0-30 were calculated separately. Study funding - B.SUB.23.290.

RESULTS: A total of 311,645 hospitalizations for AF were recorded, including 252,566 emergency ones. The main pollutant affecting the occurrence of AF episodes was PM2.5 – a 1 mg/m3 increase in PM2.5 concentrations (lag0-OR=1.035, 95%CI 1.031-1.039;P<0.001) resulted in an increase in emergency hospitalizations for AF. Hospitalized morbidity due to atrial fibrillation was also influenced by PM10 (lag0-OR=1.027, 95%CI 1.024-1.03;P<0.001). This effect persisted for 7 days [lag0-6 (PM2.5-OR=1.047, 95%CI 1.042-1.052;P<0.001), (PM10-OR=1.036, 95%CI 1.032-1.04;P<0.001).

CONCLUSIONS: Air pollution, especially PM2.5, can increase the risk of acute AF incidents. We associate these pronounced adverse health effects with the particularly toxic effects of Polish smog. Reducing air pollution levels may have significant public health benefits in terms of lowering the burden of AF and other cardiovascular diseases.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: How the severe aortic regurgitation affects patients' survival.

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INTRODUCTION: Aortic regurgitation is a heart valve disease which is characterized by reversion of blood flow from the aorta into the left ventricle during diastole. The treatment of choice is aortic valve replacement (AVR) with biological valves (BV) or mechanical valves (MV).

AIM OF THE STUDY: The goal was to evaluate survival among patients with severe aortic regurgitation and to compare AVR with BV and MV.

MATERIALS AND METHODS: The study population consisted of 98 patients with severe aortic regurgitation in the Clinical Hospital at Medical University of Bialystok during the period of 2006 to 2016. Statistical analyses were performed using ANOVA, chi-square and Kaplan-Meier estimation.

RESULTS: Among patients with aortic regurgitation, 82,65% were male. 62,24% of patients were suffering from Hypertension, 56,99% from Heart Failure, 50,00% from Hyperlipidemia, 25,51% from Chronic Kidney Disease, 22,45% from Atrial Fibrillation and 13,27% from Diabetes Mellitus. 40 patients were qualified for BV and 37 for MV implantation. Patients with biological valves were significantly older (mean 64.77 vs. 52.97; $p<0.001$) 30-day, 1-year, 5-year and 10-year survival after AVR was respectively 100%, 90%, 77%, 36% for BV and 95%, 95%, 95% and 78% for MV ($p<0.001$).

CONCLUSIONS: Patients who received MV had better long-term survival after AVR than those with BV. This may be due to a higher mean age, higher rate of comorbidities, and degeneration of the biological valve over time.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Survival after transcatheter aortic valve implantation (TAVI)

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INTRODUCTION: The transcatheter aortic valve implantation (TAVI) was interventional method of treating patients with aortic stenosis, who are at high risk for surgery. However, many patients undergoing this procedure also have chronic conditions that may affect survival after TAVI.

AIM OF THE STUDY: The aim of this study is to investigate the impact of chronic diseases on outcomes after TAVI.

MATERIALS AND METHODS: The study included 90 patients who underwent TAVI treatment at the Medical University of Bialystok Clinical Hospital between 2010, and 2018, after being qualified by the local Heart-Team. Survival was analyzed using Kaplan-Meier estimation and Cox Proportional Hazards Regression.

RESULTS: The average age of the study group was 78 years. The study involved patients of both sexes (male 55.56%, female 44.44%), of whom 75.56% suffered from hypertension, 35.56% from atrial fibrillation (AF), 50.58% from heart failure (HF), 12.22% from Chronic obstructive pulmonary disease (COPD) and 51.11% from chronic kidney disease (CKD) . The 30-days, 1-year, 3-year, 5-year and 10-year survival after TAVI were, respectively, 84.44%, 71.1%, 53.31%, 34.87% and 14.78%. There was no significant difference in survival after TAVI by gender (p=0.69), presence of AF (p=0.78), HF (p=0.14) and CKD (p = 0.89). COPD significantly reduced the survival of patients after TAVI (p=0.01), whereas pre-procedure hypertension had positive impact on it (p = 0.02).

CONCLUSIONS: The study showed that gender, atrial fibrillation, heart failure and CKD had no significant effect on survival. However there was significantly lower survival among group of people suffering COPD. The effect of hypertension is controversial and should be verified by further studies.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Survival among patients with severe mitral regurgitation: comparison of treatment methods

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INTRODUCTION: Mitral regurgitation is a heart defect consisting in the retrograde flow of blood from the left ventricle to the left atrium resulting from primary damage to the valvular apparatus or changes in the geometry of the left ventricle in the course of ischemic heart disease.

AIM OF THE STUDY: The goal was to compare outcome among patients with severe MVI after Mitral Valve Replacement with Biological Valve (MVR BV), Mechanical Valve (MVR MV) and Mitral Valve Plastic (MVP).

MATERIALS AND METHODS: 476 consecutive patients with severe mitral regurgitation admitted at the Medical University of Białystok Clinical Hospital were included in the study. The mediana of follow-up was equal to 10,74 year.

RESULTS: The average age of the respondents was 67.95 years. The dominant accompanying symptoms turned out to be heart failure (74.40%), hypertension (60.71%), hyperlipidemia (55.04%) and atrial fibrillation (52.10%). MVP was performed in 114 subjects, MVR BV in 59 and MVR MV in 39. There was a trend towards a higher percentage of patients with hypertension (71.19% vs. 57.89% vs. 48.72%; p=0.07) among patients with BV, however without statistical significance. There is also no statistically significant difference in survival between all analyzed methods (p=0.1), but in comparison of MVP vs. BV, the 10-year survival was on favor of MVP (54% vs. 38%; p=0.04).

CONCLUSIONS: In the study group of patients with severe MVI the survival was higher in the group treated with MVP compared to the group treated with MVR BV.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: The application of telemetry in children and adolescents in cardiovascular disorder

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INTRODUCTION: In paediatric patients, irregular heart rhythm is a common problem with varied clinical presentations. While ECG is often used to identify cardiac rhythm or conduction abnormalities after an incident of syncope, it may not always reveal changes in heart function. Cardiac telemetry, designed for long-term remote patient monitoring, can be applied in such situations.

AIM OF THE STUDY: The study aimed to explore the use of cardiac telemetry in diagnosing and monitoring paediatric patients with cardiac arrhythmias.

MATERIALS AND METHODS: A total of 186 paediatric patients qualified for in-depth diagnostics for heart rhythm disorders were monitored using an Event Holter device. In the event of symptoms, patients were instructed to use the event recorder button. Data were then transmitted to a telemedicine exchange, where they were analysed. Cases with abnormalities were referred to a physician.

RESULTS: During the study, 10936 ECG records were seized. Of these, 727 (6,65%) resulted in the recording of a significant arrhythmia and 192 (1,75%) required the intervention of healthcare professionals. In acute cardiac incidents, the Emergency Medical Team was immediately dispatched to the patient, while those who did not present ECG abnormalities at the time of experiencing symptoms were referred to other units.

CONCLUSIONS: Cardiac telemetry is a promising tool that allows continuous monitoring of a heart rhythm and provides physicians with vital information about potential abnormalities. Thanks to that it offers great help with differentiation between cardiological and non-cardiological causes of symptoms such as syncope, which contributes to the shortening of diagnostic time, faster treatment inclusion, and overall improved patient care.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Assessment of anti-A and anti-B group isoagglutinins in infants up to 4 months of age

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INTRODUCTION: Proper blood group testing requires the assessment of group antigens and antibodies. However, the diagnostics recommendations advise not to examine the presence of group antibodies in newborns and infants, since they are claimed to start occurring after four months of age.

AIM OF THE STUDY: We aimed to assess the presence of group isoagglutinins in patients up to 4 months of age.

MATERIALS AND METHODS: We evaluated plasma samples of 164 patients (under 4 months of age) staying in the Paediatric Teaching Hospital of the Medical University of Warsaw. We used the automatic method of group determination and the test-tube method to detect antibodies from the ABO system.

RESULTS: The presence of group antibodies was detected in 71% of the samples. Antibodies against the ABO system were found in 68% of patients on the first day of life, 73.5% of patients up to 15 days of age and 84.5% of patients 1 to 4 months of age. 75% of the type O patients developed anti-A and/or anti-B antibodies, 68% of the type A patients developed anti-B antibodies and 60% of type B patients developed anti-A antibodies. Among patients with type O, anti-A antibodies were produced in higher titers than anti-B. There was no relationship between gender and the presence of group antibodies.

CONCLUSIONS: Infants and newborns under 4 months of age produce IgM antibodies from the ABO system, older children were more likely to produce those antibodies in higher titers. Type O patients produced antibodies the most frequently, with anti-A production being greater than anti-B.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Beyond ICD-10-AM: neuroendocrine tumours in Lithuania in 2018-2019

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INTRODUCTION: Neuroendocrine tumours (NETs) are a heterogeneous group of tumours characterised by hypersecretion of biologically active substances. The neuroendocrine nature is only determined by immunohistochemical studies and does not have a separate code according to the ICD-10-AM classification, so the disease "hides" under the diagnosis of other neoplasms in the Lithuanian Cancer Registry.

AIM OF THE STUDY: To analyse the distribution of patients diagnosed with NET at Hospital of LUHS Kaunas Clinics in 2018-2019 according to demographic characteristics, primary tumour localisation, morphology, metastasis features, and disease stages. To assess overall survival (median, 3-year survival). To compare the results with the Hospital of LUHS data from 2009-2014.

MATERIALS AND METHODS: The retrospective study included 255 patients diagnosed with NET in 2018-2019 at Hospital of LUHS Kaunas Clinics. Patient's demographics, localisation of the primary tumour, histopathological characteristics of the tumours, and stage (ICD-10-AM) were assessed. The Kaplan-Meier method was used to estimate survival.

RESULTS: In 2018-2019, NETs were more frequently diagnosed in men (60%). The most frequently (53.7%) primary NETs were found in the lungs, 47.4% of all NETs were advanced (stage IV) at diagnosis. Median life expectancy of NETs was 12 months. Compared with 2009-2014 data the 3-year survival rate for NET of lungs increased from 20% to 27%.

CONCLUSIONS: The greatest increase in the 3-year survival rate was found in the NETs of lungs, which was the most frequent primary NET. Data on NET is often overlooked because of the current ICD-10-AM classification. Further developments of ICD are warranted to improve data accessibility on NETs.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Has the coronavirus pandemic affected the spectrum of microbes cultured from the abdominal cavity in patients with diffuse peritonitis?

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INTRODUCTION: The pandemic imposed a new type of management with patients hospitalized because of the acute abdomen - surgical and anesthetic procedures for SARS-CoV-2 infected patients became very restrictive. Patients were less exposed to bacterial strains.

AIM OF THE STUDY: The aim of our study was to analyze whether the introduction of the new procedures, restrictions, and coexistence of SARS-CoV-2 infection, impacted the cultured microorganisms from the peritoneum of patients with acute abdomen.

MATERIALS AND METHODS: Group A included 23 patients hospitalized from 2020 to 2022 in the Department of General Surgery because of the symptoms of acute abdomen and the coexistence of SARS-CoV-2 infection. Group B included 181 patients hospitalized in the same Department with diffuse peritonitis from 2014 to 2019 before the COVID-19 pandemic. Samples for microbiological examination were taken from the abdominal cavity of all patients. The spectrum of microorganisms, number of alarm strains, mean value of MIC and BMQ, and resistance to antibiotics were compared.

RESULTS: 50 cultures were obtained in group A. No bacterial growth was observed in 13,0% of patients. 8% of cultured microorganisms in this group were aerobic bacteria, enterobacteria 28,0%, enterococci 10,0%, staphylococci, streptococci 24,0%, anaerobic bacteria 22%, and fungi 8%. 309 cultures were obtained in group B. No bacterial growth was served in 18,2%. 3,6% of cultured microorganisms in this group were aerobic bacteria, 39% enterobacteria, 16,9% staphylococci and streptococci, 10,7% anaerobes, and 15,3% fungus.

CONCLUSIONS: Statistically significant differences were found in the spectrum of microorganisms and the resistance to antibiotics.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Persistent macular edema in patients with epiretinal membrane - an attempt to detect preoperative risk factors.

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INTRODUCTION: Although in many cases successful removal of epiretinal membrane (ERM) is performed, the main complication in post-op period is persistent cystoid macular edema (CME).

AIM OF THE STUDY: The aim of the study was to detect prognostic factors related to developing postoperative CME in first 6 months after 25-G vitrectomy (PPV) in eyes with ERM.

MATERIALS AND METHODS: The retrospective interventional study was based on individuals who underwent PPV due to an idiopathic ERM. The following factors were incuded: ERM staging, age, best corrected visual acuity, central retinal thickness (CRT), volume and average macular thickness, presence of microcysts, continuity of an ellipsoidal zone before the PPV on the occurrence of CME was performed. The considered follow-up time was set at 1 to 6 months from the intervention.

RESULTS: Among 68 eyes with ERM treated with PPV in 35 (mean age 72.0±5.87 years) persistent CME was observed, while in 19 (mean age 65.63±14.42 years) normal fovea was detected. The following parameters were detected as an independent factors for CME: age, average macular thickness, CRT, macular volume, ERM in 3rd stage ($p<0.05$). Moreover, the multivariate analysis revealed that patients presenting higher preoperative CRT (odds ratio 1.01; 95%CI: 1.003–1.015) were significantly more at risk of having persistent CME postoperatively ($p=0.004$). The predictive accuracy of the model based on CRT was established at 75.1%.

CONCLUSIONS: Thorough pretreatment assessment of macular morphology might have a predictive value for the surgical outcome in eyes with ERM.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: PLATELET ACTIVATION AND PLATELET–MONOCYTES AGGREGATES AS A PROMISING TOOL TO MONITOR RHEUMATOID ARTHRITIS.

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INTRODUCTION: Rheumatoid arthritis (RA) is an autoimmune disease, characterized by chronic inflammation of the joints, associated with a significantly increased risk of cardiovascular mortality, attributed to accelerated atherosclerosis. Platelets play a major role in the maintenance of endothelial integrity, homeostasis, representing an important linkage among inflammation and thrombosis.

AIM OF THE STUDY: The aim was to determine the parameters of platelet morphology (PLT- platelet count, MPV- mean platelet volume, PDW- platelet distribution width, P-LCR-large platelet cell ration IPF- immature platelet fraction) in correlation with platelet activity and percentage platelet- monocyte aggregates (PM).

MATERIALS AND METHODS: The study included 35 RA patients and 15 healthy donors. The parameters of the WBC were measured by fluorescence flow cytometry, the morphological parameters of the platelets by the impedance method with hydrodynamic focusing with direct current, and the percentage of platelet-monocyte complexes by the immunocytometric method with monoclonal antibodies CD62P (-)TRAP, CD62P (+)TRAP, CD45, CD14.

RESULTS: They showed a significant increase of CD62P expression (2534,8 ± 433,4) and the percentage of platelet-monocytes aggregates (61,89% ± 9,1) in the group of RA patients compared to healthy patients (respectively 505 ± 127,9; 18,8 ± 1,51%). Platelet morphological parameters such as MPV, PDW, IPF, P-LCR were increased compared to the control group (10 ± 1,7 vs 7,71 ± 0,3; 12,4 ± 2,4 vs 9,8 ± 1,4; 13,0 ± 4,5 vs 30,2 ± 10,3). MPV, IPF, P-LCR show high correlation with recognized marker of platelet activation CD62P, and slightly high correlation with percentage of PM ($p<0,001$).

CONCLUSIONS: Routine testing of platelet parameters can provide important information about the degree of platelet activation. The assessment of PM complexes can be helpful in stratification, treatment strategies in RA patients.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Relation of COVID-19 pandemic characteristics and out-of-hospital resuscitations

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INTRODUCTION: COVID-19 pandemic has negatively affected entire healthcare system, including out-of-hospital care. The cardiac events outside the healthcare institutions are not an exception.

AIM OF THE STUDY: To analyse relationship between data of COVID-19 pandemic and out-of-hospital cardiac events.

MATERIALS AND METHODS: A retrospective data study was conducted using data of more than 990 out-of-hospital cardiac arrest events in Kaunas city as well as the COVID-19 case data in Lithuania during 2019-2021. Data was processed with Pearson's correlation and Z-score tests.

RESULTS: A statistically relevant ($p<0.001$) negative change was observed comparing the out-of-hospital cardiac arrest survivability rate between control 2019 and pandemic 2020 year datasets; for the 2021 data found. While no statistically significant correlations were observed comparing OHCA data with weekly COVID-19 case rates, a statistically significant ($p=0.017$) albeit negligible correlation ($\rho=0.246$) was observed when comparing the cardiac arrest data against the Oxford COVID-19 Government Response Tracker weekly index values, as well as moderate ($\rho=-0.336$) negative statistically significant ($p=0.001$) correlation for percentage of successful out-of-hospital resuscitations, supplemented with similar, however weaker ($\rho=0.297$) correlation for unsuccessful weekly resuscitation numbers and the OxCGRT index. The study had also compared OHCA data with the COVID-19 weekly death rates, analogous small ($\rho=0.245$) yet statistically significant ($p=0.017$) interdependence was established for susccessfully resuscitated OHCA patients.

CONCLUSIONS: It has been assessed that initial (2020) waves of COVID-19 pandemic have likely negatively impacted rates of successful outcomes of cardiopulmonary resuscitations for out-of-hospital cardiac arrests. However, correlation between OHCA (with associated rates) and the COVID-19 charateristics is negligible-to-moderate.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: The influence of radioiodine therapy on the function of parathyroid gland in patient with hyperthyroidism

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INTRODUCTION: Radioiodine therapy is considered as the most comfortable and economical approach of hyperthyroidism treatment caused by Graves' disease (GD) or toxic nodular goitre (TNG). I-131 is β emitter which accumulates in the thyroid tissue and destroys it, this radiation may act also in parathyroid gland (some studies evaluated effect of radioiodine therapy on the function of parathyroid gland in patients with thyroid carcinoma).

AIM OF THE STUDY: was to evaluate the effect of I-131 on the function of parathyroid gland in patient with hyperthyroidism treated with radioiodine.

MATERIALS AND METHODS: The study was carried out in 30 patients (26 female, 4 male) with hyperthyroidism, aged 30-70 years; (10 patients with GD, 20 patients with TNG); The patients with GD were in euthyreosis. All patients with TNG were in subclinical hyperthyroidism. The effective half-life was more than 3 days at the time of treatment. The activity dose was calculated using Marinelli's formula and ranged between 200-800 MBq. The absorbed dose ranged between 150 and 300 Gy and was proportional to thyroid volume. We evaluate TSH, fT 3 fT 4, Ca, P and iPTH before and monthly for 12 months after radioiodine therapy.

RESULTS: IPTH increased in the first 5 months and then returned to normal levels after 8 months. There was no difference in the level of Ca and P.

CONCLUSIONS: Transit iPTH increase is also seen after the radioiodine therapy in patients with hyperthyroidism. It may be due to the stimulation effect of β radiation on the parathyroid gland.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: The role of MR examination in diagnosis of uterine defects.

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INTRODUCTION: Uterine defects are caused by abnormal development of the internal female internal genitalia during fetal life. Ultrasound, hysterosalpingography and magnetic resonance (MR) examinations are used in their diagnosis.

AIM OF THE STUDY: The significance of MR examination in diagnosis of uterine defects in young women.

MATERIALS AND METHODS: The study involved a group of 42 female patients referred to the Department of Interventional Radiology and Neuroradiology of Medical University of Lublin in order for performing a small pelvis MR examination with a suspected uterine defect. Each patient underwent MR imaging according to the same protocol without paramagnetic administration.

RESULTS: In the MR examination 5 patients were diagnosed with uterine duplication, 1 patient with the absence of uterus and presence of only vestigial vagina and 7 patients with unicornuate uterus. A vestigial uterine horn was found in 8 patients, including the noncommunicative in 3 patients. A bicornuate uterus was diagnosed in 14 patients, an arched uterus in 3 patients and a septate uterus was depicted in 4 patients.

CONCLUSIONS: The MR examination allows for clear assessment of the presence and type of uterine defect. Diagnosis of uterine defects in MR examination does not require an administration of a contrast agent.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: The significance of receptor for C-X-C motif chemokine ligand 8 (CXCR1) in colorectal cancer

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INTRODUCTION:

AIM OF THE STUDY: The aim of the study was to investigate whether CXCR1, as receptor for CXCL8, might be used as a potential biomarker of CRC.

MATERIALS AND METHODS: The study included 76 subjects: 46 CRC patients and 30 healthy volunteers. The serum CXCR1 levels were assayed by immunoenzyme ELISA kit, while chemiluminescent method was used for the determination of carcinoembryonic antigen (CEA) concentrations. The diagnostic crite- ria, such as diagnostic sensitivity, diagnostic specificity, predictive value for positive and negative results and diagnostic accuracy of both proteins tested were calculated.

RESULTS: Serum CXCR1 levels were lower than in healthy subjects and decreased in CRC patients with advanced stage. The concentrations of CEA were significantly elevated ($p<0.001$) in CRC patients than in control group and the highest serum levels of this protein were observed in advanced stage of tumour. Diagnostic sensitivity of CXCR1 was higher than for CEA. The diagnostic specificity for CXCR1 was lower in comparison to CEA levels, and similarly to the predictive value for positive results. The predictive value for negative results and diagnostic accuracy for CXCR1 were similar as for CEA.

CONCLUSIONS: Our findings suggest the potential usefulness of serum CXCR1 in the diagnosis of CRC patients, especially in combined measurement with CEA.

17th Bialystok International Medical Congress for Young Scientists 2023

Interdisciplinary

Title: Urological emergency room from the perspective of students attending urology wards with residents - discussion of selected cases.

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INTRODUCTION: participation of medical students in the shifts of urologists in the emergency room can bring many benefits to students, patients and doctors. we can actively participate in taking a medical history and performing a physical examination. we take part in making the diagnosis, as well as in admitting patients to the ward.

AIM OF THE STUDY: discussing the work of students during emergency urological duty, specifying the scope of the student's abilities at that time. discussion of selected urological acute cases.

MATERIALS AND METHODS: the analysis was carried out among students participating in the urological emergency room under the supervision of a resident physician or a urology specialist. the analysis concerned the course of acquiring practical skills, the ability to conduct diagnostics and make diagnoses, and the increase in the number of shifts completed. in addition, the cases that may cause the greatest diagnostic and therapeutic difficulties were analyzed.

RESULTS: acquisition of practical skills during urological emergency services depends on both the involvement of the doctor on duty and the student himself. with the number of shifts completed, the experience and scope of practical skills of the student increase.

CONCLUSIONS: attending duty shifts is a great way to gain practical knowledge because it allows you to avoid excessive stress on the first independent shifts in the future. it is important to avoid falling into an excessive routine, because, although rarely, there are exceptions to the generally predictable course of the disease.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases

Title: Assessment of the metabolomic profile of bee venom hypersensitivity patients, and its association with allergy-related diagnostic parameters.

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INTRODUCTION: Due to the worldwide distribution of bees (Hymenoptera order), their venom is a leading cause of severe allergic reactions in adults, including life-threatening anaphylaxis. These excessive reactions result from the unique composition of bee venom which includes hyaluronidases, phospholipase A2, and mellitin. Despite increasing significance of metabolomics, the profiling of metabolites in patients allergic to Hymenoptera venoms has not yet been performed.

AIM OF THE STUDY: Here, we focused on determining the metabolomic profile of patients allergic to bee venom. Additionally, we aimed to establish the value of these data in the diagnostics and monitoring of the allergy.

MATERIALS AND METHODS: Plasma of bee venom allergic patients and control group was used to evaluate their metabolome profiles using LC-MS and FIA at the Metabolomics Centre of MUB. The obtained results were correlated with tryptase, total IgE and sIgE assessed during routine diagnostics.

RESULTS: The metabolome profiles demonstrated significant differences between allergic patients and control subjects. A more detailed analysis revealed compounds that were significantly changed in hypersensitivite patients – predominantly glycerophospholipids and amino acids. Despite mostly low sensitivity, selected metabolites allowed for the highly specific determination of subjects with no allergic disease. Moreover, we noticed positive correlations with IgE and sIgE levels, and negative with tryptase levels within the established set of metabolites.

CONCLUSIONS: The results of our study provide significant novelty in the context of metabolomic profiling of patients allergic to bee venom. Importantly, selected metabolites demonstrated a high potential for their implementation as biomarkers. Subsequent clinical studies are of great importance for the practical verification of this discovery.

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Internal Diseases

Title: Association of serum brain-derived neurotrophic factor and neurofilament light chain as a markers of central nervous system integrity and function with self-assessed depression index in hemodialysis population.

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INTRODUCTION: Depression is common in hemodialysis patients. Brain-derived neurotrophic factor (BDNF) and neurofilament light chain (NfL) are associated with depression, but there is a little information on their usefulness as biomarkers in hemodialysis population.

AIM OF THE STUDY: The aim of the study was to analyze the relation between serum BDNF, NfL and depression in hemodialysis patients.

MATERIALS AND METHODS: The study was cross-sectional. 82 chronic hemodialysis patients (mean age: 64.5 ± 14.2, 36 women 43.9%). The blood was taken before a dialysis to measure hemoglobin and plasma concentration of NfL, BDNF, uric acid, potassium, calcium, phosphorus, parathyroid hormone (PTH) and C-reactive protein (CRP). Serum urea levels were measured pre- and post-dialysis to calculate a single-pool fractional clearance of urea (Kt/V). Beck's Depression Inventory (BDI). Blood pressure from the non-fistula arm was measured with a DINAMAP 1846 SX automatic sphygmomanometer.

RESULTS: There was a positive correlation between BDNF concentration and PTH concentration (r=0.27; p=0.03), and between serum NfL and age (r=0.25; p=0.03), and serum CRP (r= -0.56; p= 0.0005) and post-dialysis serum urea (r=0.26; p= 0.03). A statistically significant relationship was found between BDI score and CRP (b=0.417; p=0.005; R^2=0.17) and between BDI and URR% (b=-0.265; p=0.03; R^2=0.07).

CONCLUSIONS: Although BDNF and serum Nfl are recognized risk factors for depression in people with normal renal function, they show a number of associations with various markers of inflammation and uremia in patients with end-stage renal disease. These relationships may obscure their usefulness as biomarkers of depression in the hemodialysis population.

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Internal Diseases

Title: CAN NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN BE A USEFULL BIOMARKER IN COVID-19 CONVALESCENTS?

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INTRODUCTION: Neutrophil Gelatinase-Associated Lipocalin (NGAL) is a widely used early predictor of kidney injury. Moreover, it is described to be a biomarker of inflammation, ischemia and infection in many other conditions. During the COVID-19 pandemic it was established that it can be a predictor of both mortality and severity of the disease.

AIM OF THE STUDY: This study addresses the role of NGAL in Post-acute COVID-19 syndrome (PACS). Our objective was to evaluate changes in serum NGAL levels in relation to COVID-19 disease severity in a group of patients with reference range eGFR.

MATERIALS AND METHODS: The study included 146 patients diagnosed with COVID-19 in different stages of the disease. After 3 months since COVID-19 diagnosis patients' serum was sampled and tested. Patients were questioned for presence of pre-existing diseases and selected symptoms existing at the timepoint of serum sampling.

RESULTS: We observed that NGAL levels were associated with COVID-19 disease severity. Patients in 3rd stage had the highest level of NGAL meanwhile hospitalized patients had it significantly lower. Moreover, we demonstrate that patients with comorbidities such as Asthma or COPD had a significantly higher NGAL levels than those who did not.

CONCLUSIONS: - NGAL levels remain elevated even after 3 months since the acute phase of COVID-19 disease, proving possible role of NGAL in PACS. - Prolonged elevation of NGAL is associated with COVID-19 severity, although administration of steroid and antiviral treatment during the acute phase of the disease could reduce NGAL levels

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Internal Diseases

Title: Can psoriasis affect sexual life? – cross-sectional questionnaires-based survey.

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INTRODUCTION: The symptoms that accompany psoriasis affect functioning and comfort of patients. The impact of dermatosis on sexual health is also observed although this issue is not frequently discussed.

AIM OF THE STUDY: The aim of study was to assess the prevalence of sexual dysfunctions in psoriatic patients.

MATERIALS AND METHODS: In this cross-sectional questionnaire-based study, volunteers with psoriasis completed an online survey containing: Dermatology Life Quality Index (DLQI), Female Sexual Function Index (FSFI), International Index of Erectile Function (IIEF-15), Alcohol Use Disorders Identification Test (AUDIT) and basic epidemiological and health-related questions. Female controls received FSFI and male ones IIEF-15 questionnaires.

RESULTS: The research involved 51 psoriatics and 63 controls. The mean DLQI score was 11.7 for women and 9.5 for men. Over the last week, the skin condition has affected sexual life of 47% of patients. Almost 80% admitted the disease's influence on sexual desire and approximately 73% of patients claimed psoriasis causes intercourse difficulties. The mean FSFI score for the study group was 22.1, and IIEF 40.4. There was no significant difference between patients and controls in FSFI and IIEF scores.

CONCLUSIONS: Appropriate questionnaires should be developed for patients with chronic skin diseases to identify the presence and type of clinical problems with sex life because psoriasis is apparently to affect it. Psoriatics with abnormal scores in such questionnaires could be further referred to other specialists in order to manage the origin of their problems and improve life quality.

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Internal Diseases

Title: Complications following artery punctures - diagnostic and qualification for further management.

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INTRODUCTION: The number of endovascular procedures performed with arterial puncture has been increasing in recent years. Some patients have complications developing at the arterial puncture site.

AIM OF THE STUDY: Objective of the study was to evaluate the effectiveness of ultrasound in the diagnosis of complications after arterial punctures.

MATERIALS AND METHODS: The study included 256 patients referred to the Department of Interventional Radiology and Neuroradiology, Medical University of Lublin, with suspicion of complications after femoral (76 patients), brachial (44) and radial (136) artery punctures. All of the ultrasound examinations were performed with a LOGIQ 7 apparatus using a 6-12 MHz probe and a 3.5 MHz probe, in B mode and Doppler options.

RESULTS: 36 pseudoaneurysms, 15 fistulas and three cases of arterial dissection were found in the examined patients. In 5 cases, segmental radial artery coagulation was diagnosed. In 3 of these patients, a pseudoaneurysm and fistula coexisted. In 15 patients, who were diagnosed with pseudoaneurysms, a procedure of percutaneous injection of thrombin into their lumen and exclusion from circulation was performed.

CONCLUSIONS: Ultrasound examination allows for explicit diagnosis of vascular complications after femoral and radial artery punctures and qualification for percutaneous treatment.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases

Title: Dysregulation of MMPs and TIMPs in house dust mite-induced experimental asthma.

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INTRODUCTION: Allergic airway inflammation may lead to irreversible changes in the structure of the lung, referred to as airway remodeling. The process is characterized by uncontrolled deposition of extracellular matrix (ECM) components, including collagens. Inflammatory and airway structural cells secrete matrix metalloproteinases (MMPs) and their tissue inhibitors (TIMPs), which are involved in ECM reorganization.

AIM OF THE STUDY: Here, we aimed to investigate lung remodeling, and the involvement of MMPs and TIMPs in a house dust mite extract (HDM) induced experimental asthma model.

MATERIALS AND METHODS: C57BL/6J female mice were intranasally stimulated with 10 or 100 μg of HDM for two or twelve weeks to induce acute and chronic airway inflammation. Lung tissue was collected for gene expression analyses, histological staining, and targeted protein analyses.

RESULTS: We observed increased collagen deposition and mucus overproduction within the lungs in both models. Gene expression analyses revealed changes in the expression of genes for collagens, MMPs, and TIMPs. Targeted analysis of collagens revealed increased expression in Collagen I, III, VI, and VIII. In addition, we observed increased levels of MMP-2, MMP-8, MMP-9, MMP-12, and TIMP-4 in bronchoalveolar lavage fluid.

CONCLUSIONS: Taking together, we showed lung remodeling in HDM-induced experimental asthma. We found differences in the expression of collagens, MMPs, and TIMP among acute and chronic models. The proposed HDM-induced experimental asthma model is suitable for studying lung remodeling.

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Internal Diseases

Title: Investigation of metabolome profiling value in monitoring asthmatic patients subjected to biological therapy with mepolizumab

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INTRODUCTION: Asthma, a chronic inflammatory disease of the airways, constitutes a serious health burden worldwide. Despite symptomatic, treatment with bronchodilators and steroids allows for effective control in most cases of the disease. Noteworthy, 5-10% of patients suffer from uncontrolled or severe form of asthma. Biological therapy has revolutionized management of those patients, introducing such drug as mepolizumab (anti-IL-5 antibody) into clinical practice. Interestingly, numerous studies described its immunological consequences, however, the influence on the metabolome profile in asthmatic patients have not yet been described.

AIM OF THE STUDY: Our study aimed to evaluate metabolome profiles of asthmatic patients treated with mepolizumab, and their potential value in monitoring the therapy outcome.

MATERIALS AND METHODS: Plasma from adult asthmatic patients was isolated in the course of mepolizumab therapy. Metabolome profiles were determined using LC-MS and FIA techniques at Metabolomics Division of MUB. Biostatistical analysis revealed associations between metabolites and pulmonary function-related parameters.

RESULTS: First, we verified effectiveness of mepolizumab therapy through reported increase in values of FEV1 and FVC in asthmatic patients. Numerous metabolites analyzed demonstrated a correlation with those parameters, however, set of 25 most significant amino acids and glycerophospholipids has been selected for further stages. Treatment significantly affected relationships between metabolites. Furthermore, increased values of 8 compounds were associated with higher improvement in FEV1 and FVC.

CONCLUSIONS: Mepolizumab therapy significantly affected changes in metabolome of asthmatic patients. Selected compounds demonstrated a value as potential biomarkers in the pulmonary function improvement. Our study provides basis for further research on clinical implementation of the metabolome profiling.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases

Title: Liver pathology in children with viral gastrointestinal infection.

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INTRODUCTION: The most common cause of acute gastrointestinal infection (GI) in children are viruses; especially from Rota-, Noro- and Adenoviridae family. All these groups of viruses can have secondary hepatotropic effect.

AIM OF THE STUDY: Assessment of hepatic impairment in children hospitalized due to viral gastroenteritis.

MATERIALS AND METHODS: The retrospective study included 239 children (125 boys, 114 girls), aged 1 month-15 years (mean 3.5 ± 2.4) hospitalized in the pediatric gastroenterology unit in 2022 with viral etiology of gastroenteritis confirmed by stool analysis. Children with autoimmune or metabolic diseases, sepsis, herpes virus infection were excluded from the study. Parameters of liver injury as: alanine aminotransferase (ALT), gamma-glutamylotransferase (GGT) activity, bilirubin concentration were determined in all patients, taking into account etiology of symptoms. The obtained results were subjected to statistical analysis.

RESULTS: Rotavirus infection was diagnosed in 179 (74.9%), adenovirus in 32 (13.4%) and norovirus in 28 (11.7%) children. Increased ALT activity (mean 30 IU/ml) was stated independently on etiology of viral infection with the highest percentage in the group with rotavirus etiology (27.3%), but the mean value of ALT was significantly higher in the group with norovirus infection compared to that of rotavirus (49 vs 28 IU/ml; $p<0.05$). The other parameters of liver damage as GGT, bilirubin showed the values within normal range in 97.6% patients.

CONCLUSIONS: 1. The most common cause of liver pathology in children with viral GI infection was rotavirus. 2. Hypertransaminasemia in viral GI infections is mild and not accompanied by cholestasis.

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Internal Diseases

Title: Over the scope clips (OTSC) are effective as both first-line and salvage therapy in patients with acute non-variceal gastrointestinal bleeding (NVGIB).

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INTRODUCTION: Acute non-variceal gastrointestinal bleeding (NVGIB) is a life-threatening condition. Currently, the standard of endoscopic treatment of NVGIB is thermocoagulation or through the scope clips (TTSC) with or without epinephrine injection. Over the scope clips (OTSC, Ovesco®) are a new tool originally introduced to close gastrointestinal perforations and fistulas, increasingly used in NVGIB therapy.

AIM OF THE STUDY: The aim of the study was to evaluate the efficacy and safety profile of OTSC as first-line therapy of (1) severe (Forrest Ia, Ib, IIa) acute NVGIB and (2) salvage therapy in patients with rebleeding (previously treated with standard endoscopic methods due to NVGIB)

MATERIALS AND METHODS: We included 20 patients [median age 68.5 (52; 75) years; 11 (55%) male; Glasgow-Blatchford score 13.82±3.07] treated with OTSC [(first-line therapy n=12 (63.16%), salvage therapy n=7 (36.84%)] from October 2020 to February 2023, in our single-center, retrospective study.

RESULTS: Technical success (stopping of bleeding) was achieved in 19 (95%) patients [n=13 (92.86%) with first-line OTSC, and n=6 (100%) with OTSC as salvage therapy). Clinical success was achieved in 17 (85%) patients and 14 (n=70%) patients, at days 7 and 30, respectively. One patient (5%) required repeated endoscopic therapy, two patients (10%) required surgery due to rebleeding. Five patients (25%) died, mainly due to comorbidities. Generally, no OTSC complications were observed, except for one minor mucosal injury.

CONCLUSIONS: OTSCs are an effective and safe method of endoscopic therapy of severe and recurrent NVGIB

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases

Title: The influence of recombinant human thyroid stimulating hormone (rhTSH) on the efficiency of radioiodine therapy in patients with non-toxic nodular goiter with low RAIU.

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INTRODUCTION: There is no consensus regarding the optimum treatment of benign non-toxic goiter. Randomised studies have shown that levothyroxine has poor evidence of efficiency and thyroidectomy has many side effects. This makes them inferior to radioiodine therapy. RIT is usually recommended in patients with appropriately high RAIU levels, however as this method is both effective and noninvasive (and non-toxic goiter is exceedingly common among our society), there is a need of finding methods, which would allow treatment of patients with lower radioiodine uptake without rising I-131 activity.

AIM OF THE STUDY: The aim of our study was to evaluate the influence of the pre-treatment with rhTSH on the efficiency of radioiodine therapy in patients with non-toxic goiter with low RAIU.

MATERIALS AND METHODS: We treated 53 patients, aged 37–72. Initial 24h RAIU ranged between 5 and 17%, thyroid volume ranged between 42-128 ml. All patients received a single dose of 0.05 mg rhTSH intramuscularly. Therapeutic dose of I-131 was given on the third day after rhTSH administration. Follow up control was done every 6 weeks, thyroid ultrasound, and scintigraphy were done 6 and 12 months after RIT.

RESULTS: A significant 2-11 fold increase in 24h RAIU from 12.2% to 54% was observed. After 12 months 91% of patients remained euthyroidism. Thyroid volume was reduced by 45% on average.

CONCLUSIONS: Pre-treatment with rhTSH allows to reduce therapeutic dose of I-131 by 50–58% without compromising the result of thyroid volume reduction. This method of therapy can be recommended when RAIU is low.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases

Title: The potential protective effect of eosinophils in the infection of human lung vascular endothelium by the human coronavirus 229E

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INTRODUCTION: Human coronaviruses (HCoV) are common respiratory pathogens and may cause heavy exacerbations of chronic respiratory diseases, such as asthma. Recent studies have shown a possible role of eosinophils in eliminating viral pathogens. Eosinophils are equipped with a toolkit that makes them capable of responding to RNA viruses. Their role in the modulating of the infection of the lung vascular endothelium by coronaviruses is not known.

AIM OF THE STUDY: The aim of the study was to assess if eosinophils may display antiviral properties and support the vascular endothelium in immune responses against coronavirus 229E infection.

MATERIALS AND METHODS: Eosinophils have been isolated via density gradient centrifugation followed by anti-CD16 magnetic separation. For the inflammatory activation of eosinophils was used an in vitro model with TLRs agonists which are able to activate TLR3 and TLR7/8 receptors. Incubation with TLR-agonists was performed for 24 hours and analysed mRNA expression of several markers of antiviral response using real time PCR and ELISA assay.

RESULTS: Results showed that after 24 hours of eosinophils incubation with TLR agonists there was mRNA up-regulation, firstly of interferons, and also proteins of intracellular mechanisms of antiviral immunity – 2'-5'-oligoadenylate synthetase 1 (OAS-1), protein kinase R (PKR) and interferon-induced GTP-binding protein Mx-1 (MX-1). Eosinophils after stimulation produced RANTES and IFN-beta.

CONCLUSIONS: Eosinophils can display antiviral properties and therefore play a significant role in antiviral response of lung endothelium infected with HCoV-229E.

17th Bialystok International Medical Congress for Young Scientists 2023

Orthopedics

Title: “How can I bear it? Evaluation of the inclination and position of the endoprosthesis depending on the implant used”

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INTRODUCTION: Unicompartmental Knee Arthroplasty (UKA) is standard treatment for knee osteoarthritis (OA) when only one compartment of the knee is damaged. During the surgery damaged tissue is replaced with implants. For better clinical outcome the proper component position is necessary.

AIM OF THE STUDY: The aim of the study was to determine the alignment of components of the UKA depending on the type of prosthesis used, mobile bearing (MB) or fixed bearing (FB).

MATERIALS AND METHODS: Adult patients with diagnosed knee OA, referred for UKA, with a set of X-ray pictures were included into the study. Two independent researchers, using the Horos Programme, evaluated X-rays for alignment of both components of the prosthesis in anterior-posterior and lateral projections. Statistical analysis was performed, bioethics committee approval was acquired.

RESULTS: 65 patients with mean age 65 years (SD=7,6, MIN= 46, MAX=83). 65% of patients were females and 35% males. 57% of patients have prosthesis in the left knee and 43% in the right. In 59% of cases the FB was placed and MB in 41%. Mean tibial component placement among FB prosthesis was 0,63° (SD=1,5) varus and for MB was 1,14° (SD=3.06) varus. Mean tibial component placement among FB prosthesis was 0,61° (SD=1,2) extension and for MB was 1,46° (SD=2,4) flexion. For femoral component mean values were: 0,61° (SD=3,1) extension for FB and for MB was 1,46° (SD=2,6) flexion.

CONCLUSIONS: Observed results show a difference in placement of both tibial and femoral components, depending on type of prosthesis. However it is worth to assess thoroughly the clinical outcomes and its correlation with prosthesis alignment.

17th Bialystok International Medical Congress for Young Scientists 2023

Orthopedics

Title: Broken relationship? Correlation between neck-shaft angle and joint space in osteoarthritis of the hip.

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INTRODUCTION: Osteoarthritis (OA) is a common disease causing degradation of articular cartilage which is manifested by pain, limited mobility, and stiffness of the joints. Coxarthrosis is the second most common form and about 40% of the population over 40 years have its radiological symptoms, such as joint space narrowing. Recently, the impact of the value of the femoral neck-shaft angle on the development of the disease has also been noticed.

AIM OF THE STUDY: Aim of this study was to consider the relationship between femoral neck-shaft angle and hip joint space narrowing in patients with osteoarthritis.

MATERIALS AND METHODS: Adult patients with diagnosed coxarthrosis were included. Patients' X-ray pictures were taken from the hospital's medical record and the neck-shaft angle and joint space (measured in 3 points) were assessed by two independent researchers with the use of the RadiAnt Programme. Statistical analysis was performed, and bioethics committee approval was acquired.

RESULTS: Among 167 analyzed patients (86 females, 81 males, mean age=64,93, SD=11,20, the mean neck-shaft angle was 126°(SD=6,81°). There was no correlation between hip neck-shaft angle and joint space (p=0,54) from 3 averaged measurements, the same results were statistically insignificant for individual points.

CONCLUSIONS: According to our best knowledge, it is the first study considering this correlation. Neck-shaft angle is not helpful in the assessment of osteoarthritis. The negative correlation between this angle and age is interesting as well as lateral joint space and age which shows how important a thorough analysis of the hip joint structure is.

17th Bialystok International Medical Congress for Young Scientists 2023

Orthopedics

Title: Cause of early onset scoliosis as a predictor of surgical scoliosis treatment with MAGEC systems

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INTRODUCTION: Early onset scoliosis is quite common medical condition concerning young individuals. Conservative treatment is frequently insufficient and therefore surgical intervention is necessary. Magnetically controlled growing rods were introduced as an alternative to traditional growing rods for management of early onset scoliosis. MAGEC rods can be lengthened non-invasively which reduces risks connected with numerous surgical interventions.

AIM OF THE STUDY: The purpose of this study was to evaluate clinical and surgical outcomes of early onset scoliosis treatment with MAGEC system in patients with different types of scoliosis.

MATERIALS AND METHODS: Preoperative, postoperative and follow-up protocols of 48 paediatric patients from orthopaedic ward were reviewed. Our patients suffered from different types of scoliosis – caused by neuromuscular diseases, caused by congenital syndromes and idiophatic. Cobb angles were measured on radiographs before and after the surgery, and after the latest follow-up visit. Paired student t-test or ANOVA was used when normality of the data was met. For nonparametric analyses Wilcoxon signed-rank test was utilized.

RESULTS: Mean percentage of correction of scoliosis immediately after the surgery was 57.5% (SD = 11.6%) and 55.8% (SD = 18.0%) after the latest follow-up visit for neuromuscular scoliosis and respectively 45.5% (SD=15.4%) and 38.2% (SD=17.5%) for idiopathic scoliosis while results for congenital scoliosis were consecutively 45.25% (SD=10.8%) and 43.7% (SD=10.3%), with differences being statistically significant (p=0.011).

CONCLUSIONS: Study shows that type of scoliosis influenced postoperative and follow-up correction values - the postoperative correction and the correction at the latest follow-up was significantly larger for neuromuscular scoliosis than for idiopathic and other congenital scolioses (p=0.011).

17th Bialystok International Medical Congress for Young Scientists 2023

Orthopedics

Title: How does multiple factors impact the effectivness of posterior spondylodesis surgery in Duchenne muscular dystrophy and Spinal muscular atrophy patients

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INTRODUCTION: Spinal muscular atrophy (SMA) and Duchenne muscular dystrophy (DMD) are two neuromuscular disorders which often lead to serious spinal deformities, often requiring corrective surgery. Unfortunately previous researches frequently treated them as one disease despite being separate medical conditions.

AIM OF THE STUDY: The purpose of this study was to evaluate existance of predictors in scoliosis surgical treatment of SMA and DMD patients, with a comparison of clinical and radiological surgical outcomes.

MATERIALS AND METHODS: Preoperative and postoperative protocols of 70 pediatric patients with SMA or DMD were reviewed. All necessary radiological measurements were taken to determine improvement after the surgery. Student t-test and Welch's t-test were utilized to compare means. For nonparametric analyses Mann-Whitney U was employed. Multiple regression was used when adjusting for confounders.

RESULTS: The mean percentage of Cobb angle correction was 47.49% (SD=17.06) in DMD patients and 57.53% (SD=14.83) in SMA patients with differences being statistically significant ($p<0.04$). The mean weight was 52.21kg (SD=14.59) in DMD patients and 39.86kg (SD=11.05) in SMA patients ($p=0.002$). The difference between mean Cobb angle in pre-op elongation x-ray and post-op x-ray was 4.6 ° in DMD and 10.4 ° in SMA patients. There was no significant statistical differences in other factors.

CONCLUSIONS: When adjusted for weight and initial Cobb angle, the type of disease (DMD vs SMA) remained the only predictor of higher Cobb angle change after surgery. Considering the results, pre-operative x-ray in elongation could be used for prediction of surgical outcome in SMA and DMD patients. No other analyzed factors played a significant role in surgical outcomes.

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Orthopedics

Title: Nail or plate, that is the question. Comparison of patients with calcaneal fractures treated surgically by LCP plate to those treated with calcaneal nail.

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INTRODUCTION: Calcaneal fractures pose 2% fractures of skeletal system. Most of them occur among males. Fall from height is the most common mechanism of these injuries. These fractures are uncommon although are significant as they can lead to many complications and limitations in patients' life. Therefore, choosing appropriate treatment method is essential.

AIM OF THE STUDY: The purpose of the study was to compare patients with calcaneal fractures treated surgically by LCP plate to those treated with calcaneal nail.

MATERIALS AND METHODS: Patients diagnosed with fracture of calcaneus and treated with stabilizing plate or calcaneal nail were included. Following data was gathered: sex, age, BMI, cause of fracture, type of treatment, time of hospitalization, complications and accompanying diseases. Statistical analysis was performed, bioethics committee approval was acquired.

RESULTS: 24 patients hospitalized in the period form 2017-2023 met inclusion criteria. 54% (n=13) were treated with plate. 79% fractured bone as they fell from their own height. 25% had early complications. There was 0 late complications reported. Time after procedure to discharge for plate was 3.82 (SD=2.32); for nail 1.62 (SD=1.26) days. Corelation between BMI and discharge from hospital was p=0,82. Corelation between age and discharge from hospital was p=0,86.

CONCLUSIONS: The study confirmed most common cause of this type of fracture. Time of recovery inside hospital ward was shorter for patients with calcaneus nail rather than for plate also BMI and age didn't affect it.

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Orthopedics

Title: What does break in your knee? Correlation between ACL associating damages and posterior tibial slope after ACL reconstruction surgery

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INTRODUCTION: Anterior cruciate ligament (ACL) injury is a frequent orthopedic condition, usually accompanied by other damages within knee. Such pathology is commonly treated with ACL reconstruction surgery. Posterior tibial slope (PTS) is an angle between posterior tibial line and tibial plateau used in a preoperative evaluation of ACL reconstruction.

AIM OF THE STUDY: The aim of our study was to assess which injuries accompany ACL tear and to measure the posterior tibial slope parameter of patients with ACL reconstruction surgery.

MATERIALS AND METHODS: Adult patients with diagnosed ACL injury after reconstruction surgery were included in this study. Patients' X Rays and data was taken from the hospital's medical record and measured by two independent researchers. Statistical analysis was performed, bioethics committee approval was acquired.

RESULTS: Among 333 analyzed patients (108 females, 225 males, mean age=36,7, SD=10,1) 38,7% of them occurred to have damaged isolated ACL, 43,8% had medial meniscus (MM), 13,5% lateral meniscus (LM) and 11,4% had medial collateral ligament (MCL) injury. Males are involved in 69,2% of all MM, 68,8% of LM, 85% of posterior cruciate ligament and 76,3% MCL injuries. Mean slope for male group was 12,3 (SD=3,01) and for female group mean slope was 14,12 (SD=2,55). Mean slope for MM injury was 14,85 (SD=2,62). Mean slope for LM injury was 16,93 (SD=2,6).

CONCLUSIONS: Most ACL injuries were accompanied by pathologies including MM, LM, MCL. Most of these injuries affected males while their mean PTS score was lower than females mean PTS score. Mean slope for LM injuries was significantly higher than mean slope for MM injuries.

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Orthopedics

Title: What does knee arthrosis have to do with skiing? Analysis of PTS in knee OA before and after Total Knee Arthroplasty.

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INTRODUCTION: Knee OA is a chronic disease of the knee joint which is very common in the adult population. It is characterized by progressive degeneration of the joint which may result in limited mobility and significant physical impairment. Knee OA is diagnosed mainly by RTG imaging in which we can observe joint space narrowing, osteophyte formation and destruction of tibial plateau and femur condyles. PTS is the angle between the vertical line of the anterior cortex and the tibial plateau.

AIM OF THE STUDY: The aim of the study is to assess the correlation between PTS and age, sex or side before and after surgery.

MATERIALS AND METHODS: 400 adult patients with diagnosed OA were included into study. Two independent researchers measured PTS parameter with use of the Radiant program before and after arthroplasty. The statistical analysis was performed, bioethical committee approval was acquired.

RESULTS: 264 patients (mean age=69 years (SD=7,54); MIN=35, MAX=87) were included. 73,4%(194) were female and 26,6%(70) men; 52,3%(138) with the right side and 47,7%(126) with the left side. Mean degree of PTS before arthroplasty was 12,47 (SD=4,1) and after 5,08 (SD=2,77). There was statistical correlation between mean degree of PTS before and after surgery Wilcoxon test p=0,000001.

CONCLUSIONS: All the patients qualified for the arthroplasty had a similar PTS parameter which makes us think that it's one of the main components for indication for the surgery.

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Orthopedics

Title: When a limb loses its verticality - the osteoarthritis of the knee joint

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INTRODUCTION: Osteoarthritis is the most common joint disorder. It occurs mainly in the elderly population. The disease is caused by destabilization of the synthesis and degradation processes of the joint cartilage and leads to a gradual deterioration of the quality of life.

AIM OF THE STUDY: The purpose of the study was to estimate the deviation of the physiological axes of the lower limb in osteoarthritis.

MATERIALS AND METHODS: Patients over 55 years of age with diagnosed osteoarthritis of the knee joint and set of X-ray pictures were included into the study. Anatomical and mechanical axes of the lower limb were measured by three independent researchers. Statistical analysis was performed, bioethics committee approval was required.

RESULTS: 125 patient (mean age 69,73, SD=6,57) were included into the study. 71,2% of the patient were females. 55,4% of the patients had osteoarthritis of the left limb. The mean femoral-shaft-tibial-shaft angle was 2.03 (SD=6.91). The mean anatomic lateral distal femoral angle was 84,76 (SD=3,26) and the mean anatomic medial proximal tibial angle was 81,96 (SD=4,24). The correlation was detected between the age and the hip-knee-ankle angle (HKA) (p=0,0054, r=0,23). Sex associated with the HKA (p=0,004). The connection between left or right limb and the HKA wasn't noticed (p=0,93).

CONCLUSIONS: In the study the relationship between age and the deviation of the physiological axes of the lower limb was observed in all of the parameters. The dependence between sex and the deviation of the axes was detected. There was no relationship between the left or right limb and the deviation of the axes.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Alterations in striatal malondialdehyde level during postnatal development in the rat model of an attention-deficit/hyperactivity disorder

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INTRODUCTION: : Attention-deficit/hyperactivity disorder (ADHD) is one of the most prevalent neurodevelopmental and behavioral disorders in children, adolescents, and adults. It is characterized by inattention, impulsivity, and hyperactivity. However, the factors/mechanisms involved in brain dysfunction and its consequences are not well known. Nevertheless, it has been suggested that ADHD is associated with oxidative stress imbalances.

AIM OF THE STUDY: This study aimed to compare oxidative stress marker- malondialdehyde (MDA) -level in the striatum of juvenile and mature spontaneously hypertensive rats (SHRs) - an animal model of ADHD and Wistar Kyoto rats (WKYs) used in the present study as a control group.

MATERIALS AND METHODS: The rat striatum was separated from the brain of SHRs and WKYs in two age stages: juvenile (5-week-old) and maturating (10-week-old). Next, the tissues were homogenized and centrifuged. The MDA level were determined in the supernatants using a spectrophotometric method, and the absorbance was read in a wavelength of $\lambda = 520$ nm. Data obtained were statistically analyzed using GraphPad Prism Version 6.0.

RESULTS: MDA levels were significantly higher ($p<0.01$) in the striatum of 5-week-old SHRs compared to 5-week-old WKYs. In 10-week-old rats, the contents of MDA were similar in both strains.

CONCLUSIONS: The present study shows, for the first time, differences in the striatal MDA levels in SHRs and WKYs. Elevated levels of oxidative stress in young SHR lead to multifaceted dysfunctions in the brain that might induce symptoms of attention-deficit/hyperactivity disorder.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Correlation between anatomical and functional changes of the optic nerve and blood flow parameters in retrobulbar arteries in patients treated surgically for glaucoma.

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INTRODUCTION: Glaucoma is one of the leading causes of blindness in the world. It is characterized by irreversible, gradual loss of vision, accompanied by typical visual field defects and cupping of the optic disc. The main modifiable risk factor for the development of glaucoma is increased intraocular pressure (IOP). However, many studies indicate a significant role of vascular factors in the pathogenesis of glaucoma and suggest the inclusion of ocular vascular examination in the diagnostic procedure in order to more effectively detect the disease and monitor the progress of treatment.

AIM OF THE STUDY: In our prospective study, we evaluated the relationship between anatomical and functional changes of the optic nerve and hemodynamic parameters in retrobulbar arteries in Color Doppler Imaging (CDI) in patients with primary open-angle glaucoma (POAG) treated surgically with the newest techinques of Minimally Inasive Surgery – Canaloplasty and iStent Micro-Bypass.

MATERIALS AND METHODS: We compared Peak Systolic Velocity (PSV), End Diastolic Vlocity (EDV) and Resistive Index (RI) parameters in the Ophthalmic Artery (OA), Central Retinal Artery (CRA) and Short Posterior Ciliary Arteries (SPCAs) before and one month after MIS operation. Out of 39 patients diagnosed with POAG examined before surgical treatment, we qualified 15 of them to our study, based on the inclusion and exclusion criteria.

RESULTS: Our results indicate the correlation between anatomical and functional changes of the optic nerve and hemodynamic parameters in retrobulbar arteries.

CONCLUSIONS: Therefore, this study emphasizes the potential use of CDI in the diagnosis and monitoring of the effectiveness of antiglaucoma treatment.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Effectiveness of the use of diagnostic methods in the diagnosis of syncope in the emergency department

Author(s): mgr Klaudia Bielska[1]

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INTRODUCTION: Syncope is one of common causes of hospitalisation in the Emergency Department (ED). Data says that 1% of patients per year are admitted to the ED due to a temporary loss of consciousness (TLOC). Recent guidelines suggest the use of lab markers to confirm the diagnosis of syncope in people admitted for TLOC.

AIM OF THE STUDY: The aim of the study was assesment the effectiveness of the use of diagnostic possibilities in the ED of the University Clinical Hospital in Białystok among patients admitted to ED after TLOC. Attention was drawn to the value of the results of markers in order to compare them with other publications.

MATERIALS AND METHODS: The study was based on a retrospective analysis, individual charts of patients from the ED of the University Clinical Hospital in Białystok were source of data. The study group consisted of patients of the ED admitted to the ward due to TLOC. The group consisted of patients aged over 18 years, healthy and with diseases, admitted during one year.

RESULTS: The results of the study showed that ED patients are a homogeneous group, given the use of diagnostic. Moreover, they point to the commissioning of additional tests to exclude injuries. Analysis of the records revealed deficiencies in the entry of patients' vitals into the charts.

CONCLUSIONS: The study showed the effectiveness of the use of diagnostic methods in the setting of the ED of the hospital is comparable to the results presented in the literature, also indicating that staff should pay attention to filling out medical records .

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Factors influencing the prognosis of COVID-19 patients treated with High-Flow Nasal Oxygen Therapy (HFNOT)

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INTRODUCTION: HFNOT plays an essential role in the management of respiratory failure in COVID-19 patients. However, no specific defined factors affect the prognosis of patients treated with this method.

AIM OF THE STUDY: Determination of clinical factors and laboratory factors affecting the course of HFNOT therapy.

MATERIALS AND METHODS: We made a retrospective analysis of 103 patients treated with HFNOT in Temporary Hospital nr 1 in Białystok. HFNOT failure group (58 pts; 56.3%) was defined as patients intubated and/or patients who died. The rest was the success group (45 pts; 43.7%). We analysed clinical factors and laboratory tests at the beginning of HFNOT, after 2, 24, and 72 hours after the start of treatment and at the end of treatment. Statistical analysis was run in R software, version R4.1.2.

RESULTS: We found that age, arterial hypertension, heart failure, HFNOT duration days and levels of C-reactive protein, procalcitonin, number of white blood cells, the oxygen content of the respiratory mixture (%) in 24h, heart rate in 72h, partial pressure of oxygen (mmHg) at the beginning of therapy and saturation during treatment are prognostic factors allowing to predict the effect of HFNOT therapy ($p<0,05$). The use of convalescent plasma, remdesivir, tocylizumab and olumiant has not been shown to improve the impact of the HFNOT used.

CONCLUSIONS: The presented results shed new light on identifying prognostic factors in COVID-19 patients treated with HFNOT. Developing an advanced mathematical model/calculator to determine reliable prognostic factors is necessary.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Investigation of the inhibitory effect of high allergen doses on basophils reactivity in patients with hyperreactivity to Hymenoptera venom

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INTRODUCTION: Allergy to Hymenoptera venom (bee and wasp predominantly) affects up to 7.5% of the European population. Basophils activation is an effective parameter in determining hyperreactivity of patients to specific allergens. However, based on our own experience specified range of allergen concentrations is required to achieve high diagnostic value of such evaluation. Interestingly, application of doses used subcutaneously in venom immunotherapy (VIT) inhibited basophils reactivity, creating falsely negative results. To date, there are no data on such phenomenon and underlying mechanism.

AIM OF THE STUDY: Evaluation of the basophils' response to vastly different allergen concentrations used in monitoring bee/wasp venom allergic patients.

MATERIALS AND METHODS: Peripheral blood from 30 bee/wasp venom-allergic patients were collected. BAT assay was used for assessment of basophils' reactivity to specific allergens. Absolute values, morphology and viability of basophils were evaluated with flow cytometry.

RESULTS: Exposure to specific allergen at 500ng/ml significantly activated blood basophils in context of CD63 and CD203c expression. However, provocation with 40-higher concentrations (used routinely in venom-specific immunotherapy) diminished the previously observed effects. Interestingly, investigation of constitutively expressed activation marker CD203c revealed that such phenomenon is strictly limited to allergic patients. Furthermore, we excluded apoptosis or cytotoxicity since morphology and caspase-3 levels remained unchanged with high-dose allergen stimulation.

CONCLUSIONS: For the first time, we demonstrated differential concentration-dependent response of Hymenoptera venom-allergic patients' basophils to specific allergens. Further research is required to establish mechanism of that phenomenon. Nevertheless, BAT assays showed exceptional usefulness in allergy diagnosing and monitoring; however, must be performed with caution in context of proper dose implementation.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Preliminary assessment of the occurrence of depression among the pediatric population after viral infections including COVID-19 and its correletion to inflammatory biomarkers.

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INTRODUCTION: Depression affects 1-2% of prepubertal children and 5-8% of adolescents. There are numerous hypotheses of its etiopathogenesis - some indicate that it may be related to viral infections. During the COVID-19 pandemic, the number of children and adolescents reporting symptoms of depression, self-harm, suicidal thoughts and attempts has increased significantly.

AIM OF THE STUDY: The aim of the study is to attempt to observe the relationship between COVID-19 and other viral diseases and their severity, as well as related changes in inflammatory parameters, and the occurrence of depression in children and adolescents.

MATERIALS AND METHODS: The study recruited patients diagnosed with various viral diseases. The patients' completed the CDI-2 questionnaires twice - on the first day of hospitalization and again after 30 days. We then correlated the CDI-2 score difference with patients' baseline levels of inflammatory factors and morphology and acid-base balance.The study recruited patients diagnosed with various viral diseases. The patients' completed the CDI-2 questionnaires twice - on the first day of hospitalization and again after 30 days. We then correlated the CDI-2 score difference with patients' baseline levels of inflammatory factors and morphology and acid-base balance.

RESULTS: There were 11 study participants, 7 of whom were diagnosed with COVID-19, 2 with influenza and 2 with HSV. Only CRP was found to have an effect on any changes in the CDI-2 score. Only in the COVID-19 group, the level of CRP was positively correlated with the increase in the CDI-2 general score difference ($r=0.775$, $p=0,04$).

CONCLUSIONS: The results may indicate that not all viral diseases, their severity and the following increase in inflammatory markers affect the development of depression among children. The risk of depression may be related to a specific pathogen and COVID-19 may predispose children to depression in a special way.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: The role of biological, demographic and social parental characteristics in the prevalence of small-for-gestational age (SGA) births: A population-based study of 356,910 live births in Poland

Author(s): Sebastian Wołejszo[1] Dr n. o zdr. Agnieszka Genowska[2] Dr n. med. Radosław Motkowski[3] Prof. dr hab. n. med. Jerzy Konstantynowicz[4]

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INTRODUCTION: SGA neonates are associated with a higher risk of perinatal morbidity and mortality, and certain chronic diseases in adulthood. Socio-demographic causes are substancial and have not yet been largely studied.

AIM OF THE STUDY: The objective of this study was to examine the association between biological determinants, demographic and social background, and SGA births based on a large complete registry in Poland.

MATERIALS AND METHODS: Anonymized information for the analysis came from the Central Statistical Office (CSO) covering a record of 356,910 singleton live births in 2019. Parents' characteristics included biological variables (the length of gestation, time since previous delivery, previous stillbirths), demographic background (paternal age, place of residence, marital status) and social factors (level of education). To evaluate categorical and continuous variables the Chi-Square test and the Mann-Whitney U test were used respectively.

RESULTS: Considering biological, demographic and social factors, a significantly lower birth weight was observed for parents aged ≤25 years. The risk of SGA births decreases ≥30 years regardless of gender. The lower birth weight was associated with an extended interval since the previous birth and a nonmarital childbearing. The number of stillbirths and whether a previous pregnancy was included were not statistically significant according to SGA births. Concurrently more SGA neonates were born from pregnancies of mothers living in the city and a higher educational attainment was a significant favourable factor related to SGA births.

CONCLUSIONS: Education of prospective parents and health care professionals, better organization of obstetric, perinatal and neonatal care could help reduce the adverse health outcomes of SGA.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: Assessment of the lifestyle and knowledge about probiotic products of students of the Medical University of Bialystok

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INTRODUCTION: Interest in live microorganisms that, when administered in adequate numbers, confer a beneficial effect on the health of the host, has been growing since the 1990s. These microorganisms are used in preparations called dietary supplements, are added to food and occur naturally in it, and some are registered as medicines. However, does the increased use of probiotics lead to a better understanding of them? Students of medical schools are educated in the direction of healthy eating behaviors, as well as probiotics. But does it always mean that their knowledge is sufficient?

AIM OF THE STUDY: The aim of the study was to assess the level of knowledge about probiotics and lifestyle of students of the Medical University of Bialystok, as well as to assess the impact of probiotics on health.

MATERIALS AND METHODS: The study group consisted of students of the Medical University of Bialystok, the study included 9 men and 43 women. They were students of the following faculties: medicine, medicine and dentistry, dietetics, physiotherapy, pharmacy, nursing, electroradiology, dental hygiene, dental techniques, and public health. Among the respondents, 4 respondents suffer from gastroesophageal reflux, 3 people declared suffering from IBS, 1 person suffers from Ulcerative Colitis. Among the respondents, 34 people were born naturally, 18 by caesarean section. The average BMI in the group was 22.2 ± 3.41. The average number of points scored was 7 out of 11 possible. Knowledge and habits were assessed on the basis of questions about the definition of a probiotic, specific probiotic strains, and the essence of a healthy lifestyle. Participation in the survey was voluntary and anonymous.

RESULTS: A statistically significant (p=0.041), weak (R=0.28) and positive correlation between BMI and the frequency of intimate infections was found. A statistically significant (p = 0.002), weak (R = 0.42) and positive correlation between BMI and the frequency of urinary tract infections was found. A statistically significant (p = 0.036), weak (R = 0.29), positive correlation between the number of points obtained and the frequency of intimate infections was found. A statistically significant (p = 0.02), weak (R = 0.32), positive correlation between the number of points obtained and the frequency of urinary tract infections was found. A statistically significant (p = 0.04), weak (R = 0.29), negative correlation was found between the frequency of eating sourdough and sourdough bread and the frequency of upper respiratory tract infections. There was a statistically significant (p=0.046) difference in self-assessment of knowledge about probiotics between people who took probiotics in the form of supplements and those who did not take them. The median in the group of people who took probiotic supplements was Me=6 (Q1=4; Q3=7), and among people who did not take such supplements Me=4.5(Q1=2.5; Q3=6). A statistically significant (p=0.018) difference in self-assessment of knowledge about probiotics was found between people who declared that they choose probiotic products because of the substances they contain and those who believed that it was not important for them. The median in the group of people who declared that they

choose probiotic products due to the substances they contain was Me=5.5 (Q1=4; Q3=7), and among people who did not think that it was not important for them Me=4(Q1=3; Q3=6). There was a statistically significant (p=0.041) difference in self-assessment of knowledge about probiotics between people who declared that healthy eating is important in their lives and those who believed that it was not important for them. The median in the group of people who declared that healthy eating is important in their lives was Me=4.5 (Q1=4; Q3=6), and among people who did not think that nutrition was important for them Me=2, 5(Q1=2.5; Q3=4.5).

CONCLUSIONS: The average number of points scored indicates a fairly high level of knowledge of students of the Medical University of Bialystok, no differences in the level of knowledge between majors were found. This is probably due to the fact that these people are learning about probiotics as part of their studies. The influence of BMI on the increased frequency of infections was found, however, people with higher BMI do not show more knowledge about probiotics. The lack of normalization of body weight, more frequent infections and less knowledge about probiotics suggest that this group should be encouraged to educate towards healthy eating. Respondents who pay attention to the composition of probiotics in the form of supplements, and also take them, show greater knowledge about probiotics. People who declare that healthy eating plays a big role in their lives show a higher knowledge about probiotics than people who did not declare the importance of healthy eating. It seems, therefore, that interest in one's own health leads to better knowledge about probiotics and more conscious consumer choices.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: Cardiovascular risk factors knowledge among non-medical university students in Poland

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INTRODUCTION: According to 2021 ESC Guidelines the most important way to prevent atherosclerotic cardiovascular (CV) diseases is to promote a healthy lifestyle throughout education. It is crucial to understand the young generation's current knowledge regarding CV risk factors for initiating preventive initiatives.

AIM OF THE STUDY: This study aimed to assess the level of knowledge of CV risk factors among non-medical university students in Poland.

MATERIALS AND METHODS: An online based survey was distributed via different social media channels among non-medical students across Poland. An original questionnaire was used as a research tool. The level of knowledge was determined based on average number of correct answers to 17 scored closed-ended questions. Data were collected between July and November 2022. The data were analysed using the t-test and ANOVA test.

RESULTS: Respondents (n= 4036) were mostly female (66%), living in a city with more than 100 000 citizens (42%). The average age of the participants was 22,5 +/- 5,2 years old. Women obtained a significantly higher average score in knowledge test than men (7.3 vs 6.2, $p<0.05$). Interestingly, this score significantly differed between students in voivodeships across country ($p<0.05$) and between students studying in different fields of study ($p<0.05$). The score also significantly correlated with age ($R = 0.12$, $p<0.05$).

CONCLUSIONS: The knowledge regarding CV risk factors among non-medical students in Poland differs between sex and voivodships. This lack of awareness can have long-term fatal consequences. The results of this analysis could help in preparing educational campaigns.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: Cytotoxic effect of zapotin from the herb of Hottonia palustris L. on the oral squamous carcinoma cell line SCC-25

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INTRODUCTION: The International Agency for Research on Cancer reports that there are nearly 200,000 deaths per year from oral cancer. Additionally, there is no diminishing enthusiasm for plant metabolites, which, among their multidirectional effects, are a valuable source of cytotoxic compounds.

AIM OF THE STUDY: The study focuses on the isolation of zapotin from the herb featherfoil and its impact on the viability of and DNA biosynthesis in the tongue squamous carcinoma cell line SCC-25.

MATERIALS AND METHODS: Zapotin isolation was carried out by solid-phase extraction (SPE) and preparative HPLC from a previously prepared chloroform fraction that employed liquid–liquid extraction (LLE) of a crude methanol extract. The MTT assay was used to examine the toxic effect of zapotin on an oral squamous carcinoma cell line, while DNA biosynthesis was assessed by determining the DNA incorporation of [3H]-thymidine. Both studies were also conducted on normal fibroblasts (PCS-201-012 cells).

RESULTS: The identity of the isolated zapotin (120 mg) was confirmed by comparison with a commercial standard. In a 48 h MTT assay, compared to the control cisplatin (cPT), zapotin showed significant activity (IC50 values of 20.33 ± 1.01 μM and 7.58 ± 0.37 μM, respectively) and selectivity toward fibroblasts (IC50 values of >200 μM and 40.50 ± 2.01 μM, respectively). Downregulation of DNA biosynthesis in SCC-25 cells was observed, with zapotin showing an effect similar to cPT.

CONCLUSIONS: Our results revealed that cancer cell viability is strongly affected by zapotin and suggested that zapotin influences cell division by arresting the cell cycle in S phase.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: Effects of metformin in vitro treatment on the activity of non-small cell lung cancer (NSCLC) cell lines.

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INTRODUCTION: Metformin is the first-line anti-hyperglycemic medication used in treatment of type 2 diabetes. Besides metabolic effects, novel immunomodulatory properties of that drug are constantly being discovered by different study groups. Lung cancer is the leading cause of cancer-related deaths, with predominant role of NSCLC demonstrating highest resistance to chemotherapy and radiation. Recently, improved survival of lung cancer patients was observed in subjects using metformin. Thus, verification of its anti-cancer activity is an important topic for future studies.

AIM OF THE STUDY: We aimed to investigate the effects of metformin application on NSCLC in vitro models.

MATERIALS AND METHODS: NSCLC lines - A549 and H2030, were cultured with metformin at increasing concentrations. Cell proliferation and viability were assessed using flow cytometry after 24, 48 and 72 hours of incubation. Concomitantly, metformin influence was also tested on healthy controls' blood immune cells to assess viability, but also activation status and proliferation rate of those cells.

RESULTS: Lung cancer cells' proliferation was reduced in dose-dependent manner at concentrations starting at 10μM. Decreased expansion of cancer cells was accompanied by disturbances in cell viability, indicating possible pro-apoptotic effects. Interestingly, despite similarities, intensity of metformin influence was different between two studied NSCLC cell lines. Drug presence did not cause changes in function of healthy fibroblasts at concentrations below 1000μM. Minimal effects were also observed in reference to activity of blood immune cells.

CONCLUSIONS: Metformin demonstrated in vitro significant anti-cancer effects towards NSCLC cells. Further research is required to establish concentrations range that would be effective against cancer and safe for the surrounding microenvironment.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: Structure-activity relationship (SAR) study of selected flavonoids on human melanoma A375 cells

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INTRODUCTION: Cutaneous malignant melanoma is the most aggressive form of diagnosed skin cancer. Among the available therapeutic options for skin cancers, the administration of chemotherapy immediately after surgical intervention has been an essential element. Current research strategies are concentrated on new therapies that avoid the undesirable effects of a drug or medical treatment. Both in vitro and in vivo studies have demonstrated that flavonoids are able to prevent carcinogenesis.

AIM OF THE STUDY: Our study aimed to describe the structure-activity relationships of selected flavonoids on the human malignant melanoma cell line A375.

MATERIALS AND METHODS: Human cancer cells (A375 melanoma cells) and normal cells (skin fibroblasts) were used as in vitro models. MTT and NRU colorimetric assays were performed to preliminarily evaluate the cytotoxicity of the ten selected flavonoids. Then, the most active compounds were analyzed for their impact on DNA biosynthesis by determining the [3H]-thymidine incorporation into DNA. Additionally, the expression levels of caspase-3 and caspase-9 were evaluated by Western blotting with specific antibodies.

RESULTS: Apigenin, luteolin and 5,6-dihydroxyflavone presented significant cytotoxicity in both the MTT and NRU assays after 48 h of incubation. This effect was associated with inhibited DNA biosynthesis apoptosis activation. The observed effects were more pronounced in cancer cells than in fibroblasts.

CONCLUSIONS: The obtained results allowed us to identify the characteristics of these flavonoid structures that are responsible for their anticancer activity: the presence of hydroxyls at C3 and C7, O- and C-glycosylation, methylation and OH group acetylation.

17th Bialystok International Medical Congress for Young Scientists 2023

Public Health and Pharmacy

Title: The phytochemical and biological activity assessment of rare Potentilla species

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INTRODUCTION: Potentilla plants have been used in traditional medicine to manage various human ailments, such as diarrhea and unspecified types of cancers.

AIM OF THE STUDY: Our study aimed to recognize the phytochemical composition of aqueous acetone extracts from aerial parts of rare Potentilla species and to evaluate their biological activity in normal and cancer cell lines.

MATERIALS AND METHODS: Air-dried aerial parts of P. aurea (PAU7), P. erecta (PER7), P. fruticosa (PFR7), P. hyparctica (PHY7), P. megalantha (PME7), P. nepalensis (PNE7), P. pensylvanica (PPE7), P. pulcherrima (PPU7), P. rigoi (PRI7) and P. thuringiaca (PTH7) were extracted by using aqueous acetone. Colourimetric methods were employed to assess total phenolic (TPC), total tannin (TTC), total proanthocyanidin (TPrC), total flavonoid (TFC) and total phenolic acids (TPAC) contents. Cell viability and proliferation, as well as cytotoxicity were evaluated using MTT, BrdU and LDH assays, respectively, against human colon adenocarcinoma LS180 and human colon epithelial CCD841 CoN cell lines.

RESULTS: The highest TPC, TPrC and TPAC values were found in PFR7, while the highest TTC and TFC were found in PPE7 and PHY7, respectively. The biological assessment revealed that cancer cells were more sensitive to tested samples than normal cells. The highest decrease in colon cancer viability and proliferation were found in response to PFR7. Examination of extract cytotoxicity has shown significant damage to LS180 cells' membranes and observed effect was dose-dependent. The strongest cytotoxicity was noted in response to PFR7.

CONCLUSIONS: Obtained results indicated that some acetone extracts from Potentilla species have anti-cancer potential, however, additional research is required to prove this definitively.

SESSIONS OF CASE REPORTS



17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: "Revolutionary Arthrodesis: Synthes Nail for Ankle Joints. A case report."

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BACKGROUND: Arthrodesis or joint fusion, is a surgical procedure used to treat severe arthritis of the ankle joints that cannot be managed by conservative methods. Arthrodesis of ankle joints is a common procedure used to provide stability and relieve pain in the ankle joint. There are several forms of surgical fixation of arthrodesis, however choice of technique may depend on the specific needs of the patient.

CASE REPORT: A 36-year-old healthy male was admitted to the Orthopedic Clinics, in scheduled mode with left side post-traumatic talar arthrosis due to past comminuted fracture. Patient presented limited mobility in the left ankle joint, swelling, and significant pain during pronation and supination. After a diagnosis of hollow left foot and arthrosis of the ankle and subtalar joints, left talar and subtalar arthrodesis using Synthes Detachable Nail, was recommended. During the surgery the joints were debrided and the nail was implanted with the stabilizing screws. Bone grafts were used to fill any gaps, and the fibula was fixed to the tibia with screws. No postoperative complications were noticed, rehabilitation was ordered. In two months follow-up patient started to fully load the foot, pronation and supination was limited about 10 degrees, no pain or swelling was observed.

CONCLUSIONS: The left talar and subtalar arthrodesis utilizing the Synthes Detachable Nail with fibular osteotomy resulted in successful healing with no observed complications in the patient.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: An unusual combined liver-pancreas transplantation as a treatment for young woman with cystic fibrosis

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BACKGROUND: Cystic fibrosis (CF) is an inherited disease with a defect in epithelial chloride transport that results in multisystem disease. Most patients develop pulmonary insufficiency. However, improved survival in patients with CF has led to an increased incidence of extrapulmonary complications of this disease, including liver cirrhosis and pancreatic insufficiency. Combined liver-pancreas transplantation has become a promising therapy for CF patients with end-stage organ failure.

CASE REPORT: 21-year-old woman diagnosed with CF developed cirrhosis, exocrine pancreatic insufficiency and insulin-dependent diabetes mellitus. She had moderate respiratory symptoms. Gastrointestinal symptoms were pronounced sufficiently for the patient to be qualified to combined liver-pancreas transplantation. The liver was transplanted orthotopically. Next, the team transplanted the pancreas in a standard manner. The donor’s duodenum was anastomosed to the recipient’s proximal jejunum. Surgeons did not encounter any major problems during the transplantation. No serious complications followed the surgery. The grafts started functioning immediately. The patient became independent from external insulin and pancreatin, with good C-peptide levels and no steatorrhea. She was discharged after six weeks in general good condition. Sixteen months later the patient felt well, and the grafts kept functioning properly.

CONCLUSIONS: In conclusion, combined liver–pancreas transplantation in patients with CF restores exocrine and endocrine pancreatic function and minimizes the risk of life-threatening complications associated with liver insufficiency. Improvement of life quality coincides with the possibility of discontinuing insulin and pancreatic enzyme supplementation. The combination of liver and pancreas transplantation may even prevent advanced pulmonary complications and extend the prognosis of survival.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: CASE REPORT OF 39-YEAR-OLD PATIENT WITH TYPE 1 DIABETES UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY NECESSARY FOR KIDNEY TRANSPLANT.

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BACKGROUND: Each year more and more people suffer from diabetes mellitus (DM). In 2017 there were 9 million people with type 1 diabetes; the majority of them live in high-income countries according to WHO. Type 1 diabetes mellitus (T1D) is a chronic condition characterized by deficient insulin production and requires daily administration of insulin. The most frequent complications are diabetic retinopathy and diabetic nephropathy. Diabetic kidney disease is the leading cause of chronic kidney disease (CKD). Type 1 diabetic patients with chronic renal failure have the following therapy options: kidney transplant from a living donor, pancreas after kidney transplant, simultaneous pancreas-kidney transplant, or awaiting a deceased donor kidney transplant.

CASE REPORT: 39-year-old female suffers from type 1 diabetes with developed comorbidities: diabetic neuropathy, diabetic gastroperesis, diabetic retinopathy and diabetic nephropathy which leads to kidney failure and renal hypertension. From December 2022 patient has been on peritoneal dialysis. In February 2022 Tenckhoff catheter has been inserted and 13-14.02.2023 conversion to HD necessary for cholecystectomy was made. Patient has been qualified for kidney transplant but she required prophylactic cholecystectomy first. Despite absence of symptoms ultrasonography showed a presence of stones in gallbladder (4mm). According to the researches the incidence of gallbladder pathologies in kidney transplant recipients was higher than in general polish population. Cholelithiasis may lead to serious complication such as acute mechanical jaundice, cholangitis, biliary pancreatitis but being mostly cholecystitis. 15.02.2023 patient went through scheduled laparoscopic cholecystectomy in endotracheal anesthesia.

CONCLUSIONS: The case reminds us that although absence of symptoms gallstone could block the cystic duct causing acute cholecystitis, that is why prophylactic cholecystectomy may potentially offer benefits in some patients.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: CASE REPORT: SUCCESSFUL RESECTION OF A RETROPERITONEAL LIPOSARCOMA

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BACKGROUND: Retroperitoneal sarcomas are rare malignant soft tissue tumors, typically associated with poor prognosis. Soft tissue sarcomas are a diverse set of tumors, mostly arising from mesenchymal cells and accounting for approximately 1 to 2% of all solid neoplasms, out of which only 10-20% are located in the retroperitoneum. Liposarcomas are the most common type of retroperitoneal sarcomas.

CASE REPORT: A 63 year old man presented to the hospital with discomfort in the abdomen and pain under the left costal margin. Abdominal ultrasound indicated a mass in the retroperitoneum. Abdomen computed tomography confirmed a 20,1x13 cm mass in the left posterior pararenal space that was dislocating the left kidney, spleen, pancreas and mesentery. After a few months a biopsy of the tumor and MRI were performed, detecting a 22,4x18,5x21,7 cm retroperitoneal liposarcoma. The patient underwent a complete retroperitoneal tumor resection, a part of left psoas major muscle and a part of left kidney capsule were resected as well. A well-differentiated (G1) liposarcoma, 28x24x15 cm in size and weighing 4,9 kg, was successfully removed with no complications.

CONCLUSIONS: Retroperitoneal liposarcoma is an uncommon malignant disease that typically progresses without any specific symptoms. Despite often being asymptomatic, retroperitoneal liposarcomas are associated with high risk of local recurrence and relatively poor prognosis. Surgical resection is the principle method of treatment. Our case illustrates a rare example of a liposarcoma of considerable size and a successful surgical removal with no complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Could be minimally invasive procedure even less invasive? Ultrasound-assisted endovascular abdominal aortic aneurysm repair in a patient with advanced chronic kidney disease.

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BACKGROUND: Endovascular aortic aneurysm repair (EVAR) is a minimally invasive procedure, alternative to classical open surgical aneurysm repair. However, the most commonly used conventional EVAR requires exposure to ionizing radiation and iodine contrast media administration that carries a risk of severe allergic reactions, renal injury or thyrotoxicosis. The necessity of iodine contrast agent usage may also preclude EVAR performance in patients with advanced renal failure. As a minimally invasive alternative to conventional EVAR appears intravascular ultrasound (IVUS) - guided EVAR.

CASE REPORT: A 69-year-old male patient with chronic kidney disease (CKD), ischaemic heart disease and hypertension was referred to our clinic owing to presence of abdominal aortic aneurysm (AAA) requiring urgent treatment. Due to CKD and inability to iodine contrast medium administration, and multiple comorbidities that caused major abdominal surgery under general anesthesia difficult, a decision was made to perform fully IVUS-guided EVAR. Using IVUS, there were accurately visualized the ostia of renal and internal iliac arteries. The stent-graft had been placed infrarenally and subsequent IVUS control confirmed correct implantation. The operation had proceeded without complications and the patient was discharged home 2 days following the operation.

CONCLUSIONS: IVUS-assisted EVAR appears as a safe and feasible treatment option for patients with AAA and CKD, allowing for reliable stent-graft positioning and implantation, eliminating the necessity of iodine contrast agent administration and diminishing ionizing radiation exposure.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Hepatocellular carcinoma in a patient with Alegillea Syndrome

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BACKGROUND: Hepatocellular carcinoma ist the most common type of the liver cancer, particullary associated with cirrhosis and HBV. Alegillea Syndrome is a rare genetic conditon with multiple clinical manifestation including liver malformations.

CASE REPORT: 48 year old male was treated with sorafenib due to the tumor, initially described as unresectable. Patient was transferred to the surgical ward. The patient complained only about pain located in the right upper quadrant of the abdomen, which manifested itseft with tendrness during abdominal palpation. Past medical history consists of aneurysm of the left sinus of Valsalva. A CT scan showed conglomeration of multiple lesions measured approximately 190x103mm in the liver. Additionally Alegille syndrome was confirmed by a genetic test. Right hemihepatectomy, cholecystectomy and resection of the right part of the diaphragm was performed due to the tumor infiltration. The recovery was complicated with dysphonia, diarrhea, bile fistula. After stabilization patient was discharged home in a good condition. On his last hospitalization, due to exacerbation of cardiac and nephrologic symptom, imaging study showed metastases, despite two additional TACE procedures of the remaining lesions. Conservative treatment was suggested as a part of paliative care.

CONCLUSIONS: Occurance of the hepatocellular carcinoma with Alegille syndrome without any contributory risk factors is a rare finding only described in 13 cases worldwide. Initially the patient was excluded from a surgery,but despite the massive size of the tumor and pathological stucture of the remaining part of the liver the operation was successful so it’s crucial to precisely determine whether tumor is operatable or not.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: How can nycturia save a life of two? Case series.

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BACKGROUND: Multiple endocrine neoplasia type 2A (MEN 2A) is inherited in an autosomal dominant pattern. To our knowledge, not more than 800 families diagnosed with this syndrome worldwide was reported up to date.

CASE REPORT: 63-year-old male suffering from nycturia was reffered to the CT-scan. Enlarged prostate gland and adrenal tumors were found. Man underwent bilateral adrenalectomy. Histopathology confirmed the pheochromocytoma. During hospitalization, the patient revealed that his 40-year-old brother and his 38-year-old sister died of a thyroid cancer. In the course of enhanced diagnosis, medullary thyroid carcinoma (MTC) was diagnosed and mutation in the RET gene was identified. Thyroidectomy was performed. Postoperative course was uneventful. Children of the patient were screened for genetic as well as thyroid and adrenal disorders. 17-year-old son of the man was found to be a carrier of mutation in the RET gene. Biopsy of lesions in a teenager's thyroid revealed MTC. Patient underwent a thyroidectomy. Two years after surgery, enlarged lymph nodes were identified at the neck ultrasonography. After a throughout assessment, extended neck dissecton was performed. Three years later, at the age of 22, man experienced MTC recurrence in a residual thyroid tissue. Patient was reoperated. The tumor measuring 0.5 cm was resected succesfully.

CONCLUSIONS: Father and his son was diagnosed with MEN 2A syndrome, what was confirmed by genetic analysis. The specific feature in that case is that pheochromocytoma of the father was diagnosed incidentally and was the cause of screening in family members. Succesful treatment was achieved through surgical therapy as well as subsequent follow-up.

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Anesthesiology and Surgery

Title: Insidious Abscess: An Unusual Case of Anorectal Melanoma Metastasis Misdiagnosed as Liver Abscess

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BACKGROUND: Melanoma, a severe form of skin cancer, can metastasize to various locations, including the liver. Anorectal melanoma is rare, accounting for only 4.8 cases per 10 million per year. However, metastases from anorectal melanoma can present with atypical features, leading to misdiagnosis, such as being mistaken for an abscess.

CASE REPORT: A 76-year-old woman with a history of anorectal melanoma and chronic diseases was admitted to the emergency room with suspicion of a liver abscess. Imaging and drainage were performed, revealing a thick-walled pocket in the liver. However, no bacterial culture was detected in the drained sample, and the patient was discharged with a drain in place. A few days later, the patient returned with persistent symptoms, and further imaging revealed a focal lesion with necrotic areas. Pathomorphological diagnosis confirmed metastasis from anorectal melanoma, as melanin-like pigment was present in the drained sample. The patient subsequently underwent right hemihepatectomy with cholecystectomy and was discharged in stable condition.

CONCLUSIONS: Unusual abscess morphology on imaging should be confirmed with additional tests such as MRI or histopathology to avoid misdiagnosis. Advanced metastases from melanoma can present with necrosis-like features, mimicking abscesses. A careful review of the patient's history, including past melanoma, is crucial in suspected abscess cases to ensure accurate diagnosis and appropriate management.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Knee in elbow – synthetic LARS ligament as another treatment technique of distal biceps brachii tendon rupture. A case report

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BACKGROUND: Distal biceps tendon rupture appears in 3-10% of all biceps trauma and is usually caused by excessive eccentric forearm extension. According to the literature, the gold standard treatment for such injury is allo- or autograft application, synthetic materials may be also considered. Two surgical techniques are preferred: anterior single-incision or dual-incision technique.

CASE REPORT: A 35-year-old smoking male, who takes steroids was admitted to the orthopaedic department for scheduled reinsertion of the left distal biceps tendon. The injury had appeared 3 weeks before admission during fight when the arm was in hyperextension. Patient reported pain during elbow flexion and manifested "Popeye deformity". Dual-incision technique was chosen. During surgery absence of distal biceps tendon was detected. Application of LARS ligament was performed. The implant was sewed on biceps muscle and attached to the tuberosity of the radial bone using two bone anchors. No postsurgical side effects were stated. Patient was discharged from hospital 3 days after admission and was ordered to use orthotic and game-ready manchette on left elbow joint. 2 weeks later, patient discounted recommendations and started to fully load the operated limb. 6 weeks after the surgery, the supination was reduced about 20% and 3 months after patient regained preinjury range of motion and strength in left arm.

CONCLUSIONS: In this case, follow-up shows that synthetic materials may be used as universal grafts, enabling patient quick return to full preinjury function and strength.

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Anesthesiology and Surgery

Title: Migration of the prothesis after endoscopic treatment of fistula after sleeve gastrectomy

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BACKGROUND: The most performed weight reduction procedure is sleeve gastrectomy [SG]. This method is relatively safe, however, severe complications occur in 5-10%, including leakage after LSG, accounting for 1-3% of patients undergoing the primary procedure. Leakage at the gastric anastomosis is one of the most serious complication, with a mortality rate of up to 15%.

CASE REPORT: A 42-year-old patient admitted on 04.11.2022 to the Department of General, Minimally Invasive and Elderly Surgery in Olsztyn because of an anastomotic leak after a sleeve gastrectomy performed 6 days earlier. He reported sudden severe left epigastric pain that spread throughout the abdominal cavity. Laboratory tests showed significantly elevated CRP, urea, creatinine and leukocytosis, abdominal CT showed an area of fluid with gas and free gas in the peritoneum. Laparoscopy with drainage of the peritoneal cavity and simultaneous insertion of a MEGA esophageal-gastric stent was performed. The postoperative period was uncomplicated. On 19.01.2023 the patient was admitted to the Department of General Surgery for removal of the gastric stent. Anabdominal X-ray showed the migration of stent into the intestine. It was scheduled for removal by colonoscopy on 08.03.2023, which proved unnecessary, as the patient excreted it entirely with feces.

CONCLUSIONS: Gastric anastomosisleakage is a life-threatening complication of bariatric surgery. A stent is a method of treating a leak. Its complication may be migration. The migrated stent can be excreted via the gastrointestinal tract.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: New hope for patients with pilonidal cyst - successful treatment with radial laser ablation in a pediatric patient.

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BACKGROUND: Pilonidal cyst is a chronic inflammatory condition that occurs due to infection of hair follicles in the sacrococcygeal area. It is common in men and is associated with risk factors such as deep gluteal crease, poor hygiene, sedentary lifestyle, obesity, and injuries. Treatment options include various surgical techniques or conservative treatment. The aim of these procedures is the destruction of the pilonidal sinus. An innovative technique with use of radial laser is also an option.

CASE REPORT: 16-year-old patient with a 12x3 cm pilonidal cyst was admitted to the Clinical Department of Pediatric Surgery and Urology in Wojewódzki Specjalistyczny Szpital Dziecięcy in Olsztyn. The cyst was treated with a radial laser under general anesthesia. The cyst cavity was curetted, removing a significant amount of hair and granulation tissue. The optical fiber was sequentially inserted into all 7 fistulas, an activated diode laser in the sinus tracts was gradually withdrawn and the entire cavity was ablated. Epilation of hair in the area was also carried out. The patient had no postoperative complications and was discharged in good condition. The wound healed without any complications, except for typical minor oozing. No reoccurrence or new symptoms had been observed in the three following months.

CONCLUSIONS: Laser ablation is a less invasive treatment option of pilonidal cyst, which offers a shorter healing time, less pain, and better cosmetic outcomes compared to surgical excision. Therefore, it should be considered when planning the treatment of pilonidal cyst.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Obturator hernia as a diagnostic challenge - case report

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BACKGROUND: Obturator hernia is a rarely diagnosed subgroup of hernias. It is located in the obturator foramen between the obturator externus and the pectineus muscles. Its early diagnosis is challenging since the signs and symptoms are non-specific.

CASE REPORT: A 80-year-old woman was admitted to the Emergency Department due to fainting and loss of consciousness. Medical examination and interview revealed bloating (2 weeks) and constipation (1 week), pain on palpation of the abdomen, especially in the hypogastrium; peritoneal symtoms were positive. Perforation of the small intestine and incarcerated obturator hernia were reveled in CT scan. Immediate surgical treatment was implemented. Laparotomy revealed the presence of fecal matter in the peritoneal cavity and incarcerated hernia. After finding the main source of problem, part of the ileum was resected and side-to-side mechanical anastomosis was performed. Six days after the primary operation, fecal matter was noted in the drain. The patient was reoperated due to anastomosis dehiscence, and a stoma was created. Because of poor general condition, the patient was intubated, then, after stabilization of the general condition, due to comorbidities treatment was continued in the internal medicine ward.

CONCLUSIONS: Despite its rarity, obturator hernia it is worth remembering. Its presence can be confirmed preoperatively by medical imaging, which is why it is often mistaken for an obstruction because it is not palpable nor visible. To avoid the high morbidity and mortality associated with this condition, it should be promptly diagnosed and treated.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Open surgery still useful in acute pancreatitis treatment?

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BACKGROUND: Acute pancreatitis is an inflammatory condition of the pancreas. In 80% acute pancreatitis has a mild course. Unfortunately 20% patients suffer from severe acute pancreatitis with mortality ranges from 10% to 50%. Despite progress in medicine has been made treatment results of this disease are still uncertain.

CASE REPORT: We present case of 37-year-old male patient admitted to the General Surgery Department because of acute pancreatitis. Initially he complained about stomachache and dyspnoea. Patient did not refer any other symptoms from the digestive system. Patient was treated according to step-up approach but his general condition got worse and operation was needed. During the operation necrotic tissue was removed and next open packing technique was used. Peritoneal lavage with pancreatic debridement was repeated many times until patient's general condition improved. Most of hospitalization patient spent in Intensive Care Unit because of multi organ failure. After four months of hospitalization, patient was discharged with the recommendation of the follow-up visits.

CONCLUSIONS: According to many studies the best results in treatment acute pancreatitis can be achieved by implementing step-up approach rule. Generally minimal invasive procedures have advantage over laparotomy. But in some cases only open procedures can give a chance for saving life.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Operate or observe? A case report of pectus carinatum and considerations for treatment options

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BACKGROUND: Pectus carinatum is a congenital deformity of the anterior chest wall. This defect is characterized by a protruding sternum with adjacent ends of the ribs, while further sections of the rib arches are sunken. The deformation occurs symmetrically or unilaterally, most often with a right-sided inclination of the sternum. Pigeon chest is usually diagnosed in adolescence when growth is accelerated. The deformity may show the first clinical symptoms at the age of 10. In most cases, patients are treated for aesthetic reasons. Clinical signs, if present, often represent only tenderness at the deformity site. Other symptoms are associated with decreased compliance of the chest.

CASE REPORT: A 16-year-old patient with an asymmetric pigeon chest deformity was admitted to the clinic on an elective basis for thoracoplasty of the anterior chest wall. Ravitch procedure was performed. Postoperatively the patient was respiratory and circulatory efficient, complained of pain 5/10, intensifying with breathing, and required analgesic treatment. It was recommended to avoid physical exertion for 180 days..A control X-ray was performed, showing emphysema of the soft tissues of the chest on the right side. The skin sutures were removed, the wound healed properly. The patient did not report any symptoms at discharge.

CONCLUSIONS: Pectus carinatum is a defect that can be treated conservatively, with corrective exercises or orthotic bracing. Depending on the severity of deformity, a decision may be made to perform surgery. The results of surgical treatment are satisfactory with a good cosmetic effect without clinically significant complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Perioperative respiratory acidosis: outcome of long laparoscopic surgery

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BACKGROUND: Long laparoscopic surgery can be challenging. The use of carbon dioxide (CO_2) to create and maintain a pneumoperitoneum during laparoscopic surgery may lead to hypercapnia and respiratory acidosis. Every possible cause of intraoperative hypercapnia should be considered to successfully lower CO_2 in patient's bloodstream.

CASE REPORT: A 54-year-old man with gastric cancer was hospitalized for laparoscopic gastrectomy and hyperthermic intraperitoneal chemotherapy (HIPEC). Before surgery the patient was evaluated for general anaesthesia: ASA class 3, mallampati class 2, concomitant diseases such as bronchial asthma and prostatic hyperplasia. To ensure invasive monitoring, analgesia, and administration of fluids during the surgery, certain procedures were completed: epidural, central venous, arterial catheterization, and esophageal temperature probe insertion. Combined epidural-general anaesthesia was applied. The surgery lasted for 11 hours, out of which 8 hours was spent on laparoscopy. During it, core temperature increase was present. Respiratory acidosis was identified after receival of arterial blood gas results (pH 7.24, pCO_2 56.9 mmHg). To lower CO_2, the patient was ventilated with adequate tidal volume and respiratory rate. In addition to this, CO_2 absorbent and ventilator's circuit were changed. After anaesthesia, the patient was conscious, responsive, breathing spontaneously with supplemental oxygen, hemodynamically stable. He was transferred to intensive care unit for monitoring. The patient recovered from respiratory acidosis one hour after the surgery.

CONCLUSIONS: Respiratory acidosis is a common acid-base imbalance, and it should be monitored during long and difficult surgeries such as laparoscopic gastrectomy with HIPEC when there is a high risk of increased CO_2 absorption.

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Anesthesiology and Surgery

Title: Reducing postoperative pain in Nuss procedure: cryolysis of intercostal nerves.

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BACKGROUND: Pectus excavatum is the most common congenital chest wall defect in which the sternum is depressed posteriorly. It typically affects males more than females and occurs in one in a thousand children. Symptoms can include chest wall discomfort, exercise intolerance, and tachycardia. The Nuss technique is a minimally invasive surgery used to correct the defect, but it can be associated with severe postoperative pain requiring strong analgesic treatment, including the use of strong opioids or epidural anaesthesia. Intraoperative cryolysis of intercostal nerves can reduce postoperative pain and analgesic requirements.

CASE REPORT: A 14-year-old boy with pectus excavatum was admitted to the hospital for thoracoplasty of the anterior chest wall using the Nuss procedure. In order to push the chest into a normal position, two curved metal bars were inserted behind the sternum. After the elevation of the sternum, cryolysis of the intercostal nerves was performed. Postoperative pain management on the first day included paracetamol and metamizole, lidocaine and morphine. On the second day of hospitalization, the patient needed paracetamol, metamizole and ketoprofen, and on the third day only ketoprofen. No epidural was required. On the NRS, the patient rated postoperative pain at 3 on average. On the fourth day after the operation, the patient was discharged home.

CONCLUSIONS: Intraoperative intercostal nerves cryolysis performed during the Nuss procedure is more effective in terms of acute pain management in relation to the routinely used multimodal analgesia, allowing for the shortening of the time of opioid use and hospitalisation time.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: SAGI BARIATRIC SURGERY AS A SALVAGE OPTION FOR FAILED SLEEVE GASTRECTOMY: A CASE REPORT

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BACKGROUND: Obesity is a major public health concern, and bariatric surgery has been shown to be an effective treatment option for severe obesity. However, some patients may require repeat surgeries due to inadequate weight loss or weight regain. Repeat bariatric surgeries are associated with a higher risk of complications, and careful patient selection and counseling are necessary.

CASE REPORT: We present the case of a 54-year-old female with schizophrenia, type 2 diabetes, and multiple comorbidities who underwent a repeat bariatric surgery in 2023. The patient had a previous sleeve gastrectomy in 2016 but did not achieve adequate weight loss. She underwent a single anastomosis gastric bypass/mini gastric bypass (SAGI) procedure, which was chosen as it has shown better weight loss results compared to sleeve gastrectomy. The patient's medication history was reviewed, and it was noted that some of her medications, including olanzapine and mianserin, may contribute to weight gain. She was enrolled in a multidisciplinary weight loss program (KOS-BAR) which includes dietary, physical activity, and psychological intervention.

CONCLUSIONS: Repeat bariatric surgery may be necessary for some patients with severe obesity who do not achieve adequate weight loss or experience weight regain after their initial surgery. SAGI is a viable option for these patients, but medication history should be taken into consideration. Multidisciplinary weight loss programs such as KOS-BAR can also play an important role in promoting long-term success. Careful patient selection and counseling are necessary for repeat bariatric surgeries due to the increased risk of complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Tracheal intubation with tracheoesophageal fistula: a case report

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BACKGROUND: Esophagotracheal fistulas (TEF) is a rare condition which represents an abnormal pathway between esophagus and tracheobronchial tree. The frequent causes of acquired TEF in pediatric population is ingestion of foreign bodies or complication of intubation. Most acquired TEF require surgical closure. The anatomic alterations cause problems with the airway management.

CASE REPORT: An 11 months old boy admitted to emergency department with abnormal breathing and choking. Anamnesis showed normal growing and development of the child. It is known, that seven days ago child swallowed a lithium battery, which was removed endoscopically. A chemical burn of the posterior wall of the upper third in the esophagus was found. The patient condition was monitored at home. During clinical examination tachypnea, gurgling sound, prolonged expiration, mild rib retractions and dried secretion under the nose were observed. CT scan showed a defect in the esophagus without a clear connection with the trachea. It was decided to intubate the patient before planned gastrostomy. Intubation was done by videolaryngoscope but the end of the tube went to the stomach through the fistula (CT scan showed higher fistula's position). As a result, intra-abdominal pressure increased and patient became desaturated. Correction of the tube position was performed with the prepared bronchoscope. The tube was placed under the fistula, which allowed effective ventilation. The patient remained stable after the procedures.

CONCLUSIONS: This case report shows that TEF could cause many challenges to maintain an airway ventilation. Additional preparation must be done to save the patient.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Tumor can hurt- case from the E. R.

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BACKGROUND: Lymphangioma is a rare benign tumor, most common in children. This tumor it cames from the venous vessels and is typically located in the skin, mucous membranes, as well as in the digestive and respiratory systems. The abdominal cavity is a rare localization of lymphoma, if it occurs, its most common location is the mesentery of the small intestine.

CASE REPORT: A 24-year-old male patient came to the Emergency Department with abdominal pain from few hours. The pain was located on the right side of epigastrum and periumbilical part of abdomen. Patient denied vomiting and nausea. The physical examination shows: intense epigastric abdominal pain and a positive Blumberg's sign. All laboratory tests are normal. Abdominal ultrasound shows fluid changes without effective peristalsis. X-ray with oral contrast showed the passage of the contrast into the rectum after 4 hours. CT scan shows polycystic tumor in mesentery of the small intestine in size 52x64x67mm and enlarged regional lymph nodes. Colonoscopy and gastroscopy showed no changes. The patient was qualified for surgery. The final diagnosis is based oh the histopathology result.

CONCLUSIONS: The common opinion that a tumor does not hurt is not always true. Malignant and benign tumors can cause different symptoms such as obstruction or acute peritonitis. Symptoms most often depend on the nature, size and location of the tumor.

17th Bialystok International Medical Congress for Young Scientists 2023

Anesthesiology and Surgery

Title: Unusual case of ruptured aneurysm of the left common iliac artery- stay suspicious!

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BACKGROUND: The aneurysm of the common iliac artery (CIA) is usually asymptomatic (65-70%). Rupture mostly causes acute onset of pain. This case study presents the unusual symptoms of CIA aneurysm rapture and the importance of physical examination.

CASE REPORT: 53-year-old male with hypertension, diabetes mellitus, and obesity came to the emergency department with pain in the lumbar spine, lower abdomen, and left lower limb lasting 6 hours. He was diagnosed with a urinary tract infection. Afterward, he received treatment. However, it failed to give any clinical improvement. After three days patient appeared in another hospital with severe symptoms. Upon thorough examination, the lack of a pulse in the left groin was observed. CT angiography (CTA) and the blood test results (low erythrocytes, hematocrit, and hemoglobin levels) confirmed CIA aneurysm rapture with massive hematoma in the retroperitoneal space. The patient was qualified for surgery: aorto-bi-iliac stent-graft implantation. The operation went without complications. However, during hospitalization swelling of the lower limb was noted (iliac vein compression syndrome) due to hematoma- thrombosis was excluded using CTA and Doppler ultrasound test. The patient was discharged from the hospital 7 days later in good general condition.

CONCLUSIONS: Pain in the lumbar spine and lower abdomen are unspecific symptoms of CIA aneurysm rupture. This case highlights the significance of keeping a high index of suspicion while confronting patients with risk factors. Rapid diagnosis and surgical intervention are crucial. Otherwise, severe complications can appear.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Case report: Cardiac arrest caused by an intraorbital foreign body

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BACKGROUND: Oculocardiac reflex is described as a sinus bradycardia caused by direct eyeball pressure which can result in a sudden cardiac arrest and apnoea. An intraorbital foreign body pressing the eyeball can trigger the reflex and if not treated quickly can lead to death.

CASE REPORT: A 58-year-old male was hospitalized after falling on his face while carrying firewood. He complained of nausea and severe pain in his right eye, right upper and lower eyelids were swollen and bleeding from the lacerations. During an ophthalmologic examination, the patient collapsed due to cardiac arrest. He was immediately intubated and resuscitated. Only after 4 minutes the spontaneous blood flow was successfully restored. Head computed tomography revealed a lateral orbital wall fracture and a retrobulbar foreign body that most likely triggered the oculocardiac reflex. He was kept intubated for a night. The next morning, a surgical procedure was performed in which a 4 cm piece of wood that had been pressing on the eyeball was successfully removed. After surgery, the patient's condition was stable, and repeated eye examinations revealed no significant findings. The patient was discharged from the hospital fully recovered.

CONCLUSIONS: The presented case highlights the importance of recognising orbital trauma as a possible cause of oculocardiac reflex. If head computed tomography had been performed earlier, the patient might have gone to surgery immediately, avoiding the life-threatening condition.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Coronary MICROvascular disease with MAXImum treatment effects.

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BACKGROUND: Coronary microvascular disease (CMD) is a type of chronic coronary artery disease (CAD) with a microvascular dysfunction origin. CMD is a heart disease that affects the walls and inner lining of minute coronary artery blood vessels. It occurs due to blood vessel damage or malfunction of the smallest blood vessels.

CASE REPORT: A 74-year-old woman with a history of a 10-year long recurrent chest pain with dyspnoe at excertion was admitted to a cardiology department. In 2021 Coronary Computed Tomography Angiography (CCTA) proved no significant stenoses and echocardiography was without any abnormalities. During the current hospitalization, the patient underwent a coronary angiography of the coronary arteries, which was within norm. Functional assessment of microcirculation was performed in the left anterior descending artery using 140mcg/kg/min of adenosine. The results were: fractional flow reserve (FFR): 0.87, coronary flow reserve (CFR): 2.6, index of microcirculatory resistance (IMR): 33. During acetylcholine (ACh)-provocation test after infusion of 100 µg of ACh, chest pain occurred within 2 seconds and decreased flow in LAD was visible. Diagnosis was clear: mixed type of CMD, therefore the patient received individualized pharmacological treatment. After a few days, the invasive diagnostic test was repeated with significant increasing FFR. Now the patient feels well and had no chest pain on exertion or at rest.

CONCLUSIONS: Use of microcirculation analysis an extension of standard coronary angiography can confirm microcirculatory dysfunction. So, it possible to identify high-risk patients and introduce specialist care and prevent complications of CCS.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Coronary vasospasm resulting in myocardial infarction – a case report

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BACKGROUND: 6-8% of patients with acute myocardial infarction (MI) have no significant lesions in the coronary arteries. MI with non-obstructive coronary arteries (MINOCA) is more likely to occur in women and in young patients with non-ST-segment elevation MI. MINOCA might be caused by coronary vasospasm or microvascular disfunction. MINOCA is associated with an increased risk of adverse clinical events, thus must be properly treated.

CASE REPORT: A 49-year-old female with a history of hypertension, nicotine use and family history of MI was admitted to the Cardiology Department with anginal chest pain at rest and elevated high-sensitivity Troponin I level. Electrocardiography (ECG) showed ST-segment elevation in leads II, III, aVF, V4-V6. Coronary angiography detected no significant lesions in the coronary arteries. During the procedure, previously described ST-segment elevation was not observed. Optical coherence tomography revealed early stage of coronary artery disease. Echocardiography found normal systolic and diastolic function of the left ventricle. Intracoronary acetylcholine provocation testing induced anginal chest pain, ST-segment elevation and vasospasm of the anterior descending branch of the left coronary artery, thus confirmed that underlying cause of MINOCA was a coronary vasospasm. Pharmacotherapy with a dihydropyridine calcium channel blocker, an angiotensin-converting-enzyme inhibitor and a statin as well as dual antiplatelet therapy was started.

CONCLUSIONS: MINOCA should be considered as a differential diagnosis in patients with MI, especially in young smoking women. In the absence of significant lesions in the coronary arteries, further intracoronary tests can recognize the underlying cause of MINOCA. A diagnosis must be followed by initiation of appropriate therapy.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Large effects of a small pacemaker. Iatrogenic post-cardiac injury syndrome in a 33-year-old female patient with a classical and then leadless pacemaker - a case report

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BACKGROUND: Pericardial effusion occurs in up to 10% of patients undergoing pacemaker implantation. The most common causes are myocardial damage by the lead resulting in severe cases, cardiac tamponade. In rare cases, fluid in the pericardium is the result of iatrogenic post-cardiac injury syndrome (PCIS).

CASE REPORT: 33-year-old patient with paroxysmal second degree atrioventricular block was implanted with a dual-chamber classic pacemaker. After the procedure, the patient developed perforation of the right ventricular wall and cardiac tamponade. Pericardiocentesis was performed, and the lead was replaced. One month later, the patient developed PCIS manifested by complaints of chest pain, increased inflammatory markers and fluid in the pleural cavities and pericardium with necessity for decompression of the left pleura. Treatment included colchicine, glucocorticosteroids, and anti-inflammatory drugs. A month later, the patient was hospitalized again - diagnosed with cardiac device-related endocarditis. The entire pacing system was removed, and after antibiotic therapy, the patient was implanted with a Micra- electrodeless pacemaker. In further course, recurrence of PCIS syndrome. Colchicine and anti-inflammatory drugs were restarted. After six months of treatment the aforementioned drugs were discontinued. In further follow-up lasting 24 months, the patient without complications, stable pacemaker parameters.

CONCLUSIONS: PCIS can occur following implantation of both classical and electrodeless pacemaker. Its components may include massive pain in the chest, pleural and pericardial effusion and an increase in inflammatory markers. Such a condition needs to be differentiated from tamponade resulting from perforation of the heart wall.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Post-traumatic mitral regurgitation in the mechanism of chordae tendineae rupture

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BACKGROUND: Chordae tendineae rupture is a rare complication of blunt chest trauma and may lead to mitral valve prolapse syndrome, which can quickly lead to pulmonary edema and cardiogenic shock. For this reason, swift hemodynamic stabilization and corrective surgery are crucial.

CASE REPORT: An unconscious 62-year-old patient in a life-threatening condition after blunt chest trauma was admitted to the district hospital, where a CT scan visualized 2,0-2,5 cm of excess fluid in the pericardial sac, confirmed in ECHO. Pericardiocentesis was performed, draining 700 ml of blood. The patient was transported to the specialized department, where the tamponade was decompressed again, obtaining 100 ml of blood. Intraoperative TEE confirmed decompression of cardiac tamponade and showed significant MR, PISA 7mm, EROA 0.3 cm2, Vreg 50ml. After decompression, the patient regained consciousness, spontaneous breathing, BP 120/60 mmHg, and HR 70/min. The postoperative echo examination revealed an EF of approx. 60% and severe MR due to chordae tendineous rupture, which lead to posterior MV leaflet prolapse with severe eccentric regurgitation directed under the anterior leaflet, gradient of 5.3/1.5 mmHg, Vmax of 1.1 m/s, as well as enlarged 5.3x5.5 cm LV.

CONCLUSIONS: The mitral regurgitation was caused by excessive mobility of the valve leaflets due to chordal rupture caused by blunt force trauma to the chest. MR in this mechanism can be missed and become a serious life threat in the future therefore should always be considered in cases of chest trauma and treated accordingly.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Severe complications after inappropriate peri-operative patient management

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BACKGROUND: Approximately 25% of patients on anticoagulation therapy will require a surgical procedure within 2 years. Maintenance of INR is essential for patients with mechanical valve prosthesis. Minor invasive procedures and those where bleeding is easily controlled can be performed without VKA interruption and heparin bridging is not recommended.

CASE REPORT: 24-year-old man with mechanical prosthesis implanted due to bicuspid aortic valve regurgitation, anticoagulated with warfarin, stopped VKA 4 days prior to a tooth extraction. Heparin bridge therapy was not implemented. The patient presented to a district hospital with interscapular pain and dyspnoea. Because of suspected thrombus in LVOT he was transferred to the Cardiology Department in Bialystok. Lab tests revealed non-therapeutic INR, elevated NT-proBNP, and significantly elevated troponin levels. Segmental wall motion abnormalities and thrombi on the mechanical valve were confirmed in echocardiography. CT coronary angiogram showed no atherosclerosis, however soft tissue lesion causing significant stenosis of the distal circumflex artery was present. Pulmonary embolism was excluded. Double- anticoagulation and antiplatelet therapy was implemented. After 9 days of hospitalization the patient was discharged home.

CONCLUSIONS: Inappropriate patient management before surgery – unnecessary warfarin discontinuation in a patient with a mechanical aortic valve before a low-risk bleeding procedure such as tooth extraction – can cause life-threatening complications. Moreover, decisions to modify anticoagulation treatment should only be made after a cardiological consultation. Before minor procedures with low bleeding risk VKA treatment should be continued and INR should be maintained at the lower level of the therapeutic range.

17th Bialystok International Medical Congress for Young Scientists 2023

Cardiology

Title: Valve-in-valve TAVR using BASILICA technique and cerebral protection in a patient with severe dysfunction of the aortic bioprosthesis

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BACKGROUND: Transcatheter aortic valve replacement (TAVR) is a suitable option for degenerated surgical bioprosthetic valves. ViV (valve-in-valve) TAVR is associated both with a higher stroke risk and an increased risk of coronary occlusion.

CASE REPORT: A 66-year-old man after the mini-Bentall procedure with severe dysfunction of the aortic bioprosthesis was admitted to the cardiology department due to exacerbation of chronic heart failure to NYHA class III. Transthoracic echocardiography (TTE) revealed global hypokinesis of the left ventricle (ejection fraction 35%), severe stenosis and moderate regurgitation of the aortic bioprosthesis. Considering the high perioperative risk and high risk of coronary occlusion (a virtual transcatheter heart valve-coronary distance to the left coronary artery of only 4.6 mm), the patient was qualified for ViV TAVR using BASILICA technique (Bioprosthetic or Native Aortic Scallop Intentional Laceration to Prevent Iatrogenic Coronary Artery Obstruction) to prevent coronary occlusion and SENTINEL cerebral protection device. The bioprosthesis was implanted with no blood flow obstruction in the coronary arteries. Aortography and TOE showed no evidence of paravalvular leakage. Small embolic debris were found in the filters. There were no conduction problems after the procedure. At the 2-month follow-up, the patient's condition improved to NYHA class I/II. TTE showed an improvement of left ventricle systolic function (EF 48%) and appropriate function of the bioprosthetic valve.

CONCLUSIONS: Our report supports the efficacy and safety of ViV TAVR in patients with low coronary ostia, if both cerebral protection and BASILICA technique are applied.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: A 31-Year-Old Woman in the 12th Week of Live Cervical Pregnancy

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BACKGROUND: Cervical pregnancy is one of the rarest types of ectopic pregnancy. It occurs with a frequency of 1:1000 - 1:18000 pregnancies. It comes about when a fertilized egg is implanted in the cervical canal. Symptoms of cervical pregnancy are vaginal bleeding or abdominal pain. Diagnosis is based on transvaginal ultrasound in the first trimester pregnancy.

CASE REPORT: A 31-year-old female patient in the 12th week of pregnancy was admitted to the Department of Obstetrics and Gynecology due to persistent vaginal spotting for 7 days. The patient had never given birth before, nor had she miscarried. Ultrasonography on admission showed the presence of a fetus in the cervix. The fetal heartbeat was confirmed and the CRL was 56 mm. After performing diagnostic tests, it was decided to administer a 15% KCl solution and methotrexate to the chorion via transcervical ultrasound guidance. The follow-up examination after the procedure showed no fetal heart activity. Due to the lack of spontaneous abortion of the dead cervical pregnancy and the patient's refusal to hysterectomy, it was decided to embolize the uterine arteries and to curettage of the cervical canal. The process was uneventful, and the patient was discharged home in good general condition.

CONCLUSIONS: Cervical pregnancy is associated with an elevated risk of uterine hemorrhage, especially in cases of late diagnosis. In patients who have not completed procreation, we should place special emphasis on minimally invasive treatment in order to preserve their fertility.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: A case of amatoxin poisoning resulting in liver and renal damage

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BACKGROUND: More than 90% of all fatal mushroom poisonings worldwide are due to amatoxin containing species. Initial symptoms of abdominal cramps, vomiting, and a severe watery diarrhea generally do not manifest until six to eight hours following ingestion and can be followed by renal and hepatic failure. Outcomes range from complete recovery to fulminant organ failure and death.

CASE REPORT: A 44-year-old man came to the ER complaining of headache, abdominal pain, myalgia, fatigue and nausea. The symptoms manifested after consuming beer and mushrooms, that he had picked himself. Blood tests showed elevated serum creatinine, urea, liver transaminases and electrolyte imbalance. Due to suspected amatoxin poisoning, the patient was hospitalized and antidote treatment with benzylpenicillin and fluid therapy were started. Due to deteriorating liver function and compensated metabolic acidosis without hypoxemia, additional treatment of lactulose and prophylaxis of stress ulcers and thrombosis were prescribed. When vital functions stabilized, the patient received aggresive infusotherapy, silymarin and supplementary nutritional therapy for hypoproteinemia. During hospitalization Clostridioides difficile toxin A was found therefore the patient was put on oral Vancomycin. Despite the prescribed treatment, the progression of acute kidney injury was observed therefore it was decided to start urgent hemodialysis.

CONCLUSIONS: Our case points out the importance of considering mushroom poisoning as a potential cause of acute liver and kidney failure. Also, the case highlights the importance to consider the possibility of rare complications of amatoxin intoxication in order to be able to respond to them early and adequately.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: A RARE CASE OF HAEMORRHAGIC RADIATION PROCTITIS

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BACKGROUND: Haemorrhagic radiation proctitis is a rare late complication caused by radiotherapy for oncology located in the pelvic region. It is the result of radiation induced atrophy of the rectal epithelium, loss of stem cells and fibrosis associated with obliterative endarteritis. Radiation also impairs the formation of new blood vessels, which causes chronic mucosal ischaemia and may predispose the affected area of the colon to bleed.

CASE REPORT: A 94-year-old female patient was referred by a gynaecologist for an urgent gastroenterologist consultation due to rectal bleeding that has been ongoing for 2 months. It is known that the patient was diagnosed with a squamous cell vaginal cancer in 2021 and received radiotherapy and brachytherapy for 4 months. The patient complained of bloody stools and pain in the rectal area. During a digital rectal exam, fresh blood was found and blood tests showed mild anaemia with haemoglobin at 101 g/L. To determine the cause of the bleeding, a colonoscopy was performed and damage to the mucosa of the distal part of the rectum was observed. It was determined that the findings are consistent with haemorrhagic radiation proctitis. No other pathology was detected. The endoscopic findings were evaluated and mesalazine suppositories twice daily were prescribed with a follow-up visit scheduled after one month of treatment.

CONCLUSIONS: This clinical case presents a 94-year-old female patient diagnosed with a rare complication: haemorrhagic radiation proctitis. This case underlines the significance of late, radiotherapy induced, complications, the importance of well-timed diagnosis to prevent life-threatening complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Atrial fibrillation and hematuria in patient with acute pyelonephritis- a cascade of adverse drug reactions.

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BACKGROUND: Indapamide and Rivaroxaban are drugs commonly used in internal medicine worldwide. Such side effects as electrolyte imbalance like hyponatremia or hypokalemia due to Indapamide intake or bloody stools and anemia caused by Rivaroxaban are widely observed in many hospital departments. However, rare adverse reactions like atrial fibrillation and hematuria caused by two different drugs may be an interesting clinical finding.

CASE REPORT: A 63- year- old woman was presented to Department of Nephrology, Medical University of Lublin due to abdominal and lower back pain in March 2023. The medical history included hypertension and hypothyroidism, treated with Indapamide and Levothyroxine. CT examination showed pathological lesions responding to acute pyelonephritis. Before hospitalization first episode of atrial fibrillation was observed. The rivaroxaban was commissioned. After the initiation of Rivaroxaban treatment the patient reported an episode of hematuria. During hospitalization the patient was diagnosed with hypokalemia caused by Indapamide and bleeding due to Rivaroxaban. Indapamide has been discontiuned, Rivaroxaban was changed to Enoxaparin. Hypokalemia, atrial fibrillation and hematuria were no longer observed. The patient was discharged of hospitalization at good condition, also never since then any similar disorders have been reported.

CONCLUSIONS: Incorrect selection of a drug and its side effects may lead to a cascade of negative reactions. The appropriate choice of medications and precise examination is crucial to reduce the risk of complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Beyond the Pituitary: Ectopic Cushing's Syndrome

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BACKGROUND: Cushing’s syndrome is caused by increased levels of glucocorticosteroids in the blood. Ectopic Cushing syndrome (ECS) is a paraneoplastic disorder with the ectopic secretion of adrenocorticotropic hormone (ACTH) resulting in hypercortisolism, commonly associated with small-cell lung cancer.

CASE REPORT: A 59-year-old woman presented with hypertension, pre-diabetes, and hypokalemia (1,2 mmol/l). She reported insomnia, hyperglycemia, and rapid weight loss. Abdominal ultrasonography revealed metastatic liver lesions. CT imaging of the chest, abdomen, and pelvis showed a solid mediastinal tumor extending from the aortic arch level to the eighth thoracic vertebrae level, and liver nodules. MRI of the brain and pituitary gland were normal. The patient received potassium supplementation for hypokalemia, but cortisol excess was suspected due to refractory hypokalemia. A plasma cortisol level test revealed elevated cortisol with an upward trend. A CRH stimulation test confirmed ectopic hypercortisolism. Liver biopsy demonstrated small-cell lung carcinoma. Etomidate was used to treat hypercortisolism and combined with osilodrostat to normalize cortisol levels and blood pressure. The patient was referred for oncological treatment.

CONCLUSIONS: It is crucial to remember that not only the neuroendocrine tumors originating in the pituitary gland can exceed the ACTH level, but also the ones located in lungs or other organs. Differentiate between these two types to establish better management. Moreover, it is really important to start the treatment as fast as possible to avoid Cushing’s complications but analyzing the long-term outcome of ECS is challenging due to significant variations in underlying etiology and high mortality rates associated with tumors.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Clinically active ectopic adenoma of the parathyroid gland in young patient - case report

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BACKGROUND: One of the causes of hypercalcemia is the presence of a hormonally active parathyroid tumor secreting parathyroid hormone. Hormonally active tumors affect the calcium-phosphate metabolism and are the cause of osteolysis, which has a real impact on the quality of life. Primary hyperparathyroidism is a rare disease - diagnosed with a frequency of 30/10,000 in the general population. Primary hyperparathyroidism may occur in complex syndromes such as MEN 1 and MEN 2A. The most common causes of primary hyperparathyroidism are parathyroid adenomas, parathyroid hyperplasia or parathyroid carcinoma.

CASE REPORT: A 27-year-old female patient was admitted to the hospital due to increasing weakness, weight loss, headaches and osteoarticular pains. Laboratory tests showed hypercalcemia and significantly elevated PTH concentration - 1787 pg/ml (N 12.0-65.0 pg/ml). Ultrasonography of the neck revealed a round, solid tumor located below the lower pole of the right lobe of the thyroid gland. Subtraction parathyroid scintigraphy with Tc-99m MIBI showed an ectopic parathyroid adenoma. The patient was qualified for surgery, during which complete resection of the tumor was performed. The patient was completely cured.

CONCLUSIONS: The most common cause of hyperparathyroidism are adenomas. Subtraction scintigraphy with the radioactive element Tc99m MIBI is the gold diagnostic standard for parathyroid tumors. This technique allows to determine the exact location of ectopic tumors and to mark the scope of the surgical procedure.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Colorectal and endometrial carcinoma in a patient with Lynch syndrome: a case report.

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BACKGROUND: Lynch syndrome is caused by germline mutations in mismatch repair genes. The syndrome is inherited as an autosomal dominant disorder. Patients suffering from this syndrome have an increased risk of colorectal (CRC), endometrial (EC) and other malignancies. 3% of all CRC and 2% of all EC are related to Lynch syndrome.

CASE REPORT: Here we present a case of a 44-year old woman who at the age of 36 developed CRC. Her family history was positive for CRC, as her father developed this malignancy at the age of 43. Left hemicolectomy was performed. The patient relapsed twice within a year. At the age of 42 the patient noticed heavy menstrual bleeding. Endometrial biopsy confirmed endometrial cancer. The patient underwent hysterectomy and salpingo-oophorectomy. Eight months later, EC recurrence appeared as a control CT scan revealed enlarged external iliac lymph nodes. The next generation sequencing (NGS) test of a peripheral blood sample detected the pathogenic c.350C>T mutation of the MLH1 gene, confirming Lynch syndrome. Molecular profiling of tumor tissue demonstrated deficit in mismatch-repair proteins (dMMR). The patient underwent chemotherapy based on carboplatin and paclitaxel. The residual disease was partially removed by surgery. The patient is currently followed-up by imaging studies. In case of relapse she will be qualified for immunotherapy.

CONCLUSIONS: Early-age onset and positive family history suggest genetic inheritance of endometrial cancer. NGS testing and genetic counselling is important to detect Lynch syndrome and offer risk-reducing hysterectomy and salpingo-oophorectomy. Tumors that develop in the course of Lynch syndrome are susceptible to immunotherapy.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Conservative treatment of STEMI due to the contraindications and severe COVID-19 infection, based on the case report

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BACKGROUND: An ST-segment elevation myocardial infarction (STEMI) is one of the acute coronary syndromes, defined as sudden ischaemia of the heart muscle. The most common cause of STEMI is the abrupt cessation in coronary artery blood flow based on pre-existing atherosclerosis. Percutaneous coronary intervention (PCI) remains the gold standard for patients with STEMI. In some cases, due to contraindications, only conservative treatment is possible.

CASE REPORT: A 78-year-old woman with the history of heart failure, type 2 diabetes mellitus, obesity, hypertension, chronic renal disease, several myocardial infarctions, anaemia and thrombocytopenia in the course of myelodysplastic syndrome was admitted to Department of Internal Medicine and Hypertension because of chest pain, shortness of breath and cough. In the Emergency Unit COVID-19 infection was confirmed, as well as STEMI was diagnosed. An invasive cardiologist, because of serious thrombocytopenia, qualified the patient for conservative treatment, including fondaparinux, statin, nitroglycerin infusion and beta blocker. Due to the severe course of COVID-19 infection oxygen therapy and pharmacotherapy were implemented. During hospitalization, an episode of atrial fibrillation occurred. Considering the risk of haemorrhage apixaban was recommended, without an antiplatelet agent. The patient was discharged in general good condition.

CONCLUSIONS: On account of high bleeding risk the patient was disqualified from invasive treatment. Reperfusion therapy involves PCI, which should be performed within 120 minutes from the diagnosis of STEMI. Other methods include coronary artery bypass grafting and fibrinolytics. Due to the increased risk of complications, conservative treatment was applied, resulting in a significant improvement of the patient’s condition, despite unexpected new incidents.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Does every seizure in a pregnant woman equals eclampsia? A case report

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BACKGROUND: Subarachnoid haemorrhage (SAH) in pregnancy is a rare condition that can occur during pregnancy, at delivery and in the postpartum period. It is a potentially life-threatening event with a risk of complications for the mother and the baby. It is characterised by the sudden onset of severe headache accompanied by vomiting and focal neurological deficits or meningeal symptoms. Initial symptoms may resemble eclampsia or pre-eclampsia.

CASE REPORT: A 29-year-old woman with twin dichorionic pregnancy, gestational cholestasis and anaemia, admitted to the gynaecology-obstetrics clinical ward of the Regional Specialist Hospital in Olsztyn on 8.02.2023 for cesarean delivery at 36 weeks. The patient was suspected of endangered postoperative complicated eclampsia. After delivery patient had an elevated blood pressure, received antyhipertensive treatmend, yet she had a seizure. A postnatal CT scan showed the presence of a Fisher grade III subarachnoid haemorrhage. A magnetic resonance imaging scan showed the presence of trace amounts of blood in the cerebral grooves on the clypeus of the left hemisphere, with a localised zone of cerebral oedema. A follow-up CT scan at 12 days postpartum visualised a significant reduction in blood volume in the subarachnoid space without features of cerebral vasospasm. Hypotensive treatment and antiepileptic treatment were administered during the ward stay. Anti-D-Rh immunoglobulin was administered. The patient's clinical condition is satisfactory and stable.

CONCLUSIONS: SAH in women is not necessarily accompanied by cerebral aneurysm extravasation. It is the most common cause, but we have a variety of cases that do not necessarily present with the typical symptoms of SAH.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: How can we manage an esophageal variceal hemorrhage? - A Case report

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BACKGROUND: Background: In September 2022 the new guideline for Endoscopic diagnosis and management of esophagogastric variceal hemorrhage has been published by the European Society of Gastrointestinal Endoscopy (ESGE). It contains valid data and important recommendation - one of the main recommendations: “patients with compensated advanced chronic liver disease (due to viruses, alcohol, and/or nonobese [BMI < 30 kg/m2] nonalcoholic steatohepatitis) and clinically significant portal hypertension (hepatic venous pressure gradient [HVPG] > 10mmHg and/or liver stiffness by transient elastography > 25 kPa) should receive, if no contraindications, nonselective beta blocker therapy to prevent the development of variceal bleeding.” Based on this case report it will be presented those new managements of esophagogastric variceal hemorrhage.

CASE REPORT: Case Report: A 56-year-old patient was admitted to the emergency ward due to suspected upper gastrointestinal bleeding (UGIB). In anamnesis: weakness, tarry stools, vomit and nausea, epigastric pain, abdominal enlargement, alcohol abuse, liver cirrhosis. The patient had a history of bleeding episodes from esophageal varices that were successfully treated. Urgently an gastrointestinal endoscopy was performed and endoscopic variceal ligation (EVL). In future hospitalization another EVL procedure was planned. The patient was discharged home with directions and prescriptions.

CONCLUSIONS: Conclusion: The UGIB is a very common condition, it occurs in approximately 80% of all hospitalizations of gastrointestinal bleeding. On this account it is crucial for doctors from every specialty to learn how to proceed to help our patients.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: How to remove 18-cm long wires drom digestive tract? - a case report

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BACKGROUND: According to Szczeklik's Internal Medicine foreign body ingestion is a frequent condition, with the majority (up to 90%) of foreign bodies (FBs) tending to spontaneously proceed along the gastrointestinal tract without any major complications. Nowadays wide range of procedures are available to remove FBs; however, a real challenge is managing sharp and long foreign objects, which are related to higher rates of complications

CASE REPORT: In August 2022 a 48-year-old man with symptoms of acute abdomen was admitted to Gastroenterology Ward in WSS Olsztyn. 18 years ago while the patient was in prison, he intentionally swallowed metalic rods wrapped in plastic foil. The foreign body had migrated to stomach where it was stranded, causing a high risk of perforation. Urgently an gastrointestinal endoscopy was performed and FB was removed. According to ESGE the endoscopic technique is the best available diagnostic and therapeutic method in cases of swallowing a foreign body in the upper part of the digestive tract. It is effective in 95% of cases and has a complication rate of 0-5%.

CONCLUSIONS: Then again a risk of perforation of digestive tract is still very high. Based on this case I would like to analyse a full procedure of dealing with a foreign body ingestion as a general practitioner. What we, future specialist, should do to guarantee our patients a full recovery.

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Internal diseases I + Gynecology

Title: Primary plasma cell leukaemia with extraosseous involvement in the abdominal cavity. Description of case.

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BACKGROUND: Plasma cell leukaemia (PCL) is a rare and aggressive form of plasma cell dyscrasia. It can arise de novo (primary-PCL) or develop from pre-existing multiple myeloma (secondary-PCL). The incidence ranges between 0.4-2.4 cases per million individuals. PCL is diagnosed after detecting a circulating plasma cell count of at least 5% of peripheral leukocytes. We highlight a rare pPCL case with extraosseous involvement in the abdominal cavity.

CASE REPORT: 69-years-old male with a history of polymyalgia rheumatica was admitted to the hospital with an abnormal complete blood count, general weakness, weight loss and ostealgia. Laboratory tests revealed: leucocytosis, normocytic anemia, and thrombocytopenia. Furthermore, 10% of abnormal plasmacytes were found among circulating white blood cells. The patient initially responded to VTD (bortezomib-thalidomide-dexamethasone) therapy with further plans for autologous stem cell transplantation, but after two months patient began to complain about intense visceral pain. Computed tomography revealed enlarged celiac and periaortic nodes. Histopathological analysis of abdominal biopsy was performed, revealing a CD138, CD56, KI-67 positive, and CD20 negative cell population confirming the presence of pPCL infiltration. The patient began daratumumab therapy and is currently still hospitalized.

CONCLUSIONS: In this case report, we highlight a case of pPCL, one of the rarest neoplasia of the hematopoietic system. Besides the involvement of the bone marrow and the peripheral blood, the involvement of the other internal organs must also be considered. Physicians should carefully evaluate any signs of extraosseous progression of PCL because areas such as the abdominal cavity may also be affected.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Risk factors and course of the disease in Hepatitis Delta Virus positive patients – case series

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BACKGROUND: Hepatitis Delta Virus (HDV) causes the most aggressive and rapidly progressive form of viral hepatitis. The virus spreads only among individuals previously infected with HBV. HBV-HDV super-infected patients are at higher risk of developing severe hepatitis due to the spread of HDV and aggravation of pre-existing liver illness. This case series include 6 patients who were first confirmed with HBV infection and later diagnosed with HDV through examination.

CASE REPORT: We describe 6 middle-aged hepatitis D patients, 4 male and 2 females. Four patients already had an advanced level of liver fibrosis (F3 or higher) before starting treatment and one of them needed a liver transplant. Each of the patient underwent a HBV treatment which resulted in undetectable level of HBV DNA in 5 cases. One of the patients is in constant contact with the transplant center after completing a treatment of HBV infection due to liver cirrhosis. ALT levels in HDV patients were exceeding normal range in half of the cases. Among infected patients one of them has history of intravenous drug administration. Apart from that no risk factors have been identified that may favor in HDV infection.

CONCLUSIONS: Our findings fit with the theory that HDV is the most progressive form of chronic viral hepatitis and very often proceeds towards cirrhosis and liver decompensation. Out of the group of six infected patients, two of them demanded liver transplant and four of them presented high levels of fibrosis.

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Internal diseases I + Gynecology

Title: Thirsty for Answers: Uncovering Central Diabetes Insipidus in a Type 1 Diabetic- a case report.

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BACKGROUND: The prevalence of autoimmune diseases has been on the rise, with a current estimated incidence of 3-5% in the general population. Autoimmune polyendocrine syndromes (APS) are rare and complex disorders. Type 3 APS involves autoimmune thyroid disease, type 1 diabetes, and various other autoimmune conditions, excluding Addison's disease and hypoparathyroidism.

CASE REPORT: A 23-year-old female with a longstanding history of type 1 diabetes and chronic autoimmune thyroiditis was admitted to the hospital due to weakness, fatigue, polydipsia, and polyuria that were not associated with glycemic control and had been present for the past year. The patient had previously received thyrostatics for hyperthyroidism symptoms, which were discontinued due to hypothyroidism (TSH of 51.9 IU/ul). Imaging and Laboratory tests revealed Hashitoxicosis, and a water deprivation test confirmed central diabetes insipidus, along with an MRI showing asymmetry of the pituitary stalk. Desmopressin effectively treated the symptoms and normalized laboratory test results. However, the patient was readmitted due to the recurrence of symptoms in the form of polydipsia with polyuria and vomiting unrelated to meals. Further evaluation revealed secondary adrenal insufficiency, and the patient was started on substitution treatment with hydrocortisone. The dose of desmopressin was increased, and improvement was achieved.

CONCLUSIONS: This case report highlights the significance of monitoring patients with autoimmune diseases that can occur in APS syndromes and conducting additional diagnostics for patients with type 1 diabetes who experience polydipsia and polyuria despite adequate glycemic control. It emphasizes the complexity of autoimmune polyendocrine syndromes and the need for personalized treatment strategies.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal diseases I + Gynecology

Title: Thyroid crisis as a consequence of the lack of treatment for hyperthyroidism in a 19-year-old female patient

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BACKGROUND: Thyroid crisis is a state of metabolic decompensation of the body caused by excess thyroid hormones. Thyroid crisis is caused by precipiating factors with hyperthyroidism. Trigger factors include: abrupt discontinuation of antithyroid medicine, thyroid surgery, trauma, acute illnes like infection, diabetic ketoacidosis, cardiovascular accident, drug reactions, medication side effect

CASE REPORT: The 19 years old patient came with complaints of decreased consciousness accompanied by fever, exophthalmos, hot flushes and anxiety. Complaints of frequent sweating, heart palpitations and shaking of the fingers are found. The interview shows that the patient came to the doctor one year before and got antithyroid medications but she has not taken them regularly. Physical examination showed tachycardia and tachypnone. Laboratory tests showed hyponatremia, decreased TSH and elevated free T4. The patient was treated with infusion of NaCl 0,9%, Meropenem, Paracetamol, Pantoprazole, Hydrocortisone and Propranolol The patient experienced an improvement in consciousness after being treated in the room, she was discharged home in good general condition.

CONCLUSIONS: Untreated hyperthyroidism carries a high risk of developing a thyroid crisis and thus the risk of death. The patient's first suggestive symptom was exophthalmos, with which the patient turned to the doctor and was given antithyroid treatment. Due to non-compliance with the rules of treatment, the patient developed hyperthyroidism, which caused a thyroid crisis.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: “Double diabetes” - presentation of an obese patient with type 1 diabetes

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BACKGROUND: The prevalence of obesity has risen among patients with type 1 diabetes (DM1). The term “double diabetes” considers coexistence of autoimmune diabetes with obesity and insulin resistance, what promotes micro- and macrovascular complications.

CASE REPORT: A 55-year-old women with a 30-year history of DM1 treated with intensive insulin therapy (96 IU/day), complicated by nephropathy with hypertension and proliferative retinopathy, was admitted to the Department due to weight gain and uncontrolled diabetes. Physical examination revealed body mass index of 43kg/m2 and acanthosis nigricans on the neck and axillas. Laboratory tests showed HbA1c of 7.1%, hyperglycemia, C-peptide level <0.03 ng/ml, hypercholesterolemia, microalbuminuria, and hyperuricemia. Analysis of glucose monitoring system revealed time in range - 60%, time in hyperglycemia - 25%. Abdominal CT showed liver steatosis. Additional tests showed left ventricle concentric hypertrophy with globally preserved systolic function and uncontrolled blood pressure. In treatment, intensive insulin therapy was continued. Due to obesity metformin and liraglutide were implemented. Consequently, body mass (10 kilos) and daily insulin dose (59 IU/d) in one month observation were reduced. Very high cardiovascular risk prompted modification of antihypertensive therapy together with statin initiation.

CONCLUSIONS: The occurrence of metabolic disorders in patients with DM1 results in high risk of complications. GLP-1 analogs are beneficial in patients with “double diabetes”, reducing body weight and daily insulin dose.

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Internal Diseases II + Dentistry

Title: An unusual manifestation of myocarditis in the patient with paranoidal schizophrenia

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BACKGROUND: Myocarditis (MC) involves cardiomyocytes, interstitial tissue, vessels and sometimes the pericardium. In most cases, the etiological agent cannot be identified. Causes of MC include viral infections, autoimmune factors, drugs and toxic substances. Treatment is mainly causal and symptomatic.

CASE REPORT: The case report presents a 30-year-old obese patient with a history of paranoidal schizophrenia, sinus tachycardia and hypertension who was admitted to the Department of Internal Medicine and Hypertension after fainting as well as dizziness, chest and abdominal pain. The physical examination revealed: BP 161/104mmHg, HR 120/min, palpation pain in the left chest. Laboratory tests revealed increased inflammation and cardiac parameters. ECG showed ST elevations in leads II, III, aVF, V4-V6. ECHO reveled right ventricle dilation, left ventricular hypertrophy and lower ejection fraction. Hypotensive treatment was successfully implemented. However, the stabbing and burning chest pain persisted. Therefore, contrast-MRI was performed showing late gadolinium enhancement (LGE) on the lateral-inferior part of the left ventricle wall characterizing myocarditis (MC).

CONCLUSIONS: Although, myocarditis is a rare finding, more frequent in younger population, it is associated with significant complications and mortality thus early diagnosis can prevent critical condition. In presented case, the difficulty in making a final diagnosis of myocarditis was affected by predominant cardiac attack symptoms. Moreover, MC could be caused by TCA which high concentration was found in the patient’s blood.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Application of submental flap in soft palate reconstruction – case report

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BACKGROUND: The submental flap was first described in 1993 by Martin et al. The characteristics of the flap are: large vascular peduncle, good vascularity as well as the ability to reproduce significant tissue defects. The vascularization of the submental flap comes from the submental vessels branching from the facial vessels. It can be used to reconstruct, among others, the tongue, the floor of the oral cavity and the palate.

CASE REPORT: 70-year-old female patient was referred by a dentist to the Department of Maxillofacial Surgery of the Medical University of Białystok due to soft palate tumor localised on the left side, which appeared about two months earlier. The presenting complaint prevented the patient from being able to correctly fit and use the upper partial denture. As a result of the clinical examination left-sided soft palate tumor was found with redness of the mucosa above the neoplasm, unenlargend, impalpable cervical lymph nodes. After additional tests such as histopathological examination and CT scan of the viscerocranium and the neck with contrast medium had been performed, a diagnosis stating left-sided adenoid cystic carcinoma of the soft palate (T3N0M0) was set. It was decided to surgically remove soft palate carcinoma, perform left-sided cervical lymphadenectomy and to reconstruct the lesion with the submental flap.

CONCLUSIONS: The submental flap is a valuable method for complex palate defects treatment, allowing to obtain good anatomical and functional results. It is a precious alternative for reconstruction of soft tissues with free flaps e.g. radial forearm free flap.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Contact dermatitis after explosion of combat grenade.

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BACKGROUND: Allergic contact dermatitis (ACD) is a frequent dermatosis. It occurs when an allergen, which might be potentially a harmless substance provokes a skin immune reaction. Furthermore, a repeated contact with the allergen is required to provoke hypersensitivity reaction. Maculopapular rash may be a common ACD manifestation. Although chloroacetophenone (CN) is a tear gas used as a common riot control agent, it should be safe and not cause fatal health effects. However, in high concentrations it may trigger clinical consequences.

CASE REPORT: A 21-year-old male soldier presented to the Department of Dermatology with maculopapular rash after being exposed to a tear gas – chloroacetophenone - while throwing a practice gas grenade at military exercise. On physical examination, skin lesions were observed mostly on the forearms, lateral surfaces of the trunk and whole neck, with no rash on the face, which was covered by the face mask. They were accompanied by pruritus. The treatment with intravenous hydrocortisone, intramuscular phenazoline, followed by oral antihistamines and topical steroids resulted in significant clinical improvement.

CONCLUSIONS: We present a very rare and interesting case of ACD after exposure to chloroacetophenone, used as tear gas. What is more, our patient has had contact with the described substance before, but this is the first time of the appearance of such symptoms. As CN is commonly used by military forces all around the world, research of CN potential side effects is desired. Moreover, CN is not a natural part of the environment so the possibility of sensitization is higher among soldiers.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Does catheter like violet urine? - Case report.

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BACKGROUND: Purple urine bag syndrome (PUBS) is an uncommon syndrome which characterizes the presence of violet pigment due to bacterial colonization of the urinary system. It can be caused by a chemical reaction between substances present in the urine, and the presence of enzymes - phosphates and sulfates from bacteria, resulting in the formation of dyes.

CASE REPORT: A 96-year-old female patient, a nursing home resident, was admitted to the hospital on an emergency basis because of necrotic changes on her left lower leg. In medical history: chronic ischemic heart disease, hypertension, atrial fibrillation, ascending aortic aneurysm. Also, she had atherosclerotic-ischemic-related chronic kidney failure, hypothyroidism and cholecystolithiasis. On admission, she presented an elevated level of CRP (80,9 mg/L), creatinine (1,7 mg/dL) and a significantly elevated NT-proBNP (2609 pg/ml). She has also been chronically catheterized for unknown reasons. The Doppler ultrasound showed an occlusion in the popliteal and femoral arteries. During the hospitalization, she had a myocardial infarction and urine in the urine bag became purple. There were no indications to do a urine culture given no occurrence of symptoms of urinary tract infections. Due to the appearance of purple urine, the Foley catheter was removed. After removal, the urine color became physiological.

CONCLUSIONS: Medical staff should be aware of PUBS existence, and in case of onset, actual guidelines should be followed. Catheterization should be performed only in cases with indications for it.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Kaposi sarcoma induced by ACEI.

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BACKGROUND: Kaposi sarcoma is a relatively rare angioproliferative disorder with estimated prevalence of 0.3 cases per 100,000 people per year in Europe. It is strongly associated with Human Herpes Virus 8 (HHV8). There are four types of Kaposi sarcoma, of which one is iatrogenic occurring due to treatment with immunosuppressive agents or ACE inhibitors. The first symptoms are usually purple, red or brown nodular and papular lesions on the skin, most often on the feet and lower legs.

CASE REPORT: A 83-year-old woman, HIV-negative, treated for many years with perindopril (ACE inhibitor), was admitted to the Department of Dermatology in order to treat the skin lesions. First nodular lesions on the left shin appeared three years earlier. They were surgically removed. Histopathological examination revealed Kaposi sarcoma (nodular) CD34 (+), CD31(+), K167 (+). The patient was referred for balstilimab therapy which she refused. For the next three years more nodular lesions have appeared, and about 3 months before admission they appeared also on the other leg and started to disintegrate and bleed. This time, the patient was referred for radiotherapy with great improvement and cessation of pain.

CONCLUSIONS: We report the case of Kaposi sarcoma in an HIV-negative patient which appeared presumably due to administration of ACE inhibitor. Radiotherapy is an effective treatment for local palliation of Kaposi’s sarcoma as in the presented patient.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Multidisciplinary approach as a chance for elderly patients with severe comorbidities

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BACKGROUND: The number of older people with few chronic diseases is increasing very fast in populations. The healthcare system remains centered on treating single diseases, but we present a case of a patient who benefits from a multidisciplinary approach.

CASE REPORT: An 83-year-old woman with a medical history of: skin cancer, chronic coronary syndrome, Parkinson's disease, was admitted to hospital due to significant weakness, shortness of breath and chest pain. Laboratory tests revealed severe anemia with elevated troponins. The diagnosis of acute cardiac syndrome type 2 was made. She received a blood transfusion. Further tests revealed deep vein thrombosis. Due to a murmur over the heart - the echocardiography test was performed revealing severe aortic stenosis (AS). For the next 2 days the patient required further transfusions of RBCs and pharmacology of CAD and intravenous hydration and PPI, LMWH. The gastroscopy revealed a bleeding tumor of the stomach (histopathologically confirmed adenocarcinoma). The patient was qualified for surgical treatment but the AS was a contraindication for operation. After the Heart Team consultation, the woman underwent a balloon aortic valvuloplasty procedure and next underwent a subtotal resection of the stomach. On the 32’nd day she was discharged from hospital in stable condition. During the next 6 months she finished oncological treatment. During 1 year follow-up the patient is stable but symptomatic due to AS and nowadays she is eligible for further treatment of aortic stenosis - TAVI.

CONCLUSIONS: A multidisciplinary approach gives a chance for elderly patients with severe comorbidities.

17th Bialystok International Medical Congress for Young Scientists 2023

Internal Diseases II + Dentistry

Title: Nasopalatine duct cyst – case report

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BACKGROUND: Nasopalatine duct cyst (NPDC) is a non-odontogenic cyst that develops from the residual epithelium of the nasopalatine duct in the anterior part of the jaw, near the incisive foramen. Therefore, it is also commonly referred to as the incisive canal cyst. Nasopalatine duct cyst is considered the most common non-odontogenic cyst, occurring in approximately 1% of the population.

CASE REPORT: A 75-year-old female patient was referred to the Department of Maxillofacial and Plastic Surgery due to recurrent inflammation and swelling in the area of the incisive papilla for approximately two years. Clinical examination showed no signs of inflammation. Pantomographic X-ray and cone-beam computed tomography (CBCT) scans showed a heart-shaped translucency in the midline. The CBCT image displayed a linear darkening in the center of the osteolytic cavity. The roots of teeth 11 and 21 were separated from the cyst cavity by bone tissue. A preliminary diagnosis of nasopalatine duct cyst was made, and it was decided to surgically remove the lesion under local anesthesia. During the removal of the lesion, a foreign body in the form of a fishbone was discovered in the cyst cavity. The result of the histopathological examination confirmed the initial diagnosis of a nasopalatine duct cyst.

CONCLUSIONS: Currently, it is widely accepted that the nasopalatine duct cyst arises from the remnants of the nasopalatine duct. However, the etiological factors and the exact pathogenesis are not yet fully understood. It is also believed that the development of a cyst can occur as a result of trauma or the presence of inflammatory factors caused by a foreign body, as in the case described.

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Internal Diseases II + Dentistry

Title: NEGATIVE INFLUENCE OF AIDS INFECTION ON THE COURSE OF DIFFUSE LARGE B-CELL LYMPHOMA

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BACKGROUND: Diffuse large B-cell lymphoma (DLBCL) is the most common type of lymphoma in adults characterized by an aggressive clinical course, especially when HIV-related.

CASE REPORT: A 38-year-old male, active drug and alcohol abuser was referred to Hematology Department due to diagnosis of DLBCL based on cervical lymph node histopathology. During routine pre-chemotherapy screening a high viral HIV and hepatitis C load was found. PET-CT showed a generalized neoplastic process. Stage IV DLBCL with coexisting hepatitis C and AIDS C3 stadium was diagnosed. The patient underwent 6 cycles of RCOP as initial treatment. Further testing showed progression of the disease, leading to second-line treatment with RHDMP regimen and ultimately due to further progression third-line treatment with Poli-RB was initiated. Due to lack of compliance, alcohol and drug abuse, the treatment was repeatedly postponed and HIV infection was uncontrolled despite prescribing appropriate treatment. After third cycle of Poli-RB the patient was urgently admitted to the department due to signs of respiratory failure and DLBCL progression. During hospitalization severe pneumonia of unknown etiology was diagnosed. Despite oxygen, antibacterial, antifungal and supportive therapy patient's condition deteriorated further and after 2 days he was pronounced dead.

CONCLUSIONS: This case illustrates a relation between patient’s risky lifestyle and development of AIDS and hepatitis C, which probably led to secondary development of an aggressive lymphoma resistant to chemotherapy. Despite unfavorable prognosis it can be assumed that if the patient had followed medical regimen and doctor’s orders the course of the disease could have been more favorable.

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Internal Diseases II + Dentistry

Title: PROPAFENONE-INDUCED LIVER INJURY IN AN ELDERLY PATIENT WITH PAROXYSMAL ATRIAL FIBRILLATION- A NEW CASE REPORT

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BACKGROUND: Antiarrhythmic drugs are used more and more often, which is related to the aging of the population and the growing number of arrhythmias, especially atrial fibrillation (AF). One of the drugs used in AF is propafenone, considered a relatively safe drug in people without heart disease. Nevertheless, it can cause severe damage to the liver if one ignores the subtle symptoms that indicate an incipient problem.

CASE REPORT: A 82-year-old woman diagnosed with paroxysmal AF who developed acute liver injury during treatment with propafenone. On the fifth day of her hospitalization, we observed nausea and vomiting after introducing regular treatment with propafenone. Laboratory tests showed high serum alanine transaminase, gamma-glutamyltranspeptidase, C-reactive protein, total bilirubin, and a slight increase in aspartate transaminase. Infection with hepatic viruses, alcohol abuse, other drug toxicity, and intrahepatic cholangitis due to cholelithiasis were excluded as a cause of liver damage. With the discontinuation of propafenone, the patient's clinical condition and laboratory test results improved.

CONCLUSIONS: The described case shows that despite the infrequent occurrence of liver damage when taking propafenone (<1%), as stated in the summary of the medicinal product, all possible side effects that may occur during treatment with a given substance should be taken into account and the symptoms signaled by the patient should be carefully analyzed. It cannot be excluded that the low incidence of documented propafenone hepatotoxicity is partly due to the infrequent reporting of adverse drug reactions by physicians and patients to competent authorities.

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Internal Diseases II + Dentistry

Title: Similarities in presentation of eosinophilic esophagitis and achalasia

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BACKGROUND: Achalasia is an esophageal motility disorder characterized by aberrant peristalsis and insufficient relaxation of the lower esophageal sphincter. It happens due to degeneration of the nerve cells in the esophagus for reasons that are not known. This is a rare condition which affects roughly 1 in every 100.000 people.

CASE REPORT: A 41-year-old patient with a 4 year history of dysphagia was admitted to the clinic with accompanying symptoms such as posseting and mucus retention in esophagus. Patient periodically induced vomiting, which was providing relief of symtoms. There was a 5 kg weight decrease since the beggining of symtoms. Gastroscopy performed in April 2019 showed small esophagal hernia, without any histopathological changes, but gastroscopy which was performed 3 years later revealed longitudinal furrowing on mucous membrane of esophagus, covered with fibrin. Histhopathological examination results suited the diagnosis of esophagitis. However, gastroscopy, which was performed on 3rd of November 2022 revealed retention of fluid contents, maceration of the mucous membrane, narrowing of the esophagus and overly narrowed lower esophagial sphincter corresponding to achalasia. Histopathological samples revealed inconsiderable eosinophilic infiltration of squamous epithelium in proximal and distal parts of the esophagus. Ambulatory esophageal manometry exposed characteristics of achalasia, CT scan of thorax confirmed the diagnosis. Patient was qualified for peroral endoscopic myotomy.

CONCLUSIONS: Achalasia can manifest in a variety of ways, some of which can be very confusing. Although it is not a common disease, it is always worth taking it into consideration when we diagnose diseases of esophagus.

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Internal Diseases II + Dentistry

Title: Sustained virologic response after long-term chronic hepatitis B treatment with nucleoside analog: case presentation and literature review

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BACKGROUND: Chronic hepatitis B (CHB) is an inflammatory disease that can progress to cirrhosis, HCC and liver failure. Persistent hepatitis B virus (HBV) infections are cured very rarely: none approved treatments types for CHB (injections Peg-IFN and nucleoside analogues (NA) can eliminate the into the hepatocyte integrated covalently closed circular HBV-DNA (cccDNA). We present a complete recovery from a former CHB, observing virological signs of remission of CHB even after long-term cessation of antiviral treatment. A review of the literature examines the mechanisms and factors that may have led to this outcome.

CASE REPORT: A 65-year-old man was treated for HBeAg(-)CHB since 2002 (over 20 years). 2002-2004 patient was treated with Lamivudine. In 2007, when reactivation of CHB occurred, patient received 48-week course of Peg-IFN, and at the end of treatment HBV-DNA decreased. However, 4 weeks later a flare of CHB was observed. In 2011 treatment with entecavir was initiated and continued for 11 years, when seroconversion HBsAg to anti-HBs was confirmed, and 12 months later entecavir was discontinued. HBV-DNA has been undetectable for 5 years. Sustain virologic response (SVR), equal to recovery from previous CHB was confirmed.

CONCLUSIONS: SVR after CHB treatment is rarely achieved. NA therapy can successfully reduce or block viral replication, halting the progression of the liver disease, but often do not have a direct effect on HBsAg synthesis and do not induce HBsAg seroconversion. Other therapeutic strategies could be needed to get at the root cause of CHB: a special chromosome-like structure known as cccDNA.

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Internal Diseases II + Dentistry

Title: The Impact of COVID-19 on the Cardiovascular System: Unforeseen Complications

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BACKGROUND: Although most cases of COVID-19 have a benign clinical course and primarily involve the respiratory system, a subset of severe cases may develop extrapulmonary manifestations, including the cardiovascular system. Notably, pericarditis, well-known complication of viral infections, mainly caused by Coxsackie B virus, has emerged as a rare but recognized cardiovascular complication of SARS-CoV-2 infection.

CASE REPORT: A 67-year-old woman was admitted to the Department of Internal Medicine and Hypertension due to worsening renal function and SARS-CoV-2 infection. The patient reported dyspnea, decreased exercise tolerance and low SatO2. The patient underwent a kidney transplant in 1999 and was diagnosed with chronic kidney disease, diabetes type 2 and hypertension. Angio-CT revealed COVID-19-associated pneumonia and pericardial effusion. Echocardiography showed severe left ventricular systolic failure with a left ventricular ejection fraction of 20%. Laboratory results included elevated inflammatory markers, creatinine, NT-proBNP and troponin. The third day of hospitalization resulted in an atrial fibrillation attack. Pharmacological cardioversion was ineffective. Due to respiratory failure, electrical cardioversion was rejected. Continuous intravenous amiodarone infusion was instituted. The patient's condition deteriorated significantly. Myocardial involvement was suspected. The patient in severe general condition was transferred to the Department of Cardiology and then to the ICU, where the patient died.

CONCLUSIONS: SARS-CoV-2 is mostly associated with the respiratory tract, but it also has multiple adverse effects on the cardiovascular system. Patients with many comorbidities are more likely to develop severe courses of the disease. This case highlights that although pericarditis is a rare cardiac complication of COVID-19, we should stay alerted about it.

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Internal Diseases II + Dentistry

Title: Tocilizumab treatment of lung fibrosis and cardiac complications in the course of systemic sclerosis - case series

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BACKGROUND: Systemic sclerosis (SSc) is a rare autoimmune connective tissue disorder with high morbidity and mortality from pulmonary and cardiac complications. Tocilizumab (TOCI) is a humanized anti-interleukin-6 receptor antibody, that has shown beneficial effects on lung fibrosis in early, diffuse SSc (dSSc). We present 5 cases of patients with diffuse form of SSc and 3 patients with overlap syndrome (SSc/RA) who were treated with TOCI in the Department of Rheumatology and Internal Medicine, University Hospital in Białystok.

CASE REPORT: Eight patients with SSc and SSc-related ILD (n=8) and/or heart involvement (n=3), aged from 43 to 73 years, were treated with tocilizumab for an average time of 17 months (from 1 to 48). Tocilizumab was generally well tolerated. The most common side effects were disturbances of lipid homeostasis and infections of skin ulcers in 2 patients. Stabilization of the parameters of lung function and pulmonary artery pressure was observed in all of the patients during treatment with tocilizumab. In three patients with heart involvement stabilization of heart function parameters was also noted. Two out of three patients with SSc/RA overlap syndrome discontinued treatment with tocilizumab due to insufficient control of arthritis symptoms.

CONCLUSIONS: Tocilizumab was well-tolerated and effective in stabilization of lung and heart function in patients with SSc. Moreover, it seems to be less effective in patients with an SSc/RA overlap syndrome. More research is needed to fully understand the possible benefits of tocilizumab therapy, in particular in SSc patients with heart complications.

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Internal Diseases II + Dentistry

Title: UNDERSTIMATED ASPECTS OF TOPICAL CORTICOSTEROIDS USED CHRONICALLY - CASE REPORT.

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BACKGROUND: Topical corticosteroids have become the basis for the treatment of many dermatoses such as eczema and atopic dermatitis. Chronic inappropriate use can cause side effects among others rosacea, striae, atrophy, telangiectasias, purpura and many others cutaneous and systemic side effects.

CASE REPORT: We present a case of a 38-year-old female patient with post-steroid acne admitted urgently to the Department of Dermatology due to lack of response to outpatient treatment. The patient has suffered from psoriasis but also viral warts on the dorsal surfaces of both hands treated for 10 years with mometasone furoate. The patient used a topical corticosteroid for lesions appearing on the abdominal skin, scalp, facial area and viral warts. During long-term inappropriate use, papulo-erythematous skin lesions appeared around the nose, cheeks, forehead and hairy scalp. Various treatment was applied, starting with topical hydrocortisone, bilastine, ivermectin cream, ending with antibiotic treatment such as fusidic acid cream, actinomycin, clindamycin, cefuroxime. The patient developed erythematous- exfoliative lesions with numerous pustules. The lesions became oedematous and painful. The fever appeared.

CONCLUSIONS: Topical corticosteroids are a common group of drugs abused for dermatological diseases, especially by doctors of specialties other than dermatology. Corticosteroid ointments are used more often than calcineurin inhibitors because they are cheaper. Complications of their chronic use in some cases can be more dangerous and they can force the necessary hospitalization. When prescribing topical corticosteroids, it is essential to follow the rules of their application depending on the specific disease, the location of lesions and the potency of their action. The proper use enables better treatment results.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: 18 YEARS OLD PATIENT WITH HERPES ENCEPHALITIS

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BACKGROUND: Herpes Simplex encephalitis (HSE) is a severe viral disease of the central nervous system. It is caused by herpes simplex virus type 1 or type 2, which are characterized by latency and reactivation abilities. Despite its low prevalence, HSE remains an important clinical problem due to its severe course. Approximately 60% of adults have serological evidence of previous HSV-1 infection, but the occurrence of HSE is not connected with sex or season and depends on age. It can develop in patients under 20 years old in 30% of all cases, but also in groups over 50 years old.

CASE REPORT: An 18-year-old patient was admitted to the hospital with suspected meningitis. The patient had symptoms such as headaches, nausea, vomiting, and fever. Intravenous acyclovir therapy was started, and neuroimaging tests showed extensive hypodensity and edema in the right temporal lobe, indicating the process of herpetic inflammation. PCR of the cerebrospinal fluid showed the presence of DNA HSV-1 virus. During hospitalization, the patient experienced a single seizure episode, but successive improvement with abnormal cognitive functions was observed. The patient was discharged home in good general condition with recommendations for follow-up in various clinics and examinations.

CONCLUSIONS: If HSV infection is suspected, treatment with acyclovir should be initiated as soon as possible. The high mortality rate, even in patients with early treatment, justifies the necessity of fast and effective diagnostics, in which neuroimaging plays a significant role. Early diagnosis and treatment can improve outcomes and reduce the risk of severe complications.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: A case of a 22-year-old patient diagnosed with cerebrotendinous xanthomatosis

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BACKGROUND: Xanthomatosis is a genetic disease inherited in an autosomal recessive manner. It is estimated to occur in the general population with a frequency of 1:50 000. It's caused by mutations of the CYP27A1 gene on chromosome 2 which results in disorder of cholesterol synthesis and the accumulation of its precursors in tissues. The characteristic symptoms are progressive cerebellar ataxia, cataract, diarrhea, and the deposition of cholesterol in the tendons.

CASE REPORT: In 2012, an 11-year-old patient with a long history of deformed feet and frequent yellowing of the skin, was admitted to the Department of Neurology due to seizures. In 2013, the patient began to suffer from diarrhea, and its frequency was correlated with the concentration of bilirubin in the blood. In the same year cataract was diagnosed. At that time, brain and abdominal imaging examinations showed no abnormalities. Gradually, the patient starts to complain about progressive difficulties in moving. Repeated nerve coundation studies confirmed polyneuropathy. In 2019, genetic tests confirmed the diagnosis of cerebrotendinous xanthomatosis. Genetic tests also showed mutation carrying in both parents. Since July 2021, the patient has been successfully treated with chenodeoxycholic acid with clinical improvement.

CONCLUSIONS: Cerebrotendinous xanthomatosis is a very rare disease. In most cases, it is difficult to diagnose because of unspecific symptoms.

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Neurology, Psychiatry, Neurosurgery

Title: Bertolotti syndrome and degenerative spine disease – case report

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BACKGROUND: Bertolotti Syndrome (BS) characterize by low back pain in patients with the presence of lumbosacral transitional vertebrae (LSTV) and enlargement of the L5 transverse process/processes. The Castellvi classification is used to assess the variants of the LSTV. Management of BS is focused on the analgesic effect and involves conservative and interventional methods.

CASE REPORT: 38-year-old male was admitted to the Department of Neurosurgery with symptoms of recurrent right-sided sciatica, exacerbating for the last 5 months. The patient was unsuccessfully treated with conservative analgesic methods. During examination has been shown a discopathy at the L4/L5 level and has been revealed LSTV (type IIa according Castellvi classification). Functional X-ray examination did not show any spinal instability in the lumbosacral region. The right-sided transforaminal epidural steroid and local anaesthetic injection at the L4/L5 level has been performed but after the duration of anaesthetics action, the patient reported a recurrence of pain. The patient was referred for a right-sided L4/L5 microdiscectomy. Two days after the surgery, the patient reported severe pain in the lumbosacral region (on the right side) and not responding to the pharmacological treatment. An ultrasound-guided right sacroiliac joint injection has been performed. The patient was discharged from the hospital with an improvement in pain complaints five days after the surgery.

CONCLUSIONS: The BS constitutes a possible cause of the ineffectiveness of the surgical treatment of degenerative spine disease. Nowadays, there are no guidelines for therapeutic management in patients with diagnosed BS.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Can hypercalcemia cause psychiatric issues? - a case report based on elderly patient

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BACKGROUND: Multi-morbidity is a highly prevalent issue in geriatrics, somatic diseases are often superimposed by mental disorders as well. Hypercalcemia is an example of a problem manifested not only by somatic symptoms, such as dysfunction of the musculoskeletal system, defects in enzymatic activity and blood coagulation, but also by psychiatric symptoms, due to affecting the nervous system. The study case of a patient with many chronic diseases and hypercalcemia highlights the multiplicity of possible symptoms, including other mental disorders, affecting the difficulty of establishing a correct diagnosis.

CASE REPORT: A 65-year-old man was admitted to the Department of Internal Medicine for diagnosis of the cause of anemia. The patient had a history of partial tetraparesis after craniocerebral injury, aggravation of paresis after ischemic stroke, hypercholesterolemia, iron deficiency anemia, diaphragmatic hiatal hernia, reflux esophagitis, lower esophageal ulceration, cortical cysts of both kidneys. Hospitalization was revealed that the patient had an osteolytic femoral metastasis, which was the direct cause of the hypercalcemia. The sudden development of depressive-like disorders and, at a later stage, delirium, combined with the remission of the aforementioned complaints after the introduced therapeutic management, was clearly related to hypercalcemia.

CONCLUSIONS: Hypercalcemia is an important factor to consider when analyzing the cause of a patient's sudden cognitive functioning and the mood disorders. Testing blood calcium levels is not a routine procedure, but it seems particularly important to consider hypercalcemia in the differential diagnosis of mental disorders in the elderly, especially those with multi-morbidity

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Case report of two patients with Miller-Fisher Syndrome.

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BACKGROUND: Miller-Fisher Syndrome (MFS) is a rare variant of Guillain-Barre which present with the clinical triad of ataxia, areflexia, and ophthalmoplegia. Studies show that 70-90% of patients with MFS have antibodies against gangliosides, especially IgG anti-GQ1b antibodies. The prognosis in MFS is usually good, with a mean recovery from 8 to 12 weeks.

CASE REPORT: A 31-year-old woman with a history of upper respiratory tract infection the week before and a 69-year-old man with gradually increased diplopia, dizziness, balance, and speech problems were admitted to the Department of Neurology. Neurological examination of both patients showed ophthalmoplegia and bulbar syndrome with limb ataxia. The cerebrospinal fluid examination was normal in the younger patient, but in the older patient dissociated protein- cellular occurred. In both patients, anti-ganglioside IgG antibodies in the cerebrospinal fluid were detected. Brain MRI was normal in the younger patient, but in the older patient showed lesions in the pons. Nerve conduction studies in the younger patient showed no significant changes but in the older patient demyelinating polyneuropathy was detected. In both patients, plasmapheresis and physical rehabilitation were used in treatment with clinical improvement.

CONCLUSIONS: Both patients presented with the classical triad of symptoms and the presence of GQ1b antibodies. The older patient had a more severe course of MFS. Both patients made almost complete recoveries within a few months.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Challenges in Managing Comorbid Schizophrenia and Personality Disorders: A Case Report

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BACKGROUND: Schizophrenia is a chronic mental disorder that affects a person's ability to think, feel, and behave clearly. It often leads to delusions, hallucinations, and disordered thinking, causing significant distress and functional impairment. Additionally, personality disorders are often comorbid with schizophrenia, leading to more severe symptoms and poorer results.

CASE REPORT: 29-year-old male with a 12-year history of paranoid schizophrenia and epilepsy, admitted to the psychiatric ward due to increased self-harm tendencies, suicidal ideation, and homicidal thoughts. The patient has a history of aggression towards both patients and staff, including two attempted strangulations of a nurse and one attempted murder of another patient. He has a long history of delusional thinking, including thoughts of killing people, which started when he was 14 years old. Despite previous treatment attempts with risperidone and clozapine, he did not respond well to these medications. Currently, diagnostic procedures are underway to assess personality disorders.

CONCLUSIONS: The presented case highlights the challenges in managing patients with comorbid schizophrenia and personality disorders. The patient's history of aggression and homicidal ideation suggests the need for a thorough risk assessment and management plan. Additionally, his poor response to previous treatments emphasizes the need for individualized treatment approaches and regular monitoring of symptoms. Schizophrenia is a complex disorder that requires a multidisciplinary approach to treatment, including pharmacotherapy, psychotherapy, and social support. Further research is needed to improve our understanding of the underlying mechanisms and optimal treatment strategies for this complex patient population.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Differential diagnosis of progressive multifocal leukoencephalopathy (PML) – a case report

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BACKGROUND: Progressive multifocal leukoencephalopathy (PML) is a rare and also fatal, demyelinating disease of the central nervous system. It is caused by the reactivation of the ubiquitous John Cunningham's virus (JCV), mainly in immunocompromised patients. The diagnosis of PML is based on progressive neurological symptoms, specific findings in magnetic resonance imaging (MRI) and detecting the JCV DNA in cerebrospinal fluid (CSF).

CASE REPORT: The 73-year-old woman, who had been treated for systemic lupus erythematosus (SLE), was admitted to the Neurological Department due to progressive weakness in left limbs, difficulties with communication and cognitive impairment. The neurological examination showed left hemiparesis, left facial nerve paralysis and left-sided hemianopia. The head MRI revealed large periventricular diffusion restriction without enhancement and punctate hyperintensities in T2 and FLAIR imaging. Initially, the findings were considered as heterochronous changes throughout SLE. The patient's condition worsened during hospitalization – depression, anxiety disorder and left hemispatial neglect developed. In the next MRI scan, the involvement of corpus callosum and occipital lobe was observed. Considering the progressive course of the disease and the MRI findings, the PML diagnosis was suggested and subsequently confirmed by detecting the DNA of the JCV in the patient's CSF.

CONCLUSIONS: The differential diagnosis of PML and neuropsychiatric SLE remains a difficult challenge for physicians, but it is crucial for selecting the proper treatment. When progressive neurological symptoms and small, punctate T2-hyperintense lesions in imaging are observed, further investigation for PML should be considered. Until the PML is not ruled out, the immunosuppression should not be intensified.

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Neurology, Psychiatry, Neurosurgery

Title: Importance of psychiatric manifestation - case series of autoimmune encephalitis with anti-LGI-1 antibodies.

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BACKGROUND: Autoimmune encephalitis (AE) with anti-leucine-rich glioma inactivated-1 (LGI-1) antibodies is rare, not a fully known group of inflammatory diseases of the CNS. LGI-1 is a neural protein associated with potassium channels and it plays an important role in synaptic transmission.

CASE REPORT: 1: A 73-year-old man with rapidly progressive cognitive impairment, psychiatric symptoms and epilepsy. He had hyponatremia. The serological examination revealed anti - LGI-1 antibodies. MRI showed signal abnormalities in both insulas. The same lesion demonstrated restricted diffusion with low signal intensity on an ADC map. He was treated with anticonvulsants and steroids. 2: A 68-year-old woman with rapidly progressive dementia, positive psychiatric symptoms and epilepsy. Laboratory blood tests showed hyponatremia. Serological tests revealed anti- LGI-1 antibodies. Brain MRI revealed restricted diffusion in subcortical white matter with low signal intensity on ADC map. EEG showed diffuse slow theta waves. She was treated with immunotherapy as well as anticonvulsants and antipsychotics. 3: A 61-year-old man with progressive cognitive impairment and epileptic attack. Laboratory tests showed hyponatremia. MRI revealed hyperintensity of the medial temporal lobe on FLAIR. CSF analysis revealed the presence of anti-LGI-1 antibodies. EEG showed generalized seizure activity. Oncological screening revealed gastrointestinal stromal tumor.

CONCLUSIONS: Cognitive decline with productive symptoms may occur and dominate in the AE, consequently it can be misdiagnosed as a psychiatric disorder. Typical features of epilepsy are faciobrachial dystonic seizures. Oncological screening is crucial due to common paraneoplastic syndromes. AEs respond well to immunotherapy. The better recognition will be principal for the early treatment.

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Neurology, Psychiatry, Neurosurgery

Title: Limb-shaking transient ischaemic attacks and acute stroke in a case of bilateral carotid artery occlusion

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BACKGROUND: Limb-shaking is a rare manifestation of transient ischemic attack (TIA), characterized by brief, jerky involuntary movements of the limbs, and associated with contralateral internal carotid artery (ICA) high-grade stenosis and cerebral hypoperfusion.

CASE REPORT: A 64-year-old man was admitted to the emergency department due to short, repeated attacks of involuntary movements in his left arm. The patient history included arterial hypertension, dyslipidemia, smoking, coronary and peripheral arterial disease, orthostatic syncope, TIAs with loss of motor and sensory function, two ischemic strokes, and right ICA stenting three years ago. Due to new symptoms resembling focal motor seizures, an electroencephalogram was performed. It showed local pathological activity in both frontotemporal areas. Cervical duplex ultrasound revealed an occlusion of the right common carotid artery and both ICAs. During a hospital stay, several short involuntary shaking paroxysms were observed, starting in the patient's left arm and spreading to the rest of his body. TIA with limb shaking was diagnosed. Subsequent brain MRI showed acute ischemic lesions in the right ICA territory. Multidisciplinary team decided to optimize the conservative treatment. Patient passed away a month later due to acute coronary syndrome.

CONCLUSIONS: Limb-shaking TIAs are unusual in their presentation, sometimes resembling focal motor epileptic seizures. Knowledge of how to differentiate these disorders is crucial for the patient's survival, as delay in correct diagnosis and appropriate treatment may lead to ischemic stroke. Cervical duplex ultrasound is a reliable and non-invasive diagnostic method, which helps to identify and monitor atherosclerotic carotid steno-occlusive lesions.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: One-year non-united fracture of the axis (C2) – a case report

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BACKGROUND: The most common fracture of the axis (C2) is the odontoid fracture. It constitutes the biggest group of cervical spine fractures in elderlies as an effect of low-energy injuries. The odontoid fractures can be divided into three types: type I – fracture of its upper part, type II – transverse fracture of its base, and type III – the fracture of the axis below the process.

CASE REPORT: The 76-year-old male was admitted to the Department of Neurosurgery with a one-year history of type II non-united fracture of the odontoid. The comorbidities included diabetes and hypertension. The previous treatment by cervical collar did not result in bone union formation and resolution of symptoms. A computed tomography scan on admission showed detached bone fragments, odontoid dislocation and C1/C2 subluxation. Spinal canal stenosis was not observed. The patient was qualified for Harms technique C1/C2 fixation surgery. Two pairs of screws were initially implanted into C1 lateral masses and C2 pedicles and were subsequently connected with rods on either side. There were no postoperative or neurological complications recorded.

CONCLUSIONS: Odontoid fractures are not a rare finding in elderly patients. The conservative treatment often remains ineffective to provide unions in type II fractures. Diabetes is a factor that could play a role in a prolonged healing process. Surgical treatment was the only method that could lead to relieving the symptoms. The choice of the technique was intentional as the Harms technique characterizes a high ratio of successful spine fixations among elderly patients.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Progressive multifocal leukoencephalopathy with immune reconstitution inflammatory syndrome

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BACKGROUND: Progressive multifocal leukoencephalopathy (PML) is a rare and severe demyelinating disease of the central nervous system. It is a progressive and often fatal disease. The etiology of this illness is directly related to the infection of the polyomavirus JC. The virus replicates in glial cells, when the immune system does not work properly. The improvement of the functioning of this system causes immune reconstitution inflammatory syndrome (IRIS).

CASE REPORT: A 73-year-old female patient has been admitted to the neurology department in September 2022. Originally she presented to the hospital after two episodes of impaired consciousness. Head CT did not show any significant changes, which have been found on MRI scan. They were located in cortex and subcortical white matter of the left hemisphere. The finding was considered as a tumor metastasis. The patient had had a mastectomy of her left breast five years before. In view of her state, dexamethasone was initiated. Before discharge, the patient was examined by neurosurgeon and qualified for the brain operation. In October 2022, the patient has been admitted to the hospital again, after four episodes of epileptic seizures. CT and MRI were performed again, then there was the suspicion of PML-IRIS.

CONCLUSIONS: PML presents with subacute neurology deficits, from this reason early diagnosis can help to minimize serious effects of the worsening condition. It is seen in patients with HIV infection, after organ transplantation – immunomodulatory therapy and with lymphoproliferative diseases.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Recurrent tumefactive demyelinating lesion in a 60-year-old man: case report.

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BACKGROUND: Tumor-like demyelination (TDL) is a relatively rare condition. It may be confused with a malignant tumor because it can appear as a large solitary lesion with mass effect, perilesional edema, and contrast enhancement. There are certain clinical and radiological features that can direct identification, nevertheless they are not always present, and diagnosis of such lesions is always a challenge. Some research has focused on finding a right tool to distinguish TDLs from "true" brain tumors but still the correct diagnosis is often not made until after surgical biopsy or resection.

CASE REPORT: We report a case of recurrent tumor-like lesion in a 60-year-old man, who was initially suspected to have a malignant glioma. At the first clinical episode he had undergone tumor decompression, but histological evaluation revealed no evidence of neoplasm and merely a reactive gliosis was confirmed. At the second episode of hospitalization the lesion appeared to spread through the corpus callosum thus mimicking a "butterfly" glioma. A biopsy of the lesion eventually revealed a demyelinating lesion. Steroid therapy was instituted and resulted in significant clinical improvement. The management protocol in brain neoplasm and in demyelinating lesions differs basically, therefore a question "could this be a demyelinating disease?" should be always kept in mind.

CONCLUSIONS: Differentiation between high grade glioma and tumor-like demyelinating lesion can pose a problem, even basing on detailed data from clinical, radiological, and histopathological examinations. Awareness is a key. As the management protocol in both conditions differs basically, a question "could this be a demyelinating disease?" should be always kept in mind.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Scotoma as a presenting symptom of a sphenoid meningioma

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BACKGROUND: Meningiomas are the most common primary brain tumors. The incidence of meningioma increases progressively with age and is related to neurofibromatosis 2 and exposure to radiation. Ocular symptoms are mainly reported in sphenoid bone meningiomas, relatively benign and slow-growing tumors with orbital extension.

CASE REPORT: A 50-year-old lady was admitted to the ophthalmology clinic complaining of a foreign-body sensation and a black spot moving in front of her left eye for 3 months. On examination there was full motility, with no pain nor diplopia, no abnormalities were found in her colour vision or pupil reactions. An ordered ultrasound examination showed Weiss ring, which was identified as the possible cause of complains. A visual field examination three weeks later showed a centro-cecal scotoma in left eye. The magnetic resonance imaging was ordered and showed a 54x33 mm mass originating from the greater wing of the sphenoid bone adjacent to the left internal carotid artery. Shortly after MRI the tumor was surgically removed along with the meningeal attachment. Nine months later, a visual evoked response was prolonged in the left eye and follow-up MRI was ordered, showing tumour regrowth. Radiotherapy was performed and dexamethasone was introduced. Within 5-years follow up she is stable, with normal visual field and visual evoked potentials.

CONCLUSIONS: Ophthalmic symptoms dominate as the first clinical symptoms of sphenoid meningiomas. This case emphasises the importance of understanding the symptoms reported by our patients. Properly performed neuroophthalmological examinations aid our clinical differential diagnosis and follow-up.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Severe course of encephalitis of unknown origin - a case report.

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BACKGROUND: Encephalitis is an inflammatory process of the brain. Ethiologic factors of this disease comprise viruses such as herpes simplex virus (HSV) and rabies virus, and also bacteria, fungi, or parasites (e.g. prions). Several drugs and autoimmune illnesses may also cause encephalitis. The exact reason is still unclear in many cases. Symptoms include consciousness disorders, fever, headache, disorientation, neck stiffness, nausea and vomiting. We present a case of severe course of encephalitis with unknown etiology in a patient with amnestic syndrome.

CASE REPORT: A 56-year-old man with a history of hypertension was hospitalized with fever, impaired consciousness, somnolence throughout the day, headache and dizziness. Methods which were used to examine patient: CSF testing. The diagnosis of meningoencephalitis was made. The patient was transferred to the Department of Infectious Diseases and Neuroinfection. This time, examination methods included: CSF testing, PCR examinations for viruses, NMDA antibodies testing, MRI of the head, psychiatric consultation, oncology consultation. Test results indicated the diagnosis of encephalitis of unknown etiology and amnestic syndrome in the course of this disease.

CONCLUSIONS: Herein, we report encephalitis of unknown etiology and amnestic syndrome in a middle-aged man with an unusual image on MRI of the head. In this type of cases, the use of steroids such as dexamethasone and methylprednisolone might lead to a full recovery.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Three-dimensional (3D) printing in the pre-and intraoperative planning of unusual cranioplasty – case report

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BACKGROUND: Cranioplasty -repair of the skull vault defect- is commonly performed after decompressive craniectomy providing cerebral protection and restoring esthesis. Sizes and shapes of bone flap losses differ in each patient. A three-dimensional (3D) model of a post-craniectomy area and one in the shape of a bone prosthesis, may be developed and printed using computed tomography (CT) scans and specific programs respectively. Thus, using 3D models allows accurate reconstruction of a bone defect during cranioplasty.

CASE REPORT: A 41-year-old male was admitted to the Department of Neurosurgery for cranioplasty after a right-sided decompressive craniectomy. The patient underwent a craniectomy 18 months earlier due to an ischemic MCA stroke, complicated by malignant edema. CT scans and 3D Volume Rendering visualization in the RadiAnt DICOM Viewer revealed an unusually large bone flap defect. Therefore, the 3D model visualizing post-craniectomy bone loss was made using the Original Prusa i3 MK3S+ printer, using CT. Afterwards, a model in the shape of a polypropylene-polyester skull bone prosthesis (Codubix) was designed (Shapr3D software), printed and adjusted to the 3D model of the post-craniectomy area. The printed elements were sterilized preoperatively. During the cranioplasty, models were used to optimize the shape of Codubix in covering the bone defect. Controlled CT scans confirmed the correct position of Codubix, the postoperative course was uneventful.

CONCLUSIONS: Biomaterial bone prosthesis is the gold standard for cranioplasty, although sometimes intraoperative manual molding of implants remains insufficient. Nowadays, 3D printing is an accurate tool in pre-/intra-operative cranioplasty planning and assessment of the adjacent bone tissue morphology.

17th Bialystok International Medical Congress for Young Scientists 2023

Neurology, Psychiatry, Neurosurgery

Title: Various clinical manifestations of cytotoxic lesions of the corpus callosum-a case report

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BACKGROUND: Cytotoxic lesions of the corpus callosum (CLOCC) form a spectrum of disorders secondary to heterogenous etiopathogeneses. Neurological symptoms include motor and/or sensory deficit, cognitive decline, behavioral changes, dizziness, loss of consciousness and others. Diagnosis is based on the MRI findings. The prognosis is variable, depending on the underlying condition. Usually, no treatment is required and the lesion spontaneously resolves.

CASE REPORT: A 35-year-old male presented to the Emergency Department with impaired consciousness and mental confusion that occurred suddenly. Witnesses reported seizures. The patient did not remember the incident. Past medical history includes untreated arterial hypertension. Physical examination didn't reveal any other neurological abnormalities. The CT scan suggested a possible ischemia of the corpus callosum. Due to high blood pressure (176/106 mmHg) the patient was given antihypertensive drugs and then admitted to the Department of Neurology, Medical University of Bialystok to continue diagnostic procedures. MRI revealed a hyperintense lesion in the splenium of the corpus callosum on a T2-weighted image. During the hospitalization, the patient was consulted by a psychiatrist due to symptoms of alcohol withdrawal syndrome. The patient also received hepatoprotective treatment due to elevated liver enzymes. The patient improved in 5 days after symptomatic treatment and was discharged to home in good neurological condition.

CONCLUSIONS: Physicians should be familiar with the clinical presentation and imaging appearance of CLOCCs to avoid a misdiagnosis of ischemia. After the confirmation of CLOCC, patients should be further diagnosed to find out the underlying condition, which is usually treatable, and then provide the optimal treatment.

17th Bialystok International Medical Congress for Young Scientists 2023

Pediatrics I

Title: A case report of Haddad Syndrome in a newborn.

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BACKGROUND: Congenital central hypoventilation syndrome (CCHS), also known as Ondine curse, is a rare genetic disease which leads to the respiratory failure. Central autonomic control of breathing is severely impaired resulting in a dysfunction of ventilation. Hirschprung's Disease (HD) is a relatively common cause of congenital intestinal obstruction due to the agenesis of ganglion cells in the intestinal walls. The occurrence of those diseases simultaneously is defined as Haddad Syndrome (HS).

CASE REPORT: A male patient was born in the 37th week of gestation by C-section in a serious general condition (APGAR 6/7/9/8). He had difficulty breathing and needed an increased oxygen supply. The intubation and mechanical ventilation were necessary in the following days due to ineffective breathing, episodes of apnea during sleep. The pathologies of the respiratory system were ruled out. Genetic testing confirmed a mutation in PHOX2B gene, which validated the suspicion of CCHS. The patient had flatulence, did not pass the stool in the first 48-72 h, and did not tolerate enteral feeding. A biopsy of the rectum confirmed the diagnosis of HD. The patient was 5-weeks old when the surgery to create a stoma was performed and since then he has been fed only enterally. The coexistence of CCHS and HD led to the diagnosis of Haddad Syndrome.

CONCLUSIONS: Haddad Syndrome is a very rare disease, quite difficult to diagnose, and the treatment requires cooperation of many specialists. There is a big risk of mortal complications and no accurate treatment, therefore more research is needed to create effective therapeutic methods.

Title: Acute meningitis in the course of intravenous immunoglobulin treatment for immune thrombocytopenia.

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BACKGROUND: Intravenous immunoglobulins (IVIGs) are commonly used in various pediatric diseases such as immune thrombocytopenia (ITP). High doses of IVIGs usually act as an immunomodulatory agent. Taking into consideration the wide range of IgG applications, the occurrence of adverse reactions in the course of treatment are unavoidable. IVIG therapy can cause aseptic meningitis, a rare but serious side effect that can make diagnosis and treatment challenging.

CASE REPORT: Three children (4- and 13-year-old girls, 7-year-old boy) were admitted to the hospital due to signs of thrombocytopenia (e.g. petechiae, hematomas). Laboratory diagnosis had revealed abnormally low platelet count for which they began a course of IVIG therapy. Shortly after completing the IVIG course the patients presented with symptoms of meningitis. All three patients underwent a lumbar puncture procedure, prior to which two patients required a platelet transfusion. CSF was evaluated, in all three patients both viral and bacterial infections were excluded. The analysis showed neutrophilic pleocytosis. The 13-year-old girl was then treated with steroids, the 4-year-old girl had received 20% mannitol, hydration, cyclonamine and anti-inflammatory medication, the 7-year-old boy had received symptomatic treatment. After treatment their condition greatly improved and they were discharged from hospital.

CONCLUSIONS: Aseptic meningitis, although quite rare, should always be considered by physicians as a possible delayed side effect of IVIG treatment. Diagnostic ambiguity of clinical manifestation often makes for a challenging diagnosis. Analysis of the CSF is essential to identify the appropriate therapy, which is primarily targeted at discontinuing the causative factor and additional symptomatic treatment.

17th Bialystok International Medical Congress for Young Scientists 2023

Pediatrics I

Title: Case report: paraphimosis ignored for 7 days

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BACKGROUND: Paraphimosis is a urologic emergency commonly seen in uncircumcised males. It occurs when the foreskin is retracted behind the coronal sulcus and forms a constricting ring leading to edema of the glans, extreme pain, and venous congestion. Failure to treat this condition can result in serious complications such as glans necrosis, which may require partial amputation. Paraphimosis is typically discovered during a nappy change in infants and young children or when attempting to retract the foreskin during cleaning or following urinary catheter insertion. In adolescents, it is often caused by adventurous activities such as sexual intercourse, prolonged erotic dancing, or genital piercing. Due to embarrassment, adolescents may delay seeking medical attention. Treatment options include manipulation of the swollen foreskin, dorsal slit, and circumcision as a last resort. Adequate analgesia and sedation are necessary during the retraction of the foreskin.

CASE REPORT: A 15-year-old patient was urgently admitted to the Clinical Department of Pediatric Surgery and Urology with paraphimosis that had occurred 7 days prior. Massive edema of the glans and ulcerations were present. The patient underwent surgical treatment under general anesthesia, during which the tight edematous band of tissue was relieved with a dorsal slit and the wound was sutured transversely. There were no postoperative complications, and the patient was discharged in good condition.

CONCLUSIONS: Early recognition of paraphimosis is crucial for successful non-surgical treatment. Delayed diagnosis is associated with a higher incidence of complications and may require surgical intervention.

17th Bialystok International Medical Congress for Young Scientists 2023

Pediatrics I

Title: Different faces of anemia

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BACKGROUND: Anemia is frequently observed clinical stage, which can lead to hypoxemia, thereby, hypoxia. The pathogenesis, its severity, and the clinical course can vary. The presented cases of patients confirm that despite comparable initial laboratory results, diverse causes of the process were found.

CASE REPORT: A 2-year-old girl was admitted for extreme anemia. Weakness, emesis, and pyrexia were observed before admission. During a physical examination, there were tachycardia, pallor of the skin, and oral mucous membranes. The lab results showed normocytic anemia, increased levels of iron and ferritin, and decreased levels of vitamin B12. Anti-tTG antibodies in the IgA class were determined with positive results. The girl was diagnosed with celiac disease. 3-year-old patient was investigated after she presented knee joint's pain, weakness, fever, pallor of the skin and mucous membranes, and hepatosplenomegaly. Peripheral blood count revealed anemia, thrombocytopenia, leukocytosis. Peripheral blood smear and myelogram showed blastic cells. A diagnosis of B-lymphocyte precursor acute lymphoblastic leukemia was made. 8-month-old girl was admitted due to severe anemia. The patient presented pallor of the skin, apathy, and hepatomegaly. Peripheral blood count revealed reticulocytosis. A blood group test showed erythrocytes coated with IgG antibodies. A diagnosis of autoimmune-hemolytic anemia was made. 2-month-old patient was admitted due to anemia, pallor of the skin, and tachycardia. He had previously required blood transfusions, repeatedly. Genetic test was performed which helped to diagnose Blackfan-Diamond anemia.

CONCLUSIONS: Therapeutic management of severe anemia depends on its causes and clinical course. The discussed clinical cases are examples of diverse pathogenesis and therapeutic procedures.

17th Bialystok International Medical Congress for Young Scientists 2023

Pediatrics I

Title: Exchange transfusion in childhood leukemia

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BACKGROUND: Exchange transfusion is a procedure mainly used in hyperbilirubinemia, but can also be a crucial treatment in hyperleukocytosis in pediatric patients diagnosed with acute leukemia. Hyperleukocytosis can be defined by increase in the total number of leukocytes over 100,000/µl. Manual exchange transfusion is performed in younger children to avoid the development of life-threatening organ complications due to the leukostasis syndrome, a result of the occlusion of small blood vessels.

CASE REPORT: Eight patients of the Pediatric Oncology and Hematology Department in Białystok diagnosed with acute lymphoblastic leukemia and acute myeloid leukemia underwent manual exchange transfusion procedures to reduce hyperleukocytosis. The patients were from 1 day to 10 years-old and the lowest leukocyte count they presented with 180,000/µl. Among the symptoms, features typical of leukemia were observed: pallor of the skin, petechiae, hepatosplenomegaly, weakness and excessive sleepiness. Manual exchange transfusion was used as a life-saving procedure in all patients, which enabled the reduction of leukemic cell counts and further treatment procedures.

CONCLUSIONS: Acute leukemias are the most common childhood cancers. In 6-22% of children diagnosed with acute leukemia, hyperleukocytosis occurs and there is a risk of manifesting the symptoms of leukostasis, which can quickly lead to multiple organ failure and death. The main clinical manifestations of leukostasis and causes of death are related to the involvement of the central nervous system and lungs. The use of exchange transfusions or leukapheresis, makes it possible to reduce the number of leukemic cells in a short period of time and avoid the complications of this condition.

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Pediatrics I

Title: INSIGHTS FROM CLINICAL CASES: UNDERSTANDING THE DIFFERENT PRESENTATIONS OF INVASIVE MENINGOCOCCAL DISEASE

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BACKGROUND: Invasive meningococcal disease (IMD) is a severe medical emergency caused by Neisseria meningitidis, which colonizes the nasopharynx of about 5-10% of total population. Although the exact reason why some people manifest IMD is unknown, evidence suggests that host genetics significantly influence in predisposition to meningococcal infection.

CASE REPORT: Case 1: A previously healthy 4-month-old boy developed fever and rash, and was hospitalized in critical condition. Physical examination revealed hypersensitivity, pallor, small thromboembolic changes on lower limbs, tachycardia, tachypnoe and tense frontal fontanelle. He was diagnosed with sepsis and meningitis caused by group B N. meningitidis. Case 2: A previously healthy 3-year-old boy was hospitalized with fever, abdominal pain, lethargy, and excessive drowsiness. Physical examination revealed decreased consciousness, pale skin, cold extremities, hypersensitivity to touch, dry oral mucous membranes and stiff neck. A lumbar puncture was performed obtaining cloudy cerebrospinal fluid (cytosis 25870 cells). He was diagnosed with meningitis caused by group B N. meningitis. Case 3: A previously healthy 6-month-old boy developed low-grade fever in the evening. Early in the morning he developed fever over 40°C and a skin rash. He was admitted to the hospital at 6:00 a.m. and died at 7:40 a.m. from fulminant sepsis caused by group B N. meningitidis.

CONCLUSIONS: Despite advances in diagnosis and treatment, IMD can lead to serious complications. Therefore, there is a need for improved prevention and early detection strategies, with an emphasis on the need for vaccination. However, we do not know enough about the risk factors for IMD and how the different manifestations affect the course of the disease.

Title: Invasive Aspergillosis is not an easy diagnosis - challenges of antifungal therapy in low birth weight neonate

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BACKGROUND: Aspergillus spp. are common molds found everywhere in the environment. They are opportunistic pathogens that cause invasive aspergillosis among immunocompromised patients. However, it is a rare disease in newborns. Authors discuss difficulties in management of aspergillosis in neonates.

CASE REPORT: Authors of the paper described the case of a premature and small for gestational age (SGA) neonate born after 24 weeks of gestation with extremely low body weight. Patient was admitted to our department, because of perforation of the small intestine. During the stay, the patient developed many skin lesions of unknown etiology. The diagnostic actions were undertaken and the newborn was given empiric antibiotic therapy with antifungal treatment. The serum galactomannan was positive and Aspergillus fumigatus was isolated from skin lesion swabs. Treatment with liposomal amphotericin B was started, subsequently it was replaced by voriconazole. Treatment didn't cause any significant side effects and was successful. It was the first such case in our Department.

CONCLUSIONS: Because of lack of proper guidelines for that age group, diagnosis and treatment of IA is challenging. Drugs indicated in treatment of invasive aspergillosis in neonates are liposomal amphotericin B, amphotericin B lipid complex and voriconazole.

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Pediatrics I

Title: Neurological symptoms and side effects in pediatric malignancies

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BACKGROUND: Oncological diseases are responsible for about 2% of all neoplastic diseases of the entire population. The most common oncological disease is acute leukemia and lymphomas rank third. The overall cure reaches nowadays about 80%. However, that requires treatment with potent drugs which may have a variety of adverse reactions including neurological symptoms. Children during the chemotherapy have to struggle with e.g. peripheral neuropathy, sensory disturbances, neuropsychological deficits, headaches and fatigue. Most frequently affected are patients treated with vincristine, methotrexate and cyclophosphamide.

CASE REPORT: We present 15 cases of patients treated in the clinic for cases of acute leukemia n=10, non-Hodgkin's lymphoma n=2 and Hodgkin lymphoma n=1, solid tumors n=2 who developed acute neurological symptoms as one of the first symptoms of cancer or as a complication of the oncological treatment. The most common symptoms were seizures, loss of consciousness, behavior change. In 3 patients life-threatening encephalopathy was observed, in one – retrograde amnesia for the whole day. In all patients neurological symptoms were reversible, in most of them totally. None of patients died because of neurological consequences of treatment, but all of them required temporary neurological care and 12/15 – treatment. All of them required temporary suspension of treatment because of observed symptoms.

CONCLUSIONS: Neurological symptoms in children during the oncological treatment remain a clinically significant problem. Occurrence of neurological side effects simultaneously with oncological treatment should be considered always in order to afford a patient's well-being.

Title: Paroxymal nocturnal hemoglobinuria (PNH) associated with bone marrow failure in an 11-year-old patient

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BACKGROUND: Severe aplastic anemia (SAA) is a disorder of bone marrow failure that is associated with autoimmunity, mediated by cytotoxic T-cells. Paroxysmal nocturnal haemoglobinuria (PNH) is another bone marrow failure syndrome that often co-occurs with SAA.

CASE REPORT: We present a case of an 11-year-old patient who, as a result of irregularities in routine blood counts, underwent detailed diagnostics in the hematology ward. Laboratory tests revealed anemia and thrombocytopenia, with high reticulocytosis (non typical for aplastic anemia), also without signs of hemolysis. Other abnormalities included pallor of the skin and mucosa, generalized petechiae. Further examination showed severe aplasia of bone marrow (SAA). Moreover fluorocytometric tests on neutrophils confirmed the presence of PNH. The patient was hospitalized many times for both platelet and blood transfusions, and he was treated with antibacterial and antifungal prophylaxis as supportive treatment. Six months after the diagnosis, the bone marrow transplant procedure from an unrelated donor was started. Currently, the patient remains under constant hematological care.

CONCLUSIONS: In patients with paroxysmal nocturnal hemoglobinuria coexisting with aplastic anemia, the development of clinical symptoms associated with PNH is usually minimal, and it depends on the size of the defective cell clone. AA can be successfully treated by stem cell transplantation or immunosuppressive therapy, but the presence of the PNH clone is direct indication for bone marrow transplantation.

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Pediatrics I

Title: Skin lesions in Meningococcal sepsis in toddler

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BACKGROUND: Invasive meningococcal disease is a serious bacterial infection caused by Neisseria meningitis that can lead to life-threatening meningitis and septicemia. It usually has a rapid course with a mortality rate of 5-10% within the first 48h. Long-term sequelae have been reported in 10-20% of patients. Penicillin is the drug of choice for confirmed cases.

CASE REPORT: A 1.5-year-old boy with respiratory failure was admitted to the ICU due to N. meningitidis B sepsis. Hemorrhagic petechiae were observed all over the body. Empiric sepsis treatment was administered. Patient was intubated and a feeding a tube was placed. After discontinuing catecholamine infusion on day 4, the patient was extubated on day 9 and transferred to the PID ward. However, the boy developed necrotic skin lesions despite antibiotic treatment. Although cultures were negative, a CT scan revealed thickening of subcutaneous adipose tissue and fluid in the left hip joint. A new antibiotic regimen with metronidazole and cefepime, along with ibuprofen, resulted in fever resolution, normalized inflammatory parameters, and significant healing of skin necrosis. The patient was discharged in good condition.

CONCLUSIONS: IMD-induced skin necrosis can heal without skin grafting, but secondary infections may arise even with successful penicillin treatment. Microbiologic testing may not be very helpful in guiding appropriate antibiotic use in these cases. Regardless early diagnosis and treatment, IMD can lead to severe complications, emphasizing the need for vaccinations.

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Pediatrics I

Title: Two hospitalizations caused by one infectious disease: case report

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BACKGROUND: Tick-borne encephalitis (TBE) is a viral disorder of the central nervous system. Infection mainly occurs through tick bites. Clinical presentation of TBE is frequently two-stage. The first phase is characterised by flu-like and gastrointestinal symptoms, common laboratory findings are leukopenia and thrombocytopenia. Clinical manifestations such as high fever, dizziness, light-headedness, appear in the second phase.

CASE REPORT: A nine-year-old boy was admitted to the hospital due to abdominal pain, high fever, and cervical lymphadenopathy lasting four days. His mother reported she saw a tick on his head two weeks ago. Laboratory workup revealed anemia, leukopenia and thrombocytopenia. He received anti-inflammatory and analgesic treatment. Leukocytes and platelets showed a tendency to normalise and the boy was discharged home. Two weeks later he was admitted to the emergency department due to abdominal pain, fatigue, fever and somnolence. The abdominal ultrasound was unremarkable. Laboratory findings revealed elevated CRP and leukocytes. Meningoencephalitis was suspected. Cerebrospinal fluid testing found meningitis with 72 cells per mcL. IgM and IgG antibodies to TBE were detected in the blood and CSF and he was diagnosed with tick-borne encephalitis. He received treatment with mannitol and fluids. His clinical condition improved and the child was discharged home.

CONCLUSIONS: Infections with the tick-borne encephalitis virus should be included in the differential diagnosis in patients with fever and hematologic abnormalities living in the endemic area for TBE. Regarding potential severity of the tick-borne encephalitis, awareness about clinical courses in both phases is crucial for prompt recognition and treatment.

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Pediatrics II

Title: 11 year-old patient discovered with gonadal dysgenesis after tone of voice change.

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BACKGROUND: Sex differentiation differences mean congenital disorders in which the chromosomal, gonadal or anatomical sexual development is wrong. In the case of incomplete gender reversal syndromes, small abnormalities in the development of the usual sex type may stay unnoticed untill adolescence.

CASE REPORT: An 11-year-old female patient was admitted to the clinic after tone of voice change for 8 months on. Patient complained for hair loss, intensification of acne lesions and amenorrhea. Physical examination: height in 97th percentile (bone age 12 years), body proportions preserved, axillary and pubic hair, low voice tone, no mammary glands. Lab results showed severe deviations: FSH 144.5 mIU/ml, LH 55.9 mIU/ml, E2<5.0 pg/ml, testosterone 292 ng/dl, dihydrotestosterone 284.6 pg/mL, bHCG 1.69 mIU/ l. AMH 2.27 ng/mL and inhibin B 71 pg/mL are normal. Genetic tests confirmed male karyotype, 46, XY. Gynecological examination revealed an overgrown clitoris and shallow vagina diventricle. In imaging studies: small uterus, without differentiation into body and cervix. In the lower abdomen on the right, the right testicle was imaged. In the left groin, the visible tissue structure may also suggest a left testis or lymph node. Invisible ovaries.

CONCLUSIONS: We report a case of a patient with karyotype 46, XY, female phenotype, in whom the first observed symptom of gonadal dysgenesis was a change in a voice tone. In patients with gonadal dysgenesis, early diagnosis can safe patients form tumors from sex cells.

Title: A case of 17-year-old patient with Pachydermodactyly

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BACKGROUND: Pachydermodactyly (PDD) is a rare, benign digital fibromatosis that is often misdiagnosed as juvenile idiopathic arthritis. It is a disease that primarily affects young individuals, with the majority of cases reported in patients less than 25 years old. The condition is characterized by asymptomatic, symmetrical, fusiform soft tissue swelling of proximal interphalangeal joints with no loss of joint function.

CASE REPORT: An otherwise healthy 17-year-old patient with 2.5-year-old history of digital swelling was admitted to Rheumatology Department with suspicion of arthritis. The physical examination revealed palpable swelling of the soft tissue over the proximal interphalangeal joints on multiple fingers of both hands. However, the patient had no morning stiffness, rashes, or other symptoms, and range of joint motion was unaffected. Blood tests and ultrasonography showed no deviations from the norm, leading to the clinical diagnosis of pachydermodactyly.

CONCLUSIONS: Due to its rarity, PDD is often misdiagnosed, which leads to unnecessary treatments and anxiety in patients. However asymptomatic young patients can be diagnosed by a consistent physical examination, regular analytical results and imaging tests that simply show soft tissue swelling. It is crucial for clinicians to be aware of PDD to avoid underdiagnosis, because limited knowledge about PDD increases the risk of inappropriate treatment and unnecessary testing.

Title: A COLLECTION THAT NO ONE ENVIES - A CASE-REPORT OF 6-YEAR-OLD GIRL WITH AUTOIMMUNE POLYGLANDULAR SYNDROMES TYPE 4.

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BACKGROUND: Autoimmune polyglandular syndromes (APS) are a rare group of diseases involving the dysfunction of at least two endocrine and non-endocrine organs. There are four types of APS, of which APS-4 includes disease combinations not presented in the previous types.

CASE REPORT: A 6-year-old girl was admitted to the hospital due to polyuria and acetone breath. On admission, the patient was observed to have dry oral mucosa, a tongue with a white coating, bruises on the upper limbs, flatulence, and accelerated intestinal peristalsis. Laboratory tests showed hyperglycemia, trilineage pancytopenia, compensated metabolic acidosis, acetonuria, and glucosuria. A diagnosis of type 1 diabetes mellitus, confirmed by high levels of HbA1c, positive ICA and anti-GAD antibodies, was made. Due to trilineage pancytopenia, the patient received blood transfusions - without significant improvement. In additional laboratory testing elevated aminotransferase activity, increased bilirubin concentration, decreased albumin, and elevated ammonia concentration were reported. Magnetic resonance cholangiopancreatography (MRCP) showed fine nodular cirrhosis of the liver with moderate bile duct changes. High positive titers of LC-1, ASMA, and antibodies to celiac disease were found. Due to that, the girl was diagnosed with autoimmune hepatitis and celiac disease. Treatment included insulin treatment, antibiotics, parenteral hydration, immunoglobulin, albumin, and vitamin infusion, vascular endothelial sealing drugs, and steroid therapy. The girl was discharged home in good condition.

CONCLUSIONS: The patient was simultaneously diagnosed with type 1 diabetes mellitus, celiac disease, autoimmune hepatitis, and anaemia, which may indicate that she suffers from APS-4. Such patients should be closely monitored for further autoimmune diseases to prevent health deterioration.

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Pediatrics II

Title: Group B Streptococcal late onset disease in a 15-day old newborn - a case report

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BACKGROUND: Group B Streptococcal late onset disease (GBS LOD) is an isolation of GBS from normally sterile material at 15-89 days of age. GBS remains one of the leading causes of late onset sepsis. Therefore, the Polish Society of Gynecologists and Obstetricians recommends performing universal GBS screening between 35 and 37 weeks of gestation. Colonized women should receive intrapartum antibiotic prophylaxis (IAP). While IAP decreases the incidence of the invasive GBS early onset disease, it does not protect from the GBS late onset disease.

CASE REPORT: A 15-day old girl, previously healthy, was transferred from another hospital, where she had been reported to on the same day, due to a severe general condition and the suspicion of sepsis. At admission the patient was cardiopulmonary insufficient and unconscious. The patient's mother tested positive for GBS colonization during pregnancy. The PCR test of cerebrospinal fluid (CSF) was positive for Streptococcus agalactiae, which was also identified in blood and CSF cultures. The CSF was vague with cell count 16 918 cells/μL, total protein 277,8 mg/dl, glucose 16 mg/dl. The CRP was elevated. At admission the patient was treated with broad spectrum antibiotics. The treatment was narrowed after the antibiogram. The therapy was continued for 21 days in total and the patient was discharged in a good general condition.

CONCLUSIONS: GBS LOD, although rare in the European population, is a disease which can cause severe complications, including death. Doctors should not forget that even proper IAP does not prevent the GBS LOD.

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Pediatrics II

Title: Is allergic contact dermatitis a relevant problem in children?

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BACKGROUND: Allergic contact dermatitis (ACD) used to be considered as a rare skin pathology in children. Although patch testing is the gold standard for evaluation of ACD, diagnosis may be underreported, especially in children with atopic dermatitis (AD).

CASE REPORT: The aim of the study was to assess the incidence of ACD in children and investigate the association with atopic dermatitis.

CONCLUSIONS: 1. Allergic contact dermatitis seems to be a common problem in children with skin lesions of unknown etiology. 2. In patients with atopic dermatitis and therapeutic difficulties, allergic contact dermatitis should be considered in the differential diagnosis.

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Pediatrics II

Title: Long-gap, isolated esophageal atresia without fistula in a newborn - a case report

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BACKGROUND: Esophageal atresia (EA) is the most common congenital anomaly of the esophagus among infants. It causes the esophagus to end in a blind-ended pouch rather than connecting normally to the stomach. According to Gross classification there are five types of EA. Type A is characterized by the presence of a "gap" between the two esophageal blind pouches with no fistula present. As a special type of this congenital anomaly, a newborn is presented.

CASE REPORT: A male infant with congenital obstruction of the esophagus, patent ductus arteriosus and foramen ovale was born at 39 weeks by emergency cesarean section due to threatening intrauterine fetal asphyxia and bradycardia with body weight 3000 g, Apgar 8/9/10/10 points.. The patient was transferred urgently to the neonatology and intensive care unit. X-ray examination of the upper section of the digestive tract confirmed isolated type A esophageal atresia. In the second day of life the patient was qualified for surgical treatment. A four-stage thoracoscopic traction surgery was performed. The long distance between the segments > 2 cm, referred to as long-gap, required the use of various mechanical lengthening techniques. Finally, after 4 weeks of traction, the esophagus was anastomosed with a small end-to-end tension.

CONCLUSIONS: Long “gap” esophageal atresia still remains as a challenge for pediatric surgeons. Over the years, several techniques have been described to deal with the problem With the advent of thoracoscopy the elongation technique has been developed. It can be classified as a minimally invasive surgery, giving good results with a small percentage of complications.

Title: Mirizzi syndrome - risky laparoscopy in a rare form of gallstone disease

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BACKGROUND: Mirizzi syndrome (MS) is a rare complication of cholelithiasis, occurring in 0.5-1.4%. Pathophysiologically, the condition involves external obstruction of the common bile duct (CBD) by pressure exerted by gallstones lodged in Hartman’s pouch or cystic duct. In addition, chronic inflammation promotes the formation of fistulas and adhesions. Due to the high incidence of surgical trauma to the CBD, it is essential to introduce preoperative diagnosis in which endoscopic retrograde cholangiopancreatography (ERCP) is considered the gold standard.

CASE REPORT: A 16-year-old female patient reported to WSSD in Olsztyn because of pain in the right epigastrium. Six months earlier, cholelithiasis was detected on ultrasound. Currently: gallbladder with the presence of numerous deposits, bile ducts dilated. Because of CBD’s cholelithiasis and MS diagnosis, the patient was transferred to the Gastroenterology Department. She underwent ERCP, sphincterotomy and implantation of a prosthesis into the CBD. In the Department of Pediatric Surgery, a cholangio-MRI showed a gallbladder with a thickened wall, with deposits in the lumen, CBD and between the gallbladder and cystic duct. A week later, laparoscopic cholecystectomy was performed: the gallbladder was completely resected. The course of the procedure was uncomplicated. The patient was discharged home with a recommendation for further outpatient follow-up.

CONCLUSIONS: It is important to remember about MS in the differential diagnosis due to potential difficulties in treatment planning. A combination of different preoperative imaging modalities can increase the diagnosis rate. Laparotomy is the preferred surgical technique, although an increasing number of surgeons are beginning to opt for minimally invasive techniques.

Title: Schimke immuno-osseous dysplasia – rare cause of nephrotic syndrome

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BACKGROUND: Schimke immuno-osseous dysplasia (SIOD) is a very rare, genetically determined disease associated with SMARCL1 gene mutation. It is characterized by multisystem disorders with progressive nephropathy, skeletal, immunological, hematological and dermatological abnormalities, short stature and dysmorphia. It is a disease with bad prognosis, treated only symptomatically. Patients with SIOD usually die from opportunistic infections stemming from CD4 and CD8 lymphocytes deficiency, end-stage renal failure (ESRD) or stroke.

CASE REPORT: 6 years old girl was admitted to department of pediatric nephrology due to the first episode of a nephrotic syndrome. At admission she had generalised oedema, hypertension and height deficiency. Laboratory tests showed kidney injury, lymphopenia, hypoalbuminemia, hypertriglyceridaemia, hypercholesterolaemia, high levels of D-dimers and fibrinogen. Electrolytes, glucose, LDH and liver parameters were in normal range. C4 component of complement was elevated, C3 was normal, IgG was very low, IgA and IgM, ANA, ANCA, anti-GBM antibodies, level of CH50 were normal. Urinalysis revealed proteinuria, erythrocyturia and glycosuria. Urine culture was negative. She was treated with methylprednisolone, albumine infusions and diuretics. Due to ESRD she was qualified to haemodialysis. Renal biopsy showed focal segmental glomerulosclerosis (FSGS). A genetic testing revealed a pathogenic variant and potentially pathogenic variant in SMARCL1 gene, which is associated with SIOD. After genetic test immunosupression was discontinued. She continues hemodialysis and treatment of hypertension and anemia. The patient's waiting for kidney transplantation.

CONCLUSIONS: This case sugests that genetic testing should be performed in patients with primary steroidresistant nephrotic syndrome. Diagnosis of SIOD allows to avoid unnessesery immunosupression.

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Pediatrics II

Title: The XXYY-Files - peculiar case of Klinefelter syndrome.

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BACKGROUND: 48, XXYY syndrome (variant of Klinefelter's syndrome) is rare chromosomal aneuploidy. This syndrome occurs in about 1 in 18,000 to 1 in 50,000 male newborns. In addition to the phenotypic features characteristic of Klinefelter syndrome, mental and behavioral disorders occur in it. The coexistence of skeletal anomalies and a tendency to autoimmunity is also characteristic.

CASE REPORT: We report a case of 13-year old boy, (second child, second pregnancy) at 40 weeks of gestation, with MAS, respiratory failure, pulmonary hypertension, Apgar score 6 at 10 minute and 9 at circa 13 minutes. He was presented with moderate intellectual disability, juvenile systemic sclerosis, visual impairment, epilepsy, hypothyroidism, and allergic asthma and was referred to a Genetic Counseling Clinic due to hypergonadotropic hypogonadism (LH 21.4 mIU/ml, FSH 58.08 mIU/ml, testosterone 286 ng/dl). On physical examination, a slender silhouette was noted, along with spinal curvature, jSSc features, scant pubic and axillary hair, without gynecomastia or significant dysmorphic facial features. The boy's karyotype was determined, revealing a mosaic 48,XXYY[23]/47XXY[7] cell line. This, in combination with the clinical symptoms, formed the basis for a diagnosis of Klinefelter syndrome variant.

CONCLUSIONS: In cases of hormonal disorders such as hypergonadotropic hypogonadism, cytogenetic analysis is an essential tool for making an accurate clinical diagnosis. The detection of a mosaic form of Klinefelter syndrome with a 48,XXYY cell line in the presented case allowed for the establishment of appropriate treatment (testosterone replacement therapy), refinement of diagnostic recommendations, and prevention of metabolic diseases in adulthood.

17th Bialystok International Medical Congress for Young Scientists 2023

PhD

Title: Temporal association of granulomatous reaction restricted to permanent makeup areas and MRI procedure

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BACKGROUND: There are anecdotal reports of patients experiencing burning sensations within cosmetic tattoos during magnetic resonance imaging. Recent studies have proved magnetic behaviour of commonly used permanent makeup providing a rationale for such symptoms.

CASE REPORT: A 50-year old patient underwent a non-contrast magnetic resonance angiography because of recurrent headaches. The patient had a history of an inflammatory lung tumor caused by Mycobacterium xenopi removed 6 years earlier. During the procedure she felt tingling of lips and eyebrows, followed by petechiae and occurrence of skin papules. Lesions were limited to the area of permanent makeup performed 3 years earlier. Over the following months the patient reported pain and swelling of ankle joints and breathlessness with low intensity physical activity. Skin biopsy revealed typical sarcoid granulomas surrounding exogenous tattoo dye.

CONCLUSIONS: Despite temporal association there is no evidence of causative correlation between MRI-induced burning sensation of the tattoo and granulomas appearance. Sarcoidosis is the most common cause of granulomas within tattoo. Tattoo granuloma may precede other symptoms of sarcoidosis. There is limited evidence on the role of Mycobacterium xenopi in the pathogenesis of sarcoidosis. Novel studies suggest that hyperimmune response to mycobacteria promotes granulomatous inflammation even in the absence of present infection.



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Editor: Oliwia Froń, Paulina Bałdyga

Adjustment: Daria Trocka, Aleksandra Jurczuk

Graphics: Oliwia Froń

ISBN 978-83-67454-70-4