Medical University of Bialystok

BIMC

16th Bialystok International Medical Congress for Young Scientists

6 - 7 May 2022

BOOK OF ABSTRACTS



16th Bialystok International
Medical Congress
for Young Scientists

Book of Abstracts



Białystok
2022

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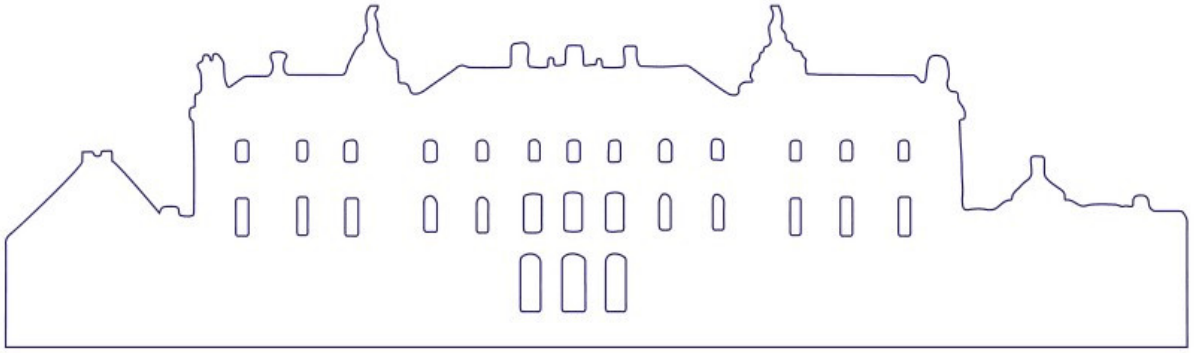
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16th Bialystok International Medical Congress for Young Scientists 2022

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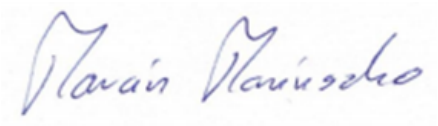
It is a great pleasure to welcome the participants of the 16th Bialystok International Medical Congress (BIMC). Despite the dramatic war and difficult circumstances, people from Poland, Belarus, Bulgaria, Hungary, Latvia, Lithuania, Portugal, Romania, and Ukraine decided to exchange scientific experiences at one of the most creative meetings in this part of Europe.

We live in times of continuous change and unprecedented access to limitless information. It all frequently leads to disorientation and only superficial gain of knowledge. As we all know, this is not the way we can make progress in life sciences, and this is not the way we can solve problems of diagnosis, prognosis, and treatment of numerous diseases we must fight daily. It all takes passion, patience, and perseverance. These three should go together, which is not that frequent nowadays. Therefore, I would like to extend special thanks to all of you for engaging in research activities. Your dedication should be highly appreciated, and I hope your work will be a source of personal and professional satisfaction. And finally, let's hope you'll all discover that doing good science is just a lot of fun.

We are delighted and privileged to welcome you to the Medical University of Bialystok. I wish to thank the Organizing Committee of the 16th BIMC for their enormous dedication, contagious energy, and numberless efforts they put into making this event so unique. Let me extend special thanks to all members of the faculty of the Medical University of Bialystok who agreed to sacrifice their time to share their experience and scientific advice during numerous scientific sessions.

We are very fortunate to live in the beautiful city of Bialystok, and I hope you will manage to find time to enjoy the unique spirit of this place.

With best regards,



Prof. Marcin Moniuszko, MD, PhD
Vice-Rector for Scientific Affairs
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TABLE OF CONTENTS

Page	Session
8	Anesthesiology and Surgery
17	Basic Sciences
30	Cardiology
47	Gynecology and Obstetrics
57	Interdisciplinary
73	Internal Diseases
90	Pediatrics
98	Public Health and Pharmacy
113	PhD I
129	PhD II
144	Case report I - Internal Diseases
165	Case report II - Neurology
177	Case report III - Gynecology and Obstetrics
187	Case report IV - Surgery
207	Case report V - Cardiology
222	Case report VI - Interdisciplinary
237	Case report VII - Pediatrics

Original Research

Anesthesiology and Surgery

Title: PREMEDICATION WITH BENZODIAZEPINES: POSTOPERATIVE OUTCOMES

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INTRODUCTION: Premedication is the administration of medication before the induction of anaesthesia. Benzodiazepines (BZD) have anxiolytic effects and causes sedation and anterograde amnesia. Premedication with BZD has become questionable regarding possible postoperative side effects such as postoperative delirium (POD) (incidence 1% – 48%), complications in cardiovascular and respiratory systems.

AIM OF THE STUDY: To compare the postoperative outcome of BZD-premedicated patients in two groups: first (1st) group – those that are not using these drugs regularly and second (2nd) group – regular users.

MATERIALS AND METHODS: A retrospective cohort study of 96 adult patients who have received premedication with BZD at Hospital of Lithuanian University of Health Sciences Kaunas Clinics from 2019 to 2020. POD diagnosis was confirmed by psychiatrist. Data analysis was accomplished using the SPSS 28.0 program. Fisher's Exact Test was applied. The statistically significant difference was, when $p<0,05$.

RESULTS: 78.1% were female, 21.9% – male. All patients underwent hip replacement surgery, received spinal anaesthesia and were premedicated with Midazolam. The 1st group consisted of 73 patients with average age 55.58 (SD=19.09), the 2nd – 23 patients with average age 67.13 (SD=7.65). 87.0% patients in the 2nd group were taking Lorazepam, 13.0% - Diazepam. There were no postoperative respiratory depression and hypotension. 5.21% patients had POD. 80% of the patients that experienced POD were from the 2nd group. POD had a higher incidence in patients that were taking BZD regularly ($p=0,011$).

CONCLUSIONS: 5.21% of study subjects have experienced POD. POD had a higher incidence in patients that were taking BZD regularly ($p=0,011$). There were no signs of cardiovascular and respiratory postoperative side effects, such as hypotension and respiratory depression.

Title: THERE IS NO CHARACTERISTIC MODEL OF OXIDATIVE STRESS DISTURBANCES CAUSED BY THE OPIOIDS - PILOT CROSS-SECTIONAL STUDY.

Author(s): Michał Kuźma[1], Hubert Żywno[1], Joanna Rosłan[1], Katarzyna Maciorowska[1], PhD Urszula Kościuczuk[1], PhD Piotr Jakubów[1]

Tutor(s): PhD Urszula Kościuczuk[1], PhD Piotr Jakubów[1]

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INTRODUCTION: Despite the important role of opioid drugs in pain pharmacotherapy, the phenomenon of its influence on oxidative-antioxidant balance are poolry understood. Additionally, little is known about the oxidative status in patients with chronic non cancer pain treated with opioids.

AIM OF THE STUDY: The goal of the study was to explore the oxidative stress using Total Oxidative Capacity (TOC) and Total Antioxidative Capacity (TAC) in chronic Low Back Pain (LBP) patients with opioid therapy.

MATERIALS AND METHODS: The study was registered in ClinicalTrials. gov (NCT04227223) and approved by Ethical Committee in Medical University of Bialystok, Poland (R-I-002/307/2019). A fifty patients were included. Serum TOC and TAC were analyzed in Study Group (n=28) - patients with the diagnosis of chronic LBP treated with opioids, and Control Group (n=11) - healthy volunteers.

RESULTS: TAC was significantly lower in Study Group compared to Control Group, ($p<0.05$) while TOC did not differ significantly. Significantly lower TOC in Group with using buprenorphine therapy compared to group with using oxycodone ($p=0.019$) and tramadol ($p=0.036$) was observed. Indeed, TOC did not differ between tramadol and oxycodone groups. The highest TAC was in group of patients with oxycodone therapy and TAC in buprenorphine and tramadol were significantly lower in comparison with oxycodone group, ($p=0.007$ and $p=0.016$), respectively.

CONCLUSIONS: Patients with chronic LBP and opioid therapy present lower antioxidative capacity. There is no characteristic model of oxidative stress disturbances caused by the opioids. The least oxidative capacity was associated with the buprenorphine, while during oxycodone therapy the greatest antioxidant activity occurred.

Title: THE HEART RATE CHANGES DURING VOLATILE INDUCTION ANAESTHESIA WITH ROCURONIUM.

Author(s): Katarzyna Maciorowska[1], Maciej Rosłan[1], Joanna Rosłan[1], Hubert Żywno[1], Michał Kuźma[1], PhD Urszula Kościuczuk[2]

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INTRODUCTION: The neuromuscular blocking agents influence on the haemodynamic condition by frequency of heart rate. This phenomenon is called as vagolytic effect.

AIM OF THE STUDY: The aim was to investigate the effect of rocuronium on heart rate during volatile induction of general anaesthesia and intubation.

MATERIALS AND METHODS: The study was conducted in two groups – Group I underwent volatile induction of general anaesthesia and intubation with rocuronium administration, Group II - volatile induction of general anesthesia and intubation without any muscle relaxants. Heart rate were recorded before anaesthesia, before intubation and after intubation.

RESULTS: In both groups, the values of the median heart rate recorded before anesthesia were similar and did not differ significantly. In Group I, significant increase in heart rate after rocuronium administration 110 (84-120) compared to the value before anesthesia 94 (86-112) were demonstrated. Additionally, after intubation median value of heart rate decreases non-significantly 94(82-114). In the Group II the value of heart rate significantly increases after intubation 115 (84-130) compared with value before intubation 76(69-94). The heart rate before intubation was significantly higher with group with rocuronium administration, but after intubation the median value of heart rate was significantly higher in control group- without rocuronium.

CONCLUSIONS: The vagolytic effect was observed during volatile induction of general anesthesia with rocuronium administration. Intubation with rocuronium administration provided heart rate protection mechanism.

Title: THE MODEL OF COMBINED VOLATILE GENERAL ANAESTHESIA WITHOUT NEUROMUSCULAR BLOCKING AGENTS DOES NOT CAUSE SIGNIFICANT METABOLIC CHANGES.

Author(s): Joanna Rosłan[1], Katarzyna Maciorowska[1], Maciej Rosłan[1], Hubert Żywno[1], Michał Kuźma[1], PhD Urszula Kościuczuk[2]

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INTRODUCTION: The use of neuromuscular blocking agents is not mandatory element of general anaesthesia.

AIM OF THE STUDY: The aim of the study was to describe the effect of limitation of neuromuscular blocking agents on the metabolism determined by oxygen consumption (OC) and carbon dioxide production (CDP).

MATERIALS AND METHODS: The Group I (50 patients) were anaesthetized with volatile general anaesthesia with rocuronium (intubation dose, and infusion to the level of relaxation TOF=0). The Group II (50 patients) underwent volatile general anaesthesia without any neuromuscular blocking agents. OC and CDP were calculated on the basis of recorded ventilation parameters before and at the end of surgery in all patients. In the Group I, OC and CDP were calculated at the end of rocuronium infusion, also.

RESULTS: . In the Group I, OC at the end of rocuronium infusion and at the end of surgery was significantly reduced compared to values before anaesthesia - 26.0% (p=0.03) and 40.8%, (p=0.01), respectively, whereas OC at the end of surgery was significantly reduced by 20.0%, (p=0.02) compared to point at the end of rocuronium infusion. The similar changes occurred in CDP in the Group I. The significant decrease in CDP at the end of rocuronium infusion and at the end of surgery in relation to baseline by 4.6%, (p=0.01) and 18.2%, (p=0.02), respectively. Significant reduction in median OC and CDP at the end of surgery compared to preoperative values by 48.3%, (p=0.01) and 18.2%, (p=0.02), in the Group II were recorded.

CONCLUSIONS: Anaesthesia without neuromuscular blocking agents was safe, and metabolic changes are similat ro general anaesthesia with using of neuromuscular blocking agents.

Title: THE EFFECT OF LOW-OPIOID ANALGESIA ON THE POSTOPERATIVE PAIN.

Author(s): Maciej Rosłan[1], Katarzyna Maciorowska[1], Joanna Rosłan[1], Urszula Kościuczuk[2], Ewa Komorowska-Wojtunik[3], Hady Raza Hady[4]

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INTRODUCTION: Postoperative pain therapy is one of the aspects in perioperative care.

AIM OF THE STUDY: The aim was to determine the influence of the low opioid anesthesia protocol on the incidence and intensity of postoperative pain after laparoscopic cholecystectomy.

MATERIALS AND METHODS: The study group consisted of 39 patients anesthetized according to the low-opioid protocol (using the coanalgesics), and the control group consisted of 37 patients (general anesthesia with fentanyl as the main analgesic). The incidence and intensity of postoperative pain was assessed using a 10-point numeric scale (NRS) questionnaire within 24 hours after surgery - at the time points: first 2 hours, between 2 and 6 hours, 6 and 12 hours, 12 and 24 hour after surgery.

RESULTS: Postoperative pain was 90%, 82% in the study group and 100% in the control.The highest median pain in the NRS was 3 and occurred within the first 2 hours, while the lowest median pain in the NRS was 1 and occurred between 12 and 24 hours after surgery. In the control group - the highest median pain was NRS 4 and occurred in the first 2 hours, between 2 and 6, 6 and 12 hours, where the lowest median pain was 3 and occurred between 12 and 24 hours after surgery. There were significant differences in pain intensity between 2 and 6 hours ($p = 0.001$), 6 and 12 hours ($p = 0.001$) and 12 and 24 hours after surgery ($p = 0.0001$). There was no evidence of an effect of the total dose of fentanyl on the intensity of postoperative pain in the control.

CONCLUSIONS: The use of the proposed low opioid anesthesia protocol was safe and reduced the intensity of postoperative pain within 24 hours after laparoscopic cholecystectomy.

Title: CHRONIC POST-THORACOTOMY PAIN AFTER TREATMENT BY CRYOLESION - AN OBSERVATIONAL PILOT STUDY

Author(s): Hubert Żywno[1], Katarzyna Maciorowska[1], Joanna Rosłan[1], Michał Kuźma[1], Urszula Kościuczuk[1], Piotr Jakubow[1]

Tutor(s): Urszula Kosciuczuk[1]

Affiliation(s):

[1]Departement of Anaesthesiology and Intensive Therapy

INTRODUCTION: Persistent pain after thoracotomy is a clinical problem that significantly limits the return of physical and psychological well-being in patients. Knowledge of pain therapy, proper diagnostic, as well as ability to assess analgesia by questionnaire is essential in the immediate postoperative period and in the distant future.

AIM OF THE STUDY: The study evaluated the effectiveness of cryosurgery in treatment of persistent pain after thoracotomy in patients after cardiothoracic surgery

MATERIALS AND METHODS: In the group of 42 patients treated with invasive techniques, analgesic efficacy was assessed before and after treatment, using pain mapping, NRS , VAS, as well as the DN-4.

RESULTS: The use of nerve cryolesioning, in the painful area, was more effective than treatment with articaine and methylprednisolone alone. The analgesic effect increased with concurrent 56 days.

CONCLUSIONS: The use of cryosurgery reduces post-operative chest pain and is an alternative to the pharmacological analgesia block approach. Cryosurgery was associated with a prolonged analgesic effect after therapy. The pain-free effect lasted longer than a conventional blockade.

Title: POSTOPERATIVE CEREBRAL VENOUS SINUS THROMBOSIS FOLLOWING RETROSIGMOID APPROACH – RADIOLOGICAL AND CLINICAL ANALYSIS

Author(s): Jan Jankowski[1], Katarzyna Camlet[1]

Tutor(s): Łukasz Przepiórka[2], Przemysław Kunert[2], Katarzyna Wójtowicz[2], Laretta Grabowska–Derlatka[3], Andrzej Marchel[2]

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INTRODUCTION: Symptomatic postoperative cerebral venous sinus thrombosis (CVST) is a rare but known complication following the retrosigmoid approach (RSA). However, the literature regarding CVST is still lacking.

AIM OF THE STUDY: The aim of this study was to evaluate radiologic features of CVST (rCVST), whether occurrence of rCVST was related to the extent of craniotomy and the frequency of clinical manifestation (CM).

MATERIALS AND METHODS: We retrospectively evaluated 128 contrast enhanced computed tomography scans performed routinely after elective RSAs. In addition to rCVST, the extent of the bony opening relative to the venous sinuses was quantified by expressing the shortest distance of the craniotomy margin from the transverse sinus (TS) and sigmoid sinus (SS) in positive values, and the overlap of the craniotomy with the sinus in negative values. Medical charts were evaluated for clinical diagnosis of CVST.

RESULTS: rCVST were found in 59 patients (46.1%), of which 38 (64.4%) in the TS, 37 (62.7%) in the SS, and 31 (52.5%) in the TS and SS junction. The mean ranges of sinus exposures in patients with and without rCVST were for SS: -3.13 and -1.90 mm (for the whole group: -2.47 mm); for TS: -7.20 and -5.04 mm (for the whole group: -6.04 mm). Exposure of SS or TS was found in 110 patients, of which 55 (50%) had rCVST. In 18 patients, neither SS nor TS was exposed, of which only 4 (22.2%) had rCVST (p=0.04). rCVST rates for exposed and unexposed SS were not significantly different (50.6% vs 38.8%, p=0.21); similarly for TS (50.5% vs 31.0%, p=0.09). 3 patients (5%) had CM of CVST, of which 1 involved superior sagittal sinus and 2 ipsilateral TS and SS.

CONCLUSIONS: rCVST are common sequelae of RSA, but occur less frequently when neither of sinuses is exposed. Approximately 5% of patients with rCVST present with CM.

Title: CHARACTERISTICS AND OUTCOMES OF PATIENTS UNDERGOING TRANSPLANTATION VS HEPATIC RESECTION FOR HEPATOCELLULAR CARCINOMA

Author(s): Agnė Grigonytė[1], Rokas Stulpinas MD, PhD student[4.5], Arvydas Laurinavičius MD, PhD[4.5], Kęstutis Strupas MD, PhD[2.5]

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INTRODUCTION: Hepatic resection (HR) and liver transplantation (LT) are the most common curative treatment options for hepatocellular carcinoma (HCC). Still, there are limited data to shed light on what characterizes patients who underwent HR or LT and which type of surgery has better outcomes for HCC.

AIM OF THE STUDY: This study aims to compare the characteristics of patients undergoing LT vs HR for HCC and determine in which group the outcomes are better.

MATERIALS AND METHODS: Clinical, surgical and laboratory data of selected patients with HCC who underwent hepatic resection or liver transplantation at Vilnius University Hospital Santaros Klinikos between May 2007 and November 2020 were collected. In this correlational study, we used the Wilcoxon rank-sum test, chi-square, and Fischer exact tests of independence to compare HR vs LT.

RESULTS: A total of 136 selected patients who went through HR (n=108) or LT (n=28) were analysed. Most of the patients (75%) were males and the median age at the time of operation was 63 years old. The median survival among the groups was over 40 months and the LT group had significantly better overall survival compared to the HR group ($p=0.003$), and disease-free survival was also significantly higher in the transplant group ($p<0.001$). Primary cancer (first time vs recurrence of HCC, $p=0.018$) and recurrence of this case ($p<0.001$), were significantly higher in patients who underwent HR compared to LT for HCC. Compared with HR, patients who underwent LT had better laboratory findings such as TBIL, GGT, AST, ALT on the last follow-up ($p<0.05$).

CONCLUSIONS: There were significant differences between surgical and laboratory findings in liver transplantation vs resection cohorts. Liver transplantation may be associated with better overall and disease-free survival, a non-recurrent tumour and better liver function on the last follow-up.

Original Research

Basic Sciences

Title: THE EFFECT OF CANNABINOID OIL ON APOPTOSIS IN NORMAL AND CANCER CELL LINES.

Author(s): Martyna Filipkowska[1], Julia Klepacka[1], Diana Wyszyńska[1], Magda Chalecka[1], Adam Kazberuk[1]

Tutor(s): Arkadiusz Surażyński, PhD[1]

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INTRODUCTION: Cancer pharmacotherapy still remains great challenge. Recent trends in studies on new anticancer compounds is focused on well-known compounds of anticancer potential. An example of such a substance with pleiotropic properties, used as a drug with anti-inflammatory, analgesic, sedative and proapoptotic potential, is cannabidiol (CBD). This compound is a ligand for the PPAR gamma receptor, mediating apoptosis, through p53 signaling.

AIM OF THE STUDY: The study was to evaluate the potential anticancer properties of CBD oil by examining its effects on apoptosis in normal and cancer cell lines.

MATERIALS AND METHODS: The studies were conducted on fibroblasts and gastric cancer cells AGS treated with different concentrations of CBD. Cell viability was assessed by MTT assay, DNA biosynthesis was studied by radiometric assay, apoptosis by cytometric assay, and expression and translocation of apoptosis markers by Immunofluorescence Bioimaging. The amount of ROS was examined by the survival fluorescence method.

RESULTS: CBD decreased cell viability and DNA biosynthesis in dose dependent manner in both cell lines, however, much more efficiently in cancer cells than in normal cells. The expression of p53 protein, active caspase 3, and production of reactive oxygen species were increased in CBD-treated cells, however the effect was more pronounced in AGS cells than in normal human skin cells.

CONCLUSIONS: The results suggest the potential anticancer properties of cannabidiol providing rational for future studies on CBD in experimental cancer therapy.

Title: EVALUATION OF THE ANTI-INFLAMMATORY EFFECT OF MONOCARBONYL ANALOGS OF CURCUMIN ON PMA-IO-INDUCED LYMPHOCYTES

Author(s): Sylwia Księżak[1], Alicja Walewska[1], Damian Pawelski[2], Dariusz Średziński[3], Piotr Radziwon[3.4], Ryszard Łaźny[5]

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INTRODUCTION: Curcumin is a natural chemical derived from Curcuma longa rhizome exhibiting many biological effects, including immune-modulatory properties, antioxidant, and antineoplastic activities. However, their clinical application is impossible due to poor water solubility and low stability. Nevertheless, it is believed that curcumin analogs may possess higher therapeutic usefulness.

AIM OF THE STUDY: Here we aimed to investigate the immunomodulatory properties of novel monocarbonyl curcumin analogs in PMA-IO stimulated leukocytes.

MATERIALS AND METHODS: First, we assessed the cytotoxicity of the novel curcumin analogs on PBMCs using an MTT assay and selected the three highest non-cytotoxic concentrations for further experimentation. The immunomodulatory effects of the novel curcumin analogs were analyzed upon 24h peripheral blood mononuclear cells stimulation with PMA-IO. The levels of IL-1β, IL-10, TNFα, and INFγ were determined by ELISA. Statistical analysis was performed using GraphPad Prism Software.

RESULTS: First, three non-cytotoxic concentrations of analyzed curcumin analogs were selected based on the cytotoxicity assay. Next, we found that studied compounds present with low endotoxin levels. Finally, we observed a decreased secretion of pro-inflammatory cytokines, especially IL-1β and TNFα, after PMA-IO stimulation in the presence of analyzed curcumin analogs. In contrast, we found no changes in anti-inflammatory IL-10 secretion.

CONCLUSIONS: Taking together, we showed here that the new curcumin analogs have low cytotoxicity and possess high anti-inflammatory potential. However, further studies are needed better to understand their biological properties.

Title: EXPRESSION AND ACTIVATION OF EXTRACELLULAR SIGNAL-REGULATED KINASE 5 (ERK5) IN LUNG ALVEOLAR EPITHELIAL CELLS EXPOSED TO URBAN DUST.

Author(s): Katarzyna Maciorowska[1], Agata Niechoda[2], Maciej Rosłan[1], Joanna Rosłan[1], Aleksandra Bowtruczuk[1], prof. Adam Hołownia[2]

Tutor(s): prof. Adam Hołownia[2]

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INTRODUCTION: It seems that biomonitoring may help quantify both accumulative, and time-integrative responses toward the specific air samples. There are however several problems in elaborating appropriate diagnostic algorithms. Extracellular signal-regulated kinase 5 (ERK5 or Big MAP Kinase- BMK1) is a member of the mitogen-activated protein kinase (MAPK) family activated by mitogens, agonists of the Toll-like receptor-2, and stress.

AIM OF THE STUDY: The objective of our study was to assess the effect of standardized urban dust (UD) on the expression and activation (C terminal phosphorylation) of ERK5 in alveolar epithelial cells.

MATERIALS AND METHODS: A549 cells (human alveolar epithelial cells) were grown for up to 24 hours with 10-200μg·mL−1 carbon black (CB; reference) or UD. ERK5 mRNA was estimated with quantitative RT-PCR, ERK5 and ERK5-P protein were assayed with Western Blott and flow cytometry, and co-expression and cell distribution were studied with flow cytometry of double-stained cells and bivariate scatterplots.

RESULTS: ERK5 mRNA was elevated by more than 2 fold in cells grown with UD when compared to cells treated with CB or control cells but was not “dose”-dependent. Numerized WB evidenced increased values, however, they were not significant, whereas FC revealed a more than a two-fold increase ($p<o.o5$). Activated ERK5 was not increased more than naïve protein and analysis of binary scatterplots (ERK5 vs ERK5-P) suggests linear co-expression, at least in the majority of cells tested.

CONCLUSIONS: Analysis of ERK5 expression and activity is relevant to indicate specific pathways activation or cell distribution. It seems that ERK5 may be used also as a response biomarker to environmental pollutants.

Title: THE EFFECTS OF IBRUTINIB ON ΓΔT CELL FUNCTIONS – DECREASED PROLIFERATION, BUT INCREASED EXPRESSION OF CYTOTOXICITY-RELATED RECEPTORS

Author(s): Adam Michalski[1], Izabela Morawska[1], Natalia Lehman[1]

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INTRODUCTION: Ibrutinib is a Bruton's Tyrosine Kinase inhibitor, conventionally used for the treatment of several hematological malignancies. While ibrutinib effects on tumor cells are thoroughly researched, the effects on cells of the immunological system are still largely unknown. Among them, we can find γδT cells, a subset of T cells, comprising approximately 2–5% of total T cells in the peripheral blood. γδT cells are important players in cancer immunosurveillance.

AIM OF THE STUDY: We aimed to investigate the effects of ibrutinib in different concentrations on γδT cells' ability to differentiate into central memory (CM) and effector memory cells (EM) and the percentage of γδT cells expressing killer-activating receptors.

MATERIALS AND METHODS: Peripheral blood mononuclear cells were stimulated with zolendronate and IL-2 to promote selective proliferation of γδT cells. Cell cultures were established without and with ibrutinib at concentrations 0.1 μM, 0.2 μM, or 0.3 μM. After 14 days samples were stained with anti-γδTCR, anti-CD3, anti-NKG2D, anti-NKp30, anti-NKp44, anti-CD27, anti-CD45RA, and anti-CD62L antibodies and analyzed with flow cytometry.

RESULTS: Ibrutinib decreased proliferation and therefore also the percentage of γδT cells in a concentration-depending manner ($p<0.05$). No effect on the ability of γδT cells to differentiate into CM and EM was discovered. However, the percentage of naïve γδT cells increased in a concentration-depending manner ($p<0.05$). Ibrutinib increased the level of NKp44+ and NKp30 + γδT cells in a concentration-depending manner, although ibrutinib at dose 0.1 μM decreased the percentage of NKp44+ γδT cells ($p<0.05$). Lastly, ibrutinib decreased the expression of NKG2D in γδT cells in a concentration-depending manner.

CONCLUSIONS: Ibrutinib seems to have a significant impact on γδT cell proliferation and possibly function. On one hand it seems to decrease their proliferative capacity, but on the other (increased expression of NKp44 and NKp30) it may increase their cytotoxic potential.

Title: INFLUENCE OF SARS-COV-2 STRUCTURAL PROTEINS ON EARLY IN VITRO CHANGES IN PHENOTYPE OF EFFECTOR T CELLS, B REGULATORY LYMPHOCYTES AND DENDRITIC CELLS.

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INTRODUCTION: SARS-CoV-2 is an RNA virus which has been a cause of pandemia since the end of 2019. Despite numerous data, mechanisms contributing to its severe onset are still not fully understood, especially in context of anti-viral immunity. Thus, it is crucial to reveal the immunological aspects of the viral entrance. Fundamental changes might potentially be associated with cell populations responsible for immune responses generation, modulation and maintenance – dendritic, B regulatory and helper T cells.

AIM OF THE STUDY: Our study aimed to assess the influence of SARS-CoV-2 structural proteins on selected populations of immune cells - crucial in context of anti-viral response induction.

MATERIALS AND METHODS: Peripheral blood mononuclear cells (PBMCs) were isolated from the healthy donors with no diagnostic and clinical signs of SARS-Cov-2 infection. PBMCs were cultured in the presence of the virus structural proteins for 24 hours, including: Nucleocapsid (N), Spike S1 (S1), and Spike RBD (RBD). Subsequently, phenotypic changes in cells phenotype were assessed using flow cytometry, focusing on: dendritic cell (DC) subsets, regulatory B cells (Breg), and population of Th1, Th17 and Th22 lymphocytes.

RESULTS: We observed that application of structural coronavirus proteins caused an increase in number of T cells producing IFN-gamma, IL-17 and IL-22 after 24-hour incubation. That effect was especially noticed in context of RBD protein. Spike S1 protein use led to a significant increase in dendritic cells. Subsequent analyses of Bregs indicated a decline in those cells, Foxp3+ especially, in response to all three types of virus proteins. Investigation of mutual correlations revealed an association between effector Th cells and Breg cells after stimulation with the N protein. Moreover, we noticed a positive correlation between subset of dendritic cells and effector Th lymphocytes.

CONCLUSIONS: Here, for the first time, we demonstrated changes in selected immune cell subpopulations in response to structural Sars-CoV-2 proteins. Profiling of the changes in immune cells can expand our knowledge on the mechanisms of immune responses to the virus. Furthermore, comprehensive understanding of aspects involved in the severe immune response during Sars-CoV-2 infection is of great importance to provide fundaments for novel more effective therapeutic in the future.

Title: APPLICATION OF LIPOPOLYSACCHARIDE (LPS) AND PUROMYCIN AMINONUCLEOSIDE (PAN) IN PODOCYTE INJURY INDUCTION IN THE EXPERIMENTAL IN VITRO MINIMAL CHANGE DISEASE MODEL.

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INTRODUCTION: Minimal change disease (MCD) is a leading cause of idiopathic nephrotic syndrome in children characterized by proteinuria and loss of podocyte ultrastructure. Early diagnosis of MCD is difficult as only electron microscopy may reveal characteristic changes in podocytes. Puromycin aminonucleoside (PAN) and lipopolysaccharide (LPS) are known to induce selective cell damage to podocytes, observed in MCD. That approach might provide an essential element of MCD studies.

AIM OF THE STUDY: Our study aimed to demonstrate that LPS-PAN injury induction of podocytes is an effective tool that enables investigation of MCD in the in vitro setting. In addition, we verified the model potential in testing drugs effects on MCD.

MATERIALS AND METHODS: Podocyte cell line (CIHP-1) was incubated with LPS+PAN to induce cell damage and reflect morphology of podocytes in MCD. Next, changes in cell structure and function were evaluated. Flow cytometry was used to assess the viability and podocyte-related proteins. Morphological features were analyzed on a confocal microscope. Functional aspects of podocytes as filtration barrier were tested using TEER analysis. Cell culture supernatants were used to assess inflammatory cytokines levels.

RESULTS: In the beginning, MCD induction did not appear to affect cells viability. However, stimulation remarkably reduced podocytes area and decreases distance between cells. Additionally, cells also presented higher circularity and reduced size. Thus, that model allowed for recreating MCD morphology. Next, TEER analysis revealed that function of podocytes as barrier is also modulated notably. In context of podocyte-related proteins, we found increased expression of PODXL and reduced in NPHS2 and PTPRO after LPS+PAN induction. MCD in vitro model generation showed changes also in cytokine levels with reduction of IL-6, and increased values of TNF-alpha and IL-10.

CONCLUSIONS: To sum up, podocytes stimulated with LPS-PAN present a wide range of changes compared to not-induced ones. Considering the obtained results LPS+PAN and CIHP-1 cells can be effectively used as MCD vitro model. Further studies would allow for the model verification in context of different MCD-related aspects investigation.

Title: AN ASSESSMENT OF SOLUBLE E-SELECTIN CONCENTRATION IN BLOOD OF COVID-19 SURVIVORS

Author(s): Wiktoria Przyborska[1], Karolina Zemlik[1], Marcin Śmiarowski[1]

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INTRODUCTION: COVID-19 patients present symptoms of several organ damage, including respiratory, nervous or cardiovascular system. Moreover, there has been described a long-COVID or post-COVID syndrome, that is associated with chronic abnormalities in COVID convalescents. It is suggested, that after the disease endothelium may be injured. E-selectin is one of the mediators of leukocyte-endothelial adhesion. It is expressed on activated endothelium and released into the circulation in its soluble form.

AIM OF THE STUDY: The aim of this study was to analyze if COVID-19 convalescents have increased concentration of soluble E-selectin, endothelial cell damage marker, in peripheral blood.

MATERIALS AND METHODS: Soluble E-selectin concentration was assessed in serum from 131 healthy blood donors registered at Regional Blood Donation Center using ELISA kit. Among enrolled subjects 80 declared previous SARS-CoV-2 infection and 51 declared no COVID-19. Parallelly, titer of anti-SARS-CoV-2 antibodies directed against nucleocapsid was measured in all samples. Statistical analysis was performed using Graph Pad Prism 6.

RESULTS: Analysis of anti-N anti-SARS-CoV-2 antibodies showed that among 51 blood donors who declared lack of previous infection, 16 had previous contact with the virus. Finally, 96 subjects were identified as convalescents and 35 as non-infected. The mean concentration of sE-selectin in convalescents was 2536.86 pg/ml ±1452.72 pg/ml and in non-infected 2045.81 pg/ml±971.74 pg/ml. The difference was statistically significant, p=0.045

CONCLUSIONS: Previous infection with SARS-CoV-2 contributes to endothelial damage and increase of sE-selectin concentration in blood.

Title: MONOCYTE-MACROPHAGE TRANSITION, CYTOTOXICITY AND DNA DAMAGE IN THP1 CELLS GROWN WITH STANDARDIZED ENVIRONMENTAL POLLUTANTS.

Author(s): Maciej Rosłan[1], Agata Niechoda[2], Katarzyna Maciorowska[1], Joanna Rosłan[1], Aleksandra Bowtruczuk[1], Prof. Adam Hołownia[2]

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INTRODUCTION: Air particulate matter (PM) triggers an inflammatory response in the airways. Unfortunately, the health risk of accumulated exposure cannot be predicted with physical monitoring systems. In experimental models, exposure of lung epithelial cells and monocytes to PM resulted in oxidative stress, DNA damage, and pro-inflammatory activation.

AIM OF THE STUDY: Aim to use the human monocyte-macrophage cell and assess the effect of standard PM (carbon black; urban dust and nanoparticle carbon black) on cell scatter within the binary fluorescence distribution system specific for DNA damage and inflammation.

MATERIALS AND METHODS: The THP1 cells grown in an ATCC-formulated RPMI 1640 medium were used in this study. Culture media were supplemented UD, NPCB, or coarse CB-used as a reference. Particles were suspended in a cell culture medium at a concentration of 30 μg/mL and THP1 cells were grown in a PM-conditioned medium for 24h. For monocyte-macrophage transition phorbol-12-myristate-13-acetate was used. The transition was confirmed by four independent epitopes. Markers of inflammation and DNA damage, ERK5 and H2AX.

RESULTS: CB was without effect on oxidative stress but UD and NPCB increased reactive oxygen species in THP1 cells. PM increased CD14, CD11a/CD18 expression, and highly stimulated PMA-induced activation. Scatterplots of H2AK and ERK5 expression were shifted toward H2AX, mostly in polarised cells, binary distributed and co-existed with oxidative stress.

CONCLUSIONS: UD and NACB can stimulate cell adhesion, increase oxidative stress, and to some extent, also affect monocyte /macrophage transition and induce DNA damage.

Title: NSPEF REDUCES TUMOR GROWTH OF PANCREATIC CANCER

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INTRODUCTION: Pancreatic cancer (PCa) remains one of the tumour with the highest mortality rates. Electric fields (EFs) have been shown to induce immunomodulatory and cytotoxic effects in malignant cells, providing a promising new approach to PCa therapy. There is no effective treatment regimen for patients with high-grade PCa, so research needs to focus more on new cancer therapies. While the effects of high-voltage EF are well understood, the molecular mechanism by which low-voltage electric fields act stil

AIM OF THE STUDY: The aim of the current study was to evaluate the potential of nsPEF in reducing the growth of 3D cell cultures. We assessed the influence of PEFs on cell membrane permeabilization and resistance to chemotherapy.

MATERIALS AND METHODS: Experiments were performed on EPP85-181RDB, EPP85-181RNOV, and EPP85-181P cell lines. We tested how nsPEF affect spheroid formation using 3D cell culture models and how it affects the resistance to paclitaxel chemotherapy. We tested the adhesive properties of cancer cells (pancadherin expression). We analyzed the release of EVs from cancer cells using holotomographic microscopy and investigated the cytotoxic effect of nsPEF on cells using MTT and clonogenic assays.

RESULTS: EPP85-181RDB PCa cells released EVs after treatment with an electric field. Moreover, the cells were more sensitive to paclitaxel treatment due to the release of microvesicles containing multidrug resistance proteins. EPP85-181RNOV cells were permeabilized after pulse treatment, which was correlated with the reduction of spheroid growth and changes in the expression of pancadherin. In EPP85-181P cells, nsPEF treatment resulted in cell shrinkage, and no anti-cancer effect was obtained.

CONCLUSIONS: nsPEF reduces pancreatic cells growth and sensitizes them to chemotherapy. However, the effect is cell line dependent and we have to optimize the PEF treatment to the specific type of cells.

Title: ASSESSMENT OF ENDOTHELIAL DAMAGE MARKER ICAM-1 IN COVID-19 CONVALESCENTS

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INTRODUCTION: COVID-19 is a disease caused by SARS-CoV-2 virus. Affected patients present dysfunction of many organs during active phase of the disease as well as survivors. Many authors describe a post-COVID syndrome associated with chronic abnormalities in survivors. One of the tissues that may be injured after the disease is endothelium. ICAM-1 is a cellular adhesion molecule that mediates the interaction of activated endothelial cells with leukocytes. It may be released by activated endothelial cells.

AIM OF THE STUDY: The aim of this study was to analyze if COVID convalescents have increased concentration of endothelial cell and leukocyte marker ICAM-1 in blood, which would be indicative for endothelial activation and damage.

MATERIALS AND METHODS: ICAM-1 concentration using ELISA method was assessed in serum from 131 healthy blood donors registered at Regional Blood Donation Center, among which 80 declared previous SARS-CoV-2 infection and 51 declared no COVID-19. Parallelly, titer of anti-SARS-CoV-2 antibodies directed against nucleocapsid was measured in all samples. Statistical analysis was performed using Graph Pad Prism 6.

RESULTS: Analysis of anti-N anti-SARS-CoV-2 antibodies showed that among 51 blood donors who declared lack of previous infection, 16 had previous contact with the virus. Finally, 96 subjects were identified as convalescents and 35 as non-infected. The mean concentration of ICAM-1 in convalescents was 1706.61 pg/ml ±760.07 pg/ml and in non-infected 1615.63 pg/ml±710.54 pg/ml. The difference was not statistically significant.

CONCLUSIONS: Previous infection with SARS-CoV-2 does not contribute to increase release of ICAM-1 from endothelial cells or leukocytes.

Title: ASSESSMENT OF THE CHANGES IN THE METABOLOMIC PROFILE OF BEE/WASP VENOM ALLERGIC PATIENTS IN THE COURSE OF ALLERGEN-SPECIFIC THERAPY (AIT)

Author(s): Magdalena Krętowska[1], Zuzanna Parfienowicz[1], Aleksandra Starosz[1]

Tutor(s): Kamil Grubczak, PhD[1]

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INTRODUCTION: Hymenoptera venom allergy leads to severe systemic reactions in up to 7,5% of patients. In addition, recurrent anaphylaxis refers to even 60% of those with a history of the incidence. These reactions occur predominantly in patients allergic to wasp venom. Wasp and bee venom, apart from similarities, demonstrate unique compositions. These differences might influence potentially metabolomic changes in patients. Our knowledge on metabolomic effects of hymenoptera allergy and AIT effect is scarce.

AIM OF THE STUDY: The aim of our study was to analyze the metabolomic profiles of bee and wasp allergic patients. Moreover, we intended to verify the AIT effects and to determine correlations between metabolites and allergy-related laboratory parameters.

MATERIALS AND METHODS: Whole blood samples were used to obtain plasma for assessment metabolomic profiles in 49 patients at admission, and in the course of AIT therapy. Metabolomes were determined using LC-MS and FIA at the Clinical Research Center, Metabolomics Division. Subsequently, biostatistical analyses of the metabolome profile changes and their associations with routine diagnostic allergy-related parameters were performed.

RESULTS: We found changes in metabolomes were increased at the very beginning of the AIT in both groups. In addition, we found a significant enhancement of the biogenic amines, amino acids, and some glycerophospholipids in bee allergic group. Wasp venom hyperreactive patients demonstrated differences in the lysoglycerophospholipids. Moreover, we noticed essential correlations of selected metabolites with clinical parameters, especially at 1th – 2nd year of treatment. Biogenic amines and amino acids correlated negatively with the tryptase level, and glycerophospholipids positively with IgE and tryptase levels in bee allergic group. Less pronounced associations were observed in wasp hyperreactive group.

CONCLUSIONS: In conclusion, characteristic metabolomic profiles in bee and wasp venom hyperreactive patients were observed. These could undoubtedly play a crucial role in the course of allergic reactions. Metabolome profiles in both groups are significantly affected by allergen-specific therapy. Our results indicate potential use of selected metabolites as a novel prognostic markers in monitoring the allergic patients response to venom-specific immunotherapy.

Title: PROTEASOME AND IMMUNOPROTEASOME AS NOVEL BIOMARKERS IN DIAGNOSIS OF ENDOMETRIOSIS

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Tutor(s): Prof. dr hab. n. med. Piotr Laudański[1]

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INTRODUCTION: Endometriosis is an inflammatory condition with the presence of endometrial-like tissue outside the uterus. The absence of specific symptoms delays diagnosis, thus invasive surgery and histopathological exam remain the gold standard. A noninvasive biomarker would ease diagnosing and monitoring treatment response. Since immunoproteasome expression is linked with inflammatory diseases we want to study whether it correlates with endometriosis stage.

AIM OF THE STUDY: The aim of this study was to determinate the proteasome and immunoproteasome concentration in the blood plasma and peritoneal fluid of women with endometriosis, and to evaluate whether they could serve as biomarkers for endometriosis.

MATERIALS AND METHODS: Biomarker discovery was performed on 97 plasma samples and 93 peritoneal fluid samples from patients with endometriosis and patients undergoing laparoscopic examination for diagnosis of endometriosis. Peritoneal fluid was aspirated and spuned at 1,000 g for 10 minutes at 4°C. Peripheral blood sample (10 mL) was drawn before laparoscopy and plasma was separated and divided. Proteasome and immunoproteasome concentrations analysis was assessed using Surface Plasmon Resonance imaging technique.

RESULTS: Proteasome and immunoproteasome levels were significantly elevated in blood plasma and peritoneal fluid as compared to controls irrespective of stage of endometriosis. No differences were found between age of patients, phase of the menstrual cycle and other main clinical characteristics.

CONCLUSIONS: There have been reported statistically significant differences in both blood plasma and peritoneal fluid concentrations of proteasome and immunoproteasome in women with endometriosis compared to control group. Proteasome and immunoproteasome might play a role in the diagnosis of endometriosis, but their precise role remains to be established.

Original Research

Cardiology

Title: THE RELATIONSHIP BETWEEN TYPE OF MYOCARDIAL INFARCTION AND LIFESPAN OF PATIENTS WITH ACUTE CORONARY SYNDROME

Author(s): Magdalena Baranowska[1], Michał Łojewski[1], Urszula Choińska[1], Katarzyna Anikiej[1], Joanna Rosłan[1], Anna Kurasz[1]

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INTRODUCTION: According to the WHO statistics cardiovascular diseases claim 17.9 million lives worldwide with ischemic heart diseases being the prevailing cause of death. Depending on which coronary artery and what part of myocardium was subject to pathological change the mid-term prognosis might differ.

AIM OF THE STUDY: Comparison of the mid-term prognosis for patients with acute coronary syndrome depending on the type of myocardial infarction (MI).

MATERIALS AND METHODS: The study was retrospective. From the group of 3588 patients treated for the acute coronary syndrome (ACS) at the Department of Invasive Cardiology of the Medical University of Bialystok, 896 patients were included in the study between 2015 and 2018. The mean time of observation was 849 days (SD=1243), the median was 952 days (Q1=474 days, Q3=1550 days). Statistical analysis was performed with XLSTAT software.

RESULTS: The male gender was dominant in the study group (67%; N=599) with a mean age of 68.92 years (SD=12.743). Hyperlipidemia occurred in 69% (N=614) and hypertension in 52% of patients (N=469). Over the period of the study, 20% of patients died (N=179). In the comparison of groups, patients with an acute transmural MI of the anterior wall were the youngest with a mean of 66.22 years (SD=13.96, p=0.018), had the lowest values of triglycerides (TG) (Mean=105.31, SD=82.48; p<0.0001) and LVEF – 36.08 (SD=10.32, p<0.0001), while patients with transmural MI of inferior wall had the highest LVEF – 45.80% (SD=8.58). The group with subendocardial infarction was the oldest and had the highest values of TG (Mean=131.44, SD=108.98; p<0.0001).

CONCLUSIONS: Our results indicate that there are no significant differences in mid-term observation in mortality between patients with acute coronary syndromes according to the type of myocardial infarction. In the study group of patients with ACS, hyperlipidemia was the most common comorbidity, followed by hypertension.

Title: HIGH INCIDENCE OF FRAGMENTED QRS IN ELECTROCARDIOGRAPHY IN PATIENTS WITH SYSTEMIC SCLEROSIS AS A POTENTIAL MARKER OF CARDIAC INVOLVEMENT.

Author(s): Tomasz Cader[2], Olaf Wasilewski, Ewa Tomicka, Szymon Staneta, Jan Wójcik

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INTRODUCTION: arious cardiovascular complications including arrhythmias and sudden death can occur in patients with connective tissue diseases, especially in systemic sclerosis (SSc). The new electrocardiographic parameter fragmented QRS (fQRS) may indicate focal or diffuse myocardial damage as well as conduction system disturbances.

AIM OF THE STUDY: Assessment of the frequency of fQRS in SSc in comparison with healthy people. Our goal was also to check if fQRS can be considered a potential marker of asymptomatic heart involvement.

MATERIALS AND METHODS: We examined consecutive 74 patients with SSc and 40 healthy controls. Accurate patients` ECG assessment was performed manually under expert supervision. Among other evaluations, we examined fQRS incidence according to worldwide accepted Das` criteria. Analysis of the obtained results, depending on the duration of the diseases and type of SSc (diffuse, limited).

RESULTS: SSc patients and healthy controls were of similar age (53±26 vs 47±17), women constituted 88.3% and 85% of the studied groups (p=0.77). Median disease duration was 6 (1 45) years, 32 (43.2%) patients presented diffuse (dSSc), 42 (56.8%) limited type (lSSc). Left ventricle ejection fraction in the study groups was similar (65.5 vs 65.8%, p=0.71), however, 17 (22.9%) of SSc patients presented TRPG >31 mmHg. Arterial hypertension in SSc was present in 24.3% and absent in controls. It is worth noting that fQRS occurred commonly in SSc and rarely in controls: in 34 (45.9%) and 3 (7.5%) of subjects, respectively (p<0.00001). The most often fQRS in SSc was notched R (in 25), and later notched S (in 19) and additional R wave (in 10 patients). The

CONCLUSIONS: Patients with SSc present a very high incidence of fQRS in standard electrocardiography, which is much more common than in healthy subjects. It is possible that fQRS may be considered an additional marker of heart involvement (especially fibrosis) in this rare disease. fQRS occur irrespective of disease duration or SSc type.

Title: GENE ASSOCIATION STUDIES IN MYOCARDIAL INFARCTION

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Tutor(s): dr. hab. Anna Szpakowicz[1]

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INTRODUCTION: The BCL11B gene is associated with regulatory elements for the transcriptional regulator B-cells lymphocytes . One polymorphism that influences the function of this gene is rs10782490. The aim of the study was to investigate the association of the rs2228145 SNP of the BCL11B gene with five years mortality in patients with myocardial infarction.

AIM OF THE STUDY: We investigated how different gene polimorphims influences a five- year mortality after myocardial infarction.

MATERIALS AND METHODS: We analyzed the data of consecutive patients with myocardial infarction. Genotyping was performed with GWAS meta-analysis. The analyzed end-point was five year after myocardial infarction.

RESULTS: The registry comprised 697 patients (mean age: 64,19 ± 12,31 years; 24,9% females, n=221. During long-term follow-up 151 (21,7%). There was significantly higher mortality in the rs10782490 CC homozygotes and TC heterozygotes compared to TT homozygotes.

CONCLUSIONS: he CC homozygotes and TC heterozygotes on the rs10782490 polymorphism of BCL11B gene was associated with higher mortality after myocardial infarction. Moreover, TT homozygotes showed significantly lower risk of death, after acute coronary syndrome. The observed trend is promising, but it requires independent replication studies.

Title: HOW DO HAEMODYNAMIC AND HEPATIC PARAMETERS CHANGE IN PATIENTS WITH PRIMARY AND SECONDARY PULMONARY HYPERTENSION? MEASUREMENT WITH INVASIVE AND NON-INVASIVE METHODS.

Author(s): Krystian Ejdys[1], Katarzyna Krajewska[1], Klaudia Jadczak[1]

Tutor(s): Katarzyna Ptaszyńska-Kopczyńska[1], Anna Lisowska[1], Bożena Sobkowicz[1]

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INTRODUCTION: Pulmonary hypertension is connected with various etiologies. It is characterized by elevated pulmonary artery pressure. Both primary and secondary pulmonary hypertension are marked by haemodynamic abnormalities on invasive and non-invasive assessment. In addition to the invasive test of right heart catheterisation (RHC), ergospirometry is performed for a complete haemodynamic assessment of the cardiovascular system, physical capacity, gas exchange and respiratory gas analysis.

AIM OF THE STUDY: Comparison of the liver and haemodynamic parameters in patients with primary and secondary pulmonary hypertension obtained using invasive and non-invasive methods.

MATERIALS AND METHODS: Analysis included 107 patients (57.6 ± 16.2; 34.6% women), 57 with pulmonary arterial hypertension (PAH) (54.0 ± 18.2; 49.1% women) and 50 with heart failure with reduced EF<40% (HFrEF) (61.6 ± 12.7; 18% women) – in which 20 had secondary PH. Each had ergospirometry, 45 PAH and 15 HFrEF patients had RHC. Laboratory tests included liver parameters and NT-proBNP. Spearman test and U Mann-Whitney test were used in Statistica 13, $p<0.05$ was considered as statistically significant.

RESULTS: The comparison between HFrEF and PAH group revealed significant differences in ALAT (24 (IQR 18-34) vs 16 (IQR 11-22); $p<0.001$). Positive correlations in entire group: ALAT & Rest VCO2 l/min ($R=0.296$; $p=0.012$), AT VCO2 l/min ($R=0.280$; $p=0.025$), VCO2 max l/min ($R=0.279$; $p=0.019$), negative between: ALAT & CO (T) ($R=–0.277$; $p=0.037$), CI (T) ($R=–0.406$; $p=0.002$); AspAT & CO (Fi) ($R=–0.377$; $p=0.005$); TBIL & CO (Fi) ($R=–0.413$; $p=0.012$), CI (Fi) ($R=–0.417$; $p=0.013$). Positive correlations in HFrEF group: TBIL & dPAP RHC ($R=0.811$; $p=0.027$), PVR (T) ($R=0.786$; $p=0.036$). Negative correlations in PAH group: AspAT & CO (Fi) ($R=–0.317$; $p=0.047$); ALAT & CI (T) ($R=–0.390$; $p=0.012$), positive between TBIL & VE/VCO2 slope ($R=0.546$; $p=0.005$).

CONCLUSIONS: Both groups of patients - with HFrEF and PAH have similar features. Laboratory findings that reflect liver function correlate with parameters of functional and hemodynamic assessment in patients with HFrEF and PAH.

Title: INVESTIGATION ON POSSIBLE WAYS TO REDUCE THE DOXORUBICIN-INDUCED CARDIOCITOTOXICITY: EXAMINATION OF THE PREIMPLANTATION FACTOR ON H9C2 RAT CARDIOMYOBLASTS

Author(s): Barbara Fanni Erdélyi-Furka[1]

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INTRODUCTION: Nowadays the high mortality of cancer is a major problem worldwide. One of the most commonly used treatment is chemotherapy in order to kill the tumor cells. The doxorubicin (DOXO) is a wildly applied chemotherapeutic agent inducing several intracellular mechanisms which can be responsible for its limitation of use. The preimplantation factor is an oligopeptide which has antioxidant and antiapoptotic qualities, so it could be potentially citoprotective againts the DOXO-induced cardiotoxicity.

AIM OF THE STUDY: The aim of the study is to test the possible citoprotective effects of preimplantation factor (PIF) in doxorubicin-induced in vitro model of heart damage.

MATERIALS AND METHODS: We used H9c2 rat cardiomyoblasts to test 0.5 and 24 hours of wilde range of PIF (0.3-5000 ng/mL) pretreatment followed by 24 hours of doxorubicin and PIF treatment. To establish the viability rates after the treatments, we performed MTT viability assay and measured the oxidative stress by performing DHE (dihydroetidium) assay. To examine the apoptotic morphology we used DAPI and for the DNA double strand breaks we applied γ-H2AX immuncytochemistry.

RESULTS: We could establish that in our 0.5 hour PIF pretreament model the DOXO reduced the cell viability and elevated the oxidative stress significantly, which effects were improved by 160 ng/mL PIF (cell death in DOXO vehicle%: 80±3%). In our 24 hour PIF pretreament model the DOXO reduced the cell viability and elevated the oxidative stress significantly, which effects were improved by 10 ng/mL PIF (cell death in DOXO-vehicle %: 73±7%). In addition to this the number of apoptotic morphological features and DNA double strands were elevated by DOXO, which was reduced by both of our PIF treatments.

CONCLUSIONS: Based on our results the preimplantation factor could reduce the doxorubicin-induced cardiocitotoxicity. In the future we would like to examine the intracellular mechanisms – especially the apoptosis and autophagy - behind this protective effect.

Title: IMPACT OF DISPERSIVE PATCH POSITION ON BASELINE IMPEDANCE DURING RADIOFREQUENCY POINT-BY-POINT PULMONARY VEIN ISOLATION.

Author(s): Mateusz Iwański[1]

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INTRODUCTION: Atrial fibrillation (AF) ablation is associated with a risk of atrioesophageal fistula (AEF), which is a rare but can be lethal. Dispersive patch (DP) is usually attached to patient's back, which may alter radiofrequency (RF) path towards esophagus. Relocating the DP to the front of the chest can reverse the direction of RF current and hypothetically protect against AEF however its effect on PVI outcomes has not been evaluated.

AIM OF THE STUDY: To determine feasibility and outcomes of anterior DP position for pulmonary vein isolation (PVI) using RF catheter ablation (RFCA).

MATERIALS AND METHODS: We analysed course of 9 consecutive patients who underwent PVI using point-by-point RFCA combined with baseline impedance measurements which were performed prior to RFCA at anterior and posterior DP position. All patients were monitored for recurrence of AF and any possible complications after PVI. Recurrence was defined as an AF episode lasting >30s.

RESULTS: 9 patients (7 males, age 60 ± 11 years) underwent point-by-point PVI. A total of 138 measurements were obtained at the pulmonary vein ostia. There was a significant difference between the impedance values depending on the dispersive patch position (DP-back vs DP-front, 127 ± 14 Ω vs 143 ± 17 Ω, p = 0.00000005). After impedance measurements, all patients underwent effective PVI. There were no complications. During follow up lasting 5,5 ± 3,8 months no AEF occurred and none of the patients reported symptoms which could be associated with any esophageal injury. Seven (77%) patients remained AF-free during follow up.

CONCLUSIONS: Anterior position of DP is associated with higher baseline impedance during PVI. Anterior position of DP during PVI is safe and effective with acceptable AF-free survival. Appropriately designed prospective studies are needed to determine exact impact of the anterior position of DP on the prevention of AEF after RFCA.

Title: THE MID-TERM PROGNOSIS OF PATIENTS WITH ACS AFTER INVASIVE TREATMENT: A COMPARISON OF DIABETES AND NON-DIABETES PATIENTS

Author(s): Tomasz Januszko[1], Julia Kozakiewicz[1], Anna Kurasz[1]

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INTRODUCTION: Each year more and more people suffer from diabetes mellitus (DM). The number of people with diabetes rose from 108 million in 1980 to 422 million in 2014 according to WHO. DM can lead to major health problems like kidney failure, neuropathies, blindness, and worsen the coexisting diseases. Adults with diabetes have a two- to three-fold increased risk of stroke and myocardial infarction.

AIM OF THE STUDY: Comparison of the mid-term prognosis in a group of diabetic and non-diabetic patients treated invasively due to acute coronary syndrome (ACS).

MATERIALS AND METHODS: The retrospective study consisted of 896 patients hospitalized due to ACS at the Department of Invasive Cardiology of the Medical University of Bialystok during the period of 08.01.2015–30.12.2018. Statistical analysis was performed using Wald's backward stepwise regression analysis. The Kaplan-Meier estimator was used to present the survival analysis.

RESULTS: In the study group, 16.18% (N=145) of patients had diabetes (DM) and the majority of them were men. The most prevalent comorbidities were DM and hypertension. The patients with DM were older (mean=71.42, SD11.61 vs. 68.44, SD=12.91;p=0.012), had poorer metabolic status presented as a higher BMI and TG concentrations (mean=151.22, SD=160.38 vs. 114.488, SD=74.09;p<0.0001). They also had higher creatinine levels (mean=1.21, SD=0.75 vs.1.01, SD=0.52;p<0.0001). The mortality rate was higher among DM patients at 27.6%, while among non-DM patients it was 18.5% (p=0.012). Age was a significant factor in increasing mortality (RR=1.059, 95%CI=1.039-1.080; p<0.0001), while an increase in GFR decreased mortality (RR=0.989, 95%CI=0.980-0.998; p=0.015).

CONCLUSIONS: In the study group of patients with acute coronary syndromes, the mortality in the mid-term observation was higher in the ones with diabetes. The main factors influencing the prognosis were age and kidney function.

Title: CHRONOBIOLOGY AND FREQUENCY OF ACUTE CORONARY SYNDROMES ORIGINATING FROM THE LEFT MAIN CORONARY ARTERY IN THE LIGHT OF DEMOGRAPHIC FACTORS.

Author(s): Malgorzata Kazberuk[1], Emil Julian Dabrowski[1], Michal Swieczkowski[1], Anna Kurasz[1]

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INTRODUCTION: Acute coronary syndromes (ACS) are still the most common cause of death in Poland. On one hand, the number of ACS is high due to aging of the society, but on the other hand development of prophylaxis influences epidemiology of ACS. Little is known so far about the characteristics of patients with ACS originating from the left main coronary artery (LMCA-ACS) mainly because of high prehospital mortality.

AIM OF THE STUDY: The analysis of differences in chronobiology and epidemiology of LMCA-ACS set side by side with ACS in the light of demographic factors.

MATERIALS AND METHODS: Our retrospective cohort study involved medical records of 3350 residents of Bialystok, Poland hospitalized for ACS in the Medical University of Bialystok, between 2008 and 2018. Chronobiology of LMCA-ACS including quarters and seasons of the year were investigated. Demographic factors, comorbidities, and biochemical laboratory tests were analysed. In statistical analysis Mann-Whitney U test, T-test and Kruskal-Wallis tests were used. P-value less than 0.05 was considered as significant.

RESULTS: The mean age of the study group was 66.43 years (SD=11.99) with 39.8% (N=1338) of females. Out of all ACS cases, patients with LMCA-ACS accounted for 3% (N=100). Age and hypertension were the main factors that were linked with the occurrence of LMCA-ACS (71.7 (SD=11.48) vs. 66.43 (SD=11.99), $p<0.01$; 46% vs 63% $p<0.01$, respectively). The number of ACS cases had been decreasing gradually from 2008 to 2018 ($p<0.01$), while the number of LMCA-ACS cases had increased ($p<0.01$). More ACS cases, including LMCA-ACS incidents, were recorded in the first and the second quarter of the year in comparison to the third quarter ($p=0.03$; $p=0.02$, respectively).

CONCLUSIONS: Besides patient-dependent risks of ACS such as older age and hypertension, chronobiology is also gaining importance in the development of this disease. We observed variability of occurrence of ACS over the year. With the progress in preventive medicine, the frequency of the ACS is changing - the total number is decreasing, yet the number of LMCA-ACS is rising. Prophylaxis and new therapeutic challenges become more important in the course of LMCA-ACS especially in the light of high mortality.

Title: UREA AS A SIGNIFICANT PARAMETER REFLECTING CLINICAL STATE OF PATIENTS SUFFERING FROM HFREF AND PAH.

Author(s): Katarzyna Krajewska[1], Klaudia Jadczak[1], Krystian Ejdys[1]

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INTRODUCTION: Impaired renal function is a factor of cardiovascular risk and influences on worse clinical state of patients. Urea is the parameter that reflects renal as well as clinical condition. Liver damage may have impact on increased urea concentration, iron parameters through decreased erythropoietin production, and decreased synthesis of proteins, involved in iron storage and transport.

AIM OF THE STUDY: The aim of the study was to assess the association of urea and clinical condition of patients with primary and secondary pulmonary hypertension.

MATERIALS AND METHODS: The analysis included 107 patients (mean age 57.6 ± 16.2; 34.6% women), 57 patients with pulmonary arteria hypertension (PAH) (mean age 54.0 ± 18.2; 49.1% women) and 50 patients with HFrEF<40% (mean age 61.6 ± 12.7; 18% women) – in which 20 patients with secondary PH. Laboratory tests included: urea, TSH, fT3, fT4, AspAT, ALAT, total bilirubin, Fe, UIBC, ferritin, NT-proBNP, 6MWT. For correlations Spearman Test was used in Statistica 13. Value $p<0.05$ was considered as statistically significant.

RESULTS: The median value of urea in the entire group is 38 mg/dl (IQR: 29-47 mg/dl), in HFrEF group – 46 mg/dl (IQR: 39-112 mg/dl) and in PAH group – 32 mg/dl (IQR: 27-42.8 mg/dl). The difference in urea between HFrEF and PAH group was significant ($p<0.001$). In the entire group urea positively correlates with UIBC ($R=0.401$; $p=0.022$), NT-proBNP ($R=0.625$;$p<0.001$), AspAT ($R=0.359$; $p=0.006$) and total bilirubin ($R=0.330$; $p=0.021$). In HFrEF group there is a positive correlation between urea and NT-proBNP ($R=0.684$; $p=0.004$) and AspAT ($R=0.732$; $p<0.001$), but negative with Fe ($R=–0.714$; $p=0.046$). In PAH group urea concentration correlates positively with NT-proBNP ($R=0.486$; $p=0.002$), but negatively with 6MWT ($R=–0.441$; $p=0.012$) and fT3 ($R=–0.761$; $p=0.017$).

CONCLUSIONS: Urea concentration in serum correlates with severity of heart failure regardless if it is right– or left ventricular. In fact, it is a valuable indicator of patients' clinical state and a helpful tool in prognosis which can be used in daily practice.

Title: CORONARY SYNDROMES- A SPECIAL PROBLEM AMONG PATIENTS WITH VALVULAR HEART DISEASE.

Author(s): Michał Kuźma[1], Monika Lewkowska[1], Katarzyna Maciorowska[1], Anna Kurasz[1], Maciej Łapiński[1], Łukasz Kuźma, MD, PhD[2]

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INTRODUCTION: Acquired valve defects remain a common cause of morbidity and mortality. They are a diagnostic challenge in all age groups, and due to their etiology, they are often associated with multi-morbidity.

AIM OF THE STUDY: Assessment of frequency of selected co-morbidities with particular focus on patients with acute coronary syndromes (ACS) in the population of patients with valvular heart disease.

MATERIALS AND METHODS: The study population included 2589 patients with valvular heart disease. The study was conducted at the Department of Invasive Cardiology of the Medical University of Bialystok between 2006 and 2016. The analysis of clinical data was performed using XL Stat and MS Excel. A p-value <0.05 was considered statistically significant.

RESULTS: In the study group, 18.69% of patients(N=484) had a history of ACS, of which 63.64% (N=308) were patients with MVI. Among acute coronary syndromes, NSTEMI (11.2%, N=290) prevailed over STEMI (8.77%, N=227). In the case of MVI defect, the difference between patients with previous STEMI and NSTEMI is not noticeable, unlike in the case of other valve defects (AVS, AVI, MVHD), where the number of patients with a history of NSTEMI is on average twice as high as the number of patients with a history of STEMI. Most PCIs were performed in the group of patients with MVI.

CONCLUSIONS: Among patients with valvular heart disease, the most common defect was mitral regurgitation and the most common coexisting disease was hypertension. Patients with MVI have the greatest burden of coronary artery disease, which results from the etiology of this defect.

Title: COMPARISON OF FLUOROSCOPY TIME AND PROCEDURE-RELATED DOSE OF IONIZING RADIATION BETWEEN FFR, QUANTITATIVE FLOW RATIO AND RESTING INDICES

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INTRODUCTION: Invasive coronary angiography (ICA) is considered a gold standard method for evaluating coronary artery anatomy and lesions. Hence, present clinical guidelines recommend a physiology-guided invasive treatment strategy in intermediate coronary artery disease [1]. Nevertheless, the development of interventional cardiology dramatically increases the number of procedures performed under ionizing radiation, which is associated with increased risks for both patients and physicians [2-3].

AIM OF THE STUDY: This study aimed to estimate the difference in ionizing radiation parameters such as dose area product (DAP) and fluoroscopy time (FT) amidst physiological assessment methods, including FFR, quantitative flow ratio (QFR), and resting indices.

MATERIALS AND METHODS: One hundred thirty-four patients were retrospectively included in this single-center study within 2021. Coronary angiography and physiological assessment methods were performed on all patients. To evaluate ionizing radiation dose and compare it between particular methods, we chose dose area product (DAP) variables and fluoroscopy time (FT). Statistical analysis was performed using the software package SPSS 20.0. The level of significance was $p<0.05$.

RESULTS: The distribution of patients according to the method used was 31 FFR (23%), 31 QFR (23%), and 72 resting indices (54%). Mean FT and DAP, in general, was 6.22 (SD ± 4.68) min. and 1896.91 (SD±1726.28) cGy cm2. Mean FT and DAP were 6.92 (SD±1.01) min and 1856.84 (SD±232.56) cGy cm2 vs. 3.32 (SD±0.59) min and 1605.28 (SD±233.57) cGy cm2 vs. 7.18 (SD±0.50) min and 2039.73 (SD±238.65) cGy cm2 during FFR vs. QFR vs. resting indices (IFR, DFR, CFR, IMR) procedures respectively. It takes more than twice to measure FFR or resting indices compared to QFR, $p<0.001$. DAP was higher in resting indices compared to QFR (mean difference 434.45 (SD±189.11), $p<0.05$). Mean BMI was 29.98 (SD±4.94), and it was weakly correlated to DAP ($r = 0.28$; $p<0.001$).

CONCLUSIONS: QFR was associated with significantly decreased fluoroscopy time and dose area product compared to FFR and resting indices. Hence, QFR, in addition to eliminating hyperaemic agents compared to FFR, eliminates the use of pressure wires and any additional exposure to ionizing radiation to a patient and personnel.

Title: IS THERE A DIFFERENCE BETWEEN IONIZING RADIATION PARAMETERS IN PATIENTS WHO UNDERWENT PERCUTANEOUS CORONARY ANGIOGRAPHY IN-PATIENT OR OUTPATIENT?

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INTRODUCTION: Proper assessment of coronary artery (CA) disease is essential for evaluating myocardial ischemia and treatment. The European Society of Cardiology recommends assessing the hemodynamic significance of all CA that need to be treated [1]. The progress of invasive procedures in cardiology results in higher exposure to ionizing radiation [2]. Nevertheless, the increasing prevalence of invasive cardiology procedures forced more and more procedures to perform on an outpatient basis.

AIM OF THE STUDY: The study aimed to compare ionizing radiation parameters in patients who underwent percutaneous coronary angiography (PCA) in-patient and outpatient. Patients are often healthier on an outpatient basis, so the parameters are expected to be lower.

MATERIALS AND METHODS: This single-center study included data from 134 patients with intermediate CA lesions who underwent PCA within 2022. Physiological assessment of CA lesions was performed by fractional flow reserve (FFR), quantitative flow reserve (QFR), or resting indices. The dose area product (DAP) and fluoroscopy time (FT) were chosen to evaluate the ionizing radiation dose. Statistical analysis was performed using the software package SPSS 20.0. The level of significance was $p<0.05$.

RESULTS: Of all, 47 patients were admitted as outpatients and 87 patients on an in-patient basis. Distribution according to the physiology assessment method was 7 FFRs (14.9%), 7 QFRs (14.9%) and 33 resting indices (70.2%) in outpatient clinic and 24 FFRs (27.6%), 24 QFRs (27.6%) and 39 resting indices (44.8%) in stationary patients. Mean FT was 6.43 (SD±03.88) min vs. 6.12 (SD±02.08) min during outpatient vs. in-patient performed PCIs with physiological assessment. Mean DAP was 2005.19 (SD±919.15) cGy cm2 vs. 1838.40 (SD±621.35) cGy cm2 in outpatient and in-patient procedures, respectively. There was no significant disparity in BMI among groups, 30.44 (SD±1.47) and 30.17 (SD±0.95), respectively.

CONCLUSIONS: There was no significant difference in fluoroscopy time between outpatient and in-patient patients who underwent PCA followed by an intermediate coronary artery lesion physiological assessment. Dose area product was relatively lower in the in-patients group.

Title: IS PERIPHERAL ARTERY DISEASE (PAD) A SIGNIFICANT CLINICAL PROBLEM AMONG PATIENTS HOSPITALIZED FOR CARDIOLOGICAL REASONS?

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INTRODUCTION: Patients with peripheral artery disease (PAD) have decreased lower extremity arterial perfusion which can cause thigh or calf pain with walking due to temporary ischemia of the leg muscles during exertion, although over 50% of patients with PAD have no symptoms.

AIM OF THE STUDY: Our goal was to investigate in which subpopulation of cardiological patients the Ankle-Brachial Index (ABI) should be measured.

MATERIALS AND METHODS: The study group consisted of consecutive patients hospitalized in the Cardiology Department of the Medical University of Białystok from march 2021 to march 2022. A questionnaire on both awareness and prevalence of cardiovascular risk factors was conducted. In addition, all patients had the ABI index measured in both lower limbs.

RESULTS: A total of 396 subjects were studied. 219 (55.3%) were men, mean age 69.8±10.4. 14% were active smokers. The mean ABI value was 1.12(±0.12) for the left and 1.13(±0.14) for the right lower limb. In 5,3% patients ABI≤0.9 was found. These patients had significantly lower LV ejection fraction (42% vs 49%, p=0.02) and significantly higher creatinine levels. A history of myocardial infarction (p=0.002), carotid atherosclerosis (p<0.0001), heart failure (p=0.02), chronic kidney disease (p<0.0001), hypercholesterolemia (p=0.03) and episodes of acute limb ischaemia (p<0.001) were significantly more frequent in this group of patients. Also these patients were more likely to have been diagnosed with an aortic aneurysm (p<0.001).

CONCLUSIONS: Patients with peripheral artery disease (PAD) have a significantly higher incidence of other cardiovascular diseases. Routine ABI testing should therefore be considered in patients hospitalised for cardiovascular reasons in order to detect asymptomatic PAD.

Title: CHRONOBIOLOGICAL TRENDS OF STROKE INCIDENCE AND MORTALITY

Author(s): Barbara Emilia Nikitiuk[1], Michał Święczkowski[1], Anna Kurasz[1], Emil Julian Dąbrowski[1], Joanna Dudzik[1]

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INTRODUCTION: Chronobiology is a trending field of science that examines how natural rhythms affect our lives. According to WHO reports, in 2019 stroke was the second leading cause of death, responsible for over 6 million deaths worldwide. However, evidence on a temporal variation on strokes is inconsistent, limited and needs further research.

AIM OF THE STUDY: Our purpose was to assess the influence of seasonal, monthly and weekly fluctuations in ischemic stroke incidence and mortality.

MATERIALS AND METHODS: We analyzed 4838 patients hospitalized for ischemic stroke in 2011-2020 in Białystok. Data on morbidity and mortality were obtained from National Health Fund. We extracted the information on ischemic stroke by analyzing hospitalization for I63 diagnosis (cerebral infarction) according to the International Classification of Diseases-10th Revision.

RESULTS: Of the 4838 patients with stroke, 54.4% were women with a median age of 74 years (IQR=16). In-hospital deaths accounted for 16.8% (N=813). The highest number of strokes was observed in the winter season compared to other seasons. ($p<0.01$). The months with the highest stroke percentage were January 1.5/day (N=479) and February 1.49/day (N=419). A decrease in stroke morbidity and mortality was observed over the years. ($p<0.01$). Additionally, the daily distribution of stroke admissions was observed with the highest frequency on Mondays and Wednesdays in opposition to the weekend ($p<0.01$).

CONCLUSIONS: The stroke occurrence and mortality rate were significantly greater in the winter season. Over the years we observed a decrease in stroke morbidity and mortality. This effect may be due to an improvement of diagnostic procedures and treatment methods. The highest and the lowest frequencies of stroke incidence occurred at the beginning of the week and weekends, respectively.

Title: PACE AND ABLATE FOR ATRIAL FIBRILLATION: IMPACT ON LEFT VENTRICULAR EJECTION FRACTION

Author(s): Normunds Viļumsons[1]

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INTRODUCTION: Atrial fibrillation (AF) and chronic heart failure (CHF) are frequently co-existing morbidities. Moreover, AF can both cause and worsen CHF, including worsening the response to implantable cardiac devices. Pace and ablate treatment strategy has been shown to reduce all-cause mortality and improve quality of life in patients with both AF un CHF. One of the possible mechanisms for the aforementioned benefits includes improvement in left ventricular ejection fracture (LVEF).

AIM OF THE STUDY: The aim of the study was to evaluate the impact of pace and ablate strategy on LVEF in patients with permanent AF unresponsive to rate or rhythm control and chronic heart failure.

MATERIALS AND METHODS: A retrospective longitudinal study analyzing medical records of 33 patients who were treated using pace and ablate treatment strategy from 2019 to 2021 was conducted in Latvian Centre of Cardiology, Pauls Stradins University Hospital.

RESULTS: In the study population of 33 patients, 25 (75.8%) were male and 8 (24.2%) were female. The mean age was 66 (±11.0 SD, range 47 - 86) years. 21 (63.6%) patients had dilated cardiomyopathy. An improvement in LVEF was observed in 23 (69.8%) patients, with a mean LVEF improvement of 14.4% (±9.4 SD, range 1% - 37%, 95% CI: 10.6 to 18.2). A decline in LVEF was observed in 5 (15.2%) patients, with a mean LEVF decline of 9.6% (±7.2SD, range 1% - 20%, 95% CI: 3.3 to 15.9). No changes in LVEF were observed in 5 (15.2%) patients. 2 patients required repeated ablation and there had been 1 death in the study group, although unrelated to the procedure or cardiovascular disease.

CONCLUSIONS: The results of this study show that pace and ablate treatment strategy improves left ventricular ejection fraction in the majority of patients with permanent atrial fibrillation and chronic heart failure.

Title: LONG-TERM OUTCOME IN PATIENTS WITH HEART FAILURE AND DIABETES MELLITUS TREATED WITH CARDIAC RESYNCHRONIZATION THERAPY.

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INTRODUCTION: Cardiac resynchronization therapy (CRT) has been proven therapy in patients with heart failure (HF) with reduced left ventricular ejection fraction (LVEF). However, little is known about the prognosis, the long-term follow-up, and the risk of cardiac device-related infective endocarditis (CDRIE) in patients with HF and diabetes mellitus (DM) treated with CRT.

AIM OF THE STUDY: To assess the long-term outcome, mortality predictors, and the risk of CDRIE in patients with HF and DM undergoing CRT.

MATERIALS AND METHODS: The study population consisted of 1059 consecutive patients with CRT implanted between 2002 and 2019 in a tertiary care university hospital in a densely inhabited, urban region of Poland (949 subjects [89.6%] with CRT-D; 110 patients with CRT-P [10.4%]; 832 men [78.6%]).

RESULTS: The studied population was divided into two groups according to had or did not DM (n=367 [34.7%] vs. n=692 [65.3%]). During the median follow-up of 1661 days (10th and 90th percentile: 323-3995), all-cause mortality in patients with HF and coexisted DM was worse than in patients without DM (61.9% vs. 50.3%, P=0.0003). The risk of CDRIE was not statistically significant differ (6.5% vs. 4.9%, P=0.27). On multivariable regression analysis, older age, ischemic cardiomyopathy, lower left ventricular ejection fraction, higher creatinine level, and diabetes treated with insulin were identified as independent predictors of higher mortality in patients with HF and DM undergoing CRT.

CONCLUSIONS: The mortality rate in patients with HF and DM treated with CRT is worse than in patients without DM and reaches almost 2/3 of patients within 4.5 years. Advanced age, ischemic cardiomyopathy, lower left ventricular ejection fraction, higher creatinine level, and diabetes treated with insulin are independent mortality predictors in subjects with HF and DM treated with cardiac resynchronization therapy.

Original Research

Gynecology and Obstetrics

Title: PERIOPERATIVE CARE IN GYNECOLOGY – FACTORS PREDISPOSING TO MORE SEVERE PAIN.

Author(s): Bałdyga Paulina[1.2], Kisielewska Lidia Natalia[1.2], Kołcz Aleksandra[1.2], Trocka Daria[1.2]

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INTRODUCTION: Recent reports lead to change in the attitude to the perioperative care in gynecology. Implementation of a holistic approach to the perioperative care is highlighted by the Enhanced Recovery After Surgery Society guidelines. The factors influencing the occurrence of higher levels of pain need to be further reviewed.

AIM OF THE STUDY: The study aimed to determine which factors have an impact on the more severe postoperative pain among patients admitted to the University Oncology Center (UOC) in Bialystok where they were operated.

MATERIALS AND METHODS: The study involved patients undergoing gynecologic surgery from XI 2020 to III 2022. Clinical data and total doses of painkillers were obtained from medical records. A psychosocial condition was assessed by original questionnaire by admission and the pain level 3 times per day, 3 days in a row after the surgery by patients themselves using the Numeric Rating Scale 0-10. A study examined the relationship between gathered data and pain level. The data was analyzed with nonparametric tests.

RESULTS: From 115 patients at median age of 50 y.o., 63 of them redelivered completed questionnaires. 30 patients were diagnosed with neoplastic and 33 with non-neoplastic disease. 56,5% of participants declared active lifestyle from which over 50% discontinued it before surgery. Averagely most severe pain occurred in the evening the next day after the surgery (median=5). Experienced postoperative pain wasn't associated with: indications for surgery (malignant or benign tumor), type of incision, age, BMI, range of the operation. The additional application of regional anesthesia resulted in the reduction of pain (p=0,017). Patients complaining of anxiety related to the procedure experienced significantly greater pain during the entire stay (p=0,041).

CONCLUSIONS: A detailed interview is important already at the stage of qualifying for surgery. Actions should be taken to reduce patients' anxiety before surgery, e.g. psychological support, education, accurate information on the course of the hospitalization. Regional anesthesia should be considered in order to reduce the postoperative pain and the administered doses of systemic drugs. Medical personnel should be aware that perioperative care begins much earlier than on the day of admission to the hospital.

Title: THE EFFECT OF ENDOMETRIAL THICKNESS ON THE OUTCOME OF IN VITRO FERTILIZATION

Author(s): Ksenija Korotkova[2], Elvita Pundure[3]

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INTRODUCTION: Endometrial thickness (EMT) is an important factor that impacts the success of an IVF cycle. The typical success rate of IVF per cycle is 20-35%, therefore any positive impact should be considered to increase the rate, like choosing optimal EMT.

AIM OF THE STUDY: This study aimed to investigate the impact of endometrial thickness on the embryo transfer day on the IVF/ICSI outcome in Latvian clinic.

MATERIALS AND METHODS: A retrospective study was conducted at the EGV clinic. FET (frozen embryo transfer) cycles performed between January 2019 to December 2020 were studied. All patients were divided into five groups according to their endometrial thickness on embryo transfer day, as follows: <8 mm (group 1), 8-10 mm (group 2), 10-12 mm (group 3), 12-14 mm (group 4), 14-16 mm (group 5). Data were analyzed using IBM SPSS.

RESULTS: Chemical pregnancy, clinical pregnancy, and live birth rates were measured. Endometrial thickness < 8mm was associated with the reduction of positive IVF/ICSI outcomes. Since age also impacts fertility, results were adjusted by the age by splitting it into three groups: 19-34; 35-39; 40+ years old.

CONCLUSIONS: Correct endometrial thickness can increase the rates of successful clinical pregnancy and implantation. IVF/ICSI outcomes improved as endometrial thickness increased, but too thick EMT can also be associated with reduced pregnancy rates.

Title: PHYSICAL ACTIVITY OF POLISH WOMEN DURING PREGNANCY

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INTRODUCTION: As is well known, "the movement is healthy". All adults should engage in regular physical activity. During pregnancy, in most cases, physical activity is safe and should be recommended to pregnant women.

AIM OF THE STUDY: The aim of the study was to assess the impact of physical activity during pre-pregnancy and pregnancy period on the pregnant woman and her child and analyze changes in the pattern of activity.

MATERIALS AND METHODS: The survey was performed by the Internet. A questionnaire was created by the authors of the study and it was distributed via Facebook pregnancy and parenting groups. The inclusion criteria were: correctly completed questionnaire, singleton pregnancy, no contraindications to physical activity. We defined women who were physically active for more than 90 minutes per week as adequately active, and the rest as low active. Fisher's Exact tests were used for data analysis.

RESULTS: The study group included 961 women. Gestational diabetes mellitus (GDM) occurred in 7% of adequately active and 14.1% of women with low activity in the period of 6 months before pregnancy (p=0.0025). The level of activity during pregnancy did not impact the incidence of GDM. 37.8% of women with low activity in the first trimester and 29.4% of adequately active women had too much pregnancy weight gain (p=0,0306). 4.5% of low-activity women and 4.8% of adequately active women in the second trimester gave birth to a child weighing <2500 g, which was not statistically significant. Pregnant women most often undertake activities such as walking, marching, and home gymnastics.

CONCLUSIONS: Physical activity should be recommended to all women who have no contraindications to it. Maintaining adequate physical activity is important for women who are planning pregnancy because it is associated with a lower risk of GDM.

Title: ASSOCIATIONS BETWEEN CHILDBIRTH RISK FACTORS AND AUTISM SPECTRUM DISORDER

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INTRODUCTION: Autism Spectrum Disorder (ASD) is a group of disorders characterized by difficulties in communication, behavior and a limited, stereotypical patterns of interests and activities. The exact causes of ASD are difficult to detect due to etiological and clinical heterogeneity. However, studies show a statistically significant association between children who develop ASD and risk factors of childbirth (Caesarean section (CS), vacuum extraction (VE), meconium in amniotic fluid, etc.).

AIM OF THE STUDY: To determine risk factors for Autism Spectrum Disorder that may be present during the childbirth.

MATERIALS AND METHODS: A retrospective analysis was conducted. The sample consisted of 133 children diagnosed with ASD and registered in Lithuanian University of Health Sciences (LUHS) Kaunas Clinic database in 2015-2020. The following selection criteria were applied: 1. Elimination of duplicates. 2. If several different diagnoses of ASD are made for the patien only the latest is included in the study. Statistical analysis was performed with IBM SPSS 22.0 software. Significant differences were considered when $p<0.05$.

RESULTS: Risk factors were identified in 45.9% of cases. CS was determined as the most common risk factor (32.3%). The most frequent indications for CS were assessed: 9% - abnormal fetal position, 6% - labor enhancement, 3.8% - multiple pregnancies, 3% - deteriorating fetal condition. Other causes of CS were fetal macrosomia and complicated obstetric history (e.g.: placenta previa). VE during delivery was required in 4.6% of analysed cases. The incidence of meconium in the amniotic fluid and in the labor enhancement was found to be 4.5% in both cases. When delivery risk factors for ASD were identified, higher incidence of speech and motor development impairment was observed in infancy (17.7%) than in the group with no risk factors (7.5%)($p<0.05$).

CONCLUSIONS: Cesarean section is the most common risk factor for ASD present during childbirth. The link between delivery risk factors and speech as well as motor development impairment has been established, thus sequential studies have to be conducted in order to recognise the explanation for the findings.

Title: INFLAMMATORY MARKERS AND PRETERM PREMATURE RUPTURE OF MEMBRANES

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INTRODUCTION: Preterm Premature Rupture of Membranes (PPROM) affects 2 to 3 percent of pregnancies, being responsible for about 1/3 of preterm labors. PPROM is associated with several perinatal complications and significant morbimortality, justifying the need for its early detection. Both local and systemic inflammation have been described as one of the pathophysiologic mechanisms behind PPROM, despite a low amount of studies that document this relation.

AIM OF THE STUDY: The aim of this study was to investigate the relation between inflammatory markers obtained from hemograms collected in the first and second trimesters and the occurrence of PPROM.

MATERIALS AND METHODS: Retrospective study that included pregnant women whose delivery was at Universitary Hospital Centre of Cova da Beira, from 2015 to 2019. Women with preexisting illnesses, multigravidae or twin pregnancy were excluded. Hemogram results and clinical background were obtained through the analysis of clinical patient files. Pregnant women with PPROM (n=19) were compared with pregnant women with eutocic delivery after 37 weeks and no Premature Rupture of Membranes (n=187).

RESULTS: PPROM was documented in 9.2% of pregnant women. No association was found between the occurrence of PPROM and neutrophil/lymphocyte ratio, neutrophil/platelet ratio or platelet/lymphocyte ratio. A correlation was verified between a higher maternal age and occurrence of PPROM before 34 weeks of pregnancy (p=0.034). Hemorrhage in the second trimester was more frequent in patients with PPROM (p=0.043), and the probability of PPROM is about eleven times higher in women who had genital hemorrhage in second trimester. Lower first minute (p=0.015) and ten minute (p=0.041) Apgar scores and the male gender of the newborn (p=0.041) were more documented in cases of PPROM.

CONCLUSIONS: Hemogram inflammatory ratios at first and second pregnancy trimesters seems not to be useful to predict a higher risk for PPROM. Higher maternal age was associated with earlier PPROM (≤34 weeks) and a second trimester genital hemorrhage was found to be an important risk factor for PPROM. As expected, PPROM was associated with worse newborn outcomes. More robust studies are needed to verify the clinical significance of hemogram inflammatory ratios, in order to predict PPROM.

Title: THE ASSOCIATION BETWEEN OXIDIZED LOW DENSITY LIPOPROTEIN AND SELECTED HORMONE PARAMETERS IN THE COURSE OF POLYCYSTIC OVARY SYNDROME.

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INTRODUCTION: Polycystic ovary syndrome (PCOS) is a common endocrinal and gynecological disorder affecting women in reproductive age. Despite many studies, the etiology of this disorder is still unknow. It seems that oxidative stress is an important factor of development of PCOS. Oxidized low density protein (ox-LDL) occurs in a result of reaction of oxygen free radicals with low density protein (LDL), and can be used as a marker of oxidative stress.

AIM OF THE STUDY: The aim of the study was to evaluate the relationships between level of ox-LDL and hormonal, lipid and carbohydrate parameters in PCOS patients.

MATERIALS AND METHODS: The study was conducted on the group of 45 women with PCOS who were hospitalized in Gynecological Endocrinology Clinic of the Silesian Medical University. Blood samples were collected during the follicular phase after an overnight fast. The concentration of ox-LDL was assayed using commercial test. Lipid profile parameters (total cholesterol (CHO), LDL, high density lipoprotein (HDL)), the concentration of glucose and insulin as well as selected hormones were measured during routinely diagnosis.

RESULTS: We found significant correlation between the concentration of ox-LDL and prolactin ($r=-0,30$, $p=0,048$) with fasting insulin ($r=0,30$, $p=0,049$) or LDL ($p=0,39$, $p=0,008$). Additionally, we found negative correlation between the value of ox-LDL/HDL ratio and the concentration of prolactin ($r=-0,30$, $p=0,048$), the value of ox-LDL/CHO ratio and the concentration of DHEA-S ($r=-0,31$, $p=0,038$) as well as between the value of ox-LDL/HDL ratio and the concentration of DHEA-S ($r=-0,35$, $p=0,037$). Moreover, the value of ox-LDL/HDL ratio negatively correlated with the concentration of cortisol ($r=-0,31$, $p=0,038$) and positively with the concentration of fasting insulin ($r=0,40$, $p=0,006$).

CONCLUSIONS: The concentration of ox-LDL and its association with the lipid profile parameters was significantly associated with the alterations in the concentration of selected hormones in the course of PCOS.

Title: MENOPAUSE IN POLISH WOMEN AGED 45-55

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INTRODUCTION: Menopause is a naturally occurring phenomenon in a woman's life. The onset of menopause is different in individual countries. However, this process can proceed in different ways depending on variable factors e.g. given populations or smoking habit. One of the main aspects of clinicians' focus of attention in this population group is managing menopausal symptoms. Data on the presence and severity of menopausal symptoms in the Polish population are not sufficiently studied.

AIM OF THE STUDY: The aim of the study was to investigate the most common symptoms, the correlation between symptoms and external factors, quality of life and the impact of hormone replacement therapy(HRT) on the intensity of symptoms in women aged 45-55.

MATERIALS AND METHODS: This cross-sectional observational study including 375 women (age 45–55 years) was conducted from June to September 2021. The data was mainly collected by means of a Google Form survey posted on various Internet groups. Statistical analysis was performed using t-test with the estimation of variance using the Brown-Forsythe test. P values <0.05 were considered significant.

RESULTS: Results showed that 63,8% of the women entered the menopause before the age of 50, while 57% of their mothers entered the menopause before the age of 50. 55,8% of women rated their level and quality of life at more than 3 points on a 5-point scale. The results have shown that the most frequent general symptoms of perimenopausal period were much more severe in postmenopausal women compared to women who still menstruated ($p<0,05$). The survey also revealed that the symptoms related to genital tract were much more severe in women with chronic diseases and women with offspring. The vaginal dryness and dyspareunia were also more severe in postmenopausal women. As many as 89,9% of women admitted that HRT reduced the severity of menopausal symptoms

CONCLUSIONS: The symptoms of menopause are influenced by chronic diseases, having children and HRT. The results also showed that women enter menopause earlier compared to their mothers.

Title: CESAREAN SECTION – MATERNAL REQUEST OR MEDICAL INDICATION? OBSTETRICIANS' VIEW

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INTRODUCTION: Worldwide 21.1% of women give birth by cesarean section (CS). In Lithuania the overall CS rate increased more than 2.5 fold from 9.6% in 1995 reaching 26.5% in 2012. According to 2020 data CS rate in Lithuania was 20.2%. When CS rate goes above 10% there is no evidence that maternal or newborn mortality rates improve. Increasing number of elective CS is regarded as an important cause of rise in CS rates and associated complications.

AIM OF THE STUDY: To evaluate obstetricians' views on natural birth and CS by maternal request, opinion about main factors that lead to choosing CS.

MATERIALS AND METHODS: Online anonymous questionnaire was shared with obstetricians through Lithuanian Obstetricians Association and Lithuanian Obstetricians Union home pages. Survey took place between 01.12.2021 and 01.02.2022 (LUHS Centre of Bioethics permission No.BEC-MF-34). Questionnaire consisted of 31 question, which included demographic data, opinion about natural birth and CS, personal birth experience. Statistical analysis was done with SPSS 23.0 using independent T and chi-square tests.

RESULTS: The survey was filled out by 57 female obstetricians. Mean age was 39.1±12.3 years. 14% of respondents would agree with CS without indications. There was statistically significant difference between years of experience 9.6±9.5 vs 17.4±12.6 and decision to agree with CS without indications (p=0.014). 17.5% think that indication - maternal request, should be legal. All obstetricians for healthy primiparas recommend natural birth. 47.4% think that CS rate in Lithuania is too high. 68.4% had personal birth experience, 74.4% of which had natural birth. 92.3% were satisfied with their birth. Difference between birth type and satisfaction with birth experience was statistically significant (p=0.011) all who had natural birth were satisfied.

CONCLUSIONS: Overall 14% of obstetricians would agree with CS without indications, but obstetricians with more years of experience tend to disagree. Major part (82.5%) think that indication - maternal request, should not be legalised. Almost half of respondents (47.4%) agree that CS rate in Lithuania is too high. All obstetricians for healthy primiparas recommend natural birth. Obstetricians' part in lowering CS rates might be significant considering their influence on childbearing females.

Title: RECOGNITION OF OPHTHALMOLOGICAL INDICATIONS OF CHILDBIRTH BY CAESAREAN SECTION AMONG MYOPIC WOMEN.

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INTRODUCTION: The belief that natural childbirth in myopic patients can irreversibly aggravate quality of visual acuity is still common among society. In Poland the most common ophthalmologic indication to terminate pregnancy by caesarean section is myopia (57%), whereas in most cases natural labour does not have an impact on vision's quality. In 2014 Polish Ophthalmological Society released guidelines regarding ophthalmological indications for pregnancy termination by caesarean section.

AIM OF THE STUDY: The objective of the study was to verify the awareness of official ophthalmological contraindications of natural labour among Polish women with myopia.

MATERIALS AND METHODS: The original, structured, anonymous, online survey was performed. The survey, distributed on social media, included nineteen, both open and closed questions. The data were analysed separately for each participant and in selected comparative groups, including myopic women in general, women affected by other visual impairments and women that had already given birth.

RESULTS: The study included 409 women with myopia. Participants were asked if they agree that refractive error is a contraindication of natural labour - 304 respondents (74,33%) agreed at least at some point with this sentence. Myopia was regarded as the most popular contraindication (160 answers - 52,63%), supposedly worsening the visual acuity irreversibly. Only 6 respondents (1,47 %) gave answers that were corresponding to the official indications. 139 (34,15%) respondents claimed that it had been suggested to them (by family, friends, Internet and 53 women advised by a physician) that there might be possible complications in the future. Only 12 women underwent a caesarean section due to ophthalmologic indications of whom 7 due to myopia.

CONCLUSIONS: As the recognition of ophthalmological conditions predisposing to caesarean section is still low among myopic women in Poland, it is of utmost importance for ophthalmologists and gynaecologists to educate women about real medical contraindications of natural labour in those patients.

Original Research

Interdisciplinary

Title: ATTITUDE OF DENTISTS TOWARDS THE TREATMENT OF HIV INFECTED PATIENTS

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INTRODUCTION: Every patient has the right to get high-quality care and to be respected by specialists, however when a patient is suffering from a non-curable contagious disease, a specialist may have reservations about the patient's treatment. As a result, it is reasonable to believe that there are factors that influence the choice of a dentist. Only a few studies have been undertaken to examine the factors that influence dentists attitudes about HIV-positive patients treatment.

AIM OF THE STUDY: To learn about dentists attitudes regarding treating HIV-positive people and to assess their understanding of the disease based on their age, gender, job experience, and specialization.

MATERIALS AND METHODS: A survey was done using an anonymous questionnaire. All general dentists, oral surgeons, maxillofacial surgeons, orthopedic dentists, periodontists, and endodontists were invited to participate in the study. A total of 338 Lithuanian dentists were interviewed, and the data was analyzed using the Chi Square test, the Kruskal-Wallis test, and the Mann-Whitney test.

RESULTS: There were 271 women and 67 men in the study. The majority of respondents are between the ages of 25 and 30. A statistically significant association was discovered between the dentist's gender, age, and work experience and the fear of treatment. According to the numbers, younger doctors, women and especially doctors with less years of experience would be afraid to treat a patient with HIV-positive. Also, statistically significant relationship was discovered between the choice of extra precautions and the dentist's age and job experience. Doctors who are older and more experienced stated that they would not take extra precautions with patients who are HIV-positive.

CONCLUSIONS: In this survey the respondents take specialty - insufficient. Women (82,3%), younger, and inexperienced dentists feel most afraid of treating an HIV-positive patient. Dentists with less than 20 years of experience would avoid treating infected patients because they would be afraid of becoming infected, and older doctors say that the main reason is insufficient additional security measures. As well as younger, less experienced dentists will usually take extra precautions.

Title: EVALUATION OF PAIN AND DISCOMFORT EXPERIENCED BY PATIENTS DURING ORTHODONTIC TREATMENT WITH MINI IMPLANTS

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Tutor(s): Roberta Kalibataite[1]

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INTRODUCTION: Orthodontic treatment using skeletal anchorage with mini-implants has become a conventional technique. Lack of knowledge about this minimally invasive procedure can result in patients' anxiety and poor degree of cooperation with orthodontist.

AIM OF THE STUDY: To investigate the patients' experience of pain and discomfort after insertion of orthodontic mini-implants.

MATERIALS AND METHODS: Totally 35 patients were enrolled in this study. All of them received orthodontic treatment with mini implants. Data was collected using a questionnaire, which evaluated pain, discomfort, analgesic consumption and impact on daily activities experienced by patients on the first, second and third day after mini implant placement. Visual analog scale (VAS) was used.

RESULTS: Patients reported low level of pain and discomfort during mini implant placement with a mean score of 1,1±1,8 (VAS). Significantly more analgesics were consumed during first day after procedure than during third day ($p<0,05$). 51,4% of patients experienced difficulties with chewing food; 20,0% – with yawning and 17,1% – with talking. 54,3% of patients reported having difficulties with ability to chew nuts (on the second day after procedure), 45,7% of patients – meat (on the first day after procedure) and 39,3% - raw vegetables (on the first and second day after procedure). Significantly more patients reported having difficulties with ability to chew raw vegetables on the third day after procedure than on the other days of procedure ($p<0,05$).

CONCLUSIONS: Patients experience moderate pain or no pain at all during treatment with orthodontic mini implants but it can cause discomfort during everyday activities like chewing, yawning or speaking.

Title: COMPARISON OF 4TH AND 5TH YEAR DENTISTRY STUDENTS' KNOWLEDGE OF THE IMPACT HYPERTENSION AND DIABETES HAVE ON THE DENTAL EXTRACTION PROCEDURE

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Tutor(s): Dr. Ruta Rasteniene[1]

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INTRODUCTION: Students are confident to perform dental extraction procedures (DEP) on healthy patients, but they do not feel prepared to treat patients with systemic diseases (SD). This may result in increased numbers of referrals to secondary care, with most treatments performed within oral surgery departments considered to be routine procedures. It is crucial to be aware of SD while performing DEP as postoperative bleeding and delayed wound healing are common complications encountered in some patients.

AIM OF THE STUDY: The aim of the study was to assess and compare the knowledge of 4th and 5th year dental students of the influence hypertension and diabetes have on DEP, determine factors leading to one's better knowledge and assess the need for practical guidelines.

MATERIALS AND METHODS: A survey was presented to a voluntary response sample of 4th year and 5th year Lithuanian dentistry students. Responses of all 4th and 5th year students who were accessible electronically were collected. Statistical data analysis was performed with R program applying Student's t, Shapiro – Wilk tests, Bonferroni adjustment, Kolmogorov-Smirnov criteria. The threshold for statistical significance was set at $p \leq 0.05$.

RESULTS: A total of 111 people participated in the study. The knowledge of the 5th year students on the influence of hypertension and diabetes on DEP was significantly better than 4th year students' ($p = 0.0002$). The knowledge of students' who expressed further interest in minimal surgical interventions was significantly better than those who have not ($p = 0,0165$). 56,8% of students get their knowledge on minimal surgical interventions only from their university lectures, while 43,2% of students study on top of their curriculum in their leisure time. Most respondents (96.2%) indicated the need for practical guidelines on the topic.

CONCLUSIONS: 5th year students' knowledge was significantly better than 4th year students. Showing further interest in surgical interventions contributed to better respondents' knowledge. The need for practical guidelines on this topic is significant. The results obtained from this study could be applied when reviewing study programs across Lithuanian dental schools.

Title: IMPACT OF THE CORONAVIRUS (COVID-19) PANDEMIC ON THE EPIDEMIOLOGY OF MAXILLOFACIAL INFECTIONS: A RETROSPECTIVE ANALYSIS

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INTRODUCTION: Due to the coronavirus (Covid-19) pandemic, the Government of the Republic of Lithuania has suspended all elective dental services and surgeries in oral and maxillofacial departments from 16.03.2020 until the end of the quarantine period, and has ordered that only emergency dental care can be provided. Some of the most common odontogenic and maxillofacial infections, if not treated in a timely manner, can complicate into life-threatening conditions.

AIM OF THE STUDY: To retrospectively assess the impact of COVID-19 lockdown on the epidemiology of patients, including the number of visits, type of illness, duration and treatment, presenting to Zalgiris Clinic of Vilnius University Hospital (VUL ZK).

MATERIALS AND METHODS: A retrospective analysis of the patients presented with maxillofacial infections during the initial four weeks of COVID-19 lockdown in 2020 was carried out and compared with the equivalent period in the preceding year. The following data were collected: age, gender, type of infection, cause of infection, locations of inflamed regions, duration and type of treatment provided. Statistical analysis was carried out with IBM SPSS 23.0. Statistical significance threshold was set at $p \leq 0.05$.

RESULTS: 397 patients were referred to VUL ZK for inflammation of the maxillofacial region. Significantly less patients (n=145) presented to the clinic during the lockdown than in 2019 (n=252) ($p<0.05$). 18.9% of patients (n=75) were hospitalised, 12.1% (n=48) in 2019 and 6.8% (n=27) in 2020. Inflammatory conditions of the jaws accounted for 73.8% of all cases (n=293). The most common cause of the inflammation was caries complications (71.6%, n=237). In 2020, patients presented to VUL ZK 4,4 days later after the onset of the first symptoms compared to 2 days in 2019. The duration of hospitalisation in 2020 was significantly longer ($p<0.05$). In 2020, significantly more patients (46.2%) required surgical treatment than in 2019 (25.9%) ($p<0.05$).

CONCLUSIONS: The quarantine in 2020 resulted in a significant decrease in the number of patients presenting with inflammatory conditions of the maxillofacial region compared to the same period in 2019. The strict lockdown had an impact on the delayed referral of patients to a healthcare facility, leading to longer lengths of hospital stays and a higher number of more severe conditions requiring complex surgical treatment.

Title: EVALUATION OF PLATELET PARAMETERS AND PLATELET-LEUKOCYTE AGGREGATES IN RHEUMATOID ARTHRITIS.

Author(s): Daria Gastołek[1], Karolina Brześcińska[1], Patrycja Dajnowska[1], Aleksandra Dyszkiewicz[1], Marta Chylińska[1], Paula Bielawska[1]

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INTRODUCTION: Modern diagnostics of rheumatic diseases, especially rheumatoid arthritis (RA), focuses on understanding the etiology and mechanisms leading to the onset of the disease. Despite many years of efforts, the time of diagnosis and proper identification is still too long, what may lead to irreversible health consequences. Recently, more attention is paid to platelets, their parameters and complexes that they can form with leukocytes.

AIM OF THE STUDY: The aim of the study was to assess the diagnostic significance of platelet-leukocyte aggregates (APL) through the analysis of P-selectin expression on the surface of thrombocytes in a group of patients with rheumatoid arthritis.

MATERIALS AND METHODS: The study and control group consisted of 60 people: 45 patients with rheumatic diseases (RA) and 15 healthy people (C). The parameters of the white blood cell were measured by fluorescence flow cytometry, the morphological parameters of the platelets were measured by the impedance method with hydrodynamic focusing with direct current, and the percentage of platelet-leukocyte complexes by the immunocytometric method with monoclonal antibodies.

RESULTS: The obtained results showed a significant increase in CD62P expression in the RA group compared to healthy subjects (C: 643,21 SD 187,3; RA: 2382,18 SD 239,4), a similar relationship was shown in the percentage of platelet-leukocyte aggregates (C: 20,2 SD 1,61; RA: 66,8 SD 7,2). In addition, platelet morphological parameters such as MPV, IPF, P-LCR (RA: 10,57 SD 1,76; 7,60 SD 2,41; 29,20 SD 12,21) were also significantly increased in RA patients compared to the control group (C:7,80 SD 0,30, 3,25 SD 1,34 and 27,30 SD 1,02).

CONCLUSIONS: The information obtained in our study together with existing criteria for the severity of the disease may be helpful in a more accurate assessment, faster diagnosis and more effective treatment.

Title: ANXIETY AND DEPRESSION SYMPTOMS AMONG PATIENTS WITH CHRONIC SKIN DISEASES

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INTRODUCTION: The skin is the largest and most visible human organ, therefore problems associated with it can have an effect people's appearance and daily lives. Deterioration in life quality can eventually lead to symptoms of depression and anxiety.

AIM OF THE STUDY: To determine the prevalence of anxiety and depression symptoms in patients with chronic skin diseases, as well as the quality of their daily lives.

MATERIALS AND METHODS: Since March 28th, 2022 till April 1st, 2022 an anonymous voluntary online survey was conducted via social media. The respondents were patients with chronic skin diseases. Depression and anxiety symptoms were evaluated with PHQ9 and GAD7 questionnaires. The threshold values were respectively ≥10 and ≥8 points. The data was analysed using Microsoft Excel and R Commander programs. The statistical significance was P value lower than 0.05.

RESULTS: The majority of respondents had psoriasis (34.51%), followed by acne vulgaris (20.42%) and atopic dermatitis (11.27%). Stress was linked to disease exacerbations in people with psoriasis ($p=0.016$) and acne vulgaris ($p=0.01$). The majority of respondents (83.81%) reported that a diagnosis of skin disease had no effect on their ability to work effectively, but worsened their mood significantly (75.35%). 59.86% reported a decline in quality of life, symptoms of anxiety ($p<0.001$) and depression ($p<0.001$) were more severe in this population. 47.2% of respondents had clinically significant anxiety and 45.1% depression. Psoriasis was the only chronic skin diseases linked to both depression and anxiety symptoms ($p=0.011$ and $p=0.004$).

CONCLUSIONS: The most common chronic skin disease among respondents was psoriasis, followed by acne vulgaris and atopic dermatitis. We found that only psoriasis was associated with both depression and anxiety symptoms. The majority of respondents reported no change in their working capacity but a significant decline in their mood and quality of life.

Title: MOBILOME CHARACTERISTICS OF MULTIDRUG-RESISTANT CITROBACTER FREUNDII STRAIN ISOLATED IN MEDICAL UNIVERSITY OF BIALYSTOK CHILDREN'S CLINICAL HOSPITAL.

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INTRODUCTION: The growing incidence of multidrug-resistant (MDR) bacteria is an emerging challenge in modern medicine. Constant selection of MDR pathogens contributes to the successive reduction of available therapeutic options. The enormous bacterial genome plasticity enables the accumulation of different mechanisms of resistance to crucial antimicrobials. As a result, the increased emergence of MDR pathogens considerably reduces the opportunities for effective treatments against these bacteria.

AIM OF THE STUDY: The aim of the study was to present a molecular insight on the molecular mechanisms of resistance to "last resort" antimicrobials in clinical C. freundii strain, a representative of Enterobacterales, frequently causing life-threatening infections.

MATERIALS AND METHODS: Molecular investigation was performed in C. freundii strain isolated from patient hospitalized in Medical University of Bialystok Children's Clinical Hospital. Antimicrobial susceptibility testing (AST) was performed using the VITEK2 system. Synergy testing with β-lactamase inhibitors and biochemical carbapenemase assay were performed. After genomic DNA preparation, whole genome sequencing (WGS) with use of long-read nanopore technology,and subsequent bioinformatic analyses were performed.

RESULTS: AST revealed a relatively high level of resistance, including penicillins, cephalosporins, carbapenems, sulfonamides and fluoroquinolones. The tested C. freundii isolate retained susceptibility to gentamicin, colistin and tigecycline. Phenotypic analysis revealed a significant increase in zone diameter around disks with EDTA, indicating the presence of metallo-β-lactamase. WGS analysis revealed the presence of 5 plasmids. Furthermore, the tested C. freundii isolated harbored the following chromosomal (blaCMY-34, sul2, qnrB9, aadA1), and acquired resistance genes responsible for resistance to: β-lactams - blaVIM-4, blaTEM-1A; tetracyclines - tet(A); fluoroquinolones - aac(6')-Ib-cr; aminoglycosides - aac(6')-Ib3; and sulfonamides - sul1.

CONCLUSIONS: Antimicrobial resistance-conferring plasmids are reported as increasingly disseminated among Enterobacterales. The process of bacterial evolution accelerates, primarily due to horizontal gene transfer, a phenomenon substantially affecting the resilience of the bacterial genomes, and consequently influences their outstanding adaptive capacity. The growing prevalence of pathogens resistant to most of currently available antimicrobials heralds the potential risk of a future “post-antibiotic era”.

Title: STUDENTS' AWARENESS OF INFECTION PREVENTION-VACCINATION.

Author(s): Blanka Mitera[1], Anna Kożuchowska[1], Paweł Radziwon[1], Jakub Brodowski[1]

Tutor(s): Elżbieta Czykier, MD, PhD, Assoc.Prof. Department of Histology and Embryology,Medical University of Bialystok, Poland.[1]

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[1]Medical University of Bialystok

INTRODUCTION: The pandemic of Covid-19 showed the lack of basic knowledge about vaccines not only among society but unfortunately also among healthcare practitioners. Many misconceptions about vaccination that have been also duplicated by medics and a lack of trust in experts led to significant differences in the vaccination rate of Polish people compared to other European nations. With that in mind, we choose to assess the comprehension of students from different medical fields about vaccination.

AIM OF THE STUDY: The aim of this study is to present the knowledge level of students from different medical fields, their attitude towards vaccination as well as educate future medical practitioners in this field.

MATERIALS AND METHODS: Medical university students were asked to complete an anonymous questionnaire consisting of three parts. In the first part, the data such as age, gender, field, and year of study of the respondents were checked. The second part consisted of twenty questions evaluating students' knowledge about vaccines, their composition, mechanisms of action, and vaccination recommendations. The final part was meant to evaluate vaccination status against-Covid-19 and overall attitude towards vaccination.

RESULTS: 75 questionnaires were included in the analysis with an average score of 11,44/20. The proportion of correct answers to each question varied between 6,67% and 92% with the highest scores among questions that addressed COVID-19 vaccination and vaccinations in Poland, and the lowest among questions concerning vaccination of pregnant women and premature babies, as well as the mechanism of action of individual vaccine groups. The vaccination against COVID-19 has been taken by 96% of respondents, of which 66,7% included the booster. Willingness to protect yourself and others, trust in the vaccines' safety, and scientific papers were most common reasons for vaccination. Over 98,1% of respondents are planning to vaccinate their children.

CONCLUSIONS: While the majority of respondents presented a positive attitude towards vaccinations, gaps in knowledge on this subject among students were still prominent. This may result in future duplication of misconceptions about vaccines. It is up to us, the medical community, to provide our patients with facts based on evidence-based medicine. As is well known we cannot achieve that without the proper education of the medical stuff which, as the Covid-19 pandemic has proven, is now more needed than ever.

Title: CONJUNCTIVAL TUMORS IN CHILDREN

Author(s): Aleksandra Musioł[1], Mikołaj Zakryś[1]

Tutor(s): Anna Chmielarz - Czarnocińska PhD[1], Wojciech Adamski PhD[1]

Affiliation(s):

[1]University of Medical Sciences

INTRODUCTION: Conjunctival nevi in children are extremely rarely malignant. However, they often concern both parents and pediatricians and result in prolonged follow-up or surgery under general anesthesia in tertiary reference medical centers.

AIM OF THE STUDY: To analyze the frequency of malignant conjunctival tumors among pediatric patients presented with pigmented conjunctival lesions in Ophthalmology Department of Poznan University of Medical Sciences.

MATERIALS AND METHODS: Retrospective analysis was carried out based on histopathological reports of surgically removed conjunctival lesions. We included the patients below 18 years of age operated in the Ophthalmology Department of Poznan University of Medical Sciences between November 2013 and November 2021.

RESULTS: One hundred and eight patients, 52 boys and 56 girls, had conjunctival lesions removed in the study period. The mean age of the patients was 10 years (range: 7 to 17 years). All excised lesions were benign. The histopathological diagnoses included: benign tumors (94 [87%]); a fragment of a normal tissue with or without melanosis (11 [10,2%]) and inflammatory lesions (3 [2,8%]). Among benign tumors the most common diagnosis was melanocytic naevi (87 [92,6%]). Other benign tumors included: dysplastic naevi (1 [1,1%]), Spitz naevi (1 [1,1%]), epidermoid cyst (1 [1,1%]), lipoma (1 [1,1%]), papilloma (1 [1,1%]) and pyogenic granuloma (2 [2,1%]). The results showed that none of the lesions was a melanoma, lymphoma or a premalignant tumor.

CONCLUSIONS: Malignant conjunctival tumors in children are extremely rare. This should be considered when deciding on a surgical removal of conjunctival nevi in children as the procedure is performed under general anesthesia which is not indifferent to the patient's general wellbeing and can cause adverse effects. This aspect should also be discussed with parents.

Title: THE NECESSITY OF TREATMENT ACCORDING TO HOSPITALISED PATIENTS WITH PARANOID SCHIZOPHRENIA AND SCHIZOAFFECTIVE DISORDERS: A CROSS-SECTIONAL STUDY

Author(s): Gintė Gaižauskaitė[1]

Tutor(s): Prof. Alvydas Navickas[1]

Affiliation(s):

[1]Vilnius University, Faculty of Medicine

INTRODUCTION: Adherence to treatment is essential in treating chronic psychiatric conditions such as schizophrenia and schizoaffective disorder. Patient's opinion on the necessity of treatment is important for adherence and continuous treatment. It is significant to study the current situation in psychiatric hospitals and search for possible influencing factors.

AIM OF THE STUDY: The aim of this study is to collect patients with schizophrenia (F20 ICD-10) and schizoaffective disorder (F25 ICD-10) opinion on different types of treatment and analyse it according to different factors and the Medication Adherence Rating Scale.

MATERIALS AND METHODS: A cross-sectional study of 43 (27 male, 16 female) patients diagnosed with paranoid schizophrenia or schizoaffective disorder who were hospitalised was conducted. Patients were interviewed and asked for their opinion on different methods of treatment. Medication Adherence Rating Scale (MARS) was used to evaluate adherence to prescribed medications. Additional data on patient's diagnosis, age and etc. was collected. Data was analysed with Microsoft Excel and IBM SPSS Statistics 25.0.

RESULTS: Mean age of patients' was 36.44 years (range 18-74 years), main duration of primary disorder was 9.95 years (range 1-35 years). 72,1% patients believe that they need treatment with antipsychotic medication, 76,7% need psychological consultations, 44,2% need psychosocial rehabilitation, 18,6% believe they need electro-convulsive therapy. 4 patients think they don't need any treatment even though 3 of them are treated voluntarily. Of the 27,9% of patients who don't think that treatment with medication is needed 58,3% are treated with long-acting injection antipsychotics. Mean result of MARS was 5.4 points. There was no difference is MARS value between patients who believe medication treatment is needed and not needed (p=0,187).

CONCLUSIONS: According to our results, in patients' opinion most needed treatment methods are psychological consultations and antipsychotic medication. On average patients scored relatively low (mean 5,4 points) on the Medication Adherence Rating Score. Our results suggest there is a significant amount of hospitalised patients with paranoid schizophrenia or schizoaffective disorder who don't think medical treatment is needed.

Title: THE IMPACT OF THE USE OF PERSONAL PROTECTIVE MEASURES ON FACE SKIN CONDITIONS DURING COVID-19 PANDEMIC

Author(s): Gabrielė Gogelytė[1]

Tutor(s): Inga Kisielienė[1]

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INTRODUCTION: COVID-19 infection changed people's normal lives and forced them to use personal protective measures daily. This change had serious effects on both: healthy and damaged skin.

AIM OF THE STUDY: To determine what type of personal protective measures was used the most, what effect it had on the manifestation of various face skin disease's symptoms during the pandemic and how it affected people's daily life.

MATERIALS AND METHODS: On the months of February and March, 2022 an anonymous online survey was carried out. The data was analyzed using Microsoft Excel and R Commander programs. Differences were considered statistically significant at $p<0.05$.

RESULTS: The most popular type of personal protective measures during pandemic was medical face masks (83.5%). Usage of them was associated with certain damaged face areas ($p=0.001$) and specific symptoms ($p=0.003$). Most affected face areas among people who faced skin problems were forehead, cheeks, nose and chin (33,3%) and the most common symptoms were acne - like symptoms (56.8%). 38.4% of respondents felt significant changes in their mood and 18.5% in ability to work due to the impaired skin condition. They were more likely to seek professional help and to use remedies prescribed by specialists (both $p<0.001$). Most of them attended cosmetologists (48.4%), followed by dermatologists (38.7%) and family doctors (9.7%).

CONCLUSIONS: The majority of respondents chose to use medical face masks during the pandemic. Usage of them was related to negative effects on certain face areas and symptoms of skin diseases such as acne vulgaris. The impaired skin condition had a negative effect on mood and ability to work for a part of respondents. They were more likely to contact specialists such as cosmetologists and to use prescribed remedies.

Title: ACNE DURING COVID 19 - THE PANDEMIC AND QUARANTINE EFFECT ON SKIN CARE OF PATIENTS WITH ACNE

Author(s): Aleksandra Kuźniar[1], Patrycja Niewinna[1], Dominik Szawica[1]

Tutor(s): Prof. dr hab. n. med Adam Reich[1]

Affiliation(s):

[1]University of Rzeszówy, College of Medical Sciences, The Student Scientific Club of Experimental Dermatology

INTRODUCTION: Acne vulgaris is a chronic, inflammatory disease of pilosebaceous unit, that is caused by the increased production of sebum. It is one of the most common diseases in the World and affects about 85% of people between 12 and 25 years of age. Moderate to severe cases constitute 15 – 25% of all.

AIM OF THE STUDY: Assesment of the effect of the COVID-19 pandemic and quarantine on skin care of patients with acne.

MATERIALS AND METHODS: A total of 484 respondents were included in the study (female – 97%, male – 3%). A self-administered online questionnaire was applied using Google Forms. It contained 25 closed questions. The first 4 were about gender, age, residence and education. The another 21 concerned the studied problem. The study group included patients who suffered from acne before the pandemic and people who developed it during the pandemic (from March 2020).

RESULTS: During the COVID-19 pandemic 43% of respondents started acne treatment for the first time and 32.4% of respondents reported the change of previous dermatological treatment, that they found inefficient. In addition, 76.9% of respondents increased their interest in the subject of acne, 81.5% of respondents increased their spending on skin care products, and 70.5% of respondents began to pay more attention to the composition of this products.

CONCLUSIONS: The conducted research confirms, that the restrictions introduced during the COVID pandemic 19 (face masks, social restrictions) had a significant impact on the skin condition of patients with acne and their care habits. Patients' interest in the subject of acne and involvement in the treatment has increased significantly - that is a positive trend.

Title: HORMONE RECEPTOR, HUMAN EPIDERMAL GROWTH FACTOR RECEPTOR 2 AND KI67 STATUS OF BREAST CANCER

Author(s): Kristīne Strižakova[1]

Tutor(s): Ilze Eņģele[1.2]

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INTRODUCTION: Breast cancer is one of tho most common cancer type in the world. To identify treatment strategy and prognosis of clinical outcome, immunohistochemistry test of breast cancer is performed. This test the one that determines hormone recepror (HR), human epidermal growth factor receptor 2 (HER2) and Ki67 status.

AIM OF THE STUDY: The aim of this study was to identify the incidence of breast cancer molecular subtypes.

MATERIALS AND METHODS: A retrospective cross-section study of patients who underwent breast biopsy with sebsequent immunochistochemical testing. Patient data was collected for a period of 6 months in 2021. Cancer molecular subtypes were grouped by immunohistochemical findings.

RESULTS: A total of 60 cases were collected (all women). The mean age of patiens was 53.02, SD = 9.48 with an age range of 30 to 69 years. According to immunohistochemical findings 16 patients (26.6%) had Luminal A, 31 patient (51,6%) had Luminal B, 8 patients (13,3%) had triple negative, 5 patients (8,3%) had HER2 enriched breast cancer subtypes.

CONCLUSIONS: Luminal A and Luminal B are two predominant breast cancer subtypes. Triple negative and HER2 enchired breast cancer subtypas are with relatively high incidence. Immunochistochemestry become an integral part of the pathology laboratory and HR, HER2 and Ki67 status is the most important anticipated and prognostic biomarcers.

Title: OCULAR MANIFESTATION OF COVID-19

Author(s): Alicja Chorągiewicz[1], Oliwia Burdan[2], Jan Błaszczyk[2], Antek Błaszczyk[2], Julia Pawłowska[2]

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INTRODUCTION: It is a well-known fact that SARS-CoV-2 causes complications in functioning of pulmonary and cardiovascular system. But destructive actions of this virus can be observed also in other systems and organs, incluing eyes.

AIM OF THE STUDY: The aim of our study is not only showing the ophthalmological symptoms of COVID-19 disease but also considering the possibility of transmitting the virus through ocular tissues.

MATERIALS AND METHODS: In our work we have searched medical studies such as “Conjunctivitis and other ocular findings in patients with COVID-19 infection” , “Post-Coronavirus disease 2019 Syndrome Associated with Central Retinal Vein Occlusion”, “SARS-CoV-2 and the Eyes: a review of the Literature on Transmission, Detection and Ocular Manifestations”.

RESULTS: We are focusing on one of the most important sensory organs – the eye, and the leverage SARS-CoV-2 exerts over it.

CONCLUSIONS: It is vital when it comes to eye protection while having contact with infected patient. Ophtalmologic long-term post COVID19 complications can be treathfull for health and standard of living in patients.

Title: ACCURACY OF VALIDATED QUESTIONNAIRES FOR SNORING AND OBSTRUCTIVE SLEEP APNEA

Author(s): Natalia Olszewska[1]

Tutor(s): prof. dr hab. Ewa Olszewska[1]

Affiliation(s):

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INTRODUCTION: Questionnaires are commonly used in screening, assessing the severity and treatment efficacy in snoring and obstructive sleep apnea syndrome (OSAS). Commonly used questionnaires are: Epworth Sleep Scale (ESS), the visual analog scale for snoring loudness (VAS), Short Form Health Survey 36 (SF-36), STOP-Bang, Pittsburgh Quality of Sleep (PSQI).

AIM OF THE STUDY: To prospectively assess the diagnostic and prognostic accuracy of sleep questionnaires in subjects underwent minimal invasive surgery for snoring and OSAS.

MATERIALS AND METHODS: 48 patients (39 male, 9 female) with snoring and/or OSAS, with mean age 40.4±11.5, mean body mass index 27.3±3.4 underwent palatoplasty and tongue base reduction with/without lower turbinates reduction under local anesthesia. They had a pre- and post-operative workup according to the study protocol, including, endoscopy of the upper airways, sleep study type III and sleep questionnaires. Pre- and post-operative sleep study parameters (SSP) and questionnaire results were analysed.

RESULTS: Pre-operative SSP demonstrated apnea hypopnea index (AHI) of 16.9±9.3, desaturation index (ODI) of 14.6±9.2 and mean percent snoring time (ST) of 17.1±14.5%. Pre-operative questionnaires demonstrated ESS of 9.1±5.8, VAS of 8.3±1.9, SF-36 of 42.4±23, STOP-Bang of 3.7±1.1 and PSQI of 6.7±3.2. Post-operative sleep study parameters demonstrated AHI of 2.3±3.1, ODI of 10.4±7.7 and ST of 12.5±13.5%. Post-operative questionnaires demonstrated ESS of 6.7±4.6, VAS of 4.1±2.9, SF-36 of 42.7±24.9, STOP-Bang of 5±2.1 and PSQI 2.5±1.4. Changes with surgery for SSP demonstrated decrease in: AHI – 42%, ODI – 29%, ST – 26.6%, ESS – 26.4%, VAS – 50.1%, PSQI – 62.2% and STOP-Bang – 36.2%. SF-36 didn't show the difference.

CONCLUSIONS: Sleep questionnaires are essential part of workup of snoring and sleep apnea. However, there are differences in their ability to identify the presence and quantify the severity, and their sensitivity in asessing changes with treatment for snoring and OSAS, when compared to objective sleep parameters.

Title: OBSERVED LABORATORY CHANGES AMONG PATIENTS WITH SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-COV-2)

Author(s): HUSSEIN.A.H[1], SHAH.J.K[1], OZA.Y.R[1], KARPOVICH Y.I[1], KARPOVICH Y.L.[11]

Tutor(s): BOGDANOVICH V.CH.[1]

Affiliation(s):

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INTRODUCTION: The COVID-19 pandemic, also known as the coronavirus pandemic, is an ongoing pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). It was first identified in December 2019 in Wuhan, China. It is necessary to closely monitor the lab values and early correction of them.

AIM OF THE STUDY: Identification and understanding of laboratory changes observed in COVID 19 infected patients

MATERIALS AND METHODS: Study involved 36 COVID-19 affected patients with the mean age 57.3 (21 males and 15 females). Mean duration of hospitalization was 12.1 days. Urine test, Coagulogram, biochemical tests and general blood test were performed to analyze the laboratory changes among these patients. Diagnosis was confirmed by testing (COVID 19 antigen, antibody, lung CT scan) of patients upon admission to the hospital.

RESULTS: On the basis of RT-PCR report patients were classified as mild 1/36(2.78%), moderate 20/36(55.55 %) & severe 10/36(27.78%) Urine analysis showed NO SIGNIFICANT CHANGE General blood test showed anemia, leukocytosis , leucopenia , thrombocytosis , thrombocytopenia , , neutrophilia ,left shift of neutrophil,lymphocytosis, lymphocytopenia, Monocytosis . Biochemical blood test showed normal protein, normal albumin, ↑ urea , ↑ creatinine ,↑ CRP, ↑ bilirubin,↑ glucose , ↑ AST , ↑ ALT 3/33(9%),, ↑ amylase, ↑ creatine kinase, ↑LDH, ↓ sodium . Coagulogram studies showed ↑ PTT, ↑ PT , ↓ APTC , ↑ INR ↑ fibrinogen, ↑ d dimer

CONCLUSIONS: The above analysis showed changes in different laboratory parameters in COVID 19 patients. The main changes observed were anemia, leukocytosis, lymphocytopenia, increased CRP, LDH, Creatine kinase and Fibrinogen in majority of patients. This shows significance of different laboratory parameters for better prognosis of Covid patients. ABBREVIATIONS M-Male F- Female

Original Research

Internal Diseases

Title: COVID-19 AND NECESSITY FOR BETA-BLOCKERS TREATMENT AFTER RECOVERY

Author(s): Tomasz Jędrasek[1]

Tutor(s): MD PhD Jakub Gawryś[2]

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INTRODUCTION: Manifestation of a Sars-CoV-2 infection is observed not only in the respiratory system but also in other organs, with frequent cardiovascular symptoms. Recent data indicates that arterial hypertension and cardiovascular diseases (CVD) are the most prevalent comorbidities in patients infected with Sars-CoV-2. Many patients who have recovered from COVID-19 still experience symptoms and suffer from cardiovascular complications.

AIM OF THE STUDY: The aim of the study is to examine if patients with CVD need additional treatment with beta-blockers or changes in previous dosage after recovery from a Sars-CoV-2 infection.

MATERIALS AND METHODS: We conducted a retrospective study of 70 patients (age above 18); 33 women and 37 men with CVD, hospitalized due to COVID-19 from October 2020 to february 2022 in a temporary ward of Department and Clinic of Internal and Occupational Diseases and Hypertension and in Temporary Hospital in Wrocław. The aim of the study was to assess a profile of COVID-19 patients with CVD and to compare whether and how the dose of beta-blockers changed before and after Sars-CoV-2 infection. Collected data included

RESULTS: Selected study group of 70 patients was divided into two groups: the first (n = 50) without increase or initiation of beta-blocker therapy, the second (n = 20) with administration or increase of the dose. The Wilcoxon pair sequence test showed a significant difference between groups (before and after infection) with p = 0,000196. In the second group 6 patients were treated with beta-blockers before COVID-19 and a dose increase was recommended after they had recovered, 14 patients who had not taken beta-blockers before the infection were prescribed beta-blockers after recovery.

CONCLUSIONS: The results of our study suggest that after recovery from a Sars-CoV-2 infection, patients need an additional treatment with beta blockers or increase in the previous beta-blocker dosage due to post-COVID-19 complications.

Title: COVID-19 COMPLICATED BY DEEP VEIN THROMBOSIS

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INTRODUCTION: Covid-19 is a disease caused by SARS-CoV-2 coronavirus. Clinical symptoms of the infection are fever, non-productive cough and shortness of breath. The course of disease is mild in most cases, however it is associated with higher risk of severe complications in older patients suffering from chronic comorbidities.

AIM OF THE STUDY: The aim of this work is to emphasize the possibility of serious complications of COVID-19, including deep vein thrombosis.

MATERIALS AND METHODS: SARS-CoV-2 infection was confirmed in 180 patients. Each of them experienced symptoms such as cough, fever and osteoarticular pain. None of the patients had previously received treatment for deep vein thrombosis. D-dimers were examined in each patient up to 5 days after the end of isolation and ultrasound of the lower limbs was performed up to 7 days from the end of isolation. Patients with DVT diagnosed during ultrasound examination and symptoms of pulmonary embolism were referred for angio-CT.

RESULTS: In the study group, D-dimers ranged from 600 ng/ml to 8,500 ng/ml. Deep vein thrombosis was diagnosed in 31 patients, which is about 17%. In these patients D-dimers ranged from 1,800 ng/ml to 8,500 ng/ml. Peripheral pulmonary embolism occurred in 9 patients.

CONCLUSIONS: Elevated D-dimer levels are common complication of COVID-19. Deep vein thrombosis occurs in over 17% of patients with elevated D-dimer levels. D-dimers are not an accurate indicator of the risk of developing DVT. Peripheral pulmonary embolism may occur in patients with popliteal vein thrombosis.

Title: EVALUATION OF THE PROGNOSTIC ROLE OF NLR, LMR AND PLR RATIOS IN COVID-19 PATIENTS

Author(s): Jakub Wiktor Kosidło[1], Karolina Marta Gacuta[1]

Tutor(s): PhD Justyna Dorf[2], Assoc Prof Olga Martyna Koper-Lenkiewicz[2], PhD Joanna Kamińska[2]

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INTRODUCTION: Changes in WBC (including lymphocytes and neutrophils) and PLT counts are observed in COVID-19 patients. Recent reports indicate that these parameters may change depending on the stage of the disease. Using the above parameters, we can calculate the NLR, LMR, and PLR ratios. They are described as a potential prognostic factors in COVID-19 patients.

AIM OF THE STUDY: The aim of the study was to comparison of NLR, PLR, LMR in patients with COVID-19 depending on the duration and severity of the disease, as well as the assessment of the prognostic value of the above mentioned indicators in the diagnosis of COVID-19.

MATERIALS AND METHODS: The study group consisted of 361 patients aged 31 to 101, hospitalized in the Temporary Hospital in Białystok in the period from 12.2020. until 05.2021. Laboratory findings and patient demographics were analyzed retrospectively. NLR, PLR and LMR ratios were calculated based on the results of blood counts. The patients were divided into 4 groups according to the MEWS scale.

RESULTS: We observed statistically significant differences in the values of NLR and PLR ratios depending on the duration of the disease ($p = 0.0217$, $p = 0.0003$). These parameters were statistically significantly higher in patients between 4-8 days than in the same patients <4 and >8 days of the COVID-19 duration. We also demonstrated increased NLR level in patients in 3 and 4 compared to 1 and 2 stage of diseases according to the MEWS scale ($p<0.0001$). The analysis of the ROC curves showed the diagnostic utility of NLR in differentiating patients with mild (1 + 2) and severe (3 + 4) symptoms ($p <0.0001$, AUC = 0.6195).

CONCLUSIONS: An increase in NLR and PLR between days 4 and 8 may indicate an exacerbation of the disease process in the course of COVID-19. A decrease in NLR> 8 days suggests a decrease in systemic inflammation, while a decrease in PLR indicates a decrease in the platelet pool after infection. NLR can be used as a diagnostic element in the differentiation of patients with mild and severe COVID-19.

Title: CLINICAL AND METABOLIC EVOLUTION OF PATIENTS WITH OBESITY AFTER SLEEVE GASTRECTOMY

Author(s): Lacatusu Maria-Cezara[1], Nemtanu Stefan[1]

Tutor(s): Associate Professor Mihalache Laura[1], Associate Professor Arhire Lidia Iuliana[1]

Affiliation(s):

[1]"Grigore T. Popa" University of Medicine and Pharmacy

INTRODUCTION: Obesity registers, nowadays, an epidemic evolution, and, in severe cases, the only efficient long-lasting treatment, regarding not only weight loss, but also for improving complications and comorbidities, is the surgical one.

AIM OF THE STUDY: The aim of this study is to monitor the weight and metabolic status evolution in the postsurgical period in patients with obesity following sleeve gastrectomy.

MATERIALS AND METHODS: In this study, there were included 75 patients (82.67% women), with obesity (mean BMI=45.15±6.78 kg/m², mean EW=54.96±18.08 kg) who underwent sleeve gastrectomy. Every patient was evaluated both pre- and postoperative (at 6 months for 52 patients and 12 months for 26 patients). The weight status was defined, according to the WHO criteria, by the BMI value (kg/m²), excess weight (kg) as: actual W. – ideal W., and excess weight loss (%EWL): as 100× (preop. W. – actual W.)/ (preop. W. – ideal W.).

RESULTS: The postoperative weight evolution was favourable with %EWL 63.15±16.91 after 6 months and with 69.13±22.64 after 12 months, with the decrease of weight, BMI values, both at 6 and 12 months ($p<.001$) after surgery, and the reduction of adipose tissue mass from 45.72±5.4% to 36.79±6.34% at 6 months ($p<.001$) and to 30.85±5.41% at 12 months ($p<.001$) postoperative. There was a decrease of insulinemia ($p<.001$ at 6 and 12 months after surgery), glycaemia, HbA1c value ($p<.005$ at 6 and 12 months postoperative), HOMA-IR index, from 5.77±2.77 to 2.09±0.79 at 6 months after surgery ($p<.001$) and to 1.29±0.98, 12 months after ($p<.001$), plasma TG level ($p<0.001$ at 6, 12 months after surgery) and an increase of HDL-Chol ($p=.004$ at 6, $p<.001$ at 12 months).

CONCLUSIONS: In our study, the weight evolution of patients with obesity that underwent sleeve gastrectomy was favourable, regarding the anthropometric and body composition parameters both at 6 and 12 months after surgery. Simultaneously, we found a significant improvement in the parameters of carbohydrate and lipid metabolism.

Title: THE EVOLUTION OF NUTRITIONAL AND ANTHROPOMETRIC PARAMETERS IN PATIENTS WITH OBESITY AFTER SLEEVE GASTRECTOMY

Author(s): Nemtanu Stefan[1], Lacatusu Maria-Cezara[1]

Tutor(s): Associate Professor Mihalache Laura[1], Associate Professor Arhire Lidia Iuliana[1]

Affiliation(s):

[1]"Grigore T. Popa" University of Medicine and Pharmacy

INTRODUCTION: Nowadays, obesity is recognized as a chronic disease associated with various complications and comorbidities, resorting, in severe cases, to surgical interventions as an efficient long-lasting treatment.

AIM OF THE STUDY: The aim of this study is to monitor the evolution of weight and nutritional status in the postsurgical period of patients with obesity following sleeve gastrectomy.

MATERIALS AND METHODS: In this study, there were included 75 patients (82.67% women), with obesity (mean BMI=45.15±6.78 kg/m², mean EW=54.96±18.08 kg) who underwent sleeve gastrectomy. Every patient was evaluated pre- and postoperative (at 6 and 12 months). The weight status was defined, according to the WHO criteria, by the BMI value (kg/m²), waist circumference (WC, cm), excess weight EW (kg) as: actual W – ideal W, and excess weight loss (%EWL): as 100× (preop. W – actual W)/ (preop. W – ideal W)

RESULTS: In the studied group, the postoperative weight evolution was favourable with %EWL 63.15±16.91 after 6 months, and 69.13±22.64 after 12 months, with the significant decrease of weight, BMI and WC values (both at 6 and 12 months ($p<.001$) after surgery), and the reduction of adipose tissue mass, from 45.72±5.4% preoperative to 36.79±6.34% at 6 months ($p<.001$) and to 30.85±5.41% at 12 months ($p<.001$) postoperative. It has been noticed a decrease of the total plasmatic protein level ($p=.001$ at 6 and $p=.000$ at 12 months postoperative), without exceeding normal range values, nor decreasing the albumin plasmatic level ($p>.05$). Postsurgically, there were no changes in mineral and vitamin levels ($p>.05$), but a slight increase in vit D levels ($p<.001$)

CONCLUSIONS: In our study, the weight evolution of patients with obesity that underwent sleeve gastrectomy was favourable, regarding the anthropometric and body composition parameters both at 6 and 12 months after surgery. Concomitantly, it has been registered no significant deficiencies of nutritional status parameters in the postoperative period.

Title: COMPARISON OF TRANSIENT ELASTOGRAPHY (FIBROSCAN) AND LIVER BIOPSY RESULTS IN PATIENTS WITH CHRONIC HEPATITIS B INFECTION.

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INTRODUCTION: The detection and quantification of hepatic inflammation and fibrosis is a key element of diagnostic evaluation and prognostication for patients with hepatitis of various etiology. Liver biopsy is an invasive and the most sensitive diagnostic method of assessing parenchymal disease and remains the reference standard. The use of non-invasive methods such as transient elastography (FibroScan) is becoming more prominent.

AIM OF THE STUDY: This study aimed to investigate the concordance between biopsy based histological grading and staging and LS measurement by FibroScan.

MATERIALS AND METHODS: We performed statistical analysis comparing Fibroscan and liver biopsy findings in patients with chronic HBV observed between 2015 and 2021. The biopsy grading and staging results were based on the Ishak score. We analyzed serum biochemical parameters, AST, ALT, GGTP, ALP, AFP, total bilirubin and INR. The FibroScan results were interpreted to give the Metavir fibrosis (F0-F4), median LS (kPa), CAP (dB/m). Statistical significance was interpreted as $p<0.05$.

RESULTS: The patients (n=42) had undergone both Fibroscan and liver biopsy evaluation within a one year interval (31 men, 11 women, median age 35 years, with no co-infections). Median LS was positively correlated with serum ALT, AST, GGTP, bilirubin ($r>0.506$ for all), $p=0.012$, 0.012, 0.006 and 0.010, respectively. CAP scores were not positively correlated with ALT ($r=0.057$, $p=0.797$), AST($r=-0.033$, $p=0.881$), INR ($r=0.163$, $p=0.457$), AFP ($r=-0.135$, $p=0.571$), GGTP ($r=0.417$, $p=0.053$) ALP ($r=0.253$, $p=0.268$), bilirubin ($r=0.289$, $p=0.277$). CAP scores were positively correlated with grading rho=0.445; $p=0.038$, but not with staging (rho=0.371, $p=0.089$). Metavir scores were positively correlated with staging ($r=0.471$, $p=0.002$) and grading ($r=0.468$, $p=0.002$).

CONCLUSIONS: FibroScan LS results can be correlated with serum ALT, AST, GGTP, bilirubin in patients with chronic HBV. CAP scores can be used to assess liver inflammation. Metavir scores were positively correlated with grading and staging biopsy results.

Title: PROCALCITONIN LEVELS AND SOME HEMOSTASIS INDICATORS AS PROGNOSTIC MARKERS

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INTRODUCTION: Diabetes mellitus is recognized as one of the main comorbid pathologies that contribute to the severe course and unfavorable prognosis in patients with acute respiratory viral disease COVID-19. It is suggested that this development is associated with an imbalance between the coagulation system and fibrinolysis, which increases the likelihood of thromboembolism in these patients. This leads to further careful study of some indicators of hemostasis.

AIM OF THE STUDY: Analyze changes and determine the association between the level of D-dimer, platelets, procalcitonin and hospitalization rates and unfavorable prognosis in patients with acute COVID-19 in the presence of diabetes and without it.

MATERIALS AND METHODS: An analysis of 102 case histories of patients with COVID-19 (mean age 69.5 ± 8.98 years), who were treated at the CP "3rd City Clinical Hospital of Poltava City Council". For comparison, two groups were formed: the main (44 patients with concomitant diabetes) and the comparison group (58 patients without diabetes). The gender and age structure of the groups did not differ significantly. The evaluation of the obtained data was performed using generally accepted statistical methods.

RESULTS: The D-dimer index in the group with diabetes was significantly higher ($p = 0.017$) than in the comparison group. The level of procalcitonin in the group of patients with diabetes was increased (2.8 ± 0.95 ng / ml) compared with the other group (1.17 ± 1.06 ng / ml) ($p = 0.035$). The percentage of patients hospitalized in the intensive care unit patients with comorbid diabetes was 65% versus 47%. The mortality rate in patients of the main group was significantly higher compared to the group without diabetes ($p = 0.022$). A strong direct relationship was found between D-dimer and mortality ($r = 0.72$), procalcitonin and mortality ($r = 0.75$).

CONCLUSIONS: Determination of the level of D-dimer, platelets, procalcitonin are reliable parameters for assessing the severity of the disease and predicting mortality in patients with COVID-19, especially in combination with diabetes. The presence of this comorbid pathology significantly complicates the course and prognosis in patients with acute respiratory viral disease COVID-19 . It should be noted that thrombocytopenia on the background of high D-dimer was associated with mortality.

Title: THE EFFECT OF RADIOIODINE THERAPY IN PATIENT WITH SUBCLINICAL HYPERTHYROIDISM

Author(s): Weronika Piszcz[1], Aleksandra Zawadzka[1], Weronika Mądra[1], Karolina Niedzielska[1]

Tutor(s): Saeid Abdelrazek MD PhD[1]

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INTRODUCTION: Subclinical hyperthyroidism is defined by a decrease of serum thyroid-stimulating hormone (TSH) concentration below 0,1 mU/L, when serum levels of total and free thyroxin and triiodothyronin concentration are within reference ranges. Subclinical hypethyroidism may progress to overt hyperthyroidism and is associated with the risk of the development of cardiovascular complications, osteoporosis and dementia.

AIM OF THE STUDY: The aim of our study was to assess the influence of radioiodine (131I) therapy on the achievement of euthyroidism, prevention of adverse effects on the cardiovascular and skeletal systems and prevent evolvement to overt hyperthyroidism.

MATERIALS AND METHODS: We treated 1100 patients, aged 30–70 years; 220 patient with multinodular goitre (MNG), and 310 patient with autonomous nodule (ATN). Some of the patients were treated with antithyroid drugs for 6 to 24 months before I131 therapy (110 patient). Malignant changes were excluded in all nodules by fine needle aspiration biopsy. All the patients had serum TSH levels <0.1 mU/l and effective T-half was more than 3 days at the time of treatment. The activity dose was calculated by the use of Marinelli's

RESULTS: Euthyroidism achieved in 99% of patient with ATN and 95% of MNG; 1% of patient with ATN and 5% of patient with MNG develop hypothyroidism. In all of the patients, the symptoms and signs of subclinical hyperthyroidism disappeared (palpitation, tachycardia, atrial fibrillation, exercise tolerance improved, the blood pressure normalised and the quality of life improved). One percent of the patients received 2nd dose of radioiodine.

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

Title: A DISINTEGRIN AND METALLOPROTEASE 15 (ADAM15) IN THE DIAGNOSIS OF PATIENTS WITH COLORECTAL CANCER

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INTRODUCTION: The global burden of colorectal cancer (CRC) is expected to increase, with 2.2 million of new cases and 1.1 million of deaths by 2030. The search for novel biomarkers useful in early diagnosis of CRC patients is necessary. A Disintegrin And Metalloproteinase (ADAMs) belong to matrix metalloproteinases family. These glycoproteins have adhesive and proteolytic activities. It was suggested that ADAM15 play a role in CRC pathogenesis ADAM15 expression of was lower in CRC than in normal mucosa.

AIM OF THE STUDY: There is no study assessing serum levels of this protein in CRC patients. The aim of the present study was to assess diagnostic usefulness of serum ADAM15 in comparison to first line tumor marker for this malignancy such as carcinoembryonic antigen

MATERIALS AND METHODS: The study group included 30 patients with CRC cancer and 30 healthy subjects. The serum levels of ADAM15 were assayed with immunoenzyme ELISA kit, while chemiluminescent method was employed for the determination of concentrations of classical tumor marker (CEA). In addition, the diagnostic criteria, such as area under ROC curve (AUC) of both proteins tested were assessed.

RESULTS: Serum concentrations of ADAM15 were significantly lower ($p<0.001$), while well-established tumor marker CEA ($p=0.009$) levels – significantly higher in CRC patients in comparison to healthy subjects. The area under ROC curve (AUC) for the ADAM15 (AUC=0.816) concentrations was higher that AUC for CEA (AUC=0.703) levels and increased for combined measurement with classical tumor marker – CEA (AUC=0.849).

CONCLUSIONS: Our findings suggest the potential usefulness of serum ADAM15 in the diagnosis of CRC patients, especially in combined measurement with classical tumor marker – CEA, however this issue requires further investigations.

Title: EXPERIMENTAL RESEARCH OF THE EXENATIDE, INSULIN AND THEIR COMPLETE INFLUENCE TO THE ENDOCRINE PART OF THE PANCREAS DURING CORRECTION OF DIABETES MELLITUS

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INTRODUCTION: openly, the main method of treating diabetes mellitus type I is substitution therapy of insulin. However, even the use of prolonged insulin requires frequent injections and constant monitoring of glucose levels in the blood. The question of the treatment of diabetes remains unresolved, the search for new drugs continues, which can strengthen regenerative processes in damaged pancreatic islets, increase the efficacy of treatment and prevent developing complications.

AIM OF THE STUDY: to establish regularities of morphofunctional changes of pancreatic islets of rats in streptozotocin diabetes mellitus and in conditions of its correction.

MATERIALS AND METHODS: experimental - for modeling of streptozotocin in rats and its medicinal correction by exenatide, insulin, and their combination; histological – for the establishment of morphofunctional changes in the pancreas; morphometric – for quantitative estimation of the revealed morphological changes; biochemical – to assess the carbohydrate metabolism; statistical – to determine the reliability of differences of indicators between the comparison groups.

RESULTS: We observed destructive changes in the pancreas of rats with daily injections of streptozotocin for 2, 6, 8, and 10 weeks, corresponding to the destruction of the endocrine part of the pancreas in humans during diabetes mellitus type I. To treat and correct this condition, we used insulin, exenatide, and their combined therapy, as a result of which we saw that 2 weeks after the start of the experiment, the approximate area of the islets of the pancreas was 5500 mkm², after 6 weeks - 5628 mkm², after 8 - 5741 mkm², and in 10 weeks - 6135 mkm². It was also established that the number of islands was 2.01/1 mm² in 2 weeks, 2.06/1 mm² in 6 weeks, 2.44/1 mm² in 8 weeks, and 3/1 mm² in 10 weeks.

CONCLUSIONS: According to the results of the experiment, we obtained data confirming the effectiveness of exenatide, insulin, and their combined action in the treatment of diabetes mellitus type 1 by restoring the ultrastructural structure of the islets of the pancreas and inhibiting destructive processes.

Title: "A HIDDEN PANDEMIC DURING AN EPIDEMIC" – DO WE HAVE AN EFFECTIVE TREATMENT FOR OBESITY?

Author(s): Bartosz Tomaszuk[1], Bartosz Pomichter

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INTRODUCTION: The prevalence of obesity in Poland has been increasing. The COVID-19 pandemic markedly highlighted this issue. Obesity increases the risk of severe course of COVID-19 infection as well as the risk of chronic diseases such as type 2 diabetes, hypertension, coronary heart diseases and cancers. Glucagon-like peptide 1(GLP-1) agonists play an important role in the pharmacological treatment of obesity. It acts mainly as a regulator of gastric emptying and satiety.

AIM OF THE STUDY: The aim of the study was the assessment of clinical and biochemical characteristics of hospitalized obese patients and evaluation of effectiveness, side effects and satisfaction with GLP-1 agonists treatment in 3-months follow up.

MATERIALS AND METHODS: Retrospective analysis of 86 obese patients of mean age 45.7 years (49 females and 37 males), hospitalized in years 2020-2021, and qualified for GLP1-agonist treatment was performed. Clinical parameters, obesity complications and treatment were analysed. It was followed by an evaluation of therapy efficiency, side effects and satisfaction after minimum 3-months treatment, by the questionnaire during a telephone interview with 40 patients, who previously agreed.

RESULTS: The mean BMI of whole analysed group was 38,7 kg/m2. The most common chronic complication of obesity were prediabetes or diabetes (81,4%), mostly type 2 diabetes (37,2%). Lipid disorders presented 65,1% of patients and primary hypertension developed 51,2% of the group. In the followed up group the most used GLP-1 agonist was liraglutide (72,5%). The mean weight loss during the 3-months therapy was 7,6 kg. In relation to body mass at baseline, an average reduction was 6.7% of body weight. The most often side effects were nausea (32,5%) and bloatedness (17,5%). 82,5% of analysed confirmed decreased appetite. Evaluating satisfaction with the treatment in score from 1 to 10, 7 and 8 points (42,5%) were the most often pointed.

CONCLUSIONS: Treatment of obesity is challenging, especially during pandemic. GLP-1 agonists appear to be an effective therapeutic option. Although gastrointestinal side effects might appear, patients continued the treatment with satisfaction.

Title: THE EFFECT OF RADIOIODINE THERAPY IN PATIENTS WITH NON-TOXIC GOITRE

Author(s): Aleksandra Zawadzka[1], Weronika Piszcz[1], Weronika Mądra[1], Karolina Niedzielska[1]

Tutor(s): Saeid Abdelrazek MD PhD[1]

Affiliation(s):

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INTRODUCTION: There is no consensus regarding the optimum treatment of benign non-toxic goitre. Randomised studies have shown that levothyroxine has poor evidence of efficacy and is inferior to radioiodine therapy regarding goitre reduction.

AIM OF THE STUDY: The aim of our study was to assess the efficacy of radioiodine therapy (RIT) to reduce thyroid volume with minimal risk of hypothyroidism in patients with non-toxic nodular goitre.

MATERIALS AND METHODS: During the last 12 years we treated 950 patients, aged 22–76 years; initial RAIU after 24 h was ranged between 22 and 44%, and thyroid volume ranged between 44 and 170 ml. Qualifications of these patients were based on normal levels of serum TSH, fT3, and fT4, and characteristic appearance on thyroid scans and ultrasound. Malignant changes were excluded in all nodules by fine needle aspiration biopsy. The therapeutic radioactivity was calculated by the use of Marinelli's formula.

RESULTS: After 12 months of radioiodine therapy a mean thyroid volume reduction of 46% was achieved in all the patients, euthyroidism persist in 93% of patients, and hypothyroidism develop in eleven patients (7%). All patients were highly satisfied; the compressive symptoms relieved and exercise tolerance improved.

CONCLUSIONS: Radioiodine is non-invasive, safe and cost effective method of therapy for reduction of goitre and should be used as first choice in every patient with non-toxic nodular goitre (>40 ml) especially in patients with special professions or in patients who wish a non-invasive treatment modality. The reduction of thyroid volume with low percent of hypothyroidism, were due to accurate measurement of administered activity, relatively high effective half-life, and well-organised follow up.

Title: A RETROSPECTIVE STUDY OF SPONTANEOUS SUBARACHNOID HAEMORRHAGE: VASOSPASM AND OTHER COMPLICATIONS

Author(s): Simona Bakanauskaitė[1]

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INTRODUCTION: Acute subarachnoid haemorrhage (SAH) is a dangerous condition: roughly 50% of patients die within 30 days, nearly 25% develop significant neuropsychological and cognitive deficits, about 10% suffer from other complications, and only around 15% recover fully. One of the main causes of lethality is cerebral vasospasm (CVS), a major cause of delayed cerebral ischemia (DCI), which can lead to secondary cerebral infarction. Thus, the early detection of CVS is crucial for improving patient outcomes.

AIM OF THE STUDY: The aim was to analyse the demographic and clinical (including complications) data of patients who were diagnosed with SAH, to evaluate the diagnostic methods, and to study the prevalence and treatment of the complications.

MATERIALS AND METHODS: This retrospective study included 102 patients diagnosed with spontaneous SAH who were at least 18 years old and had been treated at Vilnius University hospital Santaros klinikos during 2014–2017. Computerized tomography (CT), CT angiography, digital subtraction angiography (DSA), and transcranial color-coded duplex sonography (TCCS) were used to evaluate the cerebral arteries.

RESULTS: For the 102 patients (mean age 58±16, 18–88; 55% female), the main cause of spontaneous SAH was a ruptured aneurysm (65%), the most common arterial sites: middle cerebral, MCA, (34%), anterior cerebral, ACA, and communicating, AComm, (22%), internal carotid, ICA, (19%). Lethality was 21%. All the patients had brain CT, CT angiography, 26% DSA, 8% TCCS. 52% (53 patients) experienced post-SAH complications: 35% acute, 3% chronic, and 17% both. The most common acute complications were cerebral oedema (22), obstructive hydrocephalus (11), and rebleeding (11), the most common chronic complications – delayed cerebral ischaemia (9), vasospasm (8) and resorptive hydrocephalus (7).

CONCLUSIONS: Vasospasm was diagnosed considerably less frequently in this study compared to other studies. TCCS should be used more frequently for diagnosing vasospasm in order to prevent secondary cerebral infarction. Aside from vasospasm and cerebral ischaemia, all the other complications were roughly within the range of other studies.

Title: GAIT AND BALANCE ASSESSMENT AFTER UNILATERAL GAMMA KNIFE THALAMOTOMY FOR TREATMENT OF TREMOR

Author(s): Aleksandra Korn[1], Anna Ziobro[1], Karol Sadowski[1]

Tutor(s): Monika Figura[1]

Affiliation(s):

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INTRODUCTION: Parkinson's Disease (PD) and essential tremor (ET) are among the most common causes of tremor. Pharmacotherapy is the first line of treatment. It can sometimes be ineffective or have unacceptable side effects. In such cases, surgical treatment is an option. Deep Brain stimulation or thalamotomy are among the commonly used methods.

AIM OF THE STUDY: The aim of our study was to assess the impact of unilateral Gamma Knife thalamotomy on gait and balance of ET and PD patients.

MATERIALS AND METHODS: We included 20 consecutive patients with PD (n=10) or with ET (n=10) with pharmacoresistant tremor. The mean age was 63.5 (±9.5), 15 male and 5 female. They underwent assessments before (n=20); 12 months (n=20), and 24 months (n=15) after the thalamotomy. Timed "Up and go" test, tandem stance test, tandem pivot test, and walking tandem tests were performed. Stabilometry was performed using TecnoBody Prokin-M-line stabilometric platform with Prokin 3 software and gait was assessed on Zebris treadmill. Friedman's ANOVA and Wilcoxon's signed-rank test were used to compare the outcomes. Patients with PD were assessed in "ON" and "OFF" dopaminergic treatment states.

RESULTS: Statistical analysis revealed no significant deterioration in gait and balance in performed tests in a 2-year follow-up.

CONCLUSIONS: We conclude that unilateral Gamma Knife thalamotomy does not affect on gait and balance of ET and PD patients.

Title: WHICH ELECTROLYTE DISTURBANCES ARE THE MOST COMMON IN A HOSPITAL?

Author(s):

Gabriela Krych[1], Aleksandra Rusak[1], Izabela Malczyńska[1]

Tutor(s):

Prof. Tomasz Hryszko, MD PhD[1]

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INTRODUCTION: Electrolyte disturbances are common, especially in patients referred to the ER. The spectrum of consequences of electrolyte imbalance includes benign laboratory abnormalities as well as life-threatening conditions.

AIM OF THE STUDY: Assessment of the frequency of electrolyte imbalances, and evaluation of their predictive factors.

MATERIALS AND METHODS: Data were collected from the hospital's database on electrolytes in patients with laboratory tests at the time of the admission to the hospital on 3 randomly selected days in a four-month period. A total of 156 patient data were collected. Statistics were performed, with a p-value <0.05 considered statistically significant.

RESULTS: The patient's group included every person admitted to the hospital. A total of 156 patients were analyzed (50.6% of women), with an average age of 66.47±17.23 years old. The mean length of hospitalization was 9.9 days, and 7.7% died during the stay. Hyponatremia was the most common electrolyte disturbance, then hyperkalemia and hypocalcemia. Cardiac patients statistically more often had hyperchloremia. Electrolyte disturbances were associated with death during the hospital stay (p=0.049).

CONCLUSIONS: The most common electrolyte imbalance is hyponatremia. Only sodium and potassium are tested regularly. Patients with any electrolyte imbalance are a group at risk of death during a hospital stay.

Original Research

Pediatrics

Title: FOREIGN BODY INGESTION IN CHILDREN: CLINICAL FEATURES AND RISK FACTORS FOR COMPLICATIONS

Author(s): Marta Dyszkiewicz[1], Agnieszka Bullmann[1]

Tutor(s): Assoc. Prof. Beata Cudowska[1], Prof. Dariusz Lebensztejn[1]

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INTRODUCTION: Foreign body ingestion is a common problem in pediatric population and occurs usually accidentally. The highest risk of complications is associated with swallowing of buton batteries and magnets, which can even lead to death. The knowledge of risk actors other than foreign body type seems to be also relevant in preventing the complications.

AIM OF THE STUDY: The aim of the study was to analyze the clinical features of foreign body ingestion in children with special attention to risk factors for further complications.

MATERIALS AND METHODS: The retrospective analysis included 132 children (79 boys, 53 girls) aged 6 months–17 years (mean 4.9±3.9 years) attending the pediatric gastroenterology unit in the period of two years (2020-2021) due to ingestion of foreign body. Data concerning age and gender, clinical symptoms, type and location of foreign body, route and time-interval ingestion-evacuation from gastrointestinal (GI) tract, complications and treatment were collected and analyzed.

RESULTS: 75.5% of children were in the group under 6 year of age. The most common ingested foreing body were coins (22.7%) and batteries (18.9%). 44.7% of patients had clinical symptoms as emesis (28.8%), stomachache (20.3%) related to the location of the foreign body in GI tract. In 59.1% of cases, the foreign body passed GI tract without complications within a 2-6 days. In the remaining patients, endoscopic removal was required, due to dificulties in easy passing or potential harmfulness of foreign body. The time from ingestion to endoscopic procedure varried from 4 hours to 15 days. The complications of foreign body ingestion were registered in 37.1% of children: gastritis 59.2%, perforation in 6.13% patients.

CONCLUSIONS: Type of ingested foreign body and its location in GI tract belong to the most important risk factors of undesirable health consequences. The timely diagnosis and effective management are of paramount importance to reduce further complications.

Title: PEDIATRIC LUNG TRANSPLANTATIONS: NEW POSSIBILITIES AND CHALLENGES IN TREATMENT OF CHILDREN WITH END-STAGE RESPIRATORY FAILURE.

Author(s): Agnieszka Goryczka[1], Alicja Gałeczka-Turkiewicz, Anna Gogola

Tutor(s): Martyna Gawęda[1]

Affiliation(s):

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INTRODUCTION: Lung transplantation (LTx) is the last treatment option for patients with end-stage respiratory failure. Pediatric lung transplantation is less common than lung transplantation in adults. It also differs in fields of: donors accessibility, stronger immune system response and parents compliance that may lead to graft failure.

AIM OF THE STUDY: The aim of the study was to assess the characteristics of pediatric LTx recipients as well as the outcomes of the transplantation.

MATERIALS AND METHODS: Our study is a single-center retrospective review of clinical data of all 11 patients who underwent a LTx before the age of 18 years in the Silesian Center for Heart Disease between the years 2016-2020. Because of the retrospective character of our study, patients‘ consent was not obtained. Medical records were examined for patients’ characteristics, general treatment, and complications.

RESULTS: There were a total 11 pts (8 males). Median age of LTx was 14.5 yrs (range: 11-17) and the median time of the follow-up was 2.5 yrs (range: 0.5-6). The primary diseases which led to LTx were: cystic fibrosis in 8 pts (72.73%), hereditary hemorrhagic telangiectasia in 2 pts (18.18%), pulmonary hypertension in 1 patient (9.09%). Median age at qualification was 13.55 yrs (range: 10-16). Median period from qualification to LTx was 235.55 days (range: 11-748). Mean BMI before LTx was 16.3, whereas 2 months after LTx - 16.08, 6 months - 17.31. Bronchiolitis obliterans syndrome was present in 9 pts (81.82%). 2 pts (18.18%) underwent retransplantation after 3 and 5 yrs. 1 patient passed away 10 months after surgery due to parents' noncompliance.

CONCLUSIONS: The most common cause of pediatric LTx is still cystic fibrosis. In comparison, hereditary hemorrhagic telangiectasia and primary pulmonary hypertension are rather rare. One of the most important complications is bronchiolitis obliterans which slowly leads to deterioration of the graft function. Further follow-up is needed.

Title: THE APPLICATION OF ULTRASOUND ELASTOGRAPHY IN COMBINATION WITH ULTRASOUND-BASED RISK STRATIFICATION SYSTEMS IN DIAGNOSIS OF MALIGNANT THYROID NODULES IN CHILDREN AND ADOLESCENTS – RETROSPECTIVE ANALYSIS OF ONE CENTER

Author(s): Agata Karny[2], Filip Bossowski[2], Aleksandra Rusak[2], Katarzyna Marcinkiewicz[2]

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INTRODUCTION: The risk of malignancy in thyroid nodules correlates with the presence of ultrasonographic features. In adults, ultrasound risk-classification systems have been proposed to indicate the need for further invasive diagnosis. Furthermore, elastography has been shown to support differential diagnosis of thyroid nodules.

AIM OF THE STUDY: Assessment of the application of the ATA, BTA ultrasound risk-classification systems and strain elastography in the management of thyroid nodules in children and adolescents from one center.

MATERIALS AND METHODS: Seventeen nodules with Bethesda III, IV, V and VI were selected from 165 focal lesions in children. All patients underwent ultrasonography and elastography followed by fine needle aspiration biopsy. Ultrasonographic features according to the ATA and BTA stratification systems were assessed retrospectively.

RESULTS: The strain ratio in the group of thyroid nodules diagnosed as malignant was significantly higher than in benign nodules (6.07 vs. 3.09, $p = 0.036$). According to the ATA guidelines, 100% of malignant nodules were classified as high suspicion and 73% of benign nodules were assessed as low suspicion. Using the BTA U-score classification, 80% of malignant nodules were classified as cancerous (U5) and 20% as suspicious for malignancy (U4). Among benign nodules, 82% were classified as indeterminate or equivocal (U3) and 9% as benign (U2).

CONCLUSIONS: Our results suggest that application of the ATA or BTA stratification system and elastography may be a suitable method for assessing the level of suspected malignancy in thyroid nodules in children and enable to make a clinical decision on the need for further invasive diagnosis of thyroid nodules in children.

Title: ADOLESCENTS' ATTITUDE TOWARD VACCINATION COVID-19 VACCINE IN LITHUANIA

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INTRODUCTION: COVID-19 vaccine hesitancy is a worldwide phenomenon. Even though SARS-CoV-2 infection in adolescents is associated with short-term (septic shock, multiple organ dysfunction syndrome, respiratory failure) and long term (fatigue, sleep disturbance, headache) complications, only 30,8% of 12-15 years old adolescents were fully vaccinated in Lithuania on 9th of April. To increase vaccine uptake, it is important to understand the reasons of vaccination hesitancy and acceptance among adolescents.

AIM OF THE STUDY: To find out reasons of vaccination hesitancy and acceptance among adolescents.

MATERIALS AND METHODS: The research was conducted by using an anonymous online survey which was compiled in Google Forms platform. The survey was sent to 695 school administrators and part of them (the exact response rate is unknown) shared it with students using school information systems. Statistical analysis was accomplished using MS Excel and R commander programs.

RESULTS: 3042 students from 12 to 18 years old filled questionnaires between 9th December 2021 and 3rd February 2022 of whom 1655 (54,4%) were vaccinated and 1387 (46,6%) were not. 1597 (52,5%) of adolescents believe that vaccination protects from severe disease, 793 (26.07%) do not believe it and 652 (21,43%) do not know. 1296 (42,8%) believe that vaccines are safe, 661 (21,73%) think that vaccines are unsafe, 1079 (35,47%) do not know. The most common causes of unwillingness to receive vaccine were being afraid of side effects (n=528), thinking that vaccines are unsafe (n=567) and not being afraid to get infected (n=510). The most common reasons of vaccination were to protect themselves (n=1020) and to get a Covid passport (n=1019).

CONCLUSIONS: Data show that where was a significant vaccine hesitancy as only a half of adolescents believe that vaccination is effective and less than a half think that vaccines are safe. The most common reason of vaccination was protection from getting infected and the most common cause of unwillingness to receive vaccine was thinking that vaccines are unsafe.

Title: HOME ENTERAL NUTRITION (HEN) IN CHILDREN: INDICATIONS AND CLINICAL OUTCOMES

Author(s): Małgorzata Łukasik[1], Ilya Orlov[1]

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INTRODUCTION: Home Enteral Nutrition (HEN) has been established as an effective nutritional intervention and developed intensively recently, but the little data has been published on the pediatric population.

AIM OF THE STUDY: The aim of the study was to analyze a group of children using HEN with special attention to indications and tolerance of this nutritional support.

MATERIALS AND METHODS: Twenty five patients (10 girls, 15 boys) aged from 8 months to 11.3 years (mean 3.8±3.13 years) being under the care of nutritional outpatient clinic in years 2018-2021 were qualified to the retrospective study. The analysis was carried out on the following areas: indications for HEN with respect to clinical background, mode of administration of nutritional formula, covering of daily caloric requirement, duration of feeding and clinical outcomes.

RESULTS: HEN was used in patients with genetic (68.0%) and neurological (32.0%) chronic diseases due to malnutrition (92.0%) and feeding difficulties (8.0%). Children received enteral nutrition by Percutaneous Endoscopic Gastrostomy (PEG) (48.0%), surgical gastrostomy (40.0%) and nasogastric tube (12.0%). 80% of the using formula were normocaloric and 20.0% were high in calories. In 22.9% of patients they did not fully meet the daily caloric requirements, which were supplemented with meat and vegetable/fruits mixtures. The duration of HEN was ranged from 3 months to 3 years (mean 1.7±0.9 years). The improvement of nutritional status was achieved in all subjects. The tolerance of the used formula was good in 96.0%; no side-effect were reported.

CONCLUSIONS: HEN is a safe, effective and well tolerated nutritional support for pediatric patients with chronic diseases and can improve the nutritional status as well as give a chance for a relatively normal functioning in family life.

Title: EVALUATION OF URINARY BETA-2-MICROGLOBULIN AFTER ANTICANCER TREATMENT IN CHILDHOOD CANCER SURVIVORS

Author(s): Karolina Parambul[1]

Tutor(s): Katarzyna Konończuk, MD[1], Eryk Latoch, PhD[1]

Affiliation(s):

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INTRODUCTION: Nephrotoxic drugs used in anticancer treatment have a detrimental impact on kidney cells. Beta-2-microglobulin (β2M) is a protein which is removed from the serum by glomerular filtration and reabsorbed (99.9%) in the renal proximal tubules. Tubular damage decreases β2M absorption, which contributes to an increase in the level of the protein in urine.

AIM OF THE STUDY: The evaluation and comparison of the β2M in childhood cancer survivors treated with different treatment protocols.

MATERIALS AND METHODS: The study group included 81 patients (male: 38, female: 43). The mean age at the time of study was 14.55 ± 5.10 years. The mean age after completed treatment was 6.45 ± 3.65 years. The study group was divided into two groups: patients treated for leukemia and Non-Hodgkin lymphoma (NHL) (n= 56; 69.14%), and solid tumors (n= 25; 30.86%). β2M was measured by ELISA. The Mann-Whitney U test was used. The statistical significance was defined as $p<0.05$.

RESULTS: There was no significant difference in β2M levels between the two groups. The mean level of β2M was 21.31 µg/l vs. 42.69 µg/l (p= 0.503); urine creatinine 0.12 g/l vs. 0.09 g/l (p= 0.334); urine albumin 3.00 mg/l vs. 4.30 mg/l (p= 0.581); u-Albumin/u-Creatinine ratio (ACR) 51.76 mg/g vs. 56.54 mg/g (p= 0.273); eGFR 113.03 ml/min/1.73 m2 vs. 122.06 ml/min/1.73 m2 (p= 0.608) respectively. eGFR was below the range norm for the given age in 23.46% of patients. ACR level was higher than 30 mg/g in 72.84% of patients. There was no correlation in the levels of eGFR and β2M (rs= -0.079; p= 0.506), urine albumin and β2M (rs= -0.117; p= 0.298). However, urine creatinine and β2M (rs= 0.342; $p< 0.05$) correlated positively in the whole group.

CONCLUSIONS: Almost 24% of patients had eGFR below the norm range for the given age. ACR increased in 73% of patients. There were no significant differences in β2M levels in patients treated for leukemia, NHL and solid tumors in the first decade after completion of treatment.

Title: THE IMPORTANCE OF ULTRASOUND EXAMINATION IN DIAGNOSIS OF PYLOROSTENOSIS IN PEDIATRIC PATIENTS

Author(s): Monika Zbroja[1]

Tutor(s): Agnieszka Brodzisz[2], Magdalena Woźniak[2]

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INTRODUCTION: Pylorosthenosis is the most common congenital defect of the gastrointestinal tract and appears at about 4-6 weeks of age. It results in the overgrowth of the muscles of the pyloric canal, which causes impaired patency.

AIM OF THE STUDY: The aim of the study was to evaluate the importance of ultrasound examination in pediatric patients with suspected pylorostenosis.

MATERIALS AND METHODS: 63 patients, including 25 girls and 38 boys were referred for US examination in years 2014-2019 due to vomiting, abdominal distension and significant weight loss suggesting pylorostenosis. The age of the patients ranged from 3 to 8 weeks. All ultrasound examinations were performed with linear probes (L12-4Mhz and 7.2-18MHz). The length of the pyloric canal and the thickness of the muscle layer were assessed. Patients were fed before or during the examination.

RESULTS: In 52 patients US confirmed pylorostenosis. The thickness of the muscle layer of the pyloric canal was 5-9 mm, while the length of the pyloric canal was 17-30 mm. Ultrasound did not reveal pylorostenosis in 11 patients. In this group, in 7 patients the pyloric canal had the correct dimensions - the thickness of the muscle layer of the pyloric canal was 2-4 mm and the length of the pyloric canal was 8-13 mm. In 4 remaining patients the thickness of the muscle layer of the pyloric canal was 3-4 mm, and the length of the pyloric canal was 10-23 mm, which indicated the dyskinesia of the pyloric canal. Based on the ultrasound examination result and clinical symptoms, 52 patients were qualified for surgery.

CONCLUSIONS: Ultrasound examination is the gold standard in the diagnosis of pyrolostenosis. It is characterized by 100% sensitivity and specificity and does not require verification in other imaging techniques. It is a safe method of choice and the duration of the examination is relatively short, which is extremely important in pediatric patients.

Original Research

Public Health and Pharmacy

Title: EXPRESSION OF H2A.X MESSENGER RNA, H2A.X PROTEIN, AND ΓH2A.X LEVELS IN HUMAN LUNG ALVEOLAR CELLS (A549) GROWN IN A MEDIUM SUPPLEMENTED WITH PARTICULATE MATTER NANOPARTICLES

Author(s): Joanna Rosłan[1], Agata Niechoda[2], Katarzyna Maciorowska[1], Maciej Rosłan[1], Aleksandra Bowtruczuk[1], Professor Adam Hołownia[2]

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INTRODUCTION: Nanoparticles (NPs) are ultrafine particles whose sizes range from 1 to 100 nm. Several studies, including ourselves, have explicitly reported that NPS can trigger DNA damage, either by the direct interaction of NPs with the DNA or secondarily by initiating ROS mechanism in the cell, which leads to producing oxidized DNA bases, single-strand breaks (SSBs) and double-strand breaks (DSBs). Histone H2A variant H2A.X, a component of the nucleosome core structure has a special role in DNA repair.

AIM OF THE STUDY: The objective of our study was to assess the effect of nanoparticle carbon black (NPCB) on the expression and activation of H2A.X in alveolar epithelial cells.

MATERIALS AND METHODS: A549 cells (human alveolar epithelial cells) were grown for up to 24 hours with 200μg/mL NPCB or carbon black (CB) used as a reference compound. H2A.X (mRNA and protein) and γH2A.X were estimated with quantitative RT-PCR, WB, and flow cytometry (FC) Co-expression of H2A.X and γH2A.X and cell distribution were studied with flow cytometry of double-stained cells and bivariate scatterplots.

RESULTS: H2A.X mRNA was elevated by more than 2 fold in cells grown with NPCB when compared to cells treated with CB or control cells. H2A.X and γH2A.X were also higher in both WB and FC assays. The structure of density plots suggests that increased H2A.X and γH2A.X are related.

CONCLUSIONS: Our results show that nanoparticle carbon black may increase H2A.X mRNA, H2A.X protein, and γH2A.X levels and may serve as a biomarker of environmental pollutant-induced DNA damage.

Title: A NOVEL MECHANISM FOR THE ANTICANCER ACTIVITY OF ASPIRIN

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INTRODUCTION: In subsequent years, several studies have confirmed the cancer-preventive properties of aspirin.Despite intensive research, the molecular basis of underlying mechanism is still controversial and a large number of molecular targets of aspirin have been suggested. PFKFB3 kinase as a vital regulator of glycolysis is associated with many aspects of cancer, including cell proliferation, and may represent an attractive target in therapeutic strategies.

AIM OF THE STUDY: This study evaluated the antiproliferative effect of acetylsalicylic acid via PFKFB3 inhibition in amelanotic melanoma (C32) cells in vitro.

MATERIALS AND METHODS: We tested the viability of C32 cells following the different concentrations of acetylsalicylic acid. Non-apoptotic way as the mechanism of cell death was confirmed by caspase-3 activity assay. Treatment effects were assessed by measuring mitochondrial activity using the MTT assay. Acetylsalicylic acid and 3PO (selective inhibitor) were docked to PFKFB3 structure. Molecular docking studies were performed in Maestro (Schrödinger). The studies were validated on 3D cell culture models.

RESULTS: Our results revealed that acetylsalicylic acid binds to the same inhibitory region of PFKFB3 as the selective inhibitor of the kinase 3PO. The drug inhibits the kinase, hence the C32 cells undergo necrosis. Our findings show that acetylsalicylic acid induce a cytotoxic effect and promotes necrosis cell death of C32 cells. The necrotic effects is also observed in 3D cell culture models as well.

CONCLUSIONS: Acetylsalicylic acid could be a potential chemotherapeutic adjuvant and chemopreventive drug for amelanotic melanoma treatment.

Title: EPIDEMIOLOGY OF SARS-COV-2 GENOMIC MUTATIONS IN GHANA

Author(s): Berko Emmanuel Ofori[1], Abdallah Umar[1]

Tutor(s): Mamontova Tetiana[1]

Affiliation(s):

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INTRODUCTION: COVID-19 is intensively spread with high level of morbidity and mortality rates in African countries. Viral genomic mutations of SARS-COV-2 associated with increased transmissibility, virulence, and disease severity, or decreased susceptibility to vaccines. However, for three years since the beginning of the pandemic, we still do not understand the impact of mutations on the virus characteristics in Ghana population.

AIM OF THE STUDY: The aim was to assess SARS-CoV-2 genomic epidemiology in Ghana during 2020-2022 yy.

MATERIALS AND METHODS: Data on COVID-19 epidemiology trends in Ghana were obtained from dashboard Ministry of Public Health of Ghana. Analysis of meta-data of all SARS-CoV-2 genomes of Ghana population (n = 2371) include assessing gender, age, type and subline of the genome identified GISAID database from 2020-2022 yy. Genome evolution and transmission analysis was performed on the Nextstrain platform.

RESULTS: Epidemiological data showed 4 peaks of COVID-19 incidence during pandemic period: July 2020 - 1099 cases, Jan 2021 – 1042 cases, Sept 2021 -720 cases and Dec 2021 -1620 cases. SARS-CoV-2 mutations were found mainly among males (60.2%) and age category 25–34 years (21.7%). Totally, Sars-CoV-2 virus mutations GK and GR were identified as the 2 major circulating strains. It was detected several strains, as GK ("Delta") - 40.74% cases, GR ("Gamma") - 24.67% cases, G – 14.04%, GRY ("Alpha") – 10.79% cases, GRA ("Omicron") – 3.58% cases and GV ("Beta") - 0.21% cases. New GRA strain was significantly more often spread among males (2.15%) than females (1.43%; $p<0.05$) and among age category 35-44 years (1.05%) than 18-24 years (0.17%; $p < 0.0001$).

CONCLUSIONS: It was shown that Alpha, Gamma and Delta strains of Sars-CoV-2 virus mutations are widely spread during 2020-2021 in Ghana. Omicron strain associated with male sex and young age that poses a new potential threat in population Ghana.

Title: ANALYSIS OF HOSPITAL-ACQUIRED INFECTIONS IN THE UNIVERSITY CLINICAL HOSPITAL IN BIALYSTOK DURING THE COVID-19 PANDEMIC.

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INTRODUCTION: A nosocomial infection is acquired in a hospital or other health care facility where the disease wasn't in the incubation period at the time the services were provided, or it occurred after the provision of procedures within a period of time no longer than the longest incubation period. It occurs after 48 to 72 hours of a healthcare service. Monitoring, analyzing, and reporting infections is a hospital's statutory responsibility.

AIM OF THE STUDY: Comparison of the reported number of hospital-acquired infections and alarm pathogens recorded from 2018 to 2021. Assessment of the impact of the COVID-19 pandemic on the number of infections reported.

MATERIALS AND METHODS: Statistical data obtained from the Hospital Infection Control Team at USK Bialystok regarding the analysis of nosocomial infections in individual Clinics from 2018 to 2021.

RESULTS: The number of hospitalizations was 4356 in 2018, 48335 in 2019, 36339 in 2020, and 41745 in 2021. From 2018 to 2021, there is an upward trend in the number of registered nosocomial infections from 0.3 to 0.8/100 hospitalizations and from 0.7 to 1.9/1000 person-days (expected 5%). The number of recorded infections increased in both surgical and non-surgical Clinics. In 2018, the most common infection was urinary tract infection, from 2019 pneumonia. The number of alarm pathogens recorded increased from 36% in 2020 to 42% in 2021 (expected 100%). Comparing 2020 to 2021, there was an increase in microbiology testing performed in most Clinics and an increase in soap and disinfectant usage.

CONCLUSIONS: In addition to the organizational changes in the work of the departments, the large number of COVID patients and deaths , the regime was maintained and the statutorily required register of alarm pathogens and hospital-acquired infections was continuously improved. Pandemic didn't have a negative impact, indicating good surveillance work. In addition, the sanitation regime had a positive impact on handwashing rates, disinfectant and soap use.

Title: RISK FACTORS FOR PATIENT RETURN VISITS TO THE EMERGENCY DEPARTMENT WITHIN 30 DAYS WITH HOSPITALISATION IN VILNIUS UNIVERSITY HOSPITAL SANTAROS KLINIKOS

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INTRODUCTION: A return visit (RV) to the Emergency department (ED) is an adverse event. According to the literature, the frequency ranges from 0.07% to 43.9%. RV has negative consequences for both the patient and the healthcare system. Furthermore, it increases healthcare costs, it may even worsen outcomes and reduce patient satisfaction.

AIM OF THE STUDY: The aim of the study was to identify the risk factors for unscheduled RV to the ED with hospitalisation within 30 days of their initial visit.

MATERIALS AND METHODS: In a retrospective study patients were divided into two groups: those who visited ED once and those who made a RV with hospitalisation within 30 day period. The following factors were assessed: demographic data, the triage category, the number of consultations, diagnostic tests, time spent in the ED and final diagnosis group. Statistical analysis was made using R statistical software package.

RESULTS: Overall, 32215 patients were involved in the study, of them 10,05% returned to the ED within 30 days and 27.22% of them were hospitalised on 2nd visit. The number of laboratory tests, the final diagnosis group, the category of emergency medical care and the time spent in the ED had a statistically significant impact on hospitalisation. In contrast, age, gender, number of consultations and radiology tests did not. Among the diagnoses (categorised by ICD-10-AM), cardiovascular, gastrointestinal and urinary system disorders are the most commonly diagnosed for patients on RV.

CONCLUSIONS: RV to the ED are statistically significantly determined by the number of laboratory tests, the time spent on the first visit to the ED, and most importantly, by the diagnosis of the disease according to ICD-10-AM. Patients with the most commonly diagnosed cardiovascular, gastrointestinal and renal system disorders were at increased risk of RV to the ED with hospitalisation.

Title: COVID-19 PANDEMIC IN PODLASKIE VOIVODESHIP - A COMPARISON BETWEEN UNIVERSITY HOSPITAL IN BIAŁYSTOK AND THE REST OF THE REGION FOR YEAR 2021

Author(s): Maciej Chlabicz[1], Maciej Święcicki[1], Maksymilian Lech[1]

Tutor(s): Prof. Joanna Zajkowska[1.2]

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INTRODUCTION: Soon after the beginning of the ongoing pandemic, it was certain that various populations are affected in different ways - depending on demographic conditions, risk factors and logistic solutions. Trends of viral spread are shaped individually for each group of patients, having influence on the amount of cases and healthcare system overload, the latter affecting mortality.

AIM OF THE STUDY: Hospitalized patients are the most fragile group, being responsible for the majority of casualties. We then decided to analyze the entire year of pandemic in our hospital to determine the factors that increase the risk of death.

MATERIALS AND METHODS: We performed a retrospective analysis, using CGM CLININET® data including information about the survivors, the deceased and basic parameters (like sex, age, hospital ward etc.) for both groups. Our control group was the entire population of Podlaskie Voivodeship, for which we found necessary data in the BASiW official database. In our analysis, year 2021 is split into “spring wave”, “holidays” and “autumn wave”.

RESULTS: What we found is that, at first, most patients die in cardiovascular mechanism, but there is no significant difference between genders, as it might seem. And what is more, the autumn wave of COVID-19 in Podlaskie, although dominated by Delta variant, harvested less casualties that the spring wave - but within hospitalized patients, morbidity was higher, despite partial vaccination of local society. This was caused by the fact that Delta variant spread faster, leading to obstruction of the hospital that was not fully prepared for the wave. We also found that in “healthier” part of Podlaskie people, introduction of the vaccine actually decreased mortality, with no effect in the hospitalized.

CONCLUSIONS: It seems that in scarcely vaccinated regions, like Podlaskie, the vaccine is not efficient enough in preventing COVID-19 deaths. Additionally, if such voivodeships have high median age, more pressure should be put on cardiovascular prevention and healthcare system efficiency to avoid excess COVID deaths, with less hope that the vaccine itself will stop the wave.

Title: INJURIES AND FATALITIES ON SEAGOING VESSELS – ANALYSIS OF THE STATE MARINE ACCIDENT INVESTIGATION COMMISSION DATA FROM 2013 TO 2021

Author(s): Joanna Forycka[1]

Tutor(s): Jędrzej Lesman, MD, PhD[1]

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INTRODUCTION: Maritime jobs such as merchant seafaring or sea fishing are one of the most dangerous occupations. However, both professional and recreational crew members as well as passengers are prone to frequent injuries and the most serious accidents can result in death. Epidemiological studies can provide the evidence to implement successful safety measures and reduce their occurrence in the future.

AIM OF THE STUDY: The aim of this study was to investigate the frequency, severity and causes of the maritime accidents that result in injuries and fatalities.

MATERIALS AND METHODS: Data used in this study was obtained through annual analysis of marine casualties and incidents issued by The State Marine Accident Investigation Commission (SMAIC). Data on the frequency, type, location, cause of the incidents, casualties involving people and number of the ships involved were collected. A total of 688 reported incidents met the inclusion criteria for the 9-year period from 2013 to 2021.

RESULTS: During the study period, 690 ships took part in 688 accidents. As per SMAIC classification, the most frequent type was casualty (31.4%), followed by serious casualty (26.9%), incident (16.1%) and very serious casualty (11.1%). 29.1% of the casualties involved people. 110 deaths, 50 serious casualties requiring treatment for more than 3 days and 43 injuries were reported. Most of the accidents occurred in the harbor (41.4%). The top three causes were human error (40.3%), technical reason (28.6%) and hydrometeorological reason (6.3%). Out of the human errors, the most common one were carelessness during maneuvers and inattention, while the technical reasons were in the majority engine or main propulsion engine failure.

CONCLUSIONS: Occupational injuries are still a crucial concern in the maritime industry. More than one tenth of the reported accidents were very serious casualty and almost one third of all accidents involved people, which is a burden to both seafarers and shipping companies. Reduction in occupational injuries can be achieved by development of policies that encourage following safety rules and instructions especially during mooring or towing operations as well as the improvement of the work environment.

Title: CONCERNS OF QUALITY AND RELIABILITY OF EDUCATIONAL VIDEOS FOCUSED ON FRAILTY SYNDROME ON YOUTUBE PLATFORM

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INTRODUCTION: About 45% of adults search the Internet for health information. Recently, papers have been published indicating YouTube, the online video-sharing and social media platform, as a valuable source of information about many symptoms and diseases (including sarcopenia, narcolepsy, disc herniation, breast self-examination, and many others). Several online materials concerning frailty syndrome can also be found on this platform, but their quality and reliability have not been formally assessed yet.

AIM OF THE STUDY: Evaluation of utility, quality, and completeness of the frailty syndrome videos available on YouTube platform was the aim of this study.

MATERIALS AND METHODS: The observational study included 75 videos retrieved by searching seven terms related to frailty syndrome on YouTube. The quality and reliability of the videos were measured using three different tools: the DISCERN, the Global Quality Score (GQS), and the JAMA. The video content was categorized according to the following characteristics: video provider, duration, view count, average daily views of the video, channel subscribers, number of days since upload date, likes, dislikes, and comments.

RESULTS: Among the 245 videos screened, 75 videos met the inclusion criteria. The total number of views of all the videos was 83573, and the average number of views equaled 1114. The total duration of the videos was 28148 s, with a mean duration of 375 s. The average time since upload was 1285 days. The quality of 17 videos assessed in the study was found to be high, 48—intermediate, and 10—low. The high-quality videos had the longest duration, the highest number of views, and points for the DISCERN score. The physician uploaders had the highest mean DISCERN and mean GQS scores, the highest number of views, and the longest duration but the hospital channels had the highest JAMA score.

CONCLUSIONS: In conclusion, it can be stated that YouTube can be a valuable source of medical information for patients and caregivers. The quality of videos mostly depends on the authorship and the source of video providers—physicians provide the best quality content based on professional medical knowledge. The awareness of frailty syndrome as a real health problem, particularly among the elderly, should increase and the popularity of YouTube-based resources could help to achieve this aim.

Title: THE MAIN DETERMINANTS OF COVID-19 VACCINE ACCEPTANCE AMONG ADULT LEBANESE

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Tutor(s): Mamontova Tetiana[1]

Affiliation(s):

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INTRODUCTION: COVID-19 was declared a global pandemic of international concern. Despite the fact that the number of COVID-19 cases is still increasing worldwide, vaccination acceptance is not well studied in Lebanon.

AIM OF THE STUDY: was to assess COVID-19 vaccination acceptance and its determinants among adult Lebanese.

MATERIALS AND METHODS: Data on COVID-19 epidemiology trends in Lebanon were obtained on the open platform of Ministry of Public Health of Lebanon. Survey on the questionnaire developed by the authors through the use of Google Form in social networks - assessment of commitment to vaccination of the Lebanese adult population (n=301). The questionnaire includes information on gender, age, level of education, company of COVID-19 vaccination and acceptance, December 2021- January 2022. Statistical method chi-square.

RESULTS: Analysis of trends in daily new cases and mortalities of COVID-19 revealed 5 peak growth rates. Evaluation of trends show that the total number of vaccinated with 2 doses - 48% persons. 15,8% participants were willing to receive and 67,1% have already received a COVID-19 vaccine, 5.3% refused, and the remainder were unsure of their response. In total, 59,2% of participants agree on the need for vaccination against COVID-19. Among the main reasons why some adults are still not vaccinated is the fear for life, distrust of the vaccine's effectiveness and safety. 43.2% trust the effectiveness of vaccines. Only 18.4% of responders consider vaccines to be very effective and safe. 14.5% encountered problems during vaccination.

CONCLUSIONS: An insufficient level of COVID-19 vaccination and acceptance is due to high vaccine hesitancy and distrust of the efficacy and safety among adults Lebanese.

Title: RH NEGATIVITY SEEMS TO PREDISPOSE TO MILDER COVID-19 COURSE

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INTRODUCTION: Infection with the SARS-CoV-2 virus can lead to the development of COVID-19. Currently, more than 180 million people worldwide have been diagnosed with coronavirus infection, of which nearly 4 million have died from the severe course of the disease. Recent reports suggest that patients with blood group A are most at risk of developing COVID-19, and people with natural anti-A antibodies (especially those with blood type 0) have a milder course of the disease.

AIM OF THE STUDY: The aim of this study was to assess the humoral response to infection with SARS-CoV-2 depending on the patient's blood type.

MATERIALS AND METHODS: The study group consisted of 140 patients with confirmed previous COVID-19 (convalescents) and 138 individuals who declared no previous infection with SARS-CoV-2. All enrolled subjects were blood donors registered at Regional Blood Center. The titer of SARS-CoV-2 anti-nucleocapsid antibodies was determined in the serum of the patients using Elecsys Anti-SARS-CoV-2 test. The blood group was determined by a manual method using anti-A, anti-B and anti-D monoclonal sera and A, B and 0 standard cells.

RESULTS: Basing on anti-SARS-CoV-2 detection 85 people who denied contact with SARS-CoV-2 had previous asymptomatic infection. In the group of convalescents patients with 0 blood type dominated (69 0Rh+, 19 0Rh-, 62 ARh+, 15 ARh-, 31 BRh+, 12 BRh-, 13 ABRh+, 3 ABRh-) and in the non-infected group - A blood type (10 0Rh+, 7 0Rh-, 15 ARh+, 5 ARh-, 10 BRh+, 2 BRh-, 3 ABRh+, 1 ABRh-) with no statistical significance. Blood types distribution differed between convalescents group who did not know about previous infection and declared convalescents, p=0.0445. People with ARh-, BRh+, BRh-, 0Rh- blood type were more often asymptomatically infected. Moreover, Rh negative subjects more often didn’t know about previous infection than these with Rh+, p=0.0082.

CONCLUSIONS: We confirm, that people with natural anti-A antibodies may be predisposed to milder course of the disease. Moreover, it seems that subjects with Rh negative blood type have significantly milder course of disease than Rh positive.

Title: GIVING COVID A FINGER?

Author(s): Oliwia Kwaśniewska[1]

Tutor(s): Anna Kasielska - Trojan, MD, PhD[1], Bogusław Antoszewski, Prof.[1]

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INTRODUCTION: COVID-19 presents with mild symptoms in the majority of patients but in some cases it may progress to acute illness and hospitalization. It is an infectious disease that causes a severe acute respiratory syndrome, a characteristic hyperinflammatory response, vascular damage, microangiopathy, angiogenesis and widespread thrombosis.

AIM OF THE STUDY: To consider whether markers for prenatal sex hormones and postnatal stressors on developmental instability, i.e. digit ratios and their directional and unsigned asymmetries, are predictive of hospitalization due to Covid-19.

MATERIALS AND METHODS: Participants were recruited from a Department of Infectious Diseases and Liver Diseases of a Medical University. There were 54 patients and 100 controls. Controls, 47 women (mean age 51.3 ± 16.1 years) and 53 men (mean age 52.2 ± 14.4 years) were recruited from a Plastic Surgery Out-patient Clinic and among other volunteers after the first wave of COVID-19. Photographs of the hands of the patients were performed and digits measurements were done using GIMP software.

RESULTS: Patients differed in their digit ratios from controls (patients > controls) in all three ratios that included 5D (2D:5D, 3D:5D and 4D:5D) with small to medium effect sizes (d = 0.3 to 0.64), , and patients had greater |(right–left)| asymmetry than controls for 2D:4D (d = .74) and all ratios that included 5D; 2D:5D (d = 0.66), 3D:5D (d = .79), 4D:5D (d = 0.47). The Composite Asymmetry of the two largest effects (2D:4D + 3D:5D) gave a patient and control difference with effect size d = 1.04. All patient versus control differences were independent of sex.

CONCLUSIONS: Digit ratio patterns differ between patients and controls and this was most evident in ratios that included 5D. Large |(right–left)| asymmetries in the patients are likely to be a marker for postnatal stressors resulting in developmental perturbations and for the risk of hospitalization due to COVID-19.

Title: COVID-19 PANDEMIC IN PODLASKIE VOIVODESHIP - A COMPARISON BETWEEN THE REGION AND THE REST OF POLAND FOR YEAR 2021

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Tutor(s): Prof. Joanna Zajkowska[1.2]

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INTRODUCTION: COVID-19 pandemic struck every region of the world, in each place differently. In urban areas the virus spreads quickly, usually shaping cases/time graphs into steep peaks, while in barely populated areas the curves seem more smooth and flat. In general, more cases in a short period of time means more casualties, and the other key factors here are: overall health state of the population, median age and local government actions.

AIM OF THE STUDY: We decided to compare Podlaskie Voivodeship to the rest of the country, trying to determine crucial factors that affect the mortality in our region, including vaccination status of the local population.

MATERIALS AND METHODS: Our work was a retrospective analysis, comparing data about COVID-19 for Podlaskie from BASiW and Ministry of Health databases to numbers for the entire Poland as a control group, taken from webpage OurWorldInData.com. In our analysis, the year 2021 is split into “spring wave”, “holidays” and “autumn wave”.

RESULTS: It has been known since the introduction of the vaccine that it has little influence on preventing COVID-19 prevalence - little, but significant. We observed this effect in the overall Poland population, but not in Podlaskie Voivodeship, where vaccinated people in autumn wave had almost the same risk of getting sick as the non-vaccinated. What is more, mortality in autumn wave dropped for the entire country when compared to the spring wave but the decrease for Podlaskie population was visibly smaller. This and the fact that estimated risk of death in autumn wave for elderly people was also higher in Podlaskie than in whole Poland leads to the conclusion that Podlaskie people respond to the vaccine worse than Polish people in general.

CONCLUSIONS: The worse response for the vaccine in Podlaskie population may be caused by high median age, cardiovascular factors, low herd immunity and low urbanization coefficient, associated with poor access to the healthcare system. We have tried to find some connections, yet more research needs to be done and some other factors - like genetic susceptibility to Delta variant, being predominant in autumn wave - cannot be excluded.

Title: INFLUENCE OF COVID-19 PANDEMIC ON MEDICAL STUDENTS MENTAL HEALTH IN POLAND

Author(s): Piotr Limanówka[1], Julia Kuca[1], Aleksandra Szczuraszyk[1], Julia Łacwik[1], Julia Laska[1]

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INTRODUCTION: The COVID-19 pandemic has had a significant impact on people's lives, becoming a factor affecting the health and well-being of individuals around the world.

AIM OF THE STUDY: Our study aimed to demonstrate the correlation between the experiences and feelings accompanying the medical students in Poland during the pandemic and the occurrence of anxiety, depression, and drowsiness.

MATERIALS AND METHODS: An online survey has been designed to gather data. The original questionnaire contained four parts: individual experience related to the pandemic, Beck's depression test, the GAD-7 general anxiety questionnaire, and the Epworth Sleepiness Scale (ESS). The results obtained from the I-VI year medical students from 20 medical universities in Poland were developed in the statistical software "Statistica".

RESULTS: 2339 correctly completed questionnaires were obtained. 22.6% of subjects experienced the death of a close person during the pandemic, and 29.9% of students had severe cases of illness in their families. More than 49% of subjects were concerned about the possibility of someone close suffering from COVID. More than 19% of students have temporarily lost contact with their loved ones. The responses were indeed associated with an increase in the depression outcomes in Beck's scale and an increase in the level of anxiety in the GAD-7 test, also intensifying drowsiness in the ESS scale.

CONCLUSIONS: The study results show that the ongoing pandemic has had a detrimental impact on the medical students in Poland and that professional psychological help and support to those closest to maintaining their mental health should be considered.

Title: ASSESSMENT OF MEDICAL STUDENTS' KNOWLEDGE OF ANAPHYLACTIC SHOCK MANAGEMENT

Author(s): Anna Rapiejko[1], Jakub Chodkowski[1]

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INTRODUCTION: Anaphylactic shock (AS), the most severe form of anaphylaxis, is a life-threatening condition that often occurs outside of close access to a hospital and fully qualified medical care. The rapid implementation of appropriate management determines the prognosis. Therefore, it is important that medical students (MS) have adequate knowledge and basic practical skills to recognize it and implement appropriate therapeutic procedures.

AIM OF THE STUDY: The aim of the study was to assess the basic knowledge of MS on the subject of anaphylaxis and AS, their knowledge of the rules of conduct, and how they rated their skills in this area.

MATERIALS AND METHODS: An anonymous questionnaire with questions created on the basis of European and Polish guidelines for the management of AS, was distributed via social media to students of the Faculty of Medicine of the Medical University of Warsaw in the first quarter of 2022 years. The group analyzed included 252 MS representing all years of study (1-6).

RESULTS: 87% of MS correctly define the term anaphylaxis, and 75% know the symptoms indicative of AS. The vast majority (91%) correctly identify which procedure to use and (97%) identify the first choice drug. 95% of MS are aware that in the case of AS there are no absolute contraindications for the administration of epinephrine. Although 98% of MS correctly indicate the route of epinephrine administration, only 58% know the correct dose. Only 12% of MS evaluate their ability to manage AS well, 36% fairly well, 41% indicate a lack of practice, 8% are afraid of making a mistake, and 3% do not know how to proceed at all. 80% of respondents believe that this knowledge should be more practiced during studies and promoted in the community.

CONCLUSIONS: It is reassuring that most MS are aware of what AS is and what the basic guidelines for management are. However, a large proportion of them do not feel confident in their abilities in this area, which indicates a lack of sufficient practice. It is noteworthy that students express the need to develop skills in coping with crisis situations, such as AS as part of their mandatory coursework during their studies as well as to disseminate this knowledge widely in the community.

Original Research

PhD I

Title: AN ANALYSIS OF GLUCOCORTICOID RECEPTOR LEVEL IN THE PREFRONTAL CORTEX DURING POSTNATAL DEVELOPMENT IN THE RAT MODEL OF AN ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (ADHD)

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INTRODUCTION: Attention-deficit/hyperactivity disorder (ADHD) affects over 5% of children and is characterized by persistent problems with focusing or maintaining attention and/or hyperactivity-impulsivity. Boys are more vulnerable to the development of ADHD than girls. The exact etiology of this condition is not fully understood. Neuroimaging studies have shown structural alterations in several brain regions associated with motor control i.e., the prefrontal cortex and striatum. However, there is also a growing body of evidence that ADHD could be linked to the abnormalities in the functioning of the dopaminergic, noradrenergic and/or serotonergic system. Recent findings suggest that steroid hormones may contribute to ADHD.

AIM OF THE STUDY: The purpose of this study was to analyze the glucocorticoid receptor (GR) level in the prefrontal cortex during postnatal development in the spontaneously hypertensive rats (SHRs) - an animal model for ADHD and Wistar Kyoto rats (WKYs) used in the present study as a control group.

MATERIALS AND METHODS: Brains were carefully isolated from SHRs and WKYs in two age stages: juvenile (5 week-old) and maturating (10 week-old). Next, the prefrontal cortex samples have been collected and homogenized. Enzyme-linked immunosorbent assay (ELISA) kits were used to analyze GR level. Data obtained was statistically analyzed using the GraphPad Prism Version 6.0.

RESULTS: GR level were significantly higher in the prefrontal cortex of 5-week-old SHRs than in 5-week-old WKYs. In 10-week-old rats, the contents of this receptor were similar in both strains.

CONCLUSIONS: CONCLUSION: The present study, for the first time, demonstrated differences in the GR level in the prefrontal cortex between SHR and WKY rats. Significantly higher level of this receptor in the 5-weeks SHRs suggests the interaction of the nervous and endocrine systems in the ADHD pathogenesis.

Title: DEPRESSION AND SEVERITY OF COVID-19 PANDEMIC STRESS WITH ANALYSIS OF INFLAMMATORY AND COGNITIVE FUNCTION PARAMETERS: PRELIMINARY REPORT

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INTRODUCTION: The COVID-19 pandemic outbreak can be viewed as a traumatic trigger for the subjective acute stress response. Prolonged pandemic stress, through the mechanism of dysregulation of stress axis, may affect the severity of inflammation in the brain and consequently cause depressive and neurocognitive disorders. Moreover, SARS-CoV-2 infection through neurotropic properties and causing chronic inflammatory processes may exacerbate psychiatric disorders with neurocognitive decline.

AIM OF THE STUDY: The aim of this study was to assess the impact of pandemic COVID-19 on the severity of stress, anxiety-depressive symptoms among depressed and non-depressed individuals and to examine their cognitive functions, lipids and serum inflammatory markers.

MATERIALS AND METHODS: We surveyed 26 subjects, including depressed patients (n=10) and healthy individuals without history of psychiatric disorders (n=16). Anxiety-depressive symptoms and COVID-19 stress severity were assessed using diagnostic scales and the Impact of Event Scale Revised (IES-R) Polish version. Neuropsychological assessment was performed. Serum inflammatory markers and lipids were examined. Statistical analysis was performed using Mann-Whitney U test and Spearman's correlation coefficient.

RESULTS: In the study group 14 subjects had a history of SARS-CoV-2. The mean score of the Impact of Event Scale-Revised for the whole group was 28.37(SD=21.45), depressed patients had higher scores than non-depressed ones ($p<0.01$). There was a positive correlation in the scores of the IES-R with the severity of anxiety and depression for the whole group ($p<0.01$). The depressed subjects scored lower than the healthy persons in tests evaluating cognitive functions: Verbal Fluency Test, TMT Parts A&B, Stroop Word Test ($p<0.05$). There were no significant differences between the groups with and without depression in inflammatory parameters and lipid values. There were no statistically significant differences in outcomes according to COVID-19 history.

CONCLUSIONS: The severity of COVID-19 pandemic stress and cognitive decline are more pronounced in individuals with depressive disorders. The increased COVID-19 pandemic stress experience correlated with intensity of anxiety-depressive symptoms. Due to the small sample size, further research is needed.

Title: METHYLATION OF RUNX3 PROMOTER 2 IN THE WHOLE BLOOD OF CHILDREN WITH ULCERATIVE COLITIS

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INTRODUCTION: Runt-related transcription factor 3 (RUNX3) regulates Th1/Th2 balance, and therefore the synthesis of cytokines and inflammation. Ulcerative colitis (UC) results from a complex interplay between the environment and immune cells, in which the relationship between gene methylation and disease activity remains unclear.

AIM OF THE STUDY: We aimed to analyze RUNX3 promoter 2 (P2) methylation level depending on several clinical factors.

MATERIALS AND METHODS: This cross-sectional study recruited hospitalized children with UC. Clinical characteristics were assessed: age, sex, body mass index (BMI), C-reactive protein (CRP), serum albumin, disease duration, pediatric ulcerative colitis activity index (PUCAI), the Paris classification, and exposure to medications. Whole blood DNA was isolated and RUNX3 P2 methylation level was measured with methylation-sensitive restriction enzymes (OneStep qMethyl).

RESULTS: Sixty-four children were enrolled, at a mean age of 14.5 ± 2.8 years. Half of them were female (51.6%) and the mean BMI was 18.0 ± 3.2 kg/m2 (Z-score -0.44 ± 1.14). The mean methylation level of RUNX3 P2 was 54.1 ± 13.3%. The methylation level of RUNX3 P2 did not correlate with age, sex, nutritional status, CRP, albumin, PUCAI or the extent of colitis (Paris E1-E4). RUNX3 P2 methylation did not differ between patients recruited within two months of diagnosis and children who had UC for at least a year. Current or past exposure to biologics, immunosuppressants or steroids was not associated with RUNX3 P2 methylation.

CONCLUSIONS: Methylation of RUNX3 promoter 2 in whole blood DNA does not seem to associate with clinical characteristics of UC in children.

Title: THE ROLE OF ENOXAPARIN IN THE RELEASE OF GREMLIN-1 IN HEALTHY PERSONS AND PATIENTS WITH KIDNEY FAILURE

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INTRODUCTION: Gremlin-1 belongs to the group of bone morphogenetic proteins antagonists. This molecule participates in normal tissue homeostasis as well as in pathological processes, including embryonic development, carcinogenesis, fibrosis and inflammatory diseases.

AIM OF THE STUDY: To assess whether intravenous injection of enoxaparin affects the release of Gremlin-1 in healthy subjects and patients with kidney failure.

MATERIALS AND METHODS: We studied 16 healthy volunteers and 14 maintenance hemodialyzed (HD) patients. In patients, the blood samples were collected before (T0) and 10 (T1), 30 (T2) and 120 minutes (T3) after the injection of enoxaparin single dose during a hemodialysis session. In healthy persons, Gremlin-1 plasma concentration was measured at baseline (T0) and after the intravenous enoxaparin injection at 10 (T1) and 120 minutes (T3). Data were analyzed in GraphPad Prism and presented as median.

RESULTS: The baseline plasma concentration of Gremlin-1 did not differ between HD patients and healthy individuals (T0 = 34,14 ng/ml vs 28,73 ng/ml respectively; $p > 0,05$). At T1 a significant (all $p < 0,0001$) increase of Gremlin-1 was observed both in HD patients (58,45 ng/ml) as well as in healthy individuals (78,71 ng/ml) and was greater in the last group ($p < 0,0001$). In patients, after 30 min. of hemodialysis, Gremlin-1 concentration was still higher compared to baseline (52,26 ng/ml; $p < 0,0001$). T3 levels were still significantly elevated in healthy subjects but returned to the baseline in HD patients. The Gremlin-1 increase did not correlate with the enoxaparin dose at any time point.

CONCLUSIONS: Injection of enoxaparin caused a temporary increase of Gremlin-1 plasma concentration in healthy persons and patients with kidney failure. Gremlin-1 release after injection of enoxaparin is more significant in healthy persons.

Title: GENETIC VARIANTS OF PROGESTERONE RECEPTOR IN ETIOLOGY OF PRETERM DELIVERY

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INTRODUCTION: Preterm delivery accounts for ca 11% of pregnancies worldwide. Unfortunately, no diagnostic indicator, specific mechanism or genetic predisposition has yet been identified. One of the hypotheses suggest local or functional progesterone decrease as a potential reason for preterm uterine contractions. It is believed that any change in progesterone receptor DNA may be crucial for higher risk of PTD due to abnormal response to prostaglandins, normally inhibited by properly built progesterone.

AIM OF THE STUDY: The aim of this study was to determine whether there is an association between progesterone gene polymorphisms (PROGINS and +331G/A) and preterm birth.

MATERIALS AND METHODS: A total of 230 women were enrolled, including 115 cases of preterm deliveries (between 22 and 36 weeks of gestation) and 115 healthy mothers of full-term infants. Genomic DNA was isolated from the blood sample. Polymerase chain reaction (PCR) amplification was carried out in a final volume of 25µl. Genotyping was assayed by PCR. Statistical analysis of the results was conducted with $p<0.05$ accepted as statistically significant.

RESULTS: : For both PROGINS (Alu ins/del) and +331G/A (rs10895068) polymorphisms were equally frequent in case and control group. The prevalence of PGR alleles in both groups was also comparable.

CONCLUSIONS: The results of our study showed no association between progesterone gene polymorphisms (PROGINS and +331G/A) and risk of preterm delivery. Identifying mechanisms to prolong the length of gestation, particularly in women at risk for preterm delivery, will improve both maternal and fetal outcomes.

Title: EVALUATION OF CHANGES IN SERUM CONCENTRATION OF MATRIX METALLOPROTEINASES (MMPS) IN THE COURSE OF INFANTILE HEMANGIOMA TREATMENT

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INTRODUCTION: Infantile hemangiomas (IH) are the most common benign vascular tumors of infancy. Although most of IH require only active observation due to their natural course resulting in involution, about 10% present with complications and are in need of immediate treatment which includes oral propranolol therapy and laser therapy. Research shows that β-adrenoreceptor agonists can increase the expression of matrix metalloproteinase 2 (MMP-2) and 9 (MMP-9).

AIM OF THE STUDY: The aim of this study was to assess the changes in serum levels of MMP-2 and MMP-9 in patients with IH treated with oral propranolol or PDL laser in comparison to control group.

MATERIALS AND METHODS: The study was carried out in 32 pediatric patients with IH and 16 controls. The patients with IH were divided into two groups: group 1 – PDL laser treatment (n=12) and group 2- oral propranolol therapy (n=20). The serum samples were taken from patients with IH at the time of diagnosis and one month after PDL session or propranolol treatment and once from control subjects during diagnostic procedures. The serum concentrations of MMP-2 and MMP-9 were determined using immunoenzyme assay (ELISA).

RESULTS: Among patients treated with PDL laser the concentrations of serum MMP-2 were significantly higher after one month of treatment compared to the control group ($p=0,047$). The MMP-9 serum concentrations in group 1 did not differ statistically from the controls at any time of the treatment. The MMP-2 and MMP-9 serum concentrations in group 2 were significantly higher at the time of diagnosis in comparison to control group ($p=0,0008$; $p=0,013$, respectively). The MMP-2 after one month of treatment was also significantly elevated in group 2 compared to the controls ($p<0,0001$) whereas MMP-9 has significantly risen after treatment in group 2 ($p=0,010$).

CONCLUSIONS: Obtained results showed that MMP-2 and MMP-9 may play an important role not only in the pathogenesis of IH but could also be involved in the response to treatment.

Title: MM-129 AND INDOXIMOD AS AN INNOVATIVE ANTICANCER THERAPY IN AN EXPERIMENTAL ZEBRAFISH MODEL

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INTRODUCTION: New therapeutic approach for colorectal cancer based on a simultaneous inhibition of classical oncogenesis' processes with a restoration of immune defense. MM-129, an inhibitor of conventional signaling pathways (PI3K, AKT, mTOR) has been studied for antitumor activity against colon cancer cells. Indoximod (IND), an IDO/TDO inhibitor, blocks tryptophan metabolism and restrains an immune escape.

AIM OF THE STUDY: The study aimed to investigate the antitumor activity of the combined therapy in the experimental zebrafish model.

MATERIALS AND METHODS: Zebrafish embryos were exposed to the tested compounds (MM-129, IND or their combination) for 2 hours, and an antiproliferative activity was assessed by the observation of cells division. Zebrafish xenografts with injected colon cancer cell (DLD-1/HT-29 lines) were treated in the same manner for 48h. The expression of the human GAPDH gene (qRT-PCR) was used to determine the number of cancer cells.

RESULTS: The obtained results indicate that both tested compounds show an antiproliferative effect, but the inhibition was observed earlier in the group treated with MM-129 than with indoximod. It has been noted that the use of combined therapy results in a stronger antitumor effect than the use of monotherapy. The results of the gene expression analyses indicate that the anti-tumor effect of the combined therapy does not dependent on the STAT3 nor E-cadherin signaling pathways.

CONCLUSIONS: The results suggest that the combined therapy may be a promising candidate for further evaluation as a chemotherapeutic agent against colorectal cancer. However, it is essential to conduct in-depth research to answer questions about the exact mechanisms underlying the anticancer activity.

Title: BRASSINOSTEROID EXTRACT OF ANEMONE NEMOROSA CAUSES BREAST CANCER CELL APOPTOSIS

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Tutor(s): Andrzej Bajguz[4]

Affiliation(s):

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INTRODUCTION: Anemone nemorosa (Ranunculaceae) is a common plant of Polish forests traditionally used by folk medicine. The plant has a lot of active compounds such as flavonoids, alkaloids, and glycosides and also contains brassinosteroids (BRs) are natural plant steroid hormones. BRs belong to steroid hormones which show the structure and physiological similarity to human steroid hormones. BRs cause cell response with micromolar concentration. BRs promote stem growth, xylem differentiation.

AIM OF THE STUDY: The study was aimed to determine brassinosteroids in Anemone nemorosa herb and check its anticancer purposes. The goal was a demonstration of herbal anticancer strength and study anticancer role with possible effective normal non-tumor cell cycle.

MATERIALS AND METHODS: Anemone nemorosa herb was frozen in liquid nitrogen and grounded in the mortar. It was transferred into an Eppendorf PCR tube. The tissues were resuspended with methanol and homogenized in a bead mill. After extraction plant was separated by centrifugation. BRs parts were detected by LC-QTOF-MS. The samples 10 mM were prepared by dissolving substances in DMSO, FBS, l-glutamine, and antibiotics. Obtained breast carcinoma MCF-7 and breast adenocarcinoma MDA- MB-468 were cultured and MTT test done.

RESULTS: Nine BRs were found in Anemone nemorosa extract. The study revealed the presence of 28-norbrassinolide, cathasterone, 6-deoxotyphasterol, 6-deoxocastasterone, castasterone, brassinolide, 24-epibrassinolide, 24-epicastasterone, 28-homobrassinolide. 28-BR fraction had a stronger impact on MCF-7 breast cancer cells than MDA- MB 468. 24-BR fraction had a weaker effect than 28-BR fraction on both breast cancer cell lines. High cytotoxicity was observed after treating cells with brassinolide and castasterone. BR treatment induced apoptosis in both breast cancer lines (estrogen and non-estrogen sensitive breast cancer cell lines).

CONCLUSIONS: The most commonly detected were C-28 BRs. BRs have detected a wide range of concentrations from 0.33 to 20.85 ng/g biomass. The highest level was for cathasterone. BRs have wide biological and pharmacological effects. They can be a promising anticancer role by inducing apoptosis in breast cancer drugs. They have low toxicity and they do not affect non-cancer cells. Although of anticancer impact BRs should be further investigated before the extract from Anemone nemorosa could be used.

Title: CHANGES OF GALECTIN-3 EXPRESSION AND IMMUNOREACTIVITY IN HEARTS OF THE RATS IN VARIOUS TYPES OF ARTERIAL HYPERTENSION.

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INTRODUCTION: Arterial hypertension is a multifactorial disease that affects over 25% of the adult population. Complications of long-term effects of untreated hypertension, such as cardiovascular events, cause a serious threat to life. Changes in level of Galectin-3 may be related to myocardial hypertrophy due to activation of cardiomyocyte proliferation and tissue fibrosis in course of hypertension.

AIM OF THE STUDY: The aim of the study was detection and comparative assessment of immunoreactivity of Galectin-3 and Lgals3 gene expression (coding Galectin-3) in rat hearts in various types of arterial hypertension.

MATERIALS AND METHODS: The study was conducted in material from rats with arterial hypertension divided into 2 groups: SHR - spontaneously hypertensive rats, DOCA-salt - deoxy- corticosterone acetate-salt with control groups to every experimental model. Paraffine sections were stained with hematoxylin and eosin (H+E) for general histological assessment. For Galectin-3 identification immunohistochemical reaction was conducted (EnVision method). The Lgals3 gene expression was evaluate with RT-qPCR.

RESULTS: In H+E staining, myocardial cell hypertrophy was observed in both types of arterial hypertension. The intensity of the immunohistochemical reaction showing Galectin-3 increased in the heart of the rats receiving DOCA-salt, while in the heart of SHR it decreased compared to the control group. Similarly, expression of the Lgals3 gene was statistically significantly higher in the hearts of the DOCA-salt hypertensive rats compared to the control tissue and lower in the SHR heart.

CONCLUSIONS: The differences in the expression of galectin-3 in the hearts of rats with primary and secondary hypertension demonstrated in the conducted studies indicate a significant role of this protein in the pathogenesis of arterial hypertension. And they may point to new aspects of various pathomechanisms leading to primary and secondary hypertension.

Title: THE DIFFERENCE IN THE CORRELATION OF VARIOUS ELEMENTS OF MITOCHONDRIAL FUNCTION IN ATRIAL FIBRILLATION

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INTRODUCTION: Atrial fibrillation (AF) is one of the most common arrhythmias with a significant impact on global cardiovascular mortality due to cardioembolic mechanisms. The proper understanding of exact pathomechanisms of AF occurrence may lead to the development of additional molecules effective in the treatment of this disease. Mitochondrial dysfunction is one of the crucial factors in AF and its' amelioration, for instance, by sodium-glucose co-transporter-2 inhibitors was already found to be effective.

AIM OF THE STUDY: The goal of the study was to analyse the mitochondrial dysfunction occurring in atrial fibrillation.

MATERIALS AND METHODS: The atrial appendage tissue of 16 patients, admitted to the Department of Cardiac Surgery, was acquired for Western Blot. The proteins including peroxisome proliferator-activated receptor gamma coactivator 1-alpha (PGC-1 alpha), Ca2+/calmodulin-dependent protein kinase II (CaMKII), transcription factor A (TFAM), mitochondrial dynamin like GTPase (OPA1), uncoupling protein-1 (UCP1) and nuclear respiratory factor 1 (Nrf-1), were compared between patients with AF (n=5) and without AF (n=11).

RESULTS: Only in the patients with AF, there was a significant correlation between CaMKII (atrial structural remodelling stimulator) and PGC-1 alpha (master regulator of mitochondrial biogenesis). In both groups, there was a nearly similar relation between PGC-1 alpha and TFAM (key activator of mitochondrial transcription), OPA1 (regulator of mitochondrial fusion and cristae structure), UCP1 (mitochondrial carrier protein). The PGC1 alpha in patients without AF was positively correlated with Nrf-1(factor regulating cellular growth and nuclear genes required for mitochondrial respiration). However, in patients with AF, the increase of PGC-1 alpha was related to a decrease in Nrf-1.

CONCLUSIONS: Atrial fibrillation changes the relationship between various elements of mitochondrial function. The recreation of the physiological proteins correlation as an AF inhibition target should be investigated by further studies.

Title: ANTIPROLIFERATIVE PROPERTIES OF NOVEL SYNTHETIZED COMPOUND WITH A THIOSEMICARBAZIDE SYSTEM

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INTRODUCTION: Current cancer treatment therapies are associated with a high risk of side effects for the patient. Therefore, new drugs with anticancer properties are still being sought. Thiosemicarbazide derivatives can have multidirectional effects on cancer cells. They exert anti-inflammatory, antioxidant and antiangiogenetic effects, but also chelate metal ions and influence on enzymes necessary for cancer development.

AIM OF THE STUDY: The aim of this study is to investigate the antiproliferative properties of a novel synthesized compound (HJ4) with a thiosemicarbazide system.

MATERIALS AND METHODS: In vitro cytotoxicity evaluation of a novel thiosemicarbazide derivative (HJ4) was evaluated by MTT assay on MDAMB-468, MDAMB-231, PC3 cell line and physiological line of fibroblasts. In addition, IC10, IC25, IC50, IC90 for all lines were calculated.

RESULTS: The cytotoxicity analysis performed in the MTT assay showed that the compound was cytotoxic to the MDAMB-468, MDAMB-231 and PC3 line and nontoxic to the fibroblast line in the concentration range used. The IC50 for: MDAMB-468- 44.03 mg, MDAMB-231-46.92 mg and PC3- 27,56 mg while for the fibroblast line the IC50- 153.33mg.

CONCLUSIONS: In this study, a novel thiosemicarbazide derivative (HJ4) was shown to have antiproliferative properties against cancer cells, and it would be appropriate to test this compound on other cancer and physiological cell lines and confirm this effect. In addition it would be necessary to confirm this effect in preclinical in vivo studies in the next steps.

Title: LONGITUDINAL ANALYSIS OF SERUM METABOLOMICS OF BARIATRIC SURGERY PATIENTS

Author(s): Gladys Wojciechowska[1], Urszula Puchta[2]

Tutor(s): Prof. dr hab. n. med. Adam Jacek Krętowski[2.1], dr n. med. Łukasz Szczerbiński[1.2]

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INTRODUCTION: Bariatric surgery is an effective treatment for weight loss, reserved for patients with severe obesity. Profiling the metabolite changes after surgery might give insights into the molecular mechanisms behind the significant weight loss.

AIM OF THE STUDY: This longitudinal and preliminary study assesses the temporal effect of bariatric surgery on serum metabolic profiles.

MATERIALS AND METHODS: Data was collected from 31 patients at five time points: pre-surgery, one, three, six, and twelve months post-surgery. Serum metabolites were profiled using three assays: gas chromatography-mass spectrometry, hydrophilic interaction liquid chromatography coupled to mass spectrometry, and lipidomics. Statistical analysis was done using the Friedman rank sum test and Kendall's W.

RESULTS: Patients achieved a median excess BMI loss of 56.4% 12-months post-surgery ($p = 1.5e-47$). A total of 883 metabolites had significant differential trends post-surgery. Among these metabolites, 21 had effect sizes of more than 0.5. After surgery, a decline in glucose, tyrosine, glycerol, phosphatidylcholines, ceramides, and lysophosphatidylcholines was seen. In contrast, serum glucosylceramide, sphingomyelins, 1,4-cyclohexanedione, and coniferyl aldehyde were significantly increased after surgery. The metabolic changes were most pronounced one month after surgery and stabilized over time.

CONCLUSIONS: Significant changes in serum metabolites were observed after bariatric surgery, as early as one month post-surgery. These metabolites could be studied further to understand the mechanisms behind sustained weight loss.

Title: IMPACT OF N-ACETYLCYSTEINE SUPPLEMENTATION DURING HIGH-FAT DIET REGIME ON MATRIX METALLOPROTEINASE-2 AND MATRIX METALLOPROTEINASE-9 IN VISCERAL AND SUBCUTANEOUS ADIPOSE TISSUE

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INTRODUCTION: The high-fat diet (HFD) regime causes obesity and contributes to the development of oxidative stress in the cells by the production of reactive oxygen species, and the occurrence and progress of inflammation. Despite years of studies, there is no data explaining the mechanism of action of N-acetylcysteine (NAC) on matrix metalloproteinase-2 (MMP2) and matrix metalloproteinase-9 (MMP9) in visceral (VAT) and subcutaneous (SAT) adipose tissue of HFD-fed rats.

AIM OF THE STUDY: Our experiment aimed to evaluate for the first time the influence of chronic antioxidants administration on MMPs biology after an HFD regime as a potential therapeutic strategy for obesity-related complications prevention.

MATERIALS AND METHODS: Male Wistar rats were randomly divided into four groups (10 rats in each group): control diet, control diet + N-acetylcysteine intragastric administration, HFD, and HFD + N-acetylcysteine intragastric administration. The mRNA levels and protein expression of MMP2 and MMP9 were assessed using real-time PCR and Western Blot analyses. The collected samples were subjected to histological evaluation.

RESULTS: Histological examination revealed that adipocytes in the VAT and SAT of the HFD+NAC group were significant smaller than those in respective HFD groups. There was a lower number of macrophages observed in HFD+NAC (vs. HFD), with more CD68 cells. The NAC treatment during HFD regime resulted in the increase MMP2 and MMP9 mRNA expression in VAT (vs. HFD). We also observed significant differences in MMP2 mRNA expression between HFD+NAC and Control+NAC groups in SAT. The measurement of total MMP9 protein expression in VAT revealed significant increase in HFD+NAC group compared to HFD and Control+NAC groups.

CONCLUSIONS: Our data illustrate a potential role for NAC treatment in the modulation of matrix metalloproteinases expression in visceral and subcutaneous adipose tissue of the animals fed with an HFD. The antioxidants treatment can help to protect adipose tissue against oxidative stress by regulating MMP2 and MMP9 expression.

Title: IMPACT OF ALPHA-LIPOIC ACID SUPPLEMENTATION DURING HIGH-FAT DIET REGIME ON FATTY ACID TRANSPORTERS IN ADIPOSE TISSUE

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INTRODUCTION: Adipose tissue's structural changes accompanying obesity may alter lipid transport protein expression and, thus, the fatty acids (FAs) transport and lipid balance of the body. Metabolic abnormalities within adipose tissue (AT) contribute to the elevated production of reactive oxygen species and increased oxidative/nitrosative stress. Despite years of studies, there is no data explaining the mechanism of action of alpha-lipoic acid (ALA) on fatty acid transporters in AT.

AIM OF THE STUDY: Based on this, we aimed to examine the impact of ALA on the level and FA composition of the lipid fractions, and the expression of fatty acid transporters in the visceral and subcutaneous AT of high-fat diet-fed rats.

MATERIALS AND METHODS: Male Wistar rats were randomly divided into four groups (10 rats in each group): control diet, control diet + alpha-lipoic acid, HFD, and HFD + alpha-lipoic acid. The collected samples were subjected to histological evaluation. The mRNA levels and protein expression of FAT/CD36, FABPpm, FATP1, and FATP4 were assessed using real-time PCR and Western Blot analyses. The level of lipids abundance (FFA, DAG, TAG, and PL) was estimated by GLC.

RESULTS: The histological examination of the AT sections in the HFD+ALA was slightly smaller comparison to the HFD group in VAT and SAT. Furthermore, the cells from the HFD+ALA group had a slightly higher number of macrophages present in comparison to the respective control. Moreover, in HFD+ALA group we observed significant increase in FABPpm mRNA expression in VAT, and in FATP1 mRNA expression in SAT when compared to the HFD group. We also observed a significant reduction in FATP1 mRNA expressions in VAT. The comparison of the ALA treatment with the HFD regime alone revealed a significant drop in the expression of the FAT/CD36 protein level in SAT. We found that antioxidants promote changes in adipose tissue's lipid pools.

CONCLUSIONS: Current studies clearly demonstrate that the ALA, exert different influences on adipose tissue. This varying impact is reflected in histopathological images, the fatty acid transport protein expression pattern, or even in the lipid storage capacity of adipocytes. Our results provide direct evidence to support the thesis that antioxidant supplementation can be considered an effective means to block diet-induced obesity and its complications.

Title: CYTOKINE/CHEMOKINE/GROWTH FACTOR PROFILES CONTRIBUTE TO UNDERSTANDING THE PATHOGENESIS OF THE SALIVARY GLAND DYSFUNCTION IN SMOKERS OF TRADICTIONAL/ELECTRONIC/HEAT-NOT-BURN CIGARETTES

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INTRODUCTION: Despite the vast awareness of the harmful effects of cigarette smoking, the number of traditional smokers and people using electronic cigarettes and heat-not-burn products, which were originally believed to be a healthier alternative to traditional tobacco products, is continuously increasing.

AIM OF THE STUDY: The aim of the was to evaluate and compare the concentrations of a broad panel of cytokines, chemokines and growth factors in samples of unstimulated saliva of smokers of traditional cigarettes, electronic cigarettes, and heat-not-burn products.

MATERIALS AND METHODS: Unstimulated saliva was collected from a group of 25 traditional cigarette smokers, 25 electronic cigarette smokers, 25 heat-not-burn product smokers and 25 non-smokers, and tested for concentrations of a wide panel (summary 48) of cytokines / chemokines and growth factors in each group. The studied mediators of inflammation were analyzed using the Bio-Plex® Multiplex System which was based on magnetic beads whose performance can be compared to a typical ELISA.

RESULTS: Smoking traditional cigarettes is responsible for the increased concentration of INF-y in unstimulated saliva compared to the other three groups. Moreover, smokers of electronic cigarettes and heat-not-burn products were characterized by a significantly lower concentration of the tested cytonics / chemokines / growth factors compared to the group of traditional cigarette smokers and non-smokers.

CONCLUSIONS: Smoking all types of cigarettes has a negative effect on level of mediators of inflammation in unstimulated saliva, which is unambiguously associated with their harmful effects on the entire oral cavity.

Original Research

PhD II

Title: RISK FACTORS OF SYNCOPE AMONG EMERGENCY DEPARTMENT PATIENTS

Author(s): mgr Klaudia Bielska[1]

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INTRODUCTION: Syncope are one of the most common cause of hospitalization in Emergency Department (ER). According to data, 1% of all patients are annually admitted to Emergency Ward due to transient lossess of consciousness. The most frequent cause of syncope is sudden vascular expansion or bradycardia. The essence of faints diagnostics in ER is selection of patients at highest risk and identifying risk factors, which allows the implementation of targeted treatment.

AIM OF THE STUDY: The main aim of the study was to identify risk factors among patients of the Emergency Department of the University Clinical Hospital in Bialystok and to determine their incidence, with a focus on factors cited as high risk syncope predictors.

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

RESULTS: The results of the study showed that Emergency Department patients are a fairly homogeneous group, considering the risk factors for syncope. It provides a material for comparison with the results of other studies of this type, allowing the evaluation of currently accepted scales of syncope risk. Additionally, the results show that syncope often occurs in association with other diseases or syndromes. However, analysis of the medical records revealed deficiencies in the medical history collected by the medical staff that make it difficult to accurately assess the risk scale for predictors of syncope.

CONCLUSIONS: The study showed that the incidence of risk factors for syncope among patients ofEmergency Department of the University Clinical Hospital in Białystok is comparable with the results presented in the literature, indicating that at the same time medical staff should pay special attention to the importance and accuracy of the patient history. Gathering a more accurate history allows to assess the risk of syncope in a broader diagnostic and therapeutic perspective, to achieve better health effects.

Title: DIFFERENCES BETWEEN SHORT-TERM EFFECTS OF AIR POLLUTION AND CLIMATIC PARAMETERS ON ACUTE CORONARY SYNDROMES ORIGINATING FROM THE LEFT MAIN CORONARY ARTERY.

Author(s): Emil Julian Dąbrowski, MD[1], Michał Święczkowski[1], Małgorzata Kazberuk[1], Anna Kurasz[1]

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INTRODUCTION: Recently the World Health Organization introduced the new 2021 Air Quality Guidelines with more demanding thresholds suggesting that even low concentrations of air pollutants could be harmful. Impact of air pollution on acute coronary syndromes (ACS) incidence in heavily polluted areas is well documented. However, in less polluted regions, data on the influence of air quality and weather conditions on ACS as well as ACS originating from the left main coronary artery (LMCA-ACS) is very limited.

AIM OF THE STUDY: The aim of the study was to assess impact of short-term exposure to major air pollutants, climatic parameters, and temporal variation on both ACS and LMCA-ACS in moderately polluted areas.

MATERIALS AND METHODS: We analyzed medical records of 3350 residents of Białystok hospitalized due to ACS in the Department of Invasive Cardiology, Medical University of Bialystok, Poland in years 2008-2018. LMCA-ACS was diagnosed in 100 patients in the analyzed group. Data on air pollution and weather conditions was obtained from Voivodeship Inspectorate for Environmental Protection and Institute of Meteorology and the Water Management. In statistical analysis, we used log-linear regression and Kruskal-Wallis test.

RESULTS: In the analyzed group the average age was 66.43 years and 60.2% were male. Patients with the diagnosis of ACS-LMCA were significantly older than those with non-LMCA-ACS (71.74 vs 66.27, $p<0.01$). Mean NO2 concentration was 14.36 μg/m3 and its increase in 10 μg/m3 was associated with increase only in ACS frequency on the day of exposure (OR=1.104, CI 1.016-1.199, p=0.02). Increase in 10 hPa of atmospheric pressure was related with decrease in ACS incidence (OR=0.935, CI 0.887-0.985, p=0.01). We noted that an increase in 10°C of mean temperature was associated with LMCA-ACS incidence decrease on the day of exposure (OR=0.69, CI 0.503-0.946, p=0.02). In comparison to quartile 3, there was more ACS incidence in quartile 1 and 2 (p=0.03, p=0.02).

CONCLUSIONS: Epidemiological factors might determine the differences in triggers on LMCA-ACS and the overall ACS occurrence. No association between air pollutants and the incidents of LMCA-ACS may be linked with the differences in age between two groups. The first ones are significantly older and it could have an effect on their reduced mobility and reduced time of exposure. Moreover, chronobiology plays an important role as the sun exposure in the 1st and 2nd quartiles may contribute to photochemical smog.

Title: GENERATION OF INDUCED PLURIPOTENT STEM CELL (IPSC) LINE WITH P.F508DEL.

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INTRODUCTION: Cystic fibrosis (CF) is an autosomal recessive disorder caused by defects in the protein CFTR. The most common mutation in the CFTR gene, which leads to CF is F508del. HiPSCs as human 'disease-in-a-dish' models can be integrated with personalized medicine, to enable both drug efficacy and toxicity predictions within patient with unique genetic profiles.

AIM OF THE STUDY: The aim of the study was to generate two lines of hiPSCs, reprogrammed from peripheral blood mononuclear cells with F508del and dermal fibroblasts derived from a healthy volunteer.

MATERIALS AND METHODS: Both cell samples were isolated, cultured and reprogrammed with Sendai Reprograming Kit. Both lines of hiPSCs were cultured on 12-well culture plates for immunofluorescence (IF) analysis to confirm four key markers of human pluripotent stem cells (hPSCs): OCT4, SOX2, SSEA4, and TRA-1-60. Images were captured with an CellInsight CX7 High-Content Screening Platform imaging.

RESULTS: We generated and characterized two lines of hiPSCs from homozygotes for F508del in CFTR and healthy volunteer. The obtained cell colonies were analyzed by immunofluorescence staining in order to confirm the expression of classic pluripotency markers (Oct4, SOX2, SSEA4, TRA 1-60). The colony displayed all markers of pluripotency. Also observed morphology of iPSCs met morphological criteria of undifferentiated iPSCs - compact colonies that have distinct borders and well-defined edges, and are comprised of cells with a large nucleus with less cytoplasm.

CONCLUSIONS: The presented reprogramming method leads to the generation of two human induced pluripotent stem cell (iPSC) line with p.F508del and healthy control. CellInsight CX7 High-Content Screening Platform is useful tool to confirm morphology and markers of human pluripotent stem cells. The platform could be used as valuable resource for the study of both, iPSCs biology and CF disease.

Title: EVALUATION OF THE YFILER PLUS PCR AMPLIFICATION KIT IN DETERMINATION OF KINSHIP FOR THE POPULATION OF NORTHEASTERN POLAND

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INTRODUCTION: The Yfiler Plus PCR Amplification Kit (Thermo Fisher Scientific) is especially designed for forensic laboratories that process highly challenging Y-STR casework, e.g. sexual assault mixtures that contain small quantities of male DNA in a large background of female DNA, kinship analyses, and database samples. The Yfiler Plus kit amplifies 27 polymorphic loci and shows a high discriminatory capacity, which is important in forensic genetics.

AIM OF THE STUDY: To type 27 Y-STR loci to establish a Y-STR haplotype database for the population of NE Poland and study the mutation rate of 7 RM Y-STRs by the analysis of father/son pairs, the relationship of which had been confirmed by autosomal STR typing.

MATERIALS AND METHODS: DNA was isolated with the GeneMATRIX Swab-Extract DNA Purification Kit from dried blood on a blotting paper collected from 301 males from northeastern Poland. DNA was quantified using the Quantifiler Duo DNA Quantification Kit and the 7500 Real-Time PCR System. The Yfiler Plus markers were amplified in the GeneAmp PCR System 9700 thermal cycler. Electrophoresis and genotyping were performed using the 3500 Genetic Analyzer. Biostatistical parameters were calculated using the STRAF program.

RESULTS: The limit of detection (LOD) and the limit of quantitation (LOQ) were established. Complete haplotypes were observed in the range of 0.125 to 2 ng DNA. Repeated testing of the same sample in a method precision study showed repeatable and reproducible results. The biostatistical parameters for the population sample were presented. Mutation frequencies for the seven RM Y-STR markers were determined.

CONCLUSIONS: The method fulfills its requirements in the assumed acceptance criteria and provides with reliable and reproducible results. Rapidly mutating Y-STRs helps improve resolution of paternal lineage differentiation as well as helps discrimination of closely-related males.

Title: ATTITUDE CHANGE TOWARDS ANIMAL TESTING - TRACING ITS ORIGIN IN CONTEMPORARY PHILOSOPHY.

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INTRODUCTION: It can be easily observed that we are facing attitude change towards use of animals in medical experiments. Along with more restrictive legislation, researchers have to pass growing numer of requirements. At the same time impact of Animal Turn in humanities is rapidly increasing which is correlated with the change of moral paradigms and public opinion. Animal Turn might be considered a consequence of historical events of the 20th century, development of knowledge or cultural changes.

AIM OF THE STUDY: Study attempts to find and analyze causes of the Animal Turn in contemporary philosophy. It aims to connect Posthumanism and antihumanistm with changes in animal experimentation.

MATERIALS AND METHODS: Bioethics is an interdisciplinary science and requires the use of methods widely utilized in philosophy. In this study the method of hermeneutic analysis has been applied to decompose choosen concepts of contemporary continental philosophers. In this case thought of Leszek Kołakowski was great inspiration, as it opens the way to find the logical connection between ideas throughout their conceptual analysis.

RESULTS: Study shows that Heidegger's attempt to turn from anthropocentric perspective was a step toward paradigm change. Rejection of differentiating men and animals on the base of hierarchy has opened new paths for later thinkers. Secondly the ethics of The Other created by Levians incorporates openness in defining Otherness, which allowed to include animals into ethical discourse. Then comes vision of Agamben who fights „the anthropological machine of humanism" and states that the border between man and animal lays inside the humanity. Finally the deconstruction used by the Derrida led to re-thinking of the human-animal relationship and gave the outcome in creating term „L'animot" – different than animal, which did not contain any individuality.

CONCLUSIONS: Present attitude towards animal use in medical sciences has been greatly affected by the media, animal activists, development of ethology. This study shows that Animal Turn originates in philosophical concepts presented in the last century and is natural consequence of the evolution of contemporary thought. This leads to the conclusion that the attitude towards animal testing might be changing accordingly to philosophical discourse.

Title: ADAPTIVE EATING STYLES AND ADEQUACY OF FRUIT AND VEGETABLE INTAKE IN POLISH ADULTS

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INTRODUCTION: Low intake of fruit and vegetables is associated with higher risk of diet-related diseases, yet despite recommendations encouraging greater consumption as prevention, insufficient intake is still observed worldwide. With the growing popularity of intuitive and mindful eating, which are described as adaptive eating styles and non-diet approaches, it is of interest whether these constructs and their principles are in line with dietary recommendations and can be useful in healthy eating promotion.

AIM OF THE STUDY: The study aimed to examine the association between intuitive and mindful eating domains and adequacy of fruit and vegetable daily intake in Polish adults.

MATERIALS AND METHODS: The cross-sectional study was conducted in February 2020 with the use of the CAWI technique. The Polish versions of the Intuitive Eating Scale-2 (IES-2) and Mindful Eating Scale (MES), questions on the frequency and quantity of fruit, vegetables, unsweetened juices intake and metrics were administered to a representative sample of 1000 Polish adults (500 women and 500 men) aged 18-65. The Chi-Square Test and Mann-Whitney's U Test were used to analyse the data.

RESULTS: Less than half of the participants (43.9%) met recommendations for fruit and vegetable intake (≥400g/day), out of whom women, respondents aged 25-39, and those with secondary education displayed adequate intake most frequently ($p<0.05$). Participants with adequate intake scored higher than those with inadequate intake in 'Body and Food-Choice Congruence' (IES-2) (3.52±0.87 vs. 3.14±0.88; $p<0.001$) and 'Awareness' (MES) subscales (3.07±0.69 vs. 2.80±0.73; $p<0.001$). Higher scores for 'Eating For Physical Rather Than Emotional Reasons' (IES-2) and 'Acceptance' (MES) were noted in the group with inadequate intake in comparison to the group with adequate intake (3.44±0.97 vs. 3.27±1.06; $p=0.024$ and 3.02±0.67 vs. 2.85±0.72; $p<0.001$, respectively).

CONCLUSIONS: Our results suggest that IE and ME may similarly explain the adequacy of fruit and vegetable intake, however, future research is needed to confirm those observations. Diverse findings within IE and ME domains indicate that subscale-level analysis should be performed in further studies on the adaptive eating styles and their link with food intake to confirm if selected IE and ME principles might predispose to favorable eating behaviors.

Title: ASSESSMENT OF FIBROSIS PARAMETERS IN PATIENTS WITH ATRIAL FIBRILLATION TREATED WITH CRYOABLATION.

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INTRODUCTION: Atrial fibrillation (AF) is one of the most common arrhythmias. The development of AF may be caused by inflammatory and fibrosis processes within the heart muscle. The presence of them indicated by an increased concentration of markers such as galectin-3 and sST2. A method of surgical treatment of atrial fibrillation is cryoablation. Studies show differences in the durability of the clinical effect of this treatment depending on the selected group of patients.

AIM OF THE STUDY: The aim of the study was to identify the markers with different concentration in patients after cryoablation with recurrence of arythmia and without it. They could be used to select the group that will benefit the most from the treatment.

MATERIALS AND METHODS: Study group consisted of 60 patients, 39 men and 21 women, aged 40-75 (median 62,5) diagnosed with AF and hospitalized in the Cardiology Department. Patients were treated with cryoablation and observed for 3 months. Arrhythmia returned in 10 of them. Before the procedure, blood was collected in each of these groups and the concentration of galectin-3 and sST2 was determined. The control group consisted of 10 patients without arrhythmias.

RESULTS: During the three-month follow-up, 10 patients experienced recurrence of atrial fibrillation after cryoablation. The median galectin-3 concentration in the group with recurrent arrhythmia was 9.034 (5.404-11.812) ng / ml, in the group without recurrence - 7.142 (2.21-13.847) ng / ml, and in the control group it was 6.909 (3.492-9.015) ng/ ml. The median sST2 concentration in the group with recurrent arrhythmia was 4.6 (2.5-75.84) ng / ml, in the group without relapse it was 7.55 (2.5-12.44) ng / ml, and in the control group was 4.58 (2.52-7.54) ng / ml. There weren't observed any statistically significant changes in the concentration of galectin-3 ($p = 0.22$) and sST2 ($p = 0.73$) in the studied groups.

CONCLUSIONS: Research on markers of cardiac muscle fibrosis needs further development. Finding the appropriate marker may be important in clinical practice, for example in qualifying patients for cryoblation.

Title: THE POLISH TRANSLATION AND CROSS-CULTURAL ADAPTATION OF FOUR PROMIS® PEDIATRIC SHORT FORM QUESTIONNAIRES

Author(s): Justyna Młyńczyk, M.D.[1]

Tutor(s): prof. Jerzy Konstantynowicz, M.D., PhD[1], Paweł Abramowicz, M.D., PhD[1]

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INTRODUCTION: The Patient-Reported Outcomes Measurement Information System (PROMIS®) is a new non-disease-specific tool measuring multiple domains of physical, mental, and social health in children and adults.

AIM OF THE STUDY: This paper reports on the translation process of four pediatric short form questionnaires – Global Health 7, Pain Interference 8a, Fatigue 10a and Mobility 8a. The questionnaires are self-reported for children ages 8-17.

MATERIALS AND METHODS: Short forms were translated according to the PROMIS® recommendations. The translation process consisted of two forward translations, reconciliation, back translation, expert reviews, harmonization and cognitive interviewing conducted on children and adolescents grouped by age. Qualitative analysis of the feedback received through the cognitive interviewing served to establish a cross-cultural adaptation.

RESULTS: Participants reported no significant problems with the comprehension of the text, yet still, they proposed some changes concerning the language. The main challenges faced in the translation process were constructing age-adapted formats and adjusting items developed originally in an American context, such as units of measurement, to fit the Polish reality. Other challenges were related to an insufficient clarity of meaning of the text and an inadequate rating scale. After rewriting, acceptable translations were achieved for all items.

CONCLUSIONS: The experience gained in this study can be used as an example for researchers in performing other translations. The translated Polish PROMIS® Pediatric Short forms are linguistically correct and ready for cross-cultural validation in Poland.

Title: DEEP VEIN THROMBOSIS IN PATIENTS WITH PULMONARY EMBOLISM - IS IT AS COMMON AS WE THINK?

Author(s): Monika Oleksiuk[1]

Tutor(s): Katarzyna Ptaszyńska-Kopczyńska, MD[1], Asst. Prof. Anna Lisowska, MD, PhD[1], Professor Bożena Sobkowicz, PhD[1]

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INTRODUCTION: Deep vein thrombosis (DVT) and pulmonary embolism (PE) are clinical manifestations of one disease called - venous thromboembolism (VTE). Despite that it occurs less frequently than other vascular disorders, it still remains the third cause of mortality worldwide and shows a steady upward trend in recent years. Making the correct diagnosis may not be an easy task, due to variations in the clinical presentation, which is often asymptomatic.

AIM OF THE STUDY: To evaluate the frequency of coexistence of deep vein thrombosis in patients with pulmonary embolism and to establish common risk factors and prognosis.

MATERIALS AND METHODS: We conducted retrospective, single-center observational analysis in the Department of Cardiology, Medical University of Bialystok. The 884 patients, with the main diagnosis as pulmonary embolism, between 2004 and 2022 were included into the study. In all patients PE was confirmed by CT angiography/scintigraphy and DVT by ultrasound examination. Analysis comprised past medical history, laboratory tests and clinical data. Standard statistical analysis was performed using Statistica 13 software.

RESULTS: Gender distribution in study was: men-421 (47,62%), women-463 (52,38%). Mean age 65,72 (SD 16,64). The DVT was observed in 472 patients (53,39%), symptomatic DVT was noticed in 213 patients (45,13%). The hospitalization of patients with concomitant DVT lasted an average of 9.04 days and 8.53 days without DVT. Most frequently in patients with PE coexisting with DVT we observe elevated level of cardiac troponin (p=0,015), low INR (p=0,04), overweight (p=0,005), stroke (p=0,008), chronic heart failure (p=0,00005), immobilization (p=0,004) and persistent atrial fibrillation (p=0,007). We observed a positive correlation between the Wells Score punctation and the incidence of symptomatic deep vein thrombosis. In-hospital mortality was 6,9% (n=61).

CONCLUSIONS: We observed a coexistence of PE and DVT in more than half of the cases. We also confirm higher prevalence of asymptomatic DVT, which depicts scale and complexity of the disease. VTE still remains a challenge resulting from relatively high mortality and various prognosis.

Title: ASSESSMENT OF THE QUALITY OF LIFE USING THE FACIT SCALE IN PATIENTS WITH HYPERLIPIDEMIA AFTER 65 YEARS OF AGE

Author(s): Eliza Oleksy[1], Paulina Kasperska-Dębowska[1], Anna Wojtczak[1]

Tutor(s): prof. dr hab. Kornelia Kędziora-Kornatowska[1]

Affiliation(s):

[1]Nicolaus Copernicus University, Departament of Geriatrics

INTRODUCTION: In the body's aging process, changes in lipoprotein metabolism (increase in LDL and decrease in HDL) occur.

AIM OF THE STUDY: Assessment of the quality of life using the FACIT scale among hyperlipidemic patients over 65 years of age.

MATERIALS AND METHODS: Research group N = 69 PEOPLE, Control group N = 81 PEOPLE. Comprehensive Geriatric Assessment (CGA) project conducted at the Department and Clinic of Geriatrics Collegium Medicum im. Ludwik Rydygier in Bydgoszcz in the form of a questionnaire (FACIT - F, FACIT Sp, FACIT - PA, FACIT - C, FACIT - Ga), and BY ANALYSIS of a detailed history of patients' disease. The calculations of the basic statistical characteristics were applied to all tested parameters.

RESULTS: In older adults with hyperlipidemia in the functional assessment of chronic disease treatment (facit-f), the total number was 72.08 POINTS in the group of 69 patients with hyperlipidemia; the control group consisted of 81 patients, the mean was 82.90 points (difference between the groups was p = 0.010). In the functional evaluation of the treatment of chronic diseases and spiritual well-being (facit-sp) in the research group, the mean was 24.88 points. The standard was 26.50 points (the difference between the groups was p = 0.041). Blood biochemical analysis: in the research group N = 69, there are statistically significantly higher blood markers, such as CRP, CHOL, LDL, and TG.

CONCLUSIONS: People over 65 with hyperlipidemia have a lower quality of life, meaning in life and faith, than people without this disease entity, and are at risk of several other diseases.

Title: ANALYSIS AND QUANTIFICATION OF THE GLIOBLASTOMA PROTEOME USING TMT ISOBARIC TAGS

Author(s): Tomasz Pienkowski[1], Tomasz Kowalczyk[1], Adam Kretowski[2.1], Michal Ciborowski[1]

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INTRODUCTION: The diagnosis of glioma is mainly based on imaging methods that do not distinguish between tumor stages prior to histopathological analysis. Current knowledge of proteome alterations underlying gliomagenesis allow use of tumoral markers as discriminators of the state of the progression. Proteomics approach provides the ability to track physiological changes and can serve as a minimally invasive method for diagnosing asymptomatic gliomas and allowing for the initiation of prophylactic treatment.

AIM OF THE STUDY: The aim of the present study was to apply high-resolution and accurate mass orbitrap mass spectrometry to increase glioma tissue proteome coverage and search for potential protein markers.

MATERIALS AND METHODS: Proteomic analysis was performed on the isolated protein, which was subjected to proteolytic digestion using the iFASP method. The obtained peptides were labeled with TMT isobaric tags, followed by the fractionation procedure. Peptide fractions were separated by nano-flow liquid chromatography and analyzed with an Orbitrap mass spectrometer. Protein identification was performed on the basis of FASTA sequence libraries using PEAKS X pro software.

RESULTS: The number of identified proteins in each sample varies in the range of 4000 protein groups. The results indicate significant differences in the protein profile between the tumor and control tissues. Altered proteins are involved in immune response, ATP production, oxidation stress, tumor progression, vascularization and metastasis.

CONCLUSIONS: Protein markers isolated from patients bodyfluids may serve as discriminatory factors in differentiating glioma stages from each other with nano-flow liquid chromatography and Orbitrap mass spectrometer application.

Title: EVALUATION OF QUANTITY AND HETEROGENEITY OF LUNG RESIDENT MESENCHYMAL STEM CELLS (LRMSC) IN ACUTE AND CHRONIC NEUTROPHILIC EXPERIMENTAL ASTHMA MODELS

Author(s): Alicja Walewska[1], Sylwia Księżak[1], Marlena Tynecka[1]

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INTRODUCTION: Allergic asthma is a chronic inflammatory disease. Despite significant progress in understanding the mechanisms of asthma, the role of lung resident mesenchymal stem cells (lrMSC) remains elusive.

AIM OF THE STUDY: Here we aimed to analyze the effects of house dust mite (HDM) extract and cysteine protease (Derp1) induced inflammation on the number and heterogeneity of lrMSC in acute and chronic neutrophilic experimental asthma models.

MATERIALS AND METHODS: Allergic lung inflammation was induced by intranasal application of 100ug/mL HDM or Derp1 extract for 14 days (acute model) or 12 weeks (chronic model). Freshly obtained lungs were dissociated with gentleMACS dissociator and bone marrow was collected. Subsequently, isolated lrMSC, endothelial cells (lrECs), endothelial progenitor cells (lrECs), fibroblasts (lrFibro), and bone marrow-derived (BM) MSCs were stained with a panel of monoclonal antibodies. The cells were analyzed with a FACSCanto II flow cytometer. Data analysis was performed using FlowJo software with classical gating and the tSNE algorithm.

RESULTS: We found a significant decrease in lrMSC number in allergic asthma induced by HDM and Derp1 in a short-term model. Additionally, the number of lrMSC is reduced in a long-term asthma model. Interestingly, lrFibro number is a significant increase in a short-term model. Moreover, lrEPCs number is decreased by Derp1 in a short- and long-term model. However, we did not find significant changes in number of lrECs in the experimental asthma model. Interestingly, the number of BM-MSC is reduced in the long-term model. Moreover, we found heterogeneity within CD29 expression on the surface of lrMSC among the analyzed groups in a short-term neutrophilic asthma model.

CONCLUSIONS: In summary, we showed that neutrophilic experimental asthma significantly reduces the quantity of MSCs. Additionally, we observed increased heterogeneity and CD29 expression in lrMSC from neutrophilic asthma lungs. Further studies are needed to understand the role of lrMSC in asthma.

Title: EARLY EFFECTS OF MANUAL THERAPY ON GRIP STRENGTH, DISABILITY AND QUALITY OF LIFE IN PATIENTS WITH CARPAL TUNNEL SYNDROME.

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INTRODUCTION: Carpal tunnel syndrome (CTS) is the most common compression neuropathy with prevalence of 3-5% in general population, raising up to 6% in 19 women over age of 40. So far, little research has been done on the physiotherapeutic treatment of CTS in a clinical setting. The ones conducted, however, present promising results and call for further research in this field.

AIM OF THE STUDY: The aim of the study was to assess the early effects of manual therapy on grip strength, disability and quality of life in CTS patients. The correlation between strength and disability was also assessed.

MATERIALS AND METHODS: In this case-control study, patients diagnosed with CTS in the EMG studies received manual treatment in line with the Maitland concept. We conducted the therapy in 41 patients divided into two groups depending on age, who received 1 therapy per week for 5 weeks. Grip strength of patients was assessed using a dynamometer, disability was assessed using the DASH questionnaire, and quality of life was assessed using VASEQ5D5L. Data was collected before the first treatment and six weeks later.

RESULTS: We observed significant change and medium to large effect scale in both groups in DASH score(<50years old: $p<0,001$; $g=0,84$; >50years old: $p=0,002$; $g=0,77$) and quality of life(<50 years old: $p=0,002$; $g=0,75$; >50 years old $p=0,014$; $g=0,56$). Grip strength improved non-significantly in patients under age of 50 ($p=0,115$; $g=0,35$) and significantly with large effect size in patients over age of 50 ($p<0,001$; $g=1,06$) leading to reduction in mean strength difference from 1,82kg to 0,46kg between groups. There was no correlation between change in DASH score and grip strength in patients under age of 50($p=0,832$; $\rho=0,05$), and there was non-significant medium correlation in patients over age of 50($p=0,161$; $\rho=-0,32$).

CONCLUSIONS: Manual therapy significantly improves quality of life and reduces upper limb disability in patients with carpal tunnel syndrome. Symptoms of CTS other than strength may mainly affect the disability of the upper limb.

Title: THE ASSESSMENT OF THE QUALITY OF LIFE WITH SLEEP DISORDERS AFTER THE AGE OF 60

Author(s): Eliza Oleksy[1], Paulina Kasperska-Dębowska[1], Anna Wojtczak[1]

Tutor(s): prof. dr hab. Kornelia Kędziora-Kornatowska[1]

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INTRODUCTION: People have been more interested in research on the quality of life since the early forties XX century. The concept of quality of life has a multilevel and multidimensional character. The idea of well-being describes the psychological, emotional, social, cognitive, and physical aspects. Quality of life should be understood as subjective well-being and the ability to function in different areas of life, including assessing resources and capabilities.

AIM OF THE STUDY: The main aim of the study was to determine the level of quality of life by FACIT scale in people with good and impaired quality of sleep examined by the Epworth scale.

MATERIALS AND METHODS: The study included 102 people hospitalized in the Geriatric ward. The research group was about 60-92 years old. The average age in the research group was 77,28 years old. To evaluate the quality of life (in general) for people with excellent and impaired sleep quality, the FACIT scale and Epworth scale were used. Statistical analysis was carried out based on the Shapiro-Wilk test, U Mann-Whitney test, and ANOVA. The level of statistical significance was set at $p \leq 0.05$.

RESULTS: Good quality of sleep has a significant impact on the functioning in the areas such as the number of sleep hours (total), physical activity, functioning in daily life, spiritual well-being, emotional well-being, quality of life (in general).

CONCLUSIONS: Good sleep quality has a significant impact on the functioning of the areas, i.e., the number of sleepless hours (total), physical performance, functioning in everyday life, spiritual well-being, emotional well-being, and quality of life. There is a need to conduct in-depth studies on the quality of life of older adults with sleep disorders in the Polish population. After completing a systematic review of scientific work, research on similar subjects has not been resolved.

Case report I

Internal Diseases

Title: SPLENIC CYST MISDIAGNOSED AS ECHINOCOCCOSIS AND LYMPHANGIOMA

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Tutor(s): Irma Kuliavienė, MD[2]

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BACKGROUND: Splenic cysts (SC) are extremely rare clinical findings with 0,07 % incidence. They can be classified as parasitic or non-parasitic. Non-parasitic is divided into true cysts with epithelial lining and pseudocysts without epithelial lining and usually occurring after trauma. True cysts are most common in children and young adults. Generally, SC are asymptomatic and found accidentally during abdominal imaging tests. Although smaller than 5 cm cysts can sometimes regress, larger or symptomatic SC require treatment, usually splenectomy. We present a case of a young woman diagnosed with SC after splenectomy.

CASE REPORT: A 19-year-old female was investigated after she had a long-lasting fever and swollen lymph nodes. Complete blood count, biochemical blood and infectious tests showed no abnormalities and CRP was 5 mg/l (normal range 0-5 mg/l). The patient underwent abdominal ultrasound showing 8,0 x 6,5 cm size mass in the spleen and 0,3 cm size polyp inside the gallbladder. CT showed regular size spleen with frontally located 8,5 x 7,8 x 7,7 cm size thin-walled cystic structure with small calcinates indicating echinococcus cyst. Other organs were without significant changes. Doctors investigated the patient with MRI searching for other echinococcus cysts but could not find any. Spleen cyst compared to CT remained similar in size and no extra masses were detected. It was decided that these signs indicate lymphangioma with high risk of spontaneous or traumatic spleen rupture, so the patient was sent for a splenectomy. After surgery, cytological test showed no signs of cancer cells while histological examination showed spleen with blood consisting cyst and final diagnosis was serous spleen cyst. The patient was discharged from the hospital with recommendations to get requirable vaccination.

CONCLUSIONS: This case represents how challenging it can be to diagnose SC correctly. While usually SC are without any clear symptoms, it becomes more difficult to get the right diagnosis even with the wide spectrum of examination. This clinical finding might mimic other diseases, as in this case – echinococcosis and lymphangioma. Even if SP are benign masses, larger than 5 cm or symptomatic cysts should be treated as it can cause complications such as rupture, haemorrhage or infection. Large SC should be managed surgically – using either partial or total splenectomy, both providing successful treatment.

Title: A RARE CASE OF AZATHIOPRINE HYPERSENSITIVITY SYNDROME IN PATIENT WITH ULCERATIVE COLITIS

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BACKGROUND: Azathioprine is an immunosuppressive drug used to treat various autoimmune conditions, including inflammatory bowel diseases like ulcerative colitis (UC). Azathioprine hypersensitivity syndrome (AHS) is a rare side effect that may occur in the first days or weeks of the initiation of therapy and is seen in only about 2 % of patients. This side effect of Azathioprine is often under-recognized because it might mimic infection with symptoms like fever and chills or can be considered as an exacerbation of the disease. We present a case of a young man with UC who have experienced AHS.

CASE REPORT: A 28-year-old male was suffering bloody stools and diarrhoea since August 2021. He underwent fibrocolonoscopy, signs of UC were detected (MAYO 2), so he was sent to gastroenterologists. Patient had a panendoscopy with biopsy and histological examination showing peptic duodenitis, gastritis and positive Helicobacter pylori. He also underwent MRI showing changes common to UC in the distal segment of the colon. The man was prescribed with Cefuroxime, Metronidazole, Pantoprazole, Prednisolone and Azathioprine. Three days later the patient felt epigastric and joints pain, coughed and had a fever. He went to the emergency department and elevated inflammatory markers were found. COVID-19 test was negative and chest X-ray showed no significant changes, so the patient was sent to gastroenterologists. CRB, WBC, PLT were elevated. Salmonella and shigella stool tests were negative. Also, there was no sign of CMV, chlamydia or mycoplasma. Abdominal CT showed no indication of fistulas or paraproctitis. After finding no signs of other infection, Azathioprine was discontinued and a few days later the patient was absent of fever, pain and inflammatory markers decreased.

CONCLUSIONS: This case represents the clinical manifestation of AHS that was suspected to be an immune response to a new infection or exacerbation of UC and shows that doctors should be aware of these symptoms to avoid misdiagnosis. Despite the fact that AHS is an extremely rare side effect of Azathioprine, it is really important to recognise it quickly because it might occur not only as fever or gastrointestinal symptoms but it can also cause dysfunction of other organs such as liver and kidney, can lead to hypotension, congestive heart failure, cardiogenic shock and a complex of it might even be fatal.

Title: HEY, SHERLOCK! SEARCH FOR A TRENCH!

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BACKGROUND: Trench fever is an infectious disease caused by the bacterium Bartonella quintana, transmitted by body louse, which occurred almost exclusively during the war among the frontline soldiers. Currently B. quintana causes sporadic infections and risk factors include impaired immune system, poor socio-economic and hygienic conditions. The onset is usually sudden with nonspecific symptoms. Occasionally endocarditis is observed. Serological testing is used to obtain diagnosis.

CASE REPORT: A 54-year-old man with no history of chronic disease, without permanent residence, reported to the ER due to profuse nose bleeding for 3 days. Because of deterioration of renal function he was referred to the Department of Nephrology. The examination revealed haemorrhagic rash on the legs, moderate peripheral edema and pale skin. The lab results showed increased creatinine level, active urine sediment, elevated inflammatory and cardiac injury markers. As there was no obvious cause of Acute Kidney Injury, a kidney biopsy was performed, which showed membrano-prolifertive glomerulonephritis (MPGN) with fibrocellular crescents – a pattern compatible with infectious processes. The search for a source started and echocardiography showed vegetation on the edge of the non-coronal aortic valve leaflet. Multiply blood cultures were negative. In search of rare causes of infective endocarditis, serologic tests were run and revealed positive IgG antibodies against Bartonella quintana. Acute kidney injury in the course of infective endocarditis due to B. quintana was diagnosed. Patient was referred to the Department of Cardiac Surgery for surgical treatment.

CONCLUSIONS: Acute kidney injury as a consequence of MPGN in the course of infective endocarditis due to trench fever is extremely rare. This case confirms that the percentage of culture negative endocarditis depends on clinical inquisitiveness.

Title: A YOUNG PATIENT WITH DECOMPENSATED ALCOHOLIC LIVER CIRRHOSIS

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BACKGROUND: Hepatic cirrhosis is considered when scar tissue replaces normal liver tissue, disrupting blood flow and then liver function. Hepatic cirrhosis is more common in adults ages 45 to 54. Mortality rates have been increasing in the US since 2009. Cirrhosis can cause portal hypertension and/or hepatic dysfunction which can lead to many complications including ascites, varices and others. Various factors damage the liver, including viral infections, toxins, hereditary conditions, autoimmune processes and alcohol consumption. Therefore, in this case we will present a patient with alcoholic hepatic cirrhosis.

CASE REPORT: A 36 year old woman was admitted to the emergency department(ED) due to jaundice, swelling legs and increased abdominal volume. From the anamnesis it is known that a week ago the patient was consulted by gastroenterologist, was diagnosed with liver cirrhosis (Child-Pugh10, MELD23b) and alcohol abuse was identified. However the patient disagreed to be hospitalized. The patient returned to ED as her condition got worse. During the physical examination, there was jaundice in visible mucous and sclera, increased abdomen volume, prominent superficial vascular network and both legs were edematous. Lab results showed inflammation, hyperbilirubinemia, hypoalbuminemia, hypoproteinemia and hyperammonemia. Urinalysis revealed glucosuria, proteinuria, bilirubinuria, urobilinogenuria and leukocyturia. Ultrasound showed cirrhotic liver, severe ascites. Diagnostic paracentesis was performed. 5l of clear fluid was removed. Serum ascites albumin gradient>11g/l indicating portal vein hypertension. Gastroscopy showed esophageal varices. Patient underwent medication treatment and was consulted by a dietitian who prescribed amino acids intravenously. After jaundice went away and blood figures were normal she was sent on an outpatient care.

CONCLUSIONS: More and more young people are diagnosed with alcoholic liver cirrhosis. It is an increasing problem with severe and often deadly results. With young people increasingly consuming alcohol it is not only a medical but also a social problem.

Title: PATIENT WITH CHRONIC RESPIRATORY FAILURE INDUCED BY KYPHOSCOLIOSIS.

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BACKGROUND: Respiratory failure occurs when respiratory disorders impair gas exchange in the lungs and lead to hypoxemia or hypoxemia with hypercapnia. Diseases of the respiratory system are the most common etiology of the development of chronic respiratory failure (CRF). However, cardiovascular, muscular, and neurological diseases as well as chest wall diseases that impair the mechanics of breathing can also lead to the development of CRF. Kyphoscoliosis is defined as a deviation of the normal curvature of the spine in the sagittal and coronal planes. It is an example of conditions weakening the mechanics of breathing.

CASE REPORT: A 50-years-old woman with bronchial asthma treated for about 3 years, arterial hypertension and kyphoscoliosis was admitted to the pulmonology ward due to reported effort dyspnea for months, periodically dry cough and arterial blood gas disturbances of the type of fully compensated respiratory acidosis. Physically, the general condition was stable symmetrical swelling of the lower limbs were visible. Measured SpO2 without oxygen therapy was maintained at approximately 70%. Laboratory tests revealed elevated NT-pro-BNP, D-dimers, transaminases, polycythemia and slightly elevated parameters of inflammation. Blood gas analysis confirmed fully compensated respiratory acidosis. Echokardiography showed the dilation of the right atrium and right ventricle, small fibrosis and calcifications on the aortic valve leaflets and thickened mitral valve leaflets. Non-invasive ventilation (S/T mode, initially EPAP=6 and IPAP=15, then changed into EPAP=4 and IPAP=19) , a nose mask with oxygen set to 2.5 l/min and diuretic treatment were deployed. The maintenance of such treatment allowed for the stabilization of the patient's condition and discharge home with the recommendation of further treatment with the help of home ventilation care team.

CONCLUSIONS: Structural abnormalities frequently affect pulmonary function, resulting in reduced exercise tolerance and ventilation. The treatment of choice for patients with CRF secondary to severe kyphoscoliosis is non-invasive positive-pressure ventilation (NPPV). The development of cor pulmonale carries a poor prognosis and a higher risk of mortality. Nowadays, it is possible to treat chronic respiratory failure at home thanks to the provision of a long-term home care team and portable ventilators to the patient. The patient does not have to give up on everyday life and initially use the ventilator only at night.

Title: A CASE STUDY OF A PATIENT WITH A SCHWANNOMA TUMOR LOCATED SUBEPITHELIALLY IN THE ESOPHAGEAL MUCOSA

Author(s): Paulina Kasperska-Dębowska[1], Eliza Oleksy[1], Anna Wojtczak[1]

Tutor(s): prof. dr hab. Kornelia Kędziora-Kornatowska[1]

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BACKGROUND: A Schwannoma is a benign, well-defined tumor that arises from Schwann cells that form the myelin sheaths of the peripheral, cranial, or spinal nerves. Schwannomas usually originate from one nerve fiber. Schwannomas can appear anywhere on the body and in people of all ages. Up to 45% of them are located in the head and neck, mainly in the parapharyngeal space. Schwannomas of the neck and head most often occur in the area of __the cerebellopontine angle. Rarely, in less than 1% of cases, a tumor appears in the oropharynx.

CASE REPORT: A 74-year-old patient was admitted to the Geriatrics Clinic to complete the anemia diagnosis and evaluate the cysts in the left kidney. A computed tomography examination of the abdominal cavity, gastroscopy, and colonoscopy under general anesthesia was scheduled for the patient. The patient was admitted to the ward in good general condition, walking, and logical contact. On physical examination, slight swelling and trophic changes in the lower legs were observed. Auscultatory heart rate was abnormally 60-85 beats per minute. The alveolar murmur over the lung fields is slightly muted. Based on endoscopic examinations, the following were diagnosed: stricture of the esophagus, cardia insufficiency, pre-pyloric gastritis, duodenal bulb inflammation, and flat lesion of the cecum type IIA. Sections were taken for histopathological examinations. An endoscopic mucosectomy was performed. As a result of histopathological studies, two cells of the esophagus mucosa showed a visible sub-epithelial tissue of a schwannoma character. The paraepidermal epithelium focally showed signs of hyperplasia. Diffuse inflammatory infiltrates from lymphocytes are visible in the segment of the gastroesophageal junction.

CONCLUSIONS: A benign neoplastic lesion of the Schwannoma type can appear in virtually any body area, in people of any age. Proper diagnostics allows you to establish the diagnosis and plan appropriate treatment. Schwannoma therapy depends on the location of the tumor, its size, and accompanying symptoms. It is essential to monitor the disease, i.e., observe the change and perform regular, ordered imaging tests. If the tumor grows and causes various ailments, surgery may be indicated. Due to the risk of malignant transformation, radical surgical removal of the cancer is the treatment of choice.

Title: ANEMIA CAUSED BY A RECTAL TUMOR IN A 76-YEAR-OLD FEMALE PATIENT

Author(s): Paulina Kasperska-Dębowska[1], Eliza Oleksy[1], Anna Wojtczak[1]

Tutor(s): prof. dr hab. Kornelia Kędziora-Kornatowska[1]

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BACKGROUND: Rectal cancer is one of the most frequently diagnosed malignant neoplasms in Poland, and its incidence is constantly increasing. In 2017, 3,419 new cases were recorded in men and 2,198 in women. This places cancer in 6th place for men and 9th for women. The number of deaths in 2017 was 2,161 for men (7th place) and 1,377 for women (10th place). Clinical symptoms of rectal cancer depend on the location and stage of the tumor. Lower bumps can cause a feeling of incomplete bowel movements, fecal and gas incontinence, and pain in bowel movements.

CASE REPORT: Due to severe anemia, a patient with multiple diseases is urgently admitted to the Geriatrics Clinic. The patient reported passing stools with an admixture of blood. In laboratory tests: elevated inflammatory parameters, severe normocytic anemia with Hgb-6.5 g / dl, formal renal parameters, significantly elevated D-dimers, BNP, and CEA. During hospitalization, a colonoscopy was performed, and a rectal tumor occluding the intestinal lumen was found. Computed tomography of the abdominal cavity and pelvis with contrast showed a thickening of the rectal wall and numerous enlarged lymph nodes. After cardiological consultation due to pulmonary embolism and dual antiplatelet therapy, it was recommended to discontinue ASA and maintain ticagrelor for up to six months after PTCA. The implantation of a filter into the inferior vena cava was performed due to the absolute contraindication to the anticoagulant treatment of pulmonary embolism—periprocedural period without complications. Empirical antibiotic therapy, anti-hemorrhagic therapy, and fluid therapy were applied. Relative clinical improvement was established, and rectal bleeding was resolved. The patient was issued an oncological diagnosis and treatment card.

CONCLUSIONS: Rectal cancer is usually sporadic - somatic mutations cause the vast majority of disease cases. Rectal cancer is often suspected accidentally - while performing other tests (e.g., blood count - anemia, abdominal ultrasound - metastases in the liver, per rectal examinations (through the rectum) during the diagnosis of prostate diseases). The best prognosis in patients with rectal cancer who do not have lymph nodes and distant metastases, and there is no invasion of adjacent organs. There are many treatment options. The sooner a patient is correctly diagnosed, the greater the chances of recovery/survival.

Title: TREATMENT-RESISTANT PARAGANGLIOMA OF THE RETROPERITONEAL SPACE

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BACKGROUND: Paraganglioma is a rare neuroendocrine tumor with the ability to secrete neuropeptides and catecholamines. The most common clinical presentation is hypertension and sympathetic nervous system overactivity. We reported a case of paraganglioma originating from retroperitoneum, which is resistant to standard treatment.

CASE REPORT: A 73-year-old male patient was admitted due to the detection of a tumor in the retroperitoneal space in 04.2019. His past medical history: well-controlled hypertension, type 2 diabetes mellitus, paroxysmal atrial fibrillation. Computed tomography (CT) of the abdomen revealed an 8x6x8cm solid heterogeneous tumor in the retroperitoneal. High scores of methoxy derivatives of catecholamines were found in plasma (normetanephrine - 7099pg/ml; the norm is to 200pg/ml) and urine. Histopathological examination confirmed a paraganglioma. Whole-body scintigraphy and SPECT at 24, 48 and 72 hours reveal areas of high I-131MIBG-uptake in the tumor. On 11.2019 the patient was started on I-131MIBG treatment. He received 4 doses every 5 months. The follow-up US and scintigraphy after each treatment revealed that the tumor size remained unchanged, no metastases were found. In 05.2021 intensity-modulated radiation therapy (IMRT) was introduced for 6 weeks with a total dose of 4860cGy/T. A PET scan performed after this treatment showed no change in tumor mass. The patient is currently under observation and waiting for a follow-up CT scan. Oncologists plan to introduce chemotherapy in case of unsuccessful treatment.

CONCLUSIONS: Although this patient was symptomatic with scintigraphy I-MIBG-uptake, the tumor was resistant to treatment. This prompts the search for new therapeutic pathways and multidisciplinary approaches between an experienced endocrinologist, radiologist, genetics, pathologist, oncologist.

Title: ATYPICAL CHRONIC MYELOID LEUKEMIA – RARE DISEASE WITH POOR PROGNOSIS: CASE REPORT.

Author(s): Hubert Niewiński[1], Klaudia Cieśluk

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BACKGROUND: Atypical Chronic Myeloid Leukemia (aCML) is a rare disease that belongs to MDS/MPS overlap syndromes, i.e. shows signs of both dysplasia and proliferation. There are no specific genetic or molecular markers available to diagnose aCML and it is therefore a diagnosis of exclusion. This disease has poor prognosis - the median survival is 22 months, and there are no precise treatment guidelines. Current consensus says to perform stem cell transplantation, and a comprehensive evaluation for driver mutations should be performed to screen for the potential use of targeted agents.

CASE REPORT: A 58-year-old patient was admitted to hospital due to a suspected bone marrow proliferative disease. For a long time the patient complained of increasing weakness, decreased exercise tolerance - typical symptoms of a systemic disease. Complete blood count showed: leukocytosis (57 G/L) with an increase in the absolute number of each type of leukocytes. Haemoglobin (12,4 g/dl) and platelets (114 G/L) were slightly decreased. Granulocyte precursor cells were observed in the microscopic blood smear, as well as hypercellular bone marrow with granulocytic proliferation and dysplasia in the myelogram. Cytogenetic test revealed a normal karyotype - 46, XY, and JAK2, BCR /ABL mutations were not found in the molecular analysis. The patient started treatment with hydroxycarbamide and pegylated-interferon-_-2a (PEG-IFN-_-2a). After 7 months the patient was again admitted to Hematology Department. In microscopic blood smear increase in blasts, promielocytes, myelocytes and metamyelocytes was noticed compared to previous hospitalization. The patient was offered a bone marrow transplant, however due to depressive symptoms he developed after PEG-INF- _-2a and complications of alcohol abuse, other forms of therapy were considered.

CONCLUSIONS: Although the only chance to cure aCML is bone marrow transplant, the procedure which carries a huge risk of death. Therefore the patient should be informed about the possible benefits and risks of the bone marrow transplant procedure. However, in case of patients unfit or unwilling to undergo this procedure, there are new potential treatments worth considering that can be found in literature and may prolong the patient's life. That is why it is so important in hematology to adjust the therapy to the patient's current condition and increace potential chance of success even in rare diseases with poor prognosis.

Title: GLYCOJITO - WHY YOU SHOULDN'T HAVE ETHYLENE GLYCOL IN YOUR MINI-BAR

Author(s): Daniel Iwo Obrębski[1], Michał Sak[1]

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BACKGROUND: BACKGROUND Intoxications are common situations in Emergency Departments (EDs), nevertheless ethylene glycol poisonings are rarely observed. They account for 0,5-1% of all toxic substance related ED visits in Poland. Ethylene glycol intoxication carries a substantial risk of death and health impairment.

CASE REPORT: CASE REPORT An 68-year-old man was admitted at the ED with a severe diffuse burning pain radiating to chest that he associated with consumption of fatty meal. Patient had a history of multiple coronary events (treated with CABG, PCI and fibrinolysis), heart failure, type 2 diabetes mellitus, hypertension, dyslipidemia, and past alcohol abuse. On admission he presented with extremely elevated liver enzymes (AST 10085 IU/mL, ALT 7348 IU/mL), leukopenia (1,7 10^3/uL), high blood glucose (360mg/dL) and RBBB + LAH + A-V first degree block in ECG. Patient was admitted to the Cardiology Department where acute coronary syndrome was excluded but deterioration of renal function was observed (anuria and rising creatinine level). Pre- and post-renal acute kidney injury (AKI) was excluded and the patient was transferred to the Nephrology Department. As there was no clear cause of AKI, kidney biopsy was performed, which revealed extensive incrustations of calcium oxalate characteristic for ethylene glycol intoxication. Patient until discharge denied consumption of any alcohol. During the hospital stay gradual increase in diuresis and improvement of kidney function was observed. He was discharged after 3 weeks of hospitalization.

CONCLUSIONS: CONCLUSION Ethylene glycol intoxication is a serious health threat and is difficult to diagnose, especially in patients with multimorbidity. It usually presents with AKI, liver injury and metabolic acidosis, all caused by toxic metabolites of ethylene glycol.

Title: DIAGNOSTIC DIFFICULTIES AND NOVEL TREATMENT OF PATIENT WITH RENDU-OSLER-WEBER DISEASE

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BACKGROUND: We will present the case of 53-year-old patient with Rendu-Osler-Weber disease. The patient was admitted to the Hematology Department for bevacizumab treatment. The disease occurs in many family members and its symptoms appear in the 6-7 decade of life. The patient first symptoms appeared in 2013 as nosebleeds, heavy periods and iron-deficiency anemia additionally multiple liver hemangiomas were found. In 2014, the patient had the first episode of anemia requiring blood transfusion.

CASE REPORT: In April 2016, a diagnosis of Rendu-Osler-Weber disease, also known as hereditary haemorrhagic telengiectasia (HHT) was established, based on mutiple liver hemangiomas, family history and recurrent epistaxis. From the beginning of 2019, the symptoms of the disease intensified. Recurrent gastrointestinal bleeding was observed with anemization, transfusion requirement was 2-3 unit /month. Later a severe clinical course of the syndrome with organ complications was found. Numerous gastric vascular changes, observed in repeated gastroscopy, were treated with argon plasma coagulation. 20.12.2019 the patient was given the first dose of bevacizumab 200 mg IV. The day after, after discharge from the hematology ward, she went to the surgery ward due to massive gastrointestinal bleeding. 4 units red blood cells and 2 units FFP were transfused. After 3 weeks she was re-admitted to the hematology ward for the second dose of bevecizumab. On admission, the patient was in mediocre condition with epigastric pain and anemization (Hb - 6.5g%). Performed gastroscopy revealed no evidence of bleeding. The patient was transfused with 2 red blood cell units and received a second dose of bevacizumab. It was the last transfusion.

CONCLUSIONS: After control tests, the fourth dose of the drug was given and it was decided to extend the intervals between subsequent doses to 5 weeks due to significant improvement in haemoglobin concentration. Bevacizumab is a promising line of treatment for HHT patients with refractory anemia and may be useful as a bridge therapy awaiting for liver transplantation.

Title: COVID-19 ASSOCIATED SCHWARTZ-BARTTER SYNDROME

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BACKGROUND: In most clinical cases, SARS – CoV-2 infection manifests as respiratory tract disease, with varying degrees of severity. However, other systems and organs may also be involved during its course. The rare Syndrome of Inappropriate Antidiuretic Hormone Hypersecretion (SIADH or Schwartz-Bartter syndrome), caused by excessive secretion of vasopressin, is characterized by impaired water excretion. It leads to hyponatremia with isovolemia or hypervolemia. The syndrome results in a complex of symptoms including muscle pain and weakness, cramps, apathy, nausea, fatigue, and irritability.

CASE REPORT: A 68-year-old male, without chronic diseases, was admitted to the hospital with suspected COVID-19 pneumonia. Physical examination, laboratory tests, and HRCT confirmed interstitial pneumonia. There was increasing resting dyspnea SpO2 84%, elevated IL-6 level 38.2 pg/ml, D-dimers 5.46 _g/ml, and mild hyponatremia. Pulmonary embolism was ruled out. The treatment resulted in clinical improvement. Renal function parameters were within normal limits, diuresis up to 3 l/day. After transfer to another department for continued rehabilitation he was observed to have worsening symptoms of hyponatremia with isovolemia Na+ 124.3 mmol/l, polyuria (diuresis > 10 l/day), weakness, and lower exercise tolerance. There was a decreased urine specific gravity 1.002 g/cm3, decreased serum osmolality 261 mOsm/kg, decreased urine osmolality 295 mOsm/kg, and increased urinary Na+ concentration > 30 mmol/l. No pituitary or hypothalamic abnormalities were found on MRI. Diurnal cortisol, ACTH, LH, and FSH values were normal. The suspicion of Schwartz-Bartter syndrome was raised. Treatment resulted in a reduction of diuresis below 4 l/day, equalization of natremia, normalization of urine specific gravity values, serum, and urine osmolality.

CONCLUSIONS: SARS-CoV-2 infection can cause multiple symptoms with pulmonary and extrapulmonary involvement. In the above-presented case, SARS – CoV-2 infection and massive pneumonia appear to be the cause of Schwartz-Bartter syndrome. Increased levels of proinflammatory cytokines may lead to ventilation-perfusion abnormalities to the extent that they may account for inadequate ADH secretion by a pathway other than the osmotic mechanism of vasopressin release. SARS-CoV-2 infection can have surprising manifestations and a diverse, atypical clinical picture.

Title: IF A NEPHROLOGIST HEARS A HOOFBEATS, WILL IT MAKE HIM THINK ABOUT ZEBRAS?

Author(s): Aleksandra Rusak[1], Izabela Malczyńska[1], Gabriela Krych[1]

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BACKGROUND: Chronic kidney disease is the most common cause of secondary hypertension. It develops in above 90% patients with CKD and progresses with renal function deterioration. Noteworthy, the presence of CKD does not exclude other causes of secondary hypertension. Thus, It is crucial to be vigilant if all pieces do not fit a clinical image.

CASE REPORT: A 62-year-old patient with a 20-year history of diabetes mellitus type 2 and drug-resistant hypertension was admitted to the hospital with impaired kidney function (creatinine on admission 5.70 mg/dL, estimated GFR was 11 ml/min) and elevated blood pressure (200/100 mmHg). Physical examination was unremarkable. Laboratory tests showed indices of kidney disease chronicity (normocytic anaemia, secondary hyperparathyroidism, stable increased creatinine). Unexpectedly, the patient had compensated metabolic alkalosis and serum potassium level in the lower range despite treatment with aldosterone antagonist (50 mg of spironolactone per day). In the context of long-lasting drug-resistant hypertension the search for hyperaldosteronism was undertaken. Laboratory results revealed increased ratio of aldosterone to plasma renin activity and normal adrenal glands in CT scan and diagnosis of Conn's syndrome was made.

CONCLUSIONS: In conclusion, a resistant hypertension in the course of the undiagnosed hyperaldosteronism led to kidney injury and kidney failure. It is important to remember that although the vast majority of a secondary hypertension is caused by renal disease, its presence does not preclude other causes of secondary hypertension.

Title: EXACERBATION OF NEUROPSYCHIATRIC LUPUS ERYTHEMATOSUS WITH TETRAPARESIS AND EPILEPSY.

Author(s): Emilia Saj[1]

Tutor(s): dr hab. n. med. Bogdan Kolarz[1]

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BACKGROUND: Systemic lupus erythematosus is an autoimmune disease that develops as a result of complex disorders of the immune system that lead to chronic inflammation in many tissues and organs. Changes in the nervous system - neuropsychiatric lupus occurs in about 30-40% of patients. It has been shown that neuropsychiatric symptoms are most often accompanied by hematological disturbances and gastrointestinal involvement. The aim of the case report is to present the diversity of the picture and clinical course of systemic lupus erythematosus.

CASE REPORT: A 24-year-old patient was admitted to the Clinic with exacerbation of systemic lupus erythematosus. The patient discontinued the medications she was taking without medical consultation, due to malaise. This caused progressive weakness of the upper and lower limbs along with tremors during movements and trouble with walking. Admitted to the ward in a serious condition with impaired consciousness and cognitive functions, severely weakened, complaining of constipation, abdominal pain, and noticed blood in the stool. Abdominal CT scan showed a heterogeneous pancreas, extensive swelling of the surrounding fat tissue. Acute pancreatitis was diagnosed at significantly elevated lipase levels. Magnetic resonance imaging of the brain and spinal cord in the cervical segment showed clear cortical atrophy and EMG showed a myogenic record. During hospitalization at the Clinic, a seizure occurred. The patient was transferred to the ICU. Features of hemorrhagic diathesis, decrease in hemoglobin and thrombocytopenia were observed. 6 plasmapheresis treatments were performed, IVIG was used and a total of 3 Endoxan infusions with Uromitexan and Biseptol were administered. The treatment, resulted in a significant improvement in health.

CONCLUSIONS: Systemic lupus erythematosus is characterized by a considerable diversity of picture and clinical course. Some patients wit lupus experience a variety of neuropsychiatric symptoms, the coexistence has a negative impact on health-related quality of life. In addition, stopping taking the medications can be catastrophic, leading to severe deterioration of health. In this case, the patient should be under the constant care of a rheumatologist, neurologist and psychologist to avoid a similar situation in the future.

Title: GIANT CELL ARTERITIS THE REASON FOR FEVER OF UNKNOWN CAUSE.

Author(s): Emilia Saj[1]

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BACKGROUND: Giant cell arteritis is an inflammation of the arteries that usually affects the aorta and / or it's major branches, particularly the branches of the carotid and vertebral arteries. The etiology and pathogenesis are unknown. The disease usually begins with a headache, most often in the temporal or occipital area, accompanied by painful swelling of the temporal artery. Patients experience also systemic symptoms: fever, weakness, weight loss.

CASE REPORT: A 66-year-old woman was admitted to the Department of Internal Diseases due to a 2-month fever, headache in the occipital area, muscle pain and weight loss. The results of laboratory tests showed high values of inflammatory markers. Chest CT with contrast showed a 4 mm thick wall of the thoracic aorta. Ultrasound examination of the flows in the carotid arteries in the division of the left common carotid artery on the anterior wall showed a thickening of the IM complex with calcifications to approximately 1.3 mm. It also showed that the wall of the left temporal artery was thickened to approx. 0.8 mm on a long run, the flow channel was clearly narrowed and the susceptibility to pressure was reduced. This picture corresponded to the inflammatory changes in the temporal arteries. In the treatment, intravenous drip infusion of Sol-Medrol in a dose of 250 mg was used, which resulted in the improvement of the clinical condition and the relief of symptoms. On the basis of the clinical picture and extensive diagnostics, giant cell arteritis was diagnosed.

CONCLUSIONS: Analyzing the above clinical description, it should be stated that in some cases the path to determining the cause of fever of unknown cause is long and difficult. The diagnosis of giant cell arteritis is usually delayed, mainly due to the elderly age of the patients. It is important to diagnose and treat the disease in the initial stage of the disease, which protects against long-term consequences: blindness or stroke.

Title: PATIENT WITH OVERLAP SYNDROME – CASE REPORT

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BACKGROUND: Autoimmune rheumatic diseases consist of a group of disorders with similar clinical, laboratory, and immunological manifestations. Pathogenesis is based on the development of an excessive, antigen-driven, self-reactive immune response that is an consequence of genetic predisposition and environmental factors. Connective tissue diseases include e.g. systemic sclerosis, dermatomyositis or polymyositis, Sjögren's syndrome, rheumatoid arthritis, systemic lupus erythematosus. If the patient has two or more connective tissue diseases and a specific serological markers, identifying overlap syndrome is possible.

CASE REPORT: A 27-year-old man had paroxysmal fever conditions, night sweats, erythema-like skin changes on forearms and lower legs, feeling of progressive muscle weakness, especially proximal, and dry mouth feeling. The lab tests revealed the presence of anti-nuclear antibodies and high concentrations of RNP, Sm, SSA, SSB and anti-dsDNA, reduction of levels of complement components C3 and C4, leukopenia and lymphopenia. The patient was diagnosed with the overlap syndrome: systemic lupus erythematosus, dermatomyositis, and Sjogren's syndrome. Intravenous methylprednisolone was used in the treatment, then oral steroid were continued, and after reduction of concentrations of transaminases, cyclosporine was administrated. Treatment improved general status of the patient and myopathy symptoms. The patient was hospitalized in 2022 due to parenchymal liver damage. Mycophenolate mofetil was included in the treatment, it was discontinued because of adverse effects and intravenous immunoglobulins were administered.

CONCLUSIONS: An overlapping syndrome is difficult to treat due to its multi-system nature, which necessitates a symptomatic therapeutic approach and careful control of drug doses in order to reduce side effects while controlling disease activity.

Title: PRIMARY BILIARY CHOLANGITIS IN PATIENT WITH COLITIS ULCEROSA: CASE REPORT.

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Tutor(s): lek. med. Małgorzata Twardowska-Kawalec[1]

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BACKGROUND: Primary biliary cholangitis (PBC) is an autoimmune disease that causes destructive alterations in small and medium-sized bile ducts due to necrosis of intrahepatic biliary epithelial cells. The vast majority of patients are women at the ages of 40 and 65. The presence of PBC predispose to others autoimmune comorbidities. However, inflammatory bowel diseases (IBD), including colitis ulcerosa, often comorbid with primary sclerosing cholangitis (PSC), whereas association with PBS is rare.

CASE REPORT: A twenty-seven-year-old man was admitted to the hepatology department due to cholestasis of unknown aetiology. The blood tests showed liver enzymes elevation and presence of ANA and ANCA in a significant titer. MRC showed no abnormalities. Liver biopsy was performed in which primary biliary cholangitis was diagnosed. Ursodeoxycholic acid and cholestyramine were administered. One year later, the patient's condition aggravated. He lost 11 kg over 12 months. He also reported alternating diarrhoea and constipation, steatorrhoea, nausea and hypertension. Furthermore, he developed jaundice which had been observed for the first time. MR scan detected increased number of enlarged lymph nodes in the liver hilum and periaortic area as well as splenomegaly. He was diagnosed with colitis ulcerosa and started to be treated with mesalazine. Due to the persistent proteinuria (5g/24h) and hypoalbuminemia in the nephrology department, a kidney biopsy was performed which showed type II / III membranous nephropathy with immunological deposits and secondary FSGS. ACEI doses were increased to reduce proteinuria. The patient remains under the care of outpatient clinics.

CONCLUSIONS: The coexistence of PBC and colitis ulcerosa is rare, but IBD should be taken into account in the differential diagnosis of atypical gastrointestinal symptoms in patients with PBC. Moreover, patients with PBC should be regularly monitored in order to detect progression of the primary disorder and possible comorbidities. Although the prevalence of PBC in women is significantly higher, it can also be diagnosed in men.

Title: NOT JUST SALT - ANOTHER SIDE OF HYPERTENSION

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BACKGROUND: Renovascular hypertension (RVHT) is one of the most common causes of secondary hypertension. It is also a factor responsible for the development of ischemic nephropathy leading to renal failure. Renal artery stenosis (RAS) is responsible in about 80% of cases, followed by fibromuscular dysplasia. As a result of stenosis of the main renal artery, or other arteries supplying the kidneys, the pressure in the supply arteries decreases, which causes increased activity of the renin-angiotensin system. This typically leads to severe, treatment-resistant hypertension.

CASE REPORT: An 81-year-old man was admitted to the Department of Internal Medicine and Hypertension due to high blood pressure. Medical history included limited information, and medical records were not available. Laboratory results showed a high level of NT-proBNP. Echocardiography revealed hypertrophy of both ventricles. Angiotensin-converting enzyme inhibitor (ACEI) and thiazide were applied. A bruit was heard over the left renal artery. Doppler ultrasound showed narrowing of both renal arteries. Due to that, ACEI was replaced with doxazosin, indapamide with spironolactone. The dose of amlodipine was increased. A 91-year-old man with well-controlled hypertension, aortic aneurysm, chronic kidney disease and other comorbidities was admitted due to mid-abdomen ache. Laboratory results showed high level of creatinine and NT-proBNP. Angio-CT scan exposed 80% stenosis of the right renal artery and critical stenosis of two independent left renal arteries. Due to that, ACEI therapy was discontinued. Doses of beta blockers and torasemide were increased and lercanidipine was added to the regimen. Despite bilateral RAS, both patients responded positively to the new hypotensive treatment and after a few days they were discharged from the hospital.

CONCLUSIONS: Due to the similarity between primary hypertension and secondary renovascular hypertension, diagnosis of RVHT based on clinical symptoms is difficult. The first episode before 30 or after 50 years of age, severe and resistant hypertension in properly treated patients, abdominal bruits, and sudden worsening of previously well-controlled hypertension may raise suspicion of this etiology. In such patients, Doppler ultrasonography should be considered the first choice examination. Accurate diagnosis is vital as RVHT can lead to major complications and patients with bilateral RAS require medication modifications.

Title: UNEXPECTED HOSPITAL READMISSION AS A RARE COMPLICATION OF COVID-19

Author(s): Aleksandra Zalewska[1], Ewelina Wojciechowska[1], Aleksandra Bowtruczuk[1], Małgorzata Gryciuk[1]

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BACKGROUND: Stevens-Johnson syndrome (SJS) is a rare condition, characterized by widespread epidermal necrosis and sloughing of the skin. Drugs are the major cause of SJS but infections, such as M. pneumoniae may also lead to this disease. On the other hand, cutaneous manifestations of COVID_19 are being increasingly reported, from different types of skin rashes to atypical forms. Literature highlights that cutaneous manifestation of SARS-CoV_2 infection presents as lesions with varying morphology, such as exanthema or chilblain-like lesion, known also as COVID-19 toes. Few cases of STS in COVID-19 patients were reported as well.

CASE REPORT: 86-years old female, with multiple comorbidities, was admitted to the Department of Internal Medicine and Hypertension due to cirrhosis of unknown cause and COVID-19. The physical examination indicated ascites, hepatomegaly, and lower limb edema. Laboratory tests revealed normocytic anemia, hyponatremia, elevated liver enzymes, as well as ANA-2 and AMA antibodies. Based on clinical image, laboratory and diagnostic imaging findings, the diagnosis of primary biliary cholangitis was established. The patient was hospitalized for two weeks and was discharged in good general condition. Three days later, the patient was admitted again due to deterioration of the general condition and verbal communication, low blood pressure, fatigue, oral and perioral bleeding and skin lesions. During dermatological consultation SJS was diagnosed due to the skin and mucous presentation as bleeding, ulceration and hemorrhagic crusting of the lips. Glicocorticosteriods, tranexamic acid, antibiotics, fresh frozen plasma and etamsylate were administered. Unfortunately, despite the efforts and the most accurate therapy, the patient passed away after 15 days of hospitalization.

CONCLUSIONS: Although skin manifestation or SJS is a rare finding in virus infections and drug use, it is associated with significant morbidity and mortality, and early diagnosis and treatment are critical in achieving favorable outcomes for patients. In this case, the difficulty in assessment of the cause of SJS may be affected by overlapping both COVID-19 and usage of multiple medications. Moreover, COVID_19 produces an inflammatory environment that may reduce the threshold of drug reactions and may predispose COVID patients to SJS.

Title: A CASE OF CAROLI SYNDROME

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Tutor(s): Gintarė Dargienė[2]

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BACKGROUND: Caroli syndrome (CS) is a malformation of the bile ducts related to a congenital liver fibrosis. This syndrome is usually diagnosed before the age of 30 and the causes are poorly understood. Typical symptoms are fever, jaundice and pain under the right costal arch. CS affects only 1 in 100000 individuals and is more prevalent in Japan. It can cause complications such as liver cirrhosis, portal hypertension and varicose nodes in the oesophagus and stomach. Although, long term prognosis depends on the severity and frequency of the recurrent cholangitis. In this case we present a young male who was diagnosed with CS.

CASE REPORT: A 29-year-old male was urgently sent to the gastroenterologists due to severe bleeding from gastrointestinal (GI) tract. Patient complaints were general weakness, nausea, vomiting with blood clots and black stools. During the course of four years he bled from the GI four times and was diagnosed with oesophageal varices (EV) and cirrhosis. The patient was treated with ligation of EV and sclerotherapy. Based on medical records, untreated hepatitis C and usage of alcohol promoted the development of cirrhosis. The patient also underwent laparoscopic cholecystectomy due to gallstones. During his last visit the man was present with ascites, increased cholestatic markers and IgG. Biopsy of the liver showed minor cirrhotic nodules and bile canaliculus proliferation pointing to unknown origin of cirrhosis. During abdominal CT mural thrombus in the superior mesenteric vein was found and Nadroparin calcium was given. Thinking of IgG4-associated cholangitis Prednisolone was prescribed but without any effect. MRI was performed and dilated intrahepatic bile ducts with sac-like cystic masses were found, so the final diagnosis was CS. The patient was immediately put on the liver transplant waiting list.

CONCLUSIONS: Since CS rarely occurs, it can easily be mistaken with other diseases, such as liver cirrhosis or primary sclerosing cholangitis. When correctly diagnosed, a proper treatment can be promptly chosen. As in our presented case, a liver transplant could be considered as a form of treatment as it allows the patient to avoid severe complications, for example, sepsis and cholangiosarcoma. After the transplantation the patient can regain proper liver function and lead a normal life.

Case report II

Neurology

Title: A RARE CASE OF GENERALIZED TETANUS

Author(s): Eglė Vaišnoraitė[1], Gabrielė Žūkaitė[1]

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BACKGROUND: Tetanus is a severe bacterial nervous system infection caused by Clostridium tetani with symptoms such as painful muscle spasms, rigidity of muscles and fever. The disease is worldwide but due to universal vaccination only sporadic cases are reported. Tetanus is an extremely rare illness, only 30 cases per year are being reported in the USA. This disease is very dangerous and might lead to fatal outcomes. Generalized tetanus (GT) is the most frequent and most severe type of this infection with a mortality rate up to 30%. In this case we present an older woman who was diagnosed with GT and managed to survive.

CASE REPORT: A 79-year-old female patient was admitted to the Department of Geriatrics. The patient presented with general weakness, dizziness, impaired hearing, vision and speech. As the neurologic symptoms progressed and convulsions appeared, respiratory failure became more apparent. The woman was transferred to the intensive care unit. After being diagnosed with tetanus, she was treated with immunoglobulin, antibiotics, infusion therapy and was constantly mechanically ventilated. Because of the recurring convulsions the patient was heavily sedated with high doses of benzodiazepines and myorelaxants, a tracheostomy tube was placed. After her condition was stabilized, she was transferred to the Department of Neurology, where infusion therapy was continued. As the patient's state got better, she started physiotherapy and speech therapy. The woman did not avoid complications. She was left with polyneuropathy, ataxia, hemiparesis on the left side and her pelvic organs stopped functioning properly. The patient was discharged with the loss of ability to function without the help of others.

CONCLUSIONS: Overall, GT is a severe and potentially fatal disease but it is even more dangerous for older people as they have a higher risk of mortality (52% in patients older than 60 year old). This case is an unique example of an older woman suffering from dementia and other neurological disorders who was diagnosed with GT and has recovered even though the doctors were certain of the lethal outcome.

Title: DIAGNOSTIC CHALLENGES OF CHOROIDAL RUPTURE: A CASE REPORT

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BACKGROUND: A choroidal rupture is a break in the choroid, Bruch membrane, and the retinal pigment epithelium, leaving the overlying neurosensory retina intact. It is usually a result of a traumatic injury to the globe. Depending on the trauma mechanism choroidal rupture can be located at the peripheral fundus or at the posterior pole. Symptoms are based on the location of the rupture and may vary from asymptomatic if the rupture does not involve the fovea or parafoveal retina, to significantly reduced vision if those structures are involved.

CASE REPORT: A 29-year-old male presented to the Emergency department (ED) with decreased visual acuity to hand motion after sustaining a blunt trauma to his left eye. During the examination, insignificant hemophthalmus and subretinal hemorrhage size of 4 optic nerve discs at the superior vascular arcade was observed. Tonometry showed normal values. The patient was diagnosed with left eyeball contusion, retinal commotion, and subretinal hemorrhage and discharged after being recommended cold compressions to the left eye and non-steroid anti-inflammatory drug (NSAID) therapy. One month later the patient was reevaluated due to persistent visual acuity loss in the left eye. Visual acuity in the left eye was 0.1, blood from the subretinal hemorrhage was reabsorbed and new findings were observed - vitreous detachment at the posterior pole, retinal commotion area covering all macula as well as a choroidal tear in the posterior pole crossing the central part of the macula. Ultrasound of the left eye revealed thickened chorioretinal layer with possible retinal swelling, no retinal or choroidal detachment was observed. Without any indications for surgical treatment, NSAID therapy was continued to treat damaged retina.

CONCLUSIONS: When the choriocapillaris is injured during an ocular trauma, bleeding into the subretinal pigment epithelium or subretinal space occurs. Such hemorrhage may initially mask the choroidal rupture, as in this case. Although there is no surgical treatment available for choroidal rupture, follow-up of one to two times per year is important to screen for complications such as choroidal neovascularization, which requires specific treatment of anti-VEGF injections. A choroidal rupture by itself does not heal over time and since this patient experienced subfoveal choroidal rupture his visual acuity prognosis is poor.

Title: HUNTINGTON'S DISEASE – A CASE REPORT

Author(s): Aleksandra Giba[1], Agnieszka Turowska[1], Artur Aleksiejuk[1], Elwira Jańczak[1], Klaudia Jasek[1]

Tutor(s): Katarzyna Kapica-Topczewska, MD, PhD[1]

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BACKGROUND: Huntington's disease (HD) is a rare disorder of the central nervous system characterized by involuntary choreic movements, behavioral and psychiatric disturbances, and dementia. It is a fully penetrant disease caused by a dominantly inherited CAG trinucleotide repeat expansion in the huntingtin gene on chromosome 4. Diagnosis is based on clinical symptoms and signs usually in an individual with a parent suffering from HD and is confirmed by a genetic test. HD is currently incurable, therefore management is symptomatic and supportive.

CASE REPORT: A 43-year-old female patient with a family history of HD, diagnosis of HD confirmed by the genetic tests in 2016, was admitted to the Department of Neurology, Medical University in Bialystok due to jerky movements, gait deterioration, speech problems and irritability. The patient's first symptoms began when she was 32. Neurological examination revealed chorea, choreic gait, and dysarthria. Neuropsychological examination revealed poor short-term memory, visual-construction dysfunctions and disturbance of abstract thinking. MRI of the brain revealed vascular periventricular lesions. The patient was treated with tetrabenazine to reduce chorea. In addition, trazodone and opipramol were included. Pharmacological treatment and physical rehabilitation slightly diminished the patient's symptoms. Moreover, some other non-medical interventions were required, including physiotherapy, occupational therapy, and speech therapy. The patient remains under the care of a neurologist, psychiatrist, psychologist, dietician and social worker.

CONCLUSIONS: HD is a physically, psychologically, and socially devastating disease that has an immense impact on a patient's life. In order to achieve optimal results of the treatment process cooperation between specialists from various fields of medicine should be implemented. Medical and non-medical treatment must be individually managed to improve patient's quality of life.

Title: HIT THE TARGET. MOLECULAR WEAPON IN TREATMENT OF TUBEROUS SCLEROSIS COMPLEX.

Author(s): Joanna Han[1], Bartosz Andruczyk[1], Weronika Matysiak[1], Agata Pisklak[1], Weronika Rutkowska[1]

Tutor(s): Katarzyna Kapica-Topczewska, MD, PhD[2]

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BACKGROUND: Tuberous sclerosis complex (TSC) is an autosomal dominant genetic disorder that affects multiple systems. TSC is characterized by an increased predisposition to subependymal giant cell astrocytomas (SEGAs), hamartoma formation, seizures, mental retardation, and cutaneous manifestations. Those symptoms have age-related expressions and appear at different time points in a lifespan. Everolimus is used in the treatment of patients with TSC and SEGA tumors and seizures. It is an immunosuppressive and anti-cancer drug, which operates on a molecular level.

CASE REPORT: First symptoms occurred in infancy, as a 3-month-old child was admitted to the clinic due to epileptic seizures. The examination showed characteristic lesions on the skin: the angioma on the head and the multiple hypomelanotic macules on the abdomen and the right leg. The brain MRI showed benign hamartomas, detectable in the cerebral cortex and subependymal nodules along the ventricular surface. The EEG confirmed epilepsy. The patient after a genetic test was diagnosed with TSC. Thereafter, the patient was hospitalized repeatedly because of epileptic seizures. At the age of 6, he was diagnosed with angiomyolipoma in the left kidney, polycystic kidney disease, and SEGA in lateral ventricles of the brain. In addition, intensification of epilepsy, frequent infections, and a severe mental and physical disability have occurred. At the age of 13, the patient was qualified for the drug program with everolimus, which must be administered orally once daily in an individual dose. Since then the patient has been under supervision. The epileptic seizures have been better controlled. The brain MR, which has been performed annually, showed no radiological tumor progression.

CONCLUSIONS: TSC is a severe phacomatosis that requires constant control due to the high risk of neoplasms. The disease is also associated with a range of physical and neuropsychiatric manifestations. Nowadays, there can be used medicines like everolimus, which provides a potential multisystemic therapy for TSC, especially the specific brain and kidney tumors, and severe epileptic seizures. Nevertheless, the patients should be constantly treated symptomatically and be under the supervision of many specialists.

Title: WAKE-UP STROKE- A CASE REPORT

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BACKGROUND: Stroke is a clinical syndrome characterized by an acute loss of focal or generalized brain function due to inadequate blood supply. Stroke is the main cause of long-term disability and the second most common cause of death. About 10-20% of patients with stroke wake up from sleep with symptoms. The unknown time of onset of symptoms is a major challenge in deciding how to treat the patient. Numerous scientific data indicate that the symptoms of ischemic stroke arise in the early morning (probably 50% of patients in the treatment time window).

CASE REPORT: A 47-year-old man was admitted to the Emergency Department at 7:30 due to left-sided weakness and facial asymmetry. He was last seen in full health the day before hospitalization, around 22:00. The symptoms were found immediately after waking up at 4:50. Neurological examination revealed left-sided hemiparesis, central paresis of the left facial nerve, and dysarthria. He had a high blood pressure of 240/120 mmHg. Head CT showed small, poorly secreting hypodense subcortical and para-ventricular lesions in the right parietal area. Brain MRI was performed and a mismatch was found on the DWI and FLAIR sequences. The patient received antihypertensive treatment: urapidil iv and furosemide iv. Blood pressure was decreased to 184/108 mmHg. At 8:50 thrombolysis with intravenous rtPA was started. The patient neurological condition was improved. Control head CT showed no signs of hemorrhage. The patient was transferred to the Rehabilitation Department with Modified Rankin Scale-1 point.

CONCLUSIONS: he result of the clinical trial provided unquestioned evidence of efficacy and safety of thrombolytic therapy based on DWI-FLAIR mismatch on brain MRI. The wake-up stroke trial is a huge step towards further improvement in acute stroke treatment, has a direct impact on clinical practice and management guidelines by providing effective and safe treatment to a large group of patients with acute stroke who have previously not been eligible for specific reperfusion therapy.

Title: IMMUNE CHECKPOINT INHIBITOR THERAPY INDUCED GUILLAIN-BARRE SYNDROME: A CASE REPORT

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BACKGROUND: Immune checkpoint inhibitor (ICI) therapy has become treatment of choice for many advanced malignancies, including metastatic melanoma. With increased use of ICI therapy, a rising number of immune-related adverse events (irAEs) have been observed. Neurological irAEs are rare, but of great clinical significance due to health risks they pose. Failure to recognize and treat them can lead to rapidly deteriorating quality of life, permanent disability, or death.

CASE REPORT: A 63-year-old male was treated with pembrolizumab infusions due to unresectable melanoma and multiple metastases. After the 3rd infusion patient started to experience symmetrical numbness in hands and feet and a week later had difficulty walking due to lower limb weakness. Physical examination showed muscular weakness in the legs with areflexia present. Electroneuromyography (ENMG) and clinical findings were indicative of Guillain-Barre Syndrome (GBS) and daily intravenous methylprednisolone infusions were started. Due to lack of significant clinical response, intravenous immunoglobulin infusions were administered. Patient saw an improvement and could walk unaided after the treatment. Since GBS was regarded as irAE, pembrolizumab was replaced with nivolumab. Radiological imagining demonstrated positive response to ICI therapy, however the patient was further hospitalized three more times due to recurrent difficulty walking. Repeat ENMG results displayed progress of demyelination of the peripheral nerves. Physical examination showed decrease in muscle strength of arms and legs. During readmission the patient was successfully treated with intravenous corticosteroids and was discharged home to continue an oral tapering course.

CONCLUSIONS: This case highlights the importance of timely diagnosis and proper management of neurological irAEs in maintaining quality of life of affected patients. Current guidelines recommend corticosteroids as first line of treatment with dose and duration depending on the clinical severity of irAE. If sufficient clinical response is not observed, intravenous immunoglobulin infusions should be administered as second-line therapy. Clinicians should be aware of possible irAEs when evaluating patients undergoing ICI therapy, because early treatment has shown to deliver the best results.

Title: ACUTE VI CRANIAL NERVE PALSY AFTER COVID-19 INFECTION: A CASE REPORT

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BACKGROUND: With a high variety of symptoms caused by Coronavirus disease 2019 (COVID-19), neuro-ophthalmological complications are less frequently discussed in the literature. SARS-CoV-2, a virus causing COVID-19, is known to have neurotropic and neuroinvasive capabilities. Isolated abducens nerve palsy is most caused by vascular or neurological impairments, but recently it was noticed as one of the COVID-19 manifestations.

CASE REPORT: A previously healthy 25-year-old male presented to the Emergency department after having experienced diplopia and dizziness for the past three days. Physical examination findings were typical of isolated VI cranial nerve palsy – horizontal uncrossed diplopia, which worsens when looking to the right, and abduction deficit of the right eye. No other accompanying symptoms or focal neurological deficits were observed. Ophthalmic evaluation showed no other impairments with normal visual acuity. Four weeks prior patient had developed a fever and upper respiratory tract infection symptoms with a positive nasopharyngeal RT-PCR test for SARS-CoV-2. Patient had been previously vaccinated. All the symptoms resolved in 5 days. The patient was admitted for further diagnosis and treatment. A cranial computed tomography with angiography and magnetic resonance were performed with no pathological findings. Routine bloodwork was within normal limits. Blood tests for infectious disease markers were inconclusive. Due to recent history of COVID-19 and no other significant clinical findings, a post-infectious VI cranial nerve palsy diagnosis seemed most likely. Patient was administered an oral course of prednisolone and saw a clinical improvement.

CONCLUSIONS: Due to high rate of COVID-19 cases worldwide, it is essential for physicians to be aware that VI cranial nerve palsy may signify a part of the neurological spectrum of COVID-19 disease. The exact causal mechanism of such manifestation is still unclear. Nevertheless, a complete etiological study should be carried out to rule out other possible causes of this impairment, before identifying it as a COVID-19 manifestation.

Title: MULTIPLE SCLEROSIS OR BRAIN TUMOR? DIFFERENTIAL DIAGNOSIS OF BRAIN LESIONS.

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BACKGROUND: Multiple sclerosis (MS) is a demyelinating disease of the central nervous system mainly affecting young adults. It most often presents as a relapsing-remitting type of progression and the symptoms may vary widely depending on the location of the lesions. In this case report we present how unspecific manifestations of MS can make differential diagnosis challenging and requiring to consider other potential causes.

CASE REPORT: We describe the complex diagnostic process of a 26-year old woman with an 11-year neurological history. The patient was first admitted in 2011 with massive right-side paresis and mixed transcortical aphasia. Brain MRI revealed the presence of an ischaemic lesion with mass effect in the left hemisphere - the patient was diagnosed with ischemic stroke.The next year short-lasting symptoms reoccurred, additionally with tongue numbness and horizontal nystagmus, which was taken as a transient ischemic attack. In 2014, the patient suffered from an episode of right-sided hemianopia, which led to further investigation. Neuroimaging examinations and a brain biopsy were initially misinterpreted as grade II astrocytoma. Follow-up MRI in 2018 didn't reveal a characteristic evolution of the lesion primarily interpreted as a neoplasm. Additionally, MRI showed new lesions, appearance of which pointed towards a degenerative process and caused a reevaluation of previous pathohistological examination. After extensive investigation including repeated MRI and positive testing for oligoclonal bands in CSF, the diagnosis of MS was established. The patient is treated with DMT with a good outcome.

CONCLUSIONS: The clinical presentation of patients with TDL is variable and atypical for demyelinating disease. Detailed history, watchful physical examination, and thorough MRI examination may improve diagnostic accuracy and reduce delay in treatment of individuals with TDL.

Title: THE IMPORTANCE OF ANGIOGRAPHY BEFORE THE THROMBOLYSIS: A CASE OF PAINLESS TYPE A AORTIC DISSECTION, PRESENTING AS ACUTE STROKE

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BACKGROUND: According to current guidelines, intravenous thrombolysis (IVT) with the recombinant tissue plasminogen activator -alteplase should be applied as soon as possible in patients with acute ischemic stroke (AIS). It is estimated that faster door-to-needle times (DNT) are associated with better in-hospital outcomes and lower mortality. However, we should remember a rare and life-threatening disease-acute aortic dissection, which in about 30% of cases may present without typical severe chest pain, only with neurological signs. We present a case of acute left-sided hemiparesis, treated with IVT after the native CT.

CASE REPORT: 75 year old patient was admitted to the stroke center after a sudden weakness in his left leg before 1.5 hours. Past history includes arterial hypertension. No anticoagulants were used. Blood pressure- 95/60mmHg, HR- 69 bpm, glucose - 7.7 mmol/l, INR - 1,03. Neurological examination revealed left arm mild paresis and left leg plegia. Due to mild chest pain, an ECG was recorded: ST depression, negative T waves in V4-6, I, aVL leads. Non-ST-elevation myocardial infarction was diagnosed by cardiologist with no contraindications for thrombolysis. Urgent brain CT showed no hemorrhage. IVT was initiated with 7 mg bolus of actilyse. DNT was 28 min. Perfusion imaging showed frontoparietal changes in both hemispheres. CT angiography showed dissection in both carotid arteries with total occlusion on the right and 90% stenosis on the left. Thrombolysis was discontinued. Chest and abdomen CT angiography confirmed acute Stanford A type aortic dissection, spreading to the brachiocephalic trunk, left subclavian artery, both common carotid and iliac arteries. 15 min after the bolus ventricular fibrillation and then asystole developed. Resuscitation was unsuccessful, the patient died within the first hour after admission.

CONCLUSIONS: Painless A type aortic dissection with neurological symptoms may lead to serious diagnostic mistakes and poor clinical outcomes. CT angiography should be performed before the thrombolysis to exclude the aortic dissection.

Title: NEUROLEPTIC MALIGNANT SYNDROME AS A CONSEQUENCE OF PARANOID SCHIZOPHRENIA TREATMENT

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BACKGROUND: Neuroleptic malignant syndrome (NMS) is a life-threatening condition associated with the use of dopamine-receptor antagonist medications or with the rapid withdrawal of dopaminergic medications. NMS is most commonly reported with typical antipsychotics like haloperidol and fluphenazine. A patient suffering from NMS may present fever, mental status changes, muscle rigidity and autonomic instability. NMS requires early diagnosis and treatment to prevent significant mortality.

CASE REPORT: The 44-year-old female patient was admitted to the Intensive Care Unit (ICU) from the Clinic of Psychiatry in order to continue treatment of the NMS. The patient was treated in the Department of Psychiatry due to ongoing paranoid schizophrenia. During psychiatric treatment, the patient presented hypokinesia, fever and mental status changes. In the ICU, the patient was conscious, fatigued, with a slightly elevated temperature and muscle rigidity. Laboratory tests after admission to the ICU showed a severely increased level of creatinine kinase (CK) = 15666.0 IU/l (N=25-170 IU/l), which is a hallmark feature of NMS. The patient was breathing spontaneously with oxygen therapy, hemodynamically stable and monitored by transpulmonary thermodilution. The patient was treated with bromocriptine, which is a dopamine-receptor agonist. As a result of treatment, the patient was stabilized and transferred back to the Psychiatric Clinic.

CONCLUSIONS: NMS is considered to be an idiosyncratic drug reaction, but dose-related increased risks have been described. Therefore it is important to slowly increase the dose of medication and monitor the patient's condition.

Title: UNUSUAL CASE STUDY OF SHORT SAPHENOUS VARICOSE VEIN MIMICKING NEUROMA

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BACKGROUND: Symptoms of peripheral nerve tumors depend on the involved neural structures and lesion size. Patients usually present with palpable soft tissue mass accompanied by neurological symptoms. The diagnosis is based on radiologic techniques. However, there are situations when these tumors are difficult to distinguish from other pathologies located close to the nerve. The presented case is a good illustration of the mentioned diagnostic problem. The patient developed a varicose vein mimicking tibial nerve neuroma in imaging pictures. Such a case has not been reported in the literature previously.

CASE REPORT: A 25-year-old Caucasian female presented to the Department of Neurosurgery with a lump in the left popliteal fossa accompanied by excruciating pain in the lower leg with additional paresthesia on the posterolateral side of the left ankle. Other systemic diseases or taking any medications were excluded. Magnetic Resonance Imaging revealed a heterogeneous focal lesion located peripherally in the left popliteal fossa, in the subcutaneous tissue between the medial and lateral head of the gastrocnemius muscle. The lesion sack was filled with blood in the methemoglobin phase. This image was assessed as indicative of the tibial nerve neuroma complicated by bleeding. To confirm the initial diagnosis, a biopsy under ultrasound guidance was performed, but the material obtained during this procedure was non-diagnostic. In this situation, the patient was qualified to surgery. During the surgery, the short saphenous vein varicose was visualized. Finally, the vein's abnormal segment was ligated. Following the surgery, all previously reported symptoms resolved.

CONCLUSIONS: The presented case shows, that sometimes, proper diagnosis of nerve or nerve compressing lesions may be challenging even for experienced radiologists. Thus, the final diagnosis is established intraoperatively and after histopathological examination.

Case report III

Gynecology and Obstetrics

Title: DIAGNOSTIC CHALLENGES OF AMNIOTIC BAND SYNDROME- CASE REPORT

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BACKGROUND: Amniotic Band Syndrome (ABS) is a rare sequence of congenital defects caused by Premature Rupture of the Membranes (PROM), most commonly in the first trimester of pregnancy. The causes of the syndrome are not fully known and its diagnosis is usually made at birth or on ultrasound (USG) based on the characteristic pattern of the malformations. The severity of cases and prognosis depends on the location of the amniotic bands in relation to the fetus. Limb deformities are most common, but lethal defects such as encephalocele, abdominoschisis or thoracoschisis also occur.

CASE REPORT: The presented case is a 24-year-old woman, 19 weeks pregnant with her first child, admitted to the department for observation of fetal malformations detected on USG at the previous visit. The patient underwent genetic amniocentesis which revealed a normal male karyotype. During USG examination, multiple fetal abnormalities were found, indicating lethal defects: encephalocele, craniofacial defects, abdominoschisis or thoracoschisis and lack of right upper limb. The patient remained under obstetric and psychological care. At 21 weeks' gestation, the patient was readmitted to the ward due to renal colic. On the fifth day of hospitalization she was diagnosed with ABS based on a review of the previous medical documentation. The patient was informed of the poor prognosis of the fetus. At 27 weeks' gestation on gynaecological examination amniotic fluid tinted with blood was detected also on USG image the fetus was seen attached to the uterine wall with a thick band. It was decided to perform the cesarean section. The newborn was born in the agonal state, weighing 850g, APGAR 1, died during the first day.

CONCLUSIONS: Characteristic features on USG, especially limb defects, should lead us to consider the diagnosis of ABS, especially when the result of the genetic test is normal. Despite the diagnosis of the syndrome during prenatal examination, treatment options for the fetus remain limited, especially in the case of multiple defects. At each stage of diagnosis and after the labour, the doctor should provide psychological support for the patient and her partner.

Title: MATURE TERATOMA OF THE OVARY CAUSING RECURRENT ADNEXAL TORSION

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BACKGROUND: Mature teratoma is the most common germ cell tumor in women of reproductive age. These tumors, also called „dermoid cysts“, are histologically composed of mature endodermal, mesodermal and ectodermal tissues. Of these mature sebaceous tissue, hair, bone or even teeth are typical. It is reported that 21% of mature teratoma cases are complicated by ovarian torsion and 25% of all adnexal torsions are caused by mature teratomas. It is theorised that the fat component causes the cyst to float, therefore increasing the risk of torsion. We present the case of multiple ovarian torsions in the same ovary caused by a teratoma.

CASE REPORT: In 2015 a 15-year-old girl was admitted to hospital presenting with abdominal pain and vomiting for two days. Pelvic ultrasound revealed a normal right ovary, while the left one was unidentifiable. A heterogenous, unvascularised lesion, exhibiting accumulation of fluid was discovered. During laparoscopy, a detorsion of the left ovary was performed. It resulted in immediate color improvement of the salpynx and the ovary, which was suggestive of successful revascularisation. Patient was discharged having no postoperative complications, but another torsion occured one year later. No tumor could be identified at that time, therefore a second retorsion was carried out. In 2017 a routine ultrasound examination revealed an ovarian lesion, which was confirmed on MRI, reporting a heterogenous tumor, resembling an immature teratoma, containing cysts, fat components, calcifications and a contrast accumulating nodule. When laparoscopically approached, the ovary appeared to be twisted twice. After retorsion a cystectomy was performed and a tumor with visible hair, bone fragments and sebaceous tissue was removed. Pathological evaluation of the specimen revealed it to be a mature (benign) teratoma. The patient recovered with no complications.

CONCLUSIONS: Even though, mature ovarian teratomas are benign neoplasms, because of their heterogenous appearance and unpredictable growth they can be tricky to diagnose, therefore consistent observation is essential. It also should be taken into consideration, that immature teratomas, which are of similar origin, but have significantly poorer outcomes, can very rarely mimick mature teratomas on radiographic imaging.

Title: PLACENTA ACCRETA SPECTRUM – A CASE SERIES STUDY

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BACKGROUND: Placenta accreta spectrum (PAS) is a condition that includes placenta accreta (when the villi adhere to the myometrium), increta (the villi invade the myometrium), and percreta (the villi invade the entire thickness of the myometrium and even adjacent pelvic organs). PAS is a rare condition (1/300-1/2000 pregnancies) associated with a high risk of obstetric hemorrhage. The main risk factors are prior cesarean delivery, invasive procedures such as uterine curettage, placenta previa, and uterine pathologies (e.g., bicornuate uterus, adenomyosis).

CASE REPORT: This paper examines cases involving women hospitalized in the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw, between 2019 and 2021 with PAS diagnosis on histopathology. Obstetric hysterosalpingectomy was performed in 6 patients (5 singletons and one twin pregnancy) aged 36.50 +- 4.09 years in 34.50 +- 3.02 weeks of pregnancy. 5/6 subjects had a history of cesarean delivery; three were diagnosed with placenta previa. Preoperative suspicion of PAS during ultrasound examination occurred only in 2 cases of women with placenta previa and prior cesarean delivery. Obstetric results were compared between group (A), including patients with PAS suspicion (2/6) and (B) without such a diagnosis (4/6). The difference in surgical technique was observed between the groups: (A) elective cesarean section, midline laparotomy, and high upper-segment transverse uterine incision; (B) Pfannenstiel incision and low transverse uterine incision (2 electives, 2 emergency c-sections). Perioperative blood loss in both groups was 2400.00 +-2262.74 and 2325.00 +- 722.84 ml, respectively. Postoperative Hb level reached (A) 9.30 +- 1.98 and (B) 9.80 +- 2.26 mg/dl. 1 patient from group A and 3 from group B required blood transfusion.

CONCLUSIONS: Our results confirm a high risk of obstetric hemorrhage in the case of PAS. In most cases, the diagnosis was made during the surgery, resulting in unexpected hemorrhage. The single patient to avoid massive blood loss was a woman with a prior ultrasound PAS diagnosis. The suspicion of PAS leads to a different operative technique choice and optimal medical staff preparation. Key risk factor – placenta previa with prior cesarean delivery occurred only in 3 cases. It is crucial to remain vigilant and train medical professionals to diagnose PAS and manage this condition when occurring unexpectedly during delivery.

Title: PHEOCHROMOCYTOMA IN PREGNANCY ASSOCIATED WITH NEUROFIBROMATOSIS TYPE 1

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BACKGROUND: Neurofibromatosis type 1 is a genetic disorder that might affect multiple organ systems and increase the risk of causing a rare neuroendocrine tumor – pheochromocytoma. Even though there are inconsistent views about the effects of neurofibromatosis on pregnancy, pheochromocytoma-related hypertension and the release of catecholamines during pregnancy jeopardize both mother's and child's health. Undiagnosed disease results in a maternal mortality rate of 14% and fetal of 43%. Albeit, diagnosed and properly managed to decrease this rate to 8% and 17%, for mother and child respectively.

CASE REPORT: We present a case report of a 30-year-old primigravida with a rare presentation of pheochromocytoma associated with neurofibromatosis type 1, diagnosed before pregnancy, who was admitted to the outpatient clinic at Szpital Kliniczny Karowa in the first trimester of her first pregnancy. CT performed a year before revealed a 36x25mm size mass, 50jH, in the right adrenal gland. MRI showed no signal dropout. 24h urine collection revealed high metoxycatecholamine concentration. Doxazosin and metoprolol were administered. Elective adrenalectomy was planned before the pregnancy. However, due to the onset of the COVID-19 pandemic, it was canceled. Pharmacological treatment was continued during pregnancy as a pretreatment before the removal of the adrenal gland. No peaks in blood pressure were observed. In the 27th week of gestational age, the patient underwent adrenalectomy. Her blood pressure was 110/70, heart rate was 92/min. The surgery was uneventful, cardiotocography was normal and an ultrasound scan showed a eutrophic fetus. At 39 weeks of gestational age, she gave birth by an elective cesarean section, with spinal anesthesia. A 3170g girl was born, Apgar's score was 10. Perioperative and early postnatal period was uneventful.

CONCLUSIONS: Our study clearly shows that the course of pregnancy can be uneventful despite having pheochromocytoma related to neurofibromatosis. Although the rare cause of hypertension in pregnancy, physicians should bear in mind the pheochromocytoma as a potential cause. Screeing patients in high-risk groups, early diagnosis, and proper management with pharmacological treatment and removal of adrenal gland results in good maternal and neonatal outcomes.

Title: RARE CASE OF TISSUE NECROSIS OF THE SPLEEN, SIMILAR TO METASTASES FROM OVARIAN CANCER

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BACKGROUND: Spleen tumors are a rare encounter. They can be metastatic or primary , of which , lymphomes and angiosarcomes are the most common. Ovarian cancer rarely metastasizes to the spleen. It metastasizes in 4 different routes : Transcoelomic. Lymphatic, hematogenous and canalicular. However, there have been isolated cases of haematogenous metastases involving the parenchyma of the organ.

CASE REPORT: We present the case of a 61-year-old patient with histologically proven ovarian cancer, admitted to the Clinic of Oncogynecology at the University Hospital "Dr. G. Stranski" for cytoreductive surgery after 5 courses of chemotherapy with Paclitaxel and Carboplatin. Preoperative CT scans showed a partial response to the treatment, which identified the patient as operable. The CT scan revealed a formation, covering the hilar part of the spleen, metastatic paraaortic lymph nodes covering the aortic cuff, osteosclerotic metastases in the bodies of L3, L4, and L5 and hydronephrosis of the left kidney. The procedure included a total hysterectomy with bilateral salpingo-oophorectomy, an omentectomy, and a partial peritonectomy. Pathological examination revealed an atrophic-cystic endometrium with tumor infiltration in the myometrium, infiltrated parameters, two ovaries with a residual picture of undifferentiated carcinoma and tumor-filtered paratubar tissues, spleen with hemorrhage and ischemic infarction. The results of the immunohistochemical study were: WT1(-), E-cadherin(-), GATA3(-), p53(-), CK7(-), EMA(+), ER(-)Vimentin(-).

CONCLUSIONS: Splenic tumors are uncommon. Only a small percentage of tumors cause spleen metastasis. As a result, their diagnosis and treatment are underrepresented in the scientific literature. In situations like this, it's tough to make a definitive and accurate diagnosis. CT scans are insufficient. PET + CT scans, as well as Doppler ultrasound, should be employed.

Title: CASE REPORT: PRENATAL DIAGNOSTICS OF PATAU SYNDROME.

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BACKGROUND: Patau syndrome is a rare and severe genetic disease caused by a trisomy of chromosome 13 (T13). Most diagnosed cases die in utero. Patients are usually given only supportive treatment. T13 is suspected when characteristic defects during an ultrasound scan are seen and while performing a combined or noninvasive prenatal test (NIPT). The combined test can detect about 90% of T13. However, it has high false-positive rates, which result in anxiety for pregnant women who will undergo an invasive diagnostic procedure. The NIPT can detect 99.9% of T13 cases. However, it is an expensive test that not all women can afford.

CASE REPORT: The mother was a 42-year-old woman (gravida 3, para 2), who came to the Hospital of Lithuanian University of Health Sciences Kauno Klinikos for the first-trimester screening for aneuploidies. Her medical history was unremarkable. The pregnancy was natural, the patient had no complaints. Ultrasound examination revealed one fetus at 12+3 weeks of gestation, CRL (crown-rump length) – 59.9 mm, NT (nuchal translucency) – 2.09 mm, suspected omphalocele. The combined test was carried out for the patient, no increased risk of fetal Down, Edwards, Patau and Turner syndromes has been identified. After that, the woman opted for NIPT. The test identified a very high risk for trisomy 13 (Patau syndrome) – 1:2; the risk for other chromosomal aneuploidies was not increased. Therefore, the patient was further referred to perform an invasive diagnostic procedure – amniocentesis. Genetic tests confirmed trisomy 13. The pregnancy was terminated at 18 weeks on parental request. A pathological examination of the placenta and fetus was performed. The placenta: immature, chromosomal aberrations may be suspected. Morphological evaluation of the fetus: cleft lip and cleft palate, additional finger, suspected defect of the atrial septum.

CONCLUSIONS: We presented a clinical case in which combined test did not show any risk for chromosome abnormalities but NIPT results demonstrated high risk for T13. Therefore, if a patient has a high risk of fetal aneuploidies and can afford NIPT, then NIPT should be used instead of a combined test because it has better sensitivity and specificity. Thus, that would decrease the high false-positive rate of combined test and fewer invasive procedures would be done.

Title: A RARE CASE OF RETROPERITONEAL PARAGANGLIOMA DIAGNOSED IN PREGNANCY

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BACKGROUND: Pheochromocytomas and paragangliomas (PPGLs) are vascularized tumors derived from adrenomedullary chromaffin cells or extra-adrenal neural crest cells. PPGLs are rarely diagnosed throughout the pregnancy and occur in 1 out of 54 000 pregnancies (PGLs account for about 20% of PPGLs). As their clinical manifestations depend on the location, size and hormonal secretion, they remain a challenge not only to diagnose but also to treat. Approximately 40 cases of PGL in pregnancy were reported and best to our knowledge this is the first one regarding a non-functional retroperitoneal paraganglioma diagnosed prenatally.

CASE REPORT: We present a case of a 27-year-old primigravida who was referred to the Outpatient Department in the 1st Department of Obstetrics and Gynecology Medical University of Warsaw at 15-16 weeks of gestation due to suspicion of a uterine mass, most likely a fibroid. The referral ultrasound revealed a single fetus in cephalic position with normal anatomy, normal uterine myometrium and ovaries. A vascularized mass with dimensions corresponding to 10.24 x 6.47 x 9.80 cm, located in the paraaortic retroperitoneal space was identified. Subsequent MRI confirmed the diagnosis. Due to the unknown type of the tumor and significant growth patient underwent a laparotomy at 22 weeks of gestation and complete excision of the tumor was performed. Pathological examination revealed a paraganglioma. Further course of the pregnancy was unremarkable- at 38 weeks patient delivered vaginally a healthy female neonate 2740g/51cm with Apgar score of 10/10. Currently, the infant is 20 months old with normal neurodevelopment.

CONCLUSIONS: Since PGLs during pregnancy are rare, current management strategies are based on case reports and expert opinions. Early diagnosis, treatment in a referral center and individual approach remain essential to improve perinatal outcomes. Before 24 weeks of gestation a laparoscopic approach may be a first choice, however patients with prominent tumors shall undergo laparotomy due to technical limitations. Tumor excision shall not affect the method of the delivery- cesarean section and vaginal delivery are possible. In patients diagnosed in the 3rd trimester the treatment shall be administered after the delivery.

Title: NEW POSSIBILITIES IN ONCOLOGICAL TREATMENT OF PATIENTS WITH ENDOMETRIAL CANCER

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BACKGROUND: Endometrial cancer is one of the 3 most common malignancies in women. The new ESGO / ESTRO / ESP guidelines of 2020 recommend the diagnosis of molecular disorders in patients with diagnosed endometrial cancer. Genetic tests will allow the implementation of targeted (personalized) treatment in individual patients.

CASE REPORT: A 62-year-old female patient came to the hospital because of abnormal vaginal bleeding, which had been going on for 6 weeks continuously. In September 2021, the patient underwent curettage of the uterine cavity. The histopathological examination revealed the presence of endometrial adenocarcinoma. After two months, the operation was performed to completely resect the uterus with removal of the appendages on both sides. Histopathological examination revealed G1 endometrial carcinoma (highly differentiated). Due to the involvement of 3 out of 14 uterine lymph nodes, the endometrial cancer staging was scored on the FIGO scale on IIIC1. In immunohistochemical staining of MLH1 and PMS2 expression, which may suggest the patient's Lynch syndrome. The patient is currently receiving standard chemotherapy consisting of Paclitaxel and Carboplatin.

CONCLUSIONS: Detection of Lynch's syndrome in the patient will allow, at the time of disease progression, to apply targeted immunotherapy with an innovative treatment with Dostarlimab.

Title: CLITORIDECTOMY AS A FORM OF TREATMENT OF PERSISTENT GENITAL AROUSAL DISORDER – CASE REPORT

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BACKGROUND: The persistent genital arousal disorder (PGAD) is a rare condition which is characterized by symptoms of unwanted and persistent arousal of the genitals. This sensation is present despite the lack of sexual desire. Individuals suffering from PGAD are often forced to take part in various sexual activities, not for the pleasure itself, but as a form of seeking relief from intrusive symptoms. Women are more often diagnosed with this condition and the symptoms can occur in every age. Etiopathogenesis is not fully known yet and sexual abuse in past is the only confirmed risk factor.

CASE REPORT: 88- year old heterosexual woman complained of constant arousal of the clitoris and clitorial region. This sensation first appeared a few months ago and caused major discomfort, which intensified while walking. Masturbation didn't help in lowering of the sexual tension and reduction of the symptoms. Other coexisting conditions include diabetes, hypertension and hypothyroidism. Patient denies drug usage and sexual abuse in the past. The patient's medical history of injuries and surgeries of the perineum wasn't relevant. During gynecological examination the whitening of the clitoral hood and the rubefaction of the clitoral area were observed. No affective or mood disorders were diagnosed during psychiatry consultation. Pharmacological treatment included: hyaluronic acid and estrogens vaginally, gabapentin p.o. and lidocaine ointment which didn't result in symptom reduction. Patient didn't consent to treatment with psychotropic and antidepressant medication. Finally, the selective clitoridectomy was proposed. The surgery was performed under spinal anaesthesia and included labiaplasty. There were no complications during the procedure and postoperative period. After 6 weeks all symptoms subsided and the patient fully recovered.

CONCLUSIONS: PGAD is a relatively newly described condition with only few reported cases. There are no standard treatment regimens and clinical trials that would evaluate the safety and efficacy of treatment methods yet. Therefore much more research about this rare condition needs to be conducted.

Case report IV

Surgery

Title: PERITONEAL DIALYSIS AFTER INGUINAL HERNIA REPAIR

Author(s): Kerianne Cummings[2]

Tutor(s): Dr. Piotr Wojskowicz[1]

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BACKGROUND: Peritoneal dialysis is a treatment that has allowed for the convenience of many patients who do not wish to spend most of their time in the hospital. Peritoneal dialysis allows patients to receive their necessary treatments without leaving the comfort of their homes; this benefit allows for higher patient compliance. Indications for peritoneal dialysis can include refractory heart failure, pancreatitis, intolerance to hemodialysis, hepatic failure, renal failure, etc. Unfortunately, peritoneal dialysis is contraindicated in situations such as an unrepaired hernia, inflammatory bowel diseases, or ascites.

CASE REPORT: A 39-year-old male patient was admitted to the hospital for elective placement of a peritoneal dialysis catheter. The patient's past medical history includes IgA Nephropathy incidentally diagnosed due to high creatinine levels on pre-operation blood workup for his elbow in 2018, a motorcycle accident that resulted in an amputation of the left lower limb, a clavicle bar in 2001, and an inguinal hernia in 2021, which was corrected via Lichtenstein procedure 2 months prior, and renal insufficiency for four years, but now requiring dialysis. After the diagnosis of IgA Nephropathy, the patient was treated with steroids and controlled every three months. Due to a lack of response during conservative treatment, it was decided that dialysis would need to be started. In September 2021, during the decision and evaluation for dialysis placement, which would be best suited for the patient, the right inguinal hernia was discovered. This prompted elective surgery to correct the hernia. After the hernia was repaired, the patient was guided to start hemodialysis rather than peritoneal dialysis. The patient stated he did not want to do hemodialysis as this would mean he would have to come to the hospital for dialysis which was 70 km a

CONCLUSIONS: Conclusion Allowing the patients to decide their treatment plan is always the best course of action. While a physician should guide the patient according to medical treatment statistics, ultimately it is the patient who knows which treatment will be more comfortable for them and which will lead to greater compliance. Treatment compliance is the best treatment regimen, even if it means going against relative contraindications.

Title: TWO BIRDS KILLED WITH ONE STONE: LARGE BUT CLINICALLY SILENT GASTRIC LIPOMA OF PYLORUS, FOUND INCIDENTALLY IN PREPARATION FOR SLEEVE GASTRECTOMY. CASE REPORT.

Author(s): Julia Grymuza[2], Anna Francuziak[2], Damian Brysiewicz[2], Maciej Stankiewicz[2]

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BACKGROUND: Gastric lipomas shall be assimilated to the least frequently reported stomach tumors. They do not exceed 1% of all neoplasms found in the stomach. They also constitute merely 5% of the lipomas of the digestive tract. Those lesions can be typically found in the pyloric antrum. Small gastric lipomas are the most common and usually do not present any clinical signs. Differently, in patients with large tumors (>3 cm), cases of upper gastrointestinal bleeding, dyspepsia and abdominal pain have been described. The surgical treatment is predominantly recommended for those massive, symptomatic lesions.

CASE REPORT: A 61-year-old male struggling with obesity for 20 years, has been admitted to a bariatric consultation. The patient's weight was 122 kg with a BMI of 36.43. The past attempts at pharmacological and dietary treatment have been unsuccessful. Except of insomnia, patient did not refer any other symptoms, from the digestive system in particular. He was diagnosed with severe obesity and qualified for Sleeve Gastrectomy. Preoperative gastroscopy demonstrated a large yellow lesion in the gastric antrum, near pylorus. During laparoscopic sleeve gastrectomy, the mass was found in the submucosa of the pyloric antrum. Due to its localization very close to pylorus, resection of the tumor was essential. Otherwise it would have led to signs of obstruction because of its large dimensions. Then a successful attempt at sleeve gastrectomy was made. The patient did well postoperatively and 2 months after the surgery. Histopathology revealed lipoma.

CONCLUSIONS: We report a case of unusual, large but clinically silent gastric lipoma of pylorus found incidentally in preparation for sleeve gastrectomy. This is absolutely a wonder on the global scale. Therefore, it is crucial to emphasize the role of a careful diagnostic of patients before gastric restrictive surgery, as that may prevent severe complications of the procedure. The described case is also a proof that it is possible to perform a safe and effective surgical therapy for patients in need of both the bariatric treatment and excision of gastric lipoma.

Title: A CASE STUDY OF 78-YEAR OLD PATIENT WITH LUNG ADENOCARCINOMA METASTASIZING TO THYROID GLAND

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BACKGROUND: Thyroid cancer is not a common disease, occurs in about 4% of malignancies in women and 0. 5% in men and primary tumours are the most common. Metastasis to the thyroid gland are unusual with a reported frequency of up to 2.1% among all thyroid malignancies.

CASE REPORT: The case of a 78-year-old patient who had a nodular lesion in her right lung. The computed tomography (CT) study showed a mass in an upper segment of the right lung and two nodules in the left adrenal gland, confirmed in dynamic CT test as metastases. The patient received three cycles of chemotherapy with Cisplatin 110 mg + Vepesid 500 mg which was discontinued due to lack of regression. An upper right-sided bilobectomy and left-sided adrenalectomy was conducted. A histopathological examination revealed an adenocarcinoma ypT2aN1M1L1V1R0. In 2013, a focal change in the head of the pancreas with increased fluorodeoxyglucose metabolism (FDG) in a positron emission tomography (PET-CT) was detected. The patient was approved for Whipple surgery. A postoperative study confirmed a metastasis of lung cancer. During a follow-up examination in 2021 an ultrasound was performed which showed an enlargement of both thyroid lobes and hypoechogenic solid lesions. A fine-needle aspiration biopsy (FNAB) showed metastasis of lung cancer in the left thyroid lobe. The patient was classified for left-sided thyroidectomy with a postoperative diagnosis of the metastases of lung adenocarcinoma Napsin A[+], TTF-1[+], CK19[+], Thyroid globulin (TGB) [+].

CONCLUSIONS: This case reminds us that although metastatic changes in the thyroid gland are very uncommon, they may occur several years after the initial diagnosis and regression of the malignant disease. In a patient with a known history of malignancies, the finding of a new thyroid mass should be promptly evaluated with a thyroid FNAB to search for metastatic disease.

Title: PLASMAPHERESIS AS A TREATMENT OF HUMORAL TRANSPLANT REJECTION - A CASE REPORT

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Tutor(s): Marek Ochman[1]

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BACKGROUND: Cystic fibrosis (CF) is a multiorgan disease that affects lungs and exocrine glands. Patients with CF suffer from recurrent pneumonia and may develop respiratory failure. Lung transplantation (LTx) is a life-saving therapy for CF individuals. Humoral and cellular rejections may occur after Ltx. Around _ of recipients can be affected by humoral rejection. Plasmapheresis, intravenous immunoglobulins (IVIG), rituximab and steroids are possible treatments of the aforementioned rejection.

CASE REPORT: A 15-year-old patient with CF was qualified for Ltx due to end-stage respiratory failure. His spirometry results were lowered (FEV1 = 20.4%, FVC = 31.3%, FEV1/FVC = 65.1%). Patient underwent LTx, which was complicated with primary graft dysfunction in the first days after. Humoral CD4 rejection was diagnosed. Five plasmapheresis treatments were performed as well as rituximab and IVIG were administered. Intensive rehabilitation of the patient was commenced, achieving significant clinical improvement. Patient was discharged home with full respiratory capacity. However, 10 months after Ltx he was admitted to the department again due to clinical deterioration with saturation at 70%. Acute cellular rejection was diagnosed. At admission, tacrolimus level was below the therapeutic value. It was decided to implement the ECMO V-V. Four weeks later, the patient became unresponsive and met the criteria of brain death, therefore was pronounced death before reaching 1-year follow-up.

CONCLUSIONS: Humoral rejection is a serious post transplant complication. Plasmapheresis, rituximab, IVIG and high-dose steroids, can result in complete recovery. As few as five plasmapheresis resulted in a satisfactory outcome in this patient. However, acute rejection can be fatal.

Title: CASE REPORT: TREATMENT OF RUPTURED ABDOMINAL AORTIC ANEURYSM WITH REBAO METHOD

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BACKGROUND: Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) is a technique for temporary cessation or limitation of blood flow through the aorta, which may be used as a bridge until definitive control of the bleeding by endovascular procedures or surgery is performed. REBOA is a minimally invasive technique using a balloon catheter. REBAO reduce bleeding situated distal to the balloon and simultaneously to improve cardiac and cerebral oxygenation.

CASE REPORT: A male patient was admitted to the intensive care unit due to severe abdominal pain lasting 8 hours. A ruptured abdominal aortic aneurysm was found by CTA (no medical history of abdominal aortic aneurysm). In preparation for surgery, the patient suddenly lost consciousness and his blood pressure was unmeasurable. Therefore, a totaly percutaneous rEVAR strategy was chosen. REBAO was inflated suprarenaly in order to stop the blood flow to the ruptured aneurism sack. A stentgraft was placed endovasculary with no endoleaks subsequently. After 2 weeks, no pulse in the groin was observed and acute ischemia of the left leg was established. Thrombectomy was performed first, but in the absence of proximal current, it was decided to perform femor-femoral bypass grafting. Two weeks later stenosis progressed and femoro-femoral bypass stopped working. Additional stent was placed inside a stentgraft to reduce the stenosis and a normal blood flow with working femoro-femoral bypass was achieved.

CONCLUSIONS: There is growing evidence that REBOA is a minimally invasive alternative to open surgical cross-clamping of the aorta by thoracotomy for the treatment of patients with polytrauma and hemorrhagic shock due to abdominal or visceral bleeding.However potential complications that can arise in all stages must be well recognized. Comprehensive investigation and studies conducted into each of these stages of REBOA can allow identification of specific complications and adequate measures to be taken to avoid these complications and reduce potential morbidity and mortality associated with REBOA.

Title: CASE REPORT: MULTIPLE THROMBOSIS ASSOCIATED WITH PARADOXICAL EMBOLISM

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BACKGROUND: Paradoxical embolism (PDE) is an uncommon cause for acute arterial occlusion, and it occurs when a thrombus crosses an intracardiac defect into the systemic circulation. Patients may present with a cerebrovascular event, chest pain, migraine, cold extremity, or mesenteric ischemia. The emboli are usually a blood clot but maybe a fat particle, air, amniotic fluid, or tumor. The management of PDE is medical and/or surgery, depending on the location of the embolus.

CASE REPORT: The 45-year-old female felt pain, cold in left arm after pulling a heavy box. As the pain progressed and intensified after a week, the patient was admitted to a hospital, where was diagnosed left brachial artery occlusion, critical ischemia (no past medical history of heart disease). The patient underwent 3 thromboembolectomies due to recurrent thrombosis of left arm. Due to retrograde thrombosis and gangrene, amputated I-II left arm fingers, which were attached to the abdominal wall to cover of a soft tissue defect with a patch of random circulatory abdominal area. Abdominal pain occurred after a few weeks of treatment, performed abdominal CTA showed thrombosis of superior mesenteric artery, therefore thromboembolectomy and intestinal resection were performed. In the transesophageal echo (TEE) test, no thrombi were found in the heart cavities, but a patent foramen ovale (PFO) was observed. The patient was examined consistently, but the source of the thrombus could not be identified. Therefore, a PDE has been identified, possibly related to an PFO defect.

CONCLUSIONS: The clinical manifestations of paradoxical embolism (PDE) are nonspecific, making the diagnosis difficult. In the setting of a PFO, any permanent increase in right-sided cardiac pressures may increase the risk of a paradoxical embolism. Closure of intracardiac shunt is needed for patients who are at risk for recurrent embolic events.

Title: ANEURYSM IN AN AUTOGENOUS ARTERIOVENOUS FISTULA - SURGICAL MANAGEMENT AND THE RECONSTRUCTION OF THE ANASTOMOSIS

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Tutor(s): Adam Płoński MD PhD[1], Jerzy Głowiński MD PhD[1]

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BACKGROUND: The best vascular access for hemodialysis is via an arteriovenous dialysis fistula made from native vessels. However, there is little data in the literature regarding the long-term complications of dialysis fistulae such as fistula aneurysm, and even less data about surgical techniques for the reconstruction of such fistula.

CASE REPORT: A 45-year-old patient with a history of end-stage renal failure, after a kidney transplant 8 years earlier was admitted to the Department of Vascular Surgery and Transplantation due to the deterioration of the function of the transplanted kidney. The physical examination revealed a true aneurysm on the left forearm proximal to the arteriovenous anastomosis. Radial-cephalic fistula in the area of left wrist with ,,end to side" anastomosis of the vein was created 9 years earlier. Due to the deteriorating parameters of the patient's kidney function a decision was made to put in a dialysis catheter into the internal jugular vein, excise the aneurysm and to reconstruct the fistula. The fistula was made a year before the kidney transplant and was not removed. During surgery distal end of the artery was ligated and the vein was clamped. The aneurysm measuring approx. 5x4 cm was completely excised and a new end-to-end anastomosis of the proximal part of the cephalic vein to the radial artery was performed. The operation was uneventful. The wound healed properly. The fistula vascular murmur was normal. The patient was discharged home in good general condition.

CONCLUSIONS: Possible removal of fistulas in patients with a properly functioning transplanted kidney should be considered. In chronically acting AVFs high flow and pressure can weaken the vein wall and lead to an aneurysm dilatation. However, there is no clear-cut scheme in this matter. Aneurysmal dilatation of artery and vein is an often finding, specially in AVF's. Steroids taken as an immunosuppression may also increase the chance of aneurysm dilatation. The applied surgical technique was effective and safe for the patient, the parameters of the reconstructed fistula after healing period were correct and enabled re-dialysis.

Title: CHRONIC RECURRENT INTUSSUSCEPTION OF SMALL INTESTINE – THE SOURCE OF PSYCHIATRIC DISORDER; CASE REPORT.

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BACKGROUND: Intussusception in adults represents only 5% of all cases. It occurs when a proximal segment of the bowel invaginates into the lumen of the adjacent distal segment. It is usually caused by a bowel lesion.

CASE REPORT: This case concerns a 50-year old female, who had an 8-year history of depression with somatic symptoms of chronic abdominal pain. Within this long history she had been suspected of having depression correlated with somatic abdominal pain. Numerous MRI, CT scans,USG and endoscopies had been performed. Few of them reveal minor intussusception, but they were not confirmed in the follow-up scans. Somatic background of abdominal pain had been excluded and the psychiatric treatment was initiated. Few years later she was admitted to the surgery department with symptoms of obstructive ileus. She was a subject to a laparotomy, that revealed a chronic intussusception of 200cm of ileum and jejunum. Due to parietal necrosis the bowel was resected. Proximally of the Intussusception was found and resected a 35x30mm intestinal tumor, histopathology revealed the tumor to be lipoma. The patient was left with 180cm of small intestine. The outcome was successful no further chronic abdominal pain was presented by the patient.

CONCLUSIONS: The diagnosis of intussusception is often difficult because of the lack of specific clinical signs and of the problems in examining the small intestine. In this occurrence an lipoma was the provider of chronic intussusceptions which over long period of time caused additionally an psychiatric disorder.

Title: DEEP CHRONIC PERIPROSTHETIC INFECTION AFTER TOTAL ANKLE ARTHROPLASTY. A CASE REPORT AND LITERATURE REVIEW.

Author(s): Agnius Stulpinas[2]

Tutor(s): Aleksas Makulavicius, M.D., PhD.[1]

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BACKGROUND: This case report presents an adult woman with ankle endoprosthesis removal and cement insert implantation after she developed a periprosthetic infection. Periprosthetic infection after total ankle arthroplasty is a serious complication, often requiring revision surgery, including revision arthroplasty, conversion to ankle arthrodesis, or even amputation. There are few studies about periprosthetic infections in patients who have undergone total ankle arthroplasty. so it is important to review the treatment options of this complication.

CASE REPORT: A 76-year-old patient who has rheumatoid arthritis had total ankle arthroplasty in 2019. Until 2022 she only reported periodic pain in the ankle. 2022-01 during a routine visit a tumor was found in the posterior region of the ankle, at the tibialis posterior tendon projection. The ankle was swollen, arthrocentesis was performed, and according to bacteriological examination she was treated with cefazolin. During the next visit in 2022-03 she reported that the condition resolved for a month, soon after ankle pain and stiffness got worse. During the examination a sinus tract with purulent secretion was identified in the posterior ankle region, near the tibialis posterior tendon. Ankle x-ray revealed signs of instability and one broken screw. The patient was scheduled for surgery: endoprosthetic removal and cement spacer implantation.

CONCLUSIONS: In cases of deep chronic ankle periprosthetic infections the surgeon should first try antibiotic treatment with the first signs of infection, if antibiotic treatment fails there are four treatemnt options: revision ankle arthroplasty, cement spacer as a definitive treatment, conversion to ankle artrodesis and in extreme cases below-the-knee amputation. Since the cement spacer is the first stage of revision arthroplasty and conversion to ankle arthrodesis, it is the first choice of treatment. If the patient is elderly or less active and tolerates the spacer, it can be considered as definitive treatment.

Title: DEGLOVING INJURIES OF FINGERS, AMPUTATION OR RECONSTRUCTION? A CASE REPORT AND LITERATURE REVIEW.

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Tutor(s): Rūta Venciūtė[1]

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BACKGROUND: This case report presents an adult woman who underwent 3-finger degloving amputation during an accident at work after inserting her fingers into a roller. Degloving injuries are the separation of the skin and part of the subcutaneous tissue from the subcutaneous fascia, tendon sheath and muscles. There are currently no well-established guidelines or consensus on the choice of treatment for avulsion injuries of the fingers, so it is important to review the clinical presentation, treatment options and outcome.

CASE REPORT: A 46-year-old woman at work on March 8, 2022 got her left hand caught in a roller. During the examination an avulsion amputation of the second finger was identified, the neurovascular fiber of the second finger was torn off, the phalanges were not fractured, flexor and extensor tendons were not damaged; Amputations of the distal phalanges of finger IV and finger V; Diagonal fracture of the middle phalange body of the IV finger without significant dislocation. Diagnosis: Crush injury to the right hand. Avulsion amputation of the II and V fingers, distal phalanx amputation of the V finger, avulsion fracture of middle phalanx of the IV finger, wound of the III finger. Surgery: amputations of the II finger and V finger were performed at the levels of the proximal phalanx, IV digit stump formed at the distal phalange, leaving part of the distal phalanx. Immobilization with a cast.

CONCLUSIONS: In cases of avulsion injuries of the fingers, amputation may be an option if the IV or V fingers are affected and the patient is elderly or, for personal or work reasons, is unable or unwilling to receive quality treatment and rehabilitation. However, the experience of the surgeon, the psychosocial condition of the patient and the willingness to undergo long-term rehabilitation are of the greatest importance. Failure to adhere to the principles discussed in this presentation usually results in secondary amputation.

Title: DELAYED GRAFT FUNCTION AFTER RENAL TRANSPLANTATION AND RELATED COMPLICATIONS- A CASE REPORT

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BACKGROUND: Delayed graft function (DGF) is defined as the need for dialysis during the first week after transplantation and is a manifestation of acute tubular necrosis (ATN). DGF occurs with about 20% transplants and can lead to faster rejection of the graft.

CASE REPORT: The case of a 64-year-old woman who had a kidney transplant for vesicoureteral reflux, with two renal arteries on a common patch. The patient developed a DGF. In the first week after the transplant, she had to undergo dialysis three times. Flow in the pole artery was invisible on Doppler ultrasound. The patient was receiving standard immunosuppressive therapy- tacrolimus, mycophenolate mofetil (MMF) and prednisone, but due to low therapeutic concentrations of tacrolimus, a conversion to cyclosporine (CsA) was made. The toxic effects of MMF have been studied and associated with persistent diarrhoea according to the aetiology of Clostridoides difficile and Cytomegalovirus (CMV). Conversion to everolimus was performed. Serum creatinine levels stabilized and decreased to <3mg/dl from initial values of 5. 8-7mg/dl. During therapy, the patient developed COVID19 infection with 30% pulmonary parenchymal involvement. The patient was discharged at home but was hospitalized after two weeks with creatinine 7. 1 mg/dl. A biopsy of the transplanted kidney showed acute vascular cellular rejection (Banff Classification IIB). Treatment with 250 mg methylprednisolone infusion resulted in a decrease in serum creatinine to 2. 7 mg/dl.

CONCLUSIONS: In summary, the DGF contributes directly to the function of graft and subsequent acute rejection. It should also be taken into account that immunosuppressive patients are particularly susceptible to various viral, bacterial and fungal infections and the function of the graft is also impaired by antimicrobial therapies.

Title: OSTEOSARCOMA OF URINARY BLADDER AS ONE OF THE RAREST NEOPLASMS IN THE WORLD

Author(s): Stefania Włoczka[1], Paulina Śliwińska[1], Grzegorz Przybyła[1]

Tutor(s): lek. med. Jacek Jastrzębski[1]

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BACKGROUND: Osteosarcoma of the urinary bladder is a very rare malignant neoplasm (0.4% of bladder tumors, 40 cases described). It produces an osteoid or cartilage matrix with no visible attachment to the bone. It has a poor prognosis; most patients die within 6 months. Due to the morphological similarity with other tumors, immunohistochemistry is essential for the final diagnosis. The main treatment method is cystectomy.

CASE REPORT: In July a 75-year-old patient complained of hematuria. The ultrasound examination revealed a tumor with a diameter of 5 cm. He suffered from urgency and urinary incontinence. Performed transurethral resection of bladder tumor. During the procedure it turned out that the tumor was too large and the attempt to excise it turned out to be unsuccessful. Tumor samples were submitted for histopathological examination, which showed that the material contained spindle cells with mild cytological atypia and no mitotic activity with massive bone formation. However, numerous necrotic tumor fragments did not provide a complete diagnostic basis. The patient was discharged from the hospital and qualified for an elective cystectomy. In December, he was admitted with acute renal failure due to bilateral hydronephrosis. Due to the blockage of the internal urethra by the tumor, a bilateral renal fistula was created. A radical cystoptostatectomy was performed. The intraoperative material was sent for histopathological examination. The microscopic image of the tumor revealed sarcomatic urothelial carcinoma of the "osteosarcoma" and spindle cell carcinoma. The patient was discharged home with the recommendation of a follow-up at the oncology clinic.

CONCLUSIONS: Osteosarcoma of the urinary bladder is one of the rarer tumors of the urinary system, which is often very malignant. In the case of the described patient, this neoplasm, through its growth in the bladder, led to bilateral hydronephrosis, which in turn led to acute renal failure.

Title: COMPLICATIONS AFTER PENILE AUGMENTATION- CASE REPORT

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BACKGROUND: Penile augmentation is a procedure of thickening of the penis by injecting vaseline, hyaluronic acid, paraffin, autologous fat or camphor oil to subcutaneous tissues. These kind of procedures are not medically approved, and usually performed by non-medical staff or by patients by themselves. Two cases below show what kind of complications may occur after penile augmentation.

CASE REPORT: Patient 1: Patient came to emergency room because of burn of genitals. What brought doctors attention was not the burn, because it was only superficial, limited to the epidermis, but atypical shape of penis. After taking a detailed interview patient confirmed that few years ago he had penile augmentation with paraffin, which caused deformation. Patient 2: 49- year-old Patient was admitted to the Department of Urology. He underwent the procedure of subcutaneous injection of paraffin 12 years ago, which led to penis and scrotum deformation, sexual disability and difficulties with urination. The surgical intervention was needed. During the operation lesion with dimensions 6x3 cm has been radically excised from penis and scrotum. Six months after the surgery patient did not have urination problems and sexual functions were back. Histopathological examination of lesion showed it was sclerosing lipogranuloma. It is a benign lesion developed as a reaction between foreign body and damaged connective tissue.

CONCLUSIONS: Both rare cases shows how harmful non-medical practise could be. Presented adverse effects such as: deformation, urinary and sexual problems are just few examples from the long list. It is important to warn and educate patients. On the other hand, these cases show crucial role of thoroughly taken interview.

Title: TYPE A AORTIC DISSECTION COMPLICATED BY MANY SEVERE COMPLICATIONS IN 58 YEARS OLD MALE PATIENT: A CASE REPORT

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BACKGROUND: Acute type A aortic dissection (ATAAD) is a life-threatening condition. Immediate surgery is the gold standard in ATAAD management. Although prompt diagnosis and surgery increase a patient's chance of survival, the risk of mortality remains high in-hospital mortality reaches 22%.

CASE REPORT: We present a case of a 58-year-old male with Stanford type A aortic dissection. In January 2021, a patient was referred to the emergency department presenting acute chest pain. Four years prior, he underwent reconstruction of the type A dissected aorta. The current CT scan showed an aortic dissection originated from distal anastomosis. The patient was admitted to the cardiac surgery department for the aortic arch replacement, followed by TEVAR and b-EVAR procedure, 13 days later, as an emergency treatment of the bleeding to the pleural cavity. As a complication of long aortic coverage, SCI occurred, with clinical presentation of paraplegia. During the postoperative period, the patient developed intracerebral hemorrhage, which required treatment with craniotomy. In the following days, the patient was treated in the ICU, due to multiorgan failure. In further follow-up the patient developed sepsis, due to the infection of pleural cavity hematoma, and was treated surgically by thoracotomy. Forty days after the stent-graft implantation, the patient was transferred to the vasc surg unit, where he received further medical treatment and rehabilitation. In good general condition, he was discharged and referred for further rehabilitation.

CONCLUSIONS: Aortic dissection is a serious disease, which despite immediate treatment has a high risk of complications and death. Our patient, despite life-threatening complications, survived thanks to multidisciplinary care. However, he will require intensive rehabilitation in the future. It should be noted that reconstruction and stent-graft coverage of the aorta in long segment, always carries a high risk of spinal ischemia, especially in hemodynamically unstable patients.

Title: CYTOREDUCTIVE SURGERY (CRS) WITH HYPERTHERMIC INTRATHORACIC CHEMOTHERAPY (HITHOC) FOR A MALIGNANT PLEURAL MESOTHELIOMA: A CASE REPORT

Author(s): Iris-Iuliana Adam[3]

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BACKGROUND: In the past several years, a new method of treatment of the primary or secondary tumors occured, the method of the hyperthermic intrathoracic chemotherapy (HITHOC). Usually, HITHOC is used along with cytoreductive surgery (CRS) on the application of the palliative treatment of various malignant pleural effusion. Almost all studies performed were centrated solely on the effect of the procedure on the malignant pleural (MPM) cells. A combination of intrapleural hyperthermic effused cisplatin for a timespan of two hours, inflicted a significant apoptosis of tumorous MPM cells.

CASE REPORT: We present as follows the palliative treatment of an malignant pleural mesothelioma, with the help of cytoreductive surgery along with the HITHOC procedure, due to the fact that the main tumor was extended in the pleura and currative surgery was not an option. A 69-year-old female patient with a history of chemotherapy presented to the thoracic surgery unit of the St. Constantin Hospital Brasov with signs of cough, dyspnea, fatigue and weightloss. The clinical and laboratory tests made confirmed the presumptive diagnosis of a malignant pleural mesothelioma, following the surgical cytoreductive- HITHOC treatment. Despite the poor survival prognosis of the malignant pleural mesotheliomas, we highlight the excellent recovery of the patient along with the fact that he was able to initiate the oncological treatment without any complications.

CONCLUSIONS: The major advantage of HITHOC procedures is that there is a high local concentration of chemotherapy (usually cisplatin) and the low systemic absorbtion of chemotherapeutic agents. The literature regarding cytoreductive surgery which is combined with HITHOC indicates that patients suffering from thymic tumors presenting with pleural spread, MPM's and secondary pleural carcinosis are the ideal for this procedures.

Title: TO DIAGNOSE WHAT IS INVISIBLE AT FIRST SIGHT - DYNAMICS OF LESIONS DEVELOPMENT AND THE POSSIBILITY OF DETECTING THEM WITH PET/MRI AND CT - ANALYSIS OF TWO CASES

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Tutor(s): Mirosław Kozłowski DSc[1]

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BACKGROUND: Lung cancer is the most commonly diagnosed cancer in men with the highest mortality rate. In women, on the other hand, it is the third most frequently diagnosed cancer (after breast and colorectal cancer) and the most common cause of death in oncology patients. The test of choice in the diagnosis of lung cancer is invariably computed tomography (CT), however, positron emission tomography with magnetic resonance imaging (PET/MRI) is gaining increasing importance and its usefulness is constantly being evaluated and researched.

CASE REPORT: Patient 1: A 47-year-old man was admitted to the thorax surgery clinic for further diagnostics of an abnormal CT image taken a month earlier - polycystic lesions in the left lower lobe. In CT a decrease in the lesion was seen, but lymph nodes were not enlarged. The cytological examination revealed an inflammatory process. PET/MRI, performed 2 days after discharge from the hospital, revealed a metabolically active proliferative lesion in the left lung with metastasis to mediastinal lymph nodes. After 3 cycles of neoadjuvant chemotherapy - a left thoracotomy, lower lobectomy with mediastinal lymphadenectomy was performed. Patient 2: A 69-year-old man was referred to the hospital to rule out recurrence after undergoing a lower left lung lobectomy 3 years earlier (squamous cell carcinoma). CT scan of the chest showed no pathological changes. Six months later, in PET/MRI active proliferative process in the right lung was observed. The patient underwent wedge resection of the lower lobe of the right lung. Six months after the burgery CT was performed - small calcification and atelectasis-inflammatory changes were noticed in the left lung. PET/MRI one month later - the presence of metabolically active proliferative process in this lung.

CONCLUSIONS: Monitoring and detecting early changes indicative of lung cancer progression is very important for the possibility of implementing appropriate treatment, which may contribute to prolonging patients' lives. The utility, sensitivity and specificity of PET, have been greatly enhanced by its combination with CT or MR imaging and by new radiopharmaceuticals that allow the assessment of many phenotypic changes characteristic of different tumor processes. It is postulated that PET/MRI can detect even small lesions several months in advance compared to CT and is effective in assessing the dynamics of lesion development.

Title: HIP IN THE URINARY BLADDER- AN EXTREMELY RARE BLADDER INJURY

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Tutor(s): Grzegorz Młynarczyk MD PhD[1]

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BACKGROUND: Iatrogenic urinary system injuries occur often as a result of gynaecological procedures. The most commonly damaged urinary tract structure during operations is the bladder. Urological complications of total hip arthroplasty have been reported in the literature, nevertheless failure of the procedure with central migration of the prosthesis is uncommon. This is the first report of a prosthesis dislocation rupturing bladder and external iliac artery four years after successful hip replacement.

CASE REPORT: 75- year old women with a history of total hip arthroplasty in 2014 was admitted to the hospital due to hip pain, heamaturia and walking difficulties lasting for four days. Ultrasound revealed a large echogenic structure with acoustic shadowing in the bladder. X-ray showed dislocation of the acetabular cup of the right hip prosthesis and the implant stem localised in the bladder. Surprisingly, no contrast extravasation was established in urethrocystography. Eventually, cystoscopy confirmed bladder trauma caused by the hip prosthesis stem. Right external iliac artery damage was observed in CT angiography. Because of patient's deterioration she had to undergo an emergency operation. The bleeding from right iliac arteries was stopped and the prosthesis was removed without any replacement. Bladder rupture was repaired, the damaged part of external iliac artery was removed and replaced with vascular graft. The patient was transferred to the ICU. 23 days later she was discharged home.

CONCLUSIONS: Iatrogenic bladder injury can have an unforeseen and surprising origin. Moreover, the results of diagnostic tests may be misleading, therefore caution should be exercised. Multiple complex hip surgeries increase the risk of hip prosthesis migration. In order to increase patient's chances of survival a quick diagnosis and close cooperation in a multidisciplinary team is necessary as surgical repair is complex and highly individualised.

Title: TITLE: A RARE CASE OF PRIMARY SMALL CELL NEUROENDOCRINE CARCINOMA IN 66 YEAR-OLD MAN

Author(s): Raminta Šulskutė[1], Kristina Buzaitė[1]

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BACKGROUND: Primary small cell neuroendocrine carcinoma in the nasal cavity and paranasal sinuses is a rare and aggressive neoplasm. Patients often visit a doctor with complaints of facial swelling and pain, headaches, nasal bleeding, and vision problems in the early stages, but these clinical manifestations have no diagnostic specificity. Because of its rarity, the complexity of histological diagnosis and diversity of treatment options, we present a case of the patient with small cell neuroendocrine carcinoma that may be helpful in the process of better diagnosing and treatment of this uncommon disease.

CASE REPORT: A 66-year-old man presented with a complaint of left cheek pain not responsive to treatment with NSAID and opioids. On examination, a swollen and painful cheek was noticed. For further evaluation, the patient was admitted to Otolaryngology Clinics. An ultrasound scan showed no abnormal findings. PET/CT and MRI scans revealed a heterogeneous soft tissue attenuation mass in the left anterior nasal cavity, causing the erosion of the medial wall of the left maxillary sinus and the destruction of maxillary bone. Biopsy revealed small cell neuroendocrine carcinoma, strongly positive for cytokeratin (CK), moderately positive for CD-56, synaptophysin, p-16 and thyroid transcription factor -1 (TTF-1) and negative for p-63, CK-5. During abdominal ultrasound and PET/CT metastases were detected in the liver. Chemotherapy was chosen as a main treatment over surgery treatment due to advanced stage (st. IVc cT4bN0M1 G3) and destructive processes involving surrounding structures. 3 phases of chemotherapy were planned, 2 of them patient already received. At present, the patient is symptomatically better and has regular follow-up at the otolaryngology and radiation oncology departments.

CONCLUSIONS: It remains challenging to diagnose small cell sino-nasal carcinoma because it is rare and the tumor grows aggressively without manifestation in early stages. A multimodality treatment of neuroendocrine tumors of the sino-nasal tract is needed because of their destructiveness and local recurrence. One of the most decent management methods should be neoadjuvant chemoradiation followed by adjuvant chemotherapy.

Title: TITLE: A CASE REPORT OF POLYTRAUMATIZED PATIENT WITH MULTIPLE COMPLICATIONS AND PROLONGED RECOVERY

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BACKGROUND: Trauma is still one of the leading causes of death in patients younger than 40 years. Clinical management of severely injured patients is difficult at all stages of treatment during the clinical course. Survivors of severe polytrauma often require lengthy physical rehabilitation and may suffer long-term physical, cognitive, and psychological problems as a result. The aim of this case is to investigate the probable treatment options of polytraumatized patient with multiple complications and prolonged recovery.

CASE REPORT: Here we present the case of a 35-year-old woman, who presented at the emergency department for high energy trauma, by accidentally getting into a motor vehicle accident, which resulted in free intraperitoneal fluid and bilateral pneumothorax. CT scan showed bilateral pneumohemothorax with multiple fractures of ribs, duodenal rupture, partly dissected infrarenal aorta and fractures of L1, L2 spine segments. Due to impaired haemodynamic urgent laparotomy was performed and defect in duodenum was found and sutured. Acute vein thrombosis appeared the next day. After 3 weeks relaparotomy was performed due to another defect in duodenum. Surgical wound was left unsutured with the application of a vacuum system. Another relaparotomy was performed in less than a week due to multi perforations in the colon which led to right hemicolectomy. Surgery site skin defect treatment was managed with a vacuum system in 3 weeks. Patient then admitted to the neurosurgery department to fix unstable spine fractures but due to bedsores it was unable to perform a surgery. Although, after 7 months at the hospital the patient receives a full rehabilitation program.

CONCLUSIONS: The treatment of polytrauma requires a well-planned methodical approach that can be of utmost importance in achieving satisfactory functional results. It is also essential to reduce bed-days at hospital in order to decrease the possibility of complications. Furthermore, this case illustrates that the vacuum system is a safe and effective device in the treatment of surgical wounds.

Case report V

Cardiology

Title: TAKOTSUBO CARDIOMYOPATHY AS A RESULT OF SEVERE COVID-19

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BACKGROUND: Cardiovascular complications of COVID-19 may include a wide clinical spectrum of heart diseases such as myocarditis, myocardial infarction, arrhythmias, or venous thromboembolism. We present a case of an orthopedic patient with COVID-19 complicated by Takostubo cardiomyopathy.

CASE REPORT: A 68-year-old female patient after multi-organ injury was transferred from the orthopedic to the cardiology department with suspicion of ACS due to rapidly increasing dyspnea, increased troponin T level, and ECG changes correlating to extensive apical myocardial infarction. Urgent coronary angiography showed no significant stenosis. CT angiography excluded pulmonary embolism. However, diffuse areas of "frosted-glass" pattern in both lungs were found and the PCR test for SARS-CoV 2 was positive. Because of high respiratory effort and unsatisfactory SpO2, a high flow nasal cannula and prone position were used. Bedside echocardiography revealed apical ballooning of the left ventricle (LV) -wall motion abnormalities involved the apical and mid-ventricular segments of the LV with hypercontractile basal segments (EF 38%). Takotsubo cardiomyopathy was diagnosed. Unfortunately, due to exacerbation of the respiratory and heart failure (EF 25%) she was treated in ICU with pressor amines and complex antibiotic therapy. After the next 20 days, stabilization of the patient's condition was observed and control echocardiography confirmed significantly improved LV contractility (EF 55%), so she was qualified for further orthopedic treatment.

CONCLUSIONS: Rapidly progressing SARS CoV-2 pneumonia complicated by the respiratory failure may contribute to "stress cardiomyopathy", worsening LV function and the patient's prognosis. Takotsubo cardiomyopathy, is a clinical syndrome characterized by transient reversible abnormalities of LV contractility in the absence of significant coronary artery stenosis, usually in the apical region, which is caused by psychological or physical stress as infection and hypoxia, present in severe COVID-19.

Title: IS THERE AN ALTERNATIVE TO ICD FOR PATIENTS WITH HIGH RISK OF SUDDEN CARDIAC DEATH?

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BACKGROUND: Heart failure (HF) is a major complication in post-acute coronary syndromE patients. A reduced left ventricule ejection fraction (LVEF) puts them at risk of sudden cardiac death (SCD). During the recovery period, the decision regarding the implantation of an implantable cardioverter-defibrillator (ICD) is challenging. If the patient is at risk of sudden cardiac death SCD it may be beneficial to use the LifeVest defibrillator device as the bridge to a decision regarding the implantation of an ICD.

CASE REPORT: A 54-year old patient with no previous history of cardiac diseases was admitted to the catheterization laboratory with the diagnosis of ST-elevation myocardial infarction (MI) of the anterior wall. The patient complained of having recurring stinging pain for a week which was described as the strongest on the day of admission. Coronary angiography revealed an obstructed left anterior descending coronary artery - angioplasty with implantation of 2 drug-eluting stents was performed. Echocardiography revealed severely impaired systolic function of the LV with an ejection fraction of 18%. A full treatment of heart failure and coronary artery disease was administrated. After 13 days, the patient was discharged with LifeVest due to the high risk of sudden cardiac death. During the follow-up, the patient was continuously monitored via LifeVest (telemonitoring), episodes of non-sustained ventricular tachycardia were observed. One-month post-MI follow-up visit showed an increase in EF - 33% and consecutive visits after two months - EF 42%. As the patient's clinical status improved (NYHA class I), the decision was made to cease monitoring with the LifeVest and maintain preventive treatment.

CONCLUSIONS: Patients with post-MI HF are often at high risk of SCD. Such patients may benefit from continuous monitoring of the patient's heart and effective treatment in case of cardiac arrest. The strategy of prevention of SCD due to VT and VF could iclude a temporary wearable cardioverter defibrillator for the time necessary for potential recovery of systolic function. It may serve as a bridge to the decision regarding the need for the implantation of an ICD for a llifetime.

Title: INTRAMYOCARDIAL DISSECTION OF THE LEFT VENTRICLE - A CASE REPORT OF A RARE COMPLICATION OF MYOCARDIAL INFARCTION

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BACKGROUND: Intramyocardial dissection (IMD), although extremely rare, may be a fatal complication of myocardial infarction (MI). The cause can also be non-ischemic, e.g. iatrogenic, as a result of a trauma or an aortic aneurysm. The pathophysiology of IMD involves the dissection of myocardial fibres and blood inflow that leads to neocavitation within the myocardial wall. IMD is a difficult entity to diagnose, since only 40 cases were described in the literature.

CASE REPORT: A 61-year-old man with a history of ischemic cardiomyopathy, with an implantable cardioverter defibrillator, was admitted to the Cardiac ICU because of worsening symptoms of heart failure to NYHA Class IV and nonspecific chest pain. On admission, the patient was distressed with severe dyspnoea. He also presented pale skin, tachypnoea, and swelling of lower extremities. Transthoracic echocardiography showed a depressed left ventricular ejection fraction of 10-15%, as well as a large, balloting structure visible in the light of the LV. The patient was treated with noradrenaline, furosemide, and antibiotics. Sustained low-efficiency dialysis due to acute kidney injury was performed. On the next day, the patient's condition was critical with circulatory failure despite the infusion of pressor amines. There was a multi-organ failure followed by metabolic acidosis and elevated levels of rhabdomyolysis parameters. Ventricular fibrillation occurred and resulted in a cardiac arrest. The rhythm was successfully defibrillated. The patient's condition was critical, he remained in cardiogenic shock with peripheral hypoperfusion. Later that night, cardiac arrest in the mechanism of PEA occurred, which led to the death of the patient.

CONCLUSIONS: The IMD is a rare complication of MI, which can be diagnosed via echocardiography or other imaging techniques, such as computed tomography or magnetic resonance imaging. Management includes conservative treatment and surgical approach for hemodynamically unstable patients. In this case, the patient was not eligible for a surgery due to cardiogenic shock, sepsis and comorbidities.

Title: "INFECTIVE ENDOCARDITIS ON BICUSPID VALVE – THE ECHOGRAPHIC AND SURGICAL CHALLENGE"

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BACKGROUND: Bicuspid aortic valve (BAV) is the most popular congenital heart abnormality in adults, observed in 1-2% of population and is a risk factor of infective endocarditis (IE), valve degeneration, aortic aneurysm. Most of them contributes type 1, which is fusion of right and left coronary flap. Oxidative stress and inflammation factors provokes defect in the outflow of blood. Clinical image of type 1 is coarktation of aorta and left heart defects. Type II arises from endothelial disfunction, manifests as aortic stenosis. Patients with BAV are in a middle risk of IE, which is a high mortality disease, with rate 15-30%.

CASE REPORT: 31-old man without chronic diseases was admitted with fever, breathless, vertigo and malaise. He performed removal of two molar teeth 3 weeks earlier. Physical examination found tachycardia (123/min) and blood pressure 133/83mmHg, in laboratory tests high level of C-protein (26,8 mg/l) and haemoglobin (12,8mg%). Electrocardiography confirmed atrioventricular block. Transthoracic echocardiography (TTE) resulted BAV regurgitation with systolic incompetence of left ventricle. In TTE was a hyperechogenic mass, similar to perivalvular abscess. Blood culture was positive for Streptococcus S., so confirmed complicated IE. Patient was treated with benzylpenicillin G, _-adrenolytic and diuretics. Due to heart failure, perivalvular abscess and aortic valve regurgitation, patient was qualified for surgical intervention by David's method, in order to conserve native valve. Post-chirurgical TTE diagnosed mitral valve regurgitation, arising from perforation of 3 segment of frontal cusp. Severe damage of mitral valve caused increasing symptoms of heart failure. Mitral valve annuloplasty was performed, followed by antibiotics and metoprolol. Patient was discharged in good general condition for further rehabilitation.

CONCLUSIONS: Almost half of patients with IE need a surgical intervention. In this case, uncontrolled infection made impossible clinical improvement, despite antibiotic and surgical treatment. This patient, in admission, represented conduction disturbance in ECG, that may be a first sign of perivalvular complication in IE, due to anatomical proximity to the atrioventricular node and aortomitral continuity. Despite that, ESC guidelines don't advise antibiotic prophylaxis for patients with BAV, this case shows important impact in strict hygiene of oral cavity and regular stomatological visits in this group.

Title: SURPRISE, SURPRISE! – SINGLE CORONARY ARTERY DIAGNOSED IN 83-YEAR-OLD WOMAN

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BACKGROUND: Single coronary artery (SCA) is one of the rarest congenital coronary artery anomalies, with the incidence ranging from 0.01% to 0.07%. SCA can be either an isolated anomaly or associated with other congenital abnormalities such as bicuspid aortic valve. The malignant variety of SCA is the type in which SCA is located between the aorta and the pulmonary artery.

CASE REPORT: An 83-year-old woman with suspected chronic coronary syndrome (CCS) was admitted to the cardiology department for elective coronary angiography. While performing the procedure, it was difficult to cannulate the left main artery in the left aortic sinus with JL4 and JL3.5 standard catheters. The right coronary ostium was engaged with a JR4 catheter, demonstrating a superdominant right coronary artery with additional left anterior descending and circumflex arteries arising from the right coronary ostium. There were no significant atherosclerotic lesions in any of the branches. The patient received conservative treatment and was discharged from the hospital 1 day later. Based on the site of origin and anatomical distribution of the branches, SCA is classified into 2 main categories: “R,” right type, and “L,” left type. In 75% of the cases, the artery is located between the aorta and the pulmonary artery, leading to an increased risk of sudden cardiac death due to its compression. Therefore, additional assessment of the course of the vessel using computed tomography should be considered as a routine diagnostic approach. Approximately 30% of the patients with malignant artery course die during the first 2 decades of life.

CONCLUSIONS: An anomalous course of coronary artery should not be excluded in the diagnostic process even in elderly patients, who have been asymptomatic for most of their life. Medical practitioners performing coronary catheterization are ought to be capable of facing the challenges that may arise during the procedure due to the occurrence of the previously undiagnosed coronary artery anomaly.

Title: COMPREHENSIVE IMAGING OF CARDIAC LIPOMA AND ITS DIAGNOSTIC DIFFICULTIES.

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BACKGROUND: Cardiac lipomas are rare and benign. Most frequently they occur in the right atrium or the left ventricle and should be differentiated from other tumors. Our report highlights the importance of a comprehensive tumor evaluation, including echocardiographic assessment of location, shape, echogenicity, presence of microcirculation, and, most importantly, the evaluation of hemodynamic consequences. Tomographic techniques provide an important insight into the tissue composition of the mass.

CASE REPORT: A sixty-seven-year-old woman with dyspnea and cough was referred to the chest CT. The study revealed a mass in the right atrial wall, with no lung pathology. The patient was referred to the hospital for further evaluation. Transthoracic echocardiography confirmed an immobile mass with a moderate-to-high echogenicity (size 27 _ 15 mm) attached to the right atrial roof. Transesophageal echocardiography showed a mass (size 30 _ 30 mm), with a well-defined border, located in the right atrium. A low-velocity scale color Doppler study did not reveal blood flow in the tumor. Cardiac magnetic resonance imaging showed a well-circumscribed and immobile mass, arising from the right atrial wall. T1- weighted and fast spin-echo images revealed a high signal of the tumor, which was saturated with a fat suppression sequence. The short-tau inversion recovery sequence revealed a very low signal in the mass; which indicated a lipid origin of the mass. Considering the lack of symptoms and high likelihood of a benign course of the tumor, the Heart Team consilium decided on conservative treatment and periodic clinical observation.

CONCLUSIONS: Multimodality imaging, including echocardiography, computed tomography (CT) and cardiac magnetic resonance (CMR) allow to diagnose and differentiate ambiguous cardiac structures. In our case, cardiac magnetic resonance was the most useful, helping to differentiate the tumor, and informing the decision to provide conservative treatment and further follow-up.

Title: PATIENT WITH MITRAL ANNULUS DISJUNCTION ARRHYTHMIC SYNDROME

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BACKGROUND: Mitral annulus disjunction (MAD) is an abnormal atrial displacement of the mitral valve leaflet, which has been associated with mitral valve prolapse (MVP).

CASE REPORT: A 48-year-old male patient was admitted due to a sudden cardiac arrest by ventricular fibrillation. He had been twice defibrillated to restore the rhythm before he arrived at the hospital. The physical examination revealed: a regular heart rate of about 72 beats/min, blood pressure 129/85 mmHg, late systolic murmur above the heart. In the past, he had arrhythmias (4,000 ventricular ectopic beats daily), MVP with moderate mitral valve insufficiency. In echocardiography: enlarged left ventricle and left atrium, no features of left ventricular diastolic dysfunction, ejection fraction 55%, severe mitral valve regurgitation, leaflets with Barlow syndrome morphology, thickened multi-segment prolapse of both lobes, fibrosis in the posterior part of annulus, MAD present, a left-right leak through the patent foramen ovale. Heart MR confirmed results from echocardiography. The patient was qualified for mitral valve plasty and implantation of a subcutaneous cardioverter-defibrillator S-ICD in the secondary prevention of sequence of cardiac death. During hospitalization, the patient had 2 attacks of atrial flutter interrupted with amiodarone. Ultimately, he was diagnosed with mitral annulus disjunction arrhythmic syndrome.

CONCLUSIONS: MAD may be associated with the morphological and functional remodelling of the left ventricular, which may be the underlying cause of ventricular arrhythmias and sudden cardiac death. MAD itself should be considered an arrhythmogenic entity, regardless of the presence of MR or MVP, and implantation of an S-ICD, as in our patient, can save a life.

Title: MYOCARDIAL INFARCTION WITH MULTI-VESSEL THROMBOSIS – IS COVID-19 TO BLAME?

Author(s): Natalia Krajewska[1], Jakub Komorowski-Roszkiewicz[1]

Tutor(s): Anna Fojt, MD[1]

Affiliation(s):

[1]1st Department of Cardiology, Medical University of Warsaw

BACKGROUND: SARS-CoV-2 increases risk of thrombotic complications, which may indicate myocardial infarction (MI) and is connected with worse prognosis. Type 1 MI is caused by atherosclerotic plaque disruption, while type 2 is a result of an imbalance between oxygen supply and demand, which potentially arises from embolism to the coronary arteries, respiratory failure or others.

CASE REPORT: A 52-year-old man with hypertension was admitted to the cardiac intensive care unit due to pulmonary oedema. He reported crushing retrosternal pain and severe dyspnea that occured during strenuous physical activity. Lung auscultation revealed fine crackles in the left lower lobe and diminished sound of the right. The laboratory tests indicated elevated troponin levels. In ECG there were negative T waves in II, III, aVF, V5-V6, decreased ST segments in leads V2-V4. ECHO revealed akinesis of lateral and inferolateral walls with EF=25%. X-ray disclosed interstitial infiltration in both lungs. The patient was diagnosed with NSTEMI complicated by acute heart failure. Due to hypercapnic pulmonary failure a respiratorotherapy was implemented. Despite, his arterial blood gas did not improve. In coronarography multivessel disease was present with massive thrombus in all main coronary arteries. Angioplasty of circumflex branch and balloon catheterization were attempted, which did not restore epicardial blood flow and it ended with asystolic cardiac arrest. RT-PCR test detected gene N2 of SARS-CoV-2, but gene E was not. Taking into account respiratory failure and described radiological changes, it was consistent with COVID-19 infection.

CONCLUSIONS: COVID-19 has both influence on the pulmonary and cardiovascular system. In literature a connection between COVID-19 and higher risk of cardiovascular disease with thromboembolism has been established. MIs accompanied with COVID-19 usually occur with massive thrombosis, most often in more than one coronary artery and is connected with poorer outcome. Most of them are type 2. Complexity of our patient's case cannot assign unambiguously the type of MI.

Title: RECURRING ELECTRICAL STORM IN POST MYOCARDITIS PATIENT

Author(s): Louise Orth[1], Anna Lena Mai[1]

Tutor(s): Dr. Magdalena Róg-Makal[1]

Affiliation(s):

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BACKGROUND: Ventricular tachycardia (VT) is a life threatening arrhythmia which is often a symptom of an underlying cardiac disease. A syndrome of three or more sustaining episodes of VT within 24 hours is called Electrical Storm. One of its rare but identified causes is myocarditis. Ventricular arrhythmias may present during and after the active disease. The clinical presentation can vary from self-limiting to hemodynamically unstable VT which need pharmacological and electrical intervention.

CASE REPORT: We present a 47-year-old woman with recurrent Electrical Storm since May 2021 after myocarditis. A coronarography presented no pathological changes in July. In October she was admitted to our department again with VT. Electrical cardioversion was performed successfully yet the arrhythmia kept returning. She received amiodarone which had to be exchanged for lidocaine due to liver failure. Lidocaine was discontinued due to signs of a stroke and amiodarone was again introduced. In October she received an ICD and was discharged but readmitted in November due to suspected infection at the ICD implantation site. Empirical antibiotic therapy was started, the ICD was removed. In December she had an unsuccessful ablation. She continued to have VT, so after antibiotic treatment and normalization of CRP another ICD was implanted. She was discharged but readmitted again in February 2022 due to another infection at the implantation site. Inflammatory markers were unremarkable, blood and urine cultures negative for infection.The ICD was removed and the patient qualified for a LifeVest, which has the possibility of defibrillation as she must be supported with treatment of life threatening arrhythmia.

CONCLUSIONS: Treatment resistant VT are a rare, but life-threatening complication of myocarditis. Due to an unknown source of infection the patient required an external defibrillator vest. For the future we hope to successfully and permanently implant another ICD DR, perform successful ablation or lastly qualify her for heart transplantation.

Title: A STRIKING CASE OF A PATIENT WITH SEVERE AORTIC REGURGITATION

Author(s): Kacper Orzeł[1], Maria Włosińska[1]

Tutor(s): Małgorzata Knapp MD PhD DSc[1], Anna Lisowska MD PhD DSc[1], prof. Anna Tomaszuk-Kazberuk MD PhD DSc[1]

Affiliation(s):

[1]Department of Cardiology

BACKGROUND: Severe and moderate aortic regurgitation exists in 0,5% of the population. A large percentage of the patients have prohibitive risk for surgery and only pharmacological treatment of heart failure may be implemented, while the underlaying valvular heart disease remains without definitive treatment. Interestingly, novel transcatheter aortic valve replacement (TAVR) devices have been used “off-label” to treat aortic regurgitation with promising results.

CASE REPORT: 53 year-old woman, with AF treated with acenocumarol, had atrial myxoma resection with mechanical mitral valve replacement and reconstruction of the Valsalva sinus and the atrial wall in 2011. The course was complicated with ischemic stroke followed by haemorrhagic transformation. Due to atrioventricular node dysfunction caused by the operation, the patient had DDD pacemaker implantation. In 2012 another ischemic stroke occurred. Furthermore, she has severe aortic and tricuspid regurgitation as well as hypothyroidism due to subtotal strumectomy. In 2021 she was admitted to a gynaecological ward due to abnormal vaginal bleeding, endometrial ablation was performed. Because of postoperative bleeding she was reoperated twice- total hysterectomy and haemostatic suturing. She was transferred to the CICU in hypovolemic shock. After 9 days internal iliac arteries were ligated due to bleeding recurrence. In total, 22 units of RCC, 8 units of FFP and 5 units of cryoprecipitate had to be transfused during the hospitalization. 5 days after the last surgery, a huge hematoma of the femoral area had to be drained. Patient’s condition improved, she was discharged home.

CONCLUSIONS: Despite the benign character of myxoma and low mortality rate in patients surviving surgical excision of that tumour, severe complications may occur. In patients with a mechanical valve undergoing a surgery, unpredictable bleeding may arise in spite of appropriate anticoagulation. On account of numerous comorbidities and high bleeding risk surgical management of valvular pathologies may be impossible. New treatment options like TAVR may turn out to be a safe and successful alternative.

Title: RECURRENCE OF PACEMAKER-RELATED INFECTION IN A PATIENT WITH DOWN SYNDROME: A CASE REPORT

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BACKGROUND: Pacemaker-related infection is a serious complication following pacemaker implantation surgery, with a substantial risk of morbidity and mortality. Down syndrome is associated with a high incidence of congenital heart disease (CHD) and children with Down syndrome and CHD are more likely to require a permanent pacemaker following surgical repair of the defect, but they are also more susceptible to infections, including pacemaker infections, due to congenital immune dysregulation.

CASE REPORT: A 16-year-old female was brought by her mother to the emergency department because of swelling of the pacemaker implantation site scar. The patient was born with 21 trisomy and had been pacemaker dependent since 2005, due to surgical repair of congenital atrioventricular septal defect. Additional medical history included pacemaker lead endocarditis in 2014. Diagnoses of right-sided pacemaker pocket infection with fistula formation and a pacemaker malfunction were made - an electrocardiogram showed complete atrioventricular block with severe bradycardia (ventricular rate 30 bpm). A new pacemaker generator with both atrial and ventricular leads was implanted on the left side. However, 14 days after the surgery, the new implantation site showed erythema, serosanguinous and purulent discharge. A wound culture was obtained and was positive for coagulase-negative staphylococci, therefore, a left-sided pacemaker pocket infection was diagnosed. Both left and right-sided pacemaker generators and leads were explanted and a leadless pacemaker Micra was implanted into the right ventricle. After the surgery, recovery was uneventful - both wound sites healed completely and the patient is doing well after discharge from the hospital.

CONCLUSIONS: As the treatment of peacemaker-related infection requires the removal of the pacemaker system, it is crucial to make an assessment of individual risk factors for infection, as in this case – Down syndrome and multiple pacemaker-related surgeries, before implantation of a new pacemaker system in pacemaker-dependant patients. Our case highlights that in high-risk patients, leadless pacemakers provide an excellent therapeutical alternative to lead-based systems.

Title: COMPLICATIONS AFTER PACEMAKER IMPLANTATION IN AN 81-YEAR-OLD FEMALE PATIENT.

Author(s): Bartosz Zambrzycki[1], Michał Łuczaj[1]

Tutor(s): dr hab. n. med. Anna Lisowska[1], dr n. med. Robert Sawicki[1]

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BACKGROUND: Sick sinus syndrome is a disorder of the sinoatrial node. The condition is caused by a not fully functional pacemaker and damaged impulse transmission. The dysfunction can occur at any age but it is the most common in older age. One of 600 cardiac patients of 65 years of age or older develops sinus node dysfunction. [1] The treatment of the disease can include a placement of a peacemaker. Pacing for asymptomatic SND does not affect prognosis. Therefore to improve patients' live with symptomatic bradycardia due to SND, permanent pacing is considered as an appropriate indication.[2]

CASE REPORT: This case report presents the medical history of an 81-year-old woman with heart failure with preserved ejection fraction, sinus node disease in the form of symptomatic bradycardia, persistent atrial fibrillation, acute tricuspid regurgitation surgically repaired in 2013, and moderate mitral regurgitation. The patient had a VVI pacemaker implanted in 1995 which was removed transvenously in 2013 due to pacemaker pocket infection. The procedure was complicated by tricuspid valve injury. Cardiac surgical intervention was essential to reconstruct the valve leaflet. The patient underwent valve reconstruction and an epicardial DDD pacemaker implantation. The pacemaker generator was located in a space developed between the muscles and fascia of the abdominal wall. Currently, due to increasing ventricular exit block and pacemaker battery depletion, the decision was made to implant a leadless MICRA pacemaker.

CONCLUSIONS: This case report illustrates therapeutic challenges arising from the presence of early and late complications of medical procedures. The patient therefore required a non-standard procedure, i.e. implantation of a new generation leadless MICRA pacemaker. Although the decision went beyond the standards of conduct, the advantages of this approach are multiple.

Title: STEMI AND NSTEMI IN PERIOD OF TWO WEEKS

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Tutor(s): Dr. Neringa Česnauskienė[2]

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BACKGROUND: Acute coronary syndrome (ACS) has several subgroups: ST-segment elevation myocardial infarction (STEMI), non-ST-segment elevation myocardial infarction (NSTEMI), and unstable angina (UA). Clinical signs and ECG of NSTEMI and UA are very similar, the difference is that NSTEMI has a positive test of cardiac troponin biomarker. STEMI is an occurrence of transmural ischaemia which can induce myocardial necrosis. Major risk factors of ACS are tobacco, alcohol abuse, high blood pressure, physical inactivity.

CASE REPORT: A 60 year old male patient underwent a NSTEMI and stenosis of the right coronary (RCA) and left circumflex arteries. Percutaneous coronary intervention was done of S2, S3, S13 segments. Chest pain dissapeared and the situation was stable. However, two weeks after NSTEMI the patient experienced loss of consciousness, ventricular fibrillation and underwent resuscitation. Diagnosis was inferior STEMI. Thrombosis of S13 stent and onset of RCA stents thrombosis was detected during angiography. Antiplatelet drug Eptifibatide was injected immediately and fibrinolytic therapy was performed. Thrombosis of the stents vanished. After two recurrent heart attacks, ejection fraction decreased to 30% (before the events it was 50%). Patient's risk factors for ACS were smoking, alcohol abuse, primary arterial hypertension, ischemic heart disease. He also had some comorbidities: left ventricular failure, first-degree atrioventricular block. After the first event of NSTEMI the patient was prescribed with aspirin, ticagrelor, atorvastatin, zofenopril, metoprolol, spironolacton and omeprazol. However, the patient took the prescribed medication incorrectly, skipped daily doses of antiplatelet drugs and this led to stent thrombosis.

CONCLUSIONS: Patients who survive NSTEMI has a risk of reccurent MI (90_day probability of readmission is 2.5% and no information about readmission in two weeks was found) and one of the main causes is stent thrombosis (17%). This risk is closely related to the number of risk factors, comorbidities and improper usage of medication. Recurrent ACS is also associated with deterioration of heart function, increased mortality and the risk of death remains elevated more than a year.

Title: ISCHAEMIC ATTACK OF THE CEREBELLUM LED TO THE DEVELOPMENT OF DEPRESSION WHICH INCREASED THE RISK OF RECURRENCE OF STROKE AND CARDIAC EVENTS

Author(s): Gabrielė Žūkaitė[1], Agnė Baliūnaitė[1]

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BACKGROUND: Depressive symptoms are one of the most frequent complications after the stroke which also increse the risk of recurrence of it. The latter studies suggest that depression and its symptoms are also associated with increased risk of cardiac events and mortality. We present a case of a woman with unstable angina pectoris (UAP), ischemic attack (IA) which repeated twice, and these events led to worsening of the depression, anxiety and sleep disturbances.

CASE REPORT: A 57 year old woman underwent an event of UAP and had lots of comorbidities: type 2 diabetes mellitus (T2DM), dyslipidemia, depression, primary arterial hypertension (PAH), extrasystoles (800 supraventricular and 500 polymorphic ventricular extrasystoles were identified during 24-hour Holter monitoring), spinal pain and IA of the cerebellum which occured 28 years ago. Control of T2DM is adequate using oral hypoglycemic drug (HbA1c-6,37%), however, PAH is unsteady despite the usage of Metoprolol and Perindopril. Also, patient experienced a second IA in the vertebrobasilar arteries 8 years ago which led to severly impaired coordination, Romberg's position collapses and exacerbated symptoms of depression. Week after the attack, woman was still feeling unwell, suffered from general weakness, dizziness, angina pectoris, irregular heartbeat and as a result of the symptoms UAP was detected. After the event heart ejection fraction was moderately reduced (45%), chronic heart failure developed, and this led to further deterioration of depression symptoms. In order to prevent emotional disturbances, woman was prescribed with Escitalopram, Chlorprothixen, Diazepam and later on UAP ans IA did not repeated.

CONCLUSIONS: As a result, twice repeated IA of the cerebellum had influence on the developement of depression. Depression is a considerable risk factor for cardiac events especially UAP. Woman after the cardiac event and recurrent IA of the cerebellum experienced social disintegration, worsening quality of life and incapacity for work due to former life-threatening conditions. Taking everything into account, prescribed antidepressant, typical antipsychotic and anxiolytic drugs improved the situation and contributed to the prevention of the events mentioned before.

Case report VI

Interdisciplinary

Title: HEBEPHRENIC SCHIZOPHRENIA IN A CHILD WITH PANAYIOTOPOULOS SYNDROME: A CASE REPORT

Author(s): Gintė Gaižauskaitė[1]

Tutor(s): Evelina Petrauskaitė[1]

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BACKGROUND: Panayiotopoulos syndrome is a common type of focal childhood epilepsy. This syndrome is considered benign and seizures usually resolve in 2-3 years. Psychiatric comorbidity is rare. In general, epilepsy is associated with 8 times higher rate of psychosis and between 2 to 3 times higher prevalence of schizophrenia. Genetic research findings indicate possible shared genetic susceptibility between epilepsy and schizophrenia. In this case report, a child with Panayiotopoulos syndrome who later developed hebephrenic schizophrenia is presented.

CASE REPORT: An 11 year old female patient was admitted to the Republican Vilnius Psychiatric Hospital with history of repeating and worsening episodes of psychomotor agitation and uncontrollable behaviour. The episodes consisted of unpredictable, disorganised, aggressive and sometimes self-harming behaviour that would last from several hours to a few days. Typical examples of repeated behaviour were: crawling on the ground, knocking down chairs, slamming the wall with hands or head, attacking other children or adults. Other psychiatric findings were flat affect, disorganised speech, formal thought disorder. Child had no history of behaviour problems until the age of 7. At the age of 7, focal epileptic seizures began and Panayiotopoulos syndrome was diagnosed. Shortly after the onset of seizures, episodes of aggressive, disorganised behaviour started and social functioning was disturbed (she was no longer able to attend school at the age of 8). Hebephrenic schizophrenia was diagnosed at the age of 11. It is notable, that no psychiatric treatment was provided to the child until admission to our psychiatric hospital at the age of 11. Treatment with olanzapine successfully lowered the rate of uncontrollable behaviour and improved other symptoms.

CONCLUSIONS: Attention to increased risk of psychotic disorders in epilepsy is needed. In this case, a benign and usually self-resolving Panayiotopoulos syndrome in a child was comorbid with hebephrenic schizophrenia and the start of psychiatric treatment was delayed. Sudden behaviour changes of a child should always rise concern and clinicians should always react accordingly despite existing or non-existing comorbid diseases.

Title: ORBITAL TRAUMA AS A LIKELY TRIGGER FOR IDIOPATHIC ORBITAL INFLAMMATION - CASE REPORT

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Tutor(s): dr hab. Tomasz Łysoń[1], dr hab. Andrzej Sieśkiewicz[2]

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BACKGROUND: Idiopathic orbital inflammation is a benign condition of unknown etiology that usually involves extraocular muscles. It makes up about 10% of all orbital mass lesions and remains the third most common orbital disease following Graves' ophthalmopathy and lymphoproliferative disease. Pathogenesis of IOI is currently unknown, however a few theories have been proposed i.e. autoimmune process, infection and trauma. We present a case report that puts forward trauma as a likely trigger mechanism for IOI.

CASE REPORT: This case report describes a 36 year old man who suffered from right eye esotropia, diplopia, ptosis, restricted eye movement and slight proptosis for a few years. Prior to hospital admission he had been diagnosed with right orbital lesion of presumably inflammatory origin and oral corticosteroids had been administered but showed no significant improvement. He was then referred to surgical treatment. MRI revealed a tumor located in the inferior wall of the right orbit. During surgery a wooden splinter was found in the tumor mass and removed. The tumor was not completely resected however, during postoperative period additional corticosteroid therapy was administered and the symptoms fully resolved.

CONCLUSIONS: The reported case makes a role for a preceding trauma trigger in the pathogenesis of IOI likely. The case emphasizes the importance of a comprehensive evaluation of a patient with IOI when first line therapy is unsuccessful.

Title: VISUAL SNOW: PIXELATED VISION WITHOUT ANY ABNORMALITIES IN OPHTHALMIC EXAMINATIONS

Author(s): Wiktoria Stańska[1], Anna Maria Torbus[1], Przemysław Rusztyn[1]

Tutor(s): Piotr Maciejewicz, MD, PhD[1]

Affiliation(s):

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BACKGROUND: Visual snow (VS) is a rare clinical entity, described as the bilateral presence of dynamic, flickering dots, affecting the whole visual field, often compared to pixelated television static. In the past, the condition was perceived as a persistent visual aura, but now it's a distinct condition. Patients often face a lack of understanding from medical professionals as the nature of the condition is subjective and elusive. The purpose of our case report is to increase the awareness of this disease as hearing a diagnosis is often a relieving factor for patients with VS.

CASE REPORT: A 23-year-old woman presenting the symptoms of visual snow was admitted to the Ophthalmological Department of Szpital Kliniczny Dzieciątka Jezus. She's been having VS as long as she can remember. The main symptoms were bright, flickering dots seen with opened and closed eyes, particularly disturbing while looking at plain backgrounds and reading paper books. It was accompanied by severe photophobia, nyctalopia, and oscillopsia. Transient palinopsia, photopsia, and tinnitus also occured. What's interesting patient has an identical twin, who also experienced VS. According to the patient wearing eyeglasses with the filter of blue light improves her condition. The patient had been previously diagnosed with fibromyalgia, psoriasis, and Sjogren's syndrome, treated with steroids and methotrexate. In April 2021 when duloxetine was administered for fibromyalgia, her VS worsened. In our department, we performed an extensive ophthalmological examination, which included a visual acuity test, fundus examination, optical coherence tomography, intraocular pressure, color perception, and corneal structure. All the results were correct except for low myopia -0,75 in both right and left eye effectively corrected with glasses.

CONCLUSIONS: Visual snow can be a distressing condition for many patients, lowering the comfort of daily life. Even though the pathophysiology of VS remains unknown and there is no strong recommendation about effective treatment, we believe that by expanding the knowledge about it, we can have a real impact on the comfort of patients, as VS is often labeled as psychogenic.

Title: KLIPPEL TRENAUNAY WEBER SYNDROME: DO WE KNOW ENOUGH?

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BACKGROUND: Klippel-Trenaunay-Weber syndrome (KTWS) is avery rare affliction (1:100.000), characterized by a triad of port-wine stain, varicose veins, and bony and/or soft tissue hypertrophy involving an extremity. Management is normally conservative and includes stockings for compression of the venous branches to reduce edema caused by chronic venous insufficiency and/or modern devices that cause on and off pneumatic compression, but in some cases clinicians may resort to amputation to avoid extreme discomfort and poor life quality for the patient.

CASE REPORT: A 34-year old female is scheduled for a splenectomy, palliative treatment of her congenital condition:Klippel-Trenauney-Weber Syndrome. Amputation of the right lower limb has already been performed. Two days prior tot the intervention, she presents to the emergency room with asthenia, diarrheea, 2-month gradual build-up of ascites. Waiting for the results of paraclinicals:bacterial cultures and echography, she became icteric and was transferred to the Institute of Gastroeneterology and Hepatology.

CONCLUSIONS: This case is unique due to rarity of the disease and possibility to assess success of different therapies. It gives the opportunity to understand more in depth how it evolves from birth to the afore mentioned age and how it affected the patient physically and mentally.

Title: SIMILAR OR DIFFERENT? A CASE REPORT OF CONFUSING COEXISTENCE OF TINEA AND PSORIASIS.

Author(s): Marta Całus[1], Katarzyna Hodun[1], Daria Trocka[1]

Tutor(s): Assoc. Prof. Anna Baran MD, PhD[1]

Affiliation(s):

[1]Students' Scientific Society at the Department of Dermatology and Venerology, Medical University of Bialystok

BACKGROUND: Psoriasis is one the most common dermatoses worldwide. It is a chronic, immunologically mediated, inflammatory disease associated with polygenic predisposition and triggered by environmental factors. The most characteristic skin lesions include well-demarcated, raised, erythematous papules with white scaly surface. Psoriasis is often misdiagnosed with other skin conditions, particularly dermatitis and fungal infections. They can also coexist.

CASE REPORT: We present a case of a 23-year-old patient with the history of recurrent skin lesions with accompanying mild pruritus. The first lesions were diagnosed as allergic dermatitis and successfully treated with topical steroids several times. Three years after the first episode, the exacerbation of skin lesions resistant to previous treatment occurred. A conducted direct mycological examination appeared to be positive. Fungal cultures indicated Trichophyton verrucosum and Candida spp. The patient was effectively treated systemically with terbinafine and topical ciclopirox olamine. Although the clinical improvement was achieved after few weeks, still partial activity with papules within the residual lesions remained. The performed skin biopsy ruled out fungal infection and pointed to psoriasis.

CONCLUSIONS: The proper initial diagnosis enables to begin the appropriate treatment earlier and contributes to better outcome. Misdiagnosis and consequently administration of wrong medication may provide temporary remission, especially in case of fungal infection leading to tinea incognito. Correct diagnosis is especially important in coexistence of a few conditions. In very doubtful cases, in relapses or resistance to therapy, skin biopsy is crucial to make a definitive diagnosis and implement proper treatment.

Title: CASE OF USING ECP WITH 532 NM LASER AND EX-PRESS IMPLANT IN THE TREATMENT OF SECONDARY GLAUCOMA

Author(s): Kajetan Głogowski[1]

Tutor(s): dr n. med. Andrzej Gębka[1]

Affiliation(s):

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BACKGROUND: In recent years, many new procedures and implants have been introduced for the treatment of glaucoma. De-creasing the intraocular pressure can be achieved by increasing the outflow of aqueous humor. One method used for this purpose is the use of the EX-PRESS glaucoma filtration device. Another way to treat glaucoma is to reduce the production of aqueous humor by the ciliary processes by delivering laser energy to them in an endoscopic cy-clophotocoagulation procedure.

CASE REPORT: A 77-year-old female patient was admitted to the UCK Department of Ophthalmology in Gdansk due to an acute attack of glaucoma of the left eye. The patient had a history of secondary glaucoma of a mixed malignant and postinflammatory mechanism, pseudophakia, and had undergone trabeculectomy, vitreous decompression and YAG iridotomy three times. Previous glaucoma treatment, both pharmacological and surgical, did not bring satis-factory results. During the hospitalization, the decision was made to perform a 25G PPV procedure with 120-degree endocyclophotocoagulation with EX-PRESS implantation. The surgical procedure was performed success-fully and there were no complications in the postoperative period. The patient was discharged home with local improvement and in good general condition.

CONCLUSIONS: Secondary glaucoma poses quite a therapeutic challenge and sometimes prompts non-standard solutions. The combination of two different ways of lowering intraocular pressure - increasing the outflow of aqueous humor and reducing its production - can be an effective way of treating difficult cases.

Title: DOES CUTANEOUS LARVA MIGRANS OCCUR ONLY AMONG TRAVELERS? A CASE REPORT.

Author(s): Alicja Jelska[1], Marta Ignatiuk[1], Aleksandra Okońska[1]

Tutor(s): Assoc. Prof. Anna Baran MD, PhD[2], Prof. Iwona Flisiak MD, PhD[2]

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BACKGROUND: Cutaneous larva migrans (CLM) is an infectious disease caused by hookworms larvae. It is characterized by the presence of creeping skin lesions due to formation tortuous tubules with inflammatory reaction. CLM is most commonly transmitted by animal faeces depositing eggs in the soil, with larvae entering humans through direct contact with skin.

CASE REPORT: A 64-year-old man patient was admitted to Dermatology Department in order to diagnose and treat the one-month history of skin lesions over the skin of the left lower limb. Initially a small papule appeared, which was indolent, itchy and fast-growing. The patients was diagnosed for eczema cruris with secondary bacterial infection and treated with oral antibiotics, antifungals, anithistamines and topical steroids and antibiotics with no improvement. On the admission papular lesions with tunnels and serpiginous erythema on the left limb with accompanying intense pruritus were noted. Laboratory studies revealed anemia and hematocyturia. Based on the clinical picture cutaneous larva migrans was diagnosed. Systemic treatment with mebendazole and topical treatment resulted in fast clinical improvement.

CONCLUSIONS: Although cutaneous larva migrans is usually endemic, due to the increasing frequency of foreign travels, the disease prevalence rises. Most of the cases are initially under-diagnosed, which results in a delay in proper treatment. Therefore pruritic lesions, and especially showing no improvement after treatment with corticosteroids and antihistamines, parasitic etiology should always be considered.

Title: A CASE REPORT OF A 51-YEAR-OLD WOMAN WITH SKIN METASTASES OF BREAST CANCER.

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Tutor(s): Prof. dr hab. n. med. Adam Reich[1]

Affiliation(s):

[1]Studencie Koło Naukowe z Dermatologii, Kolegium Nauk Medycznych, Uniwersytet Rzeszowski

BACKGROUND: Breast cancer is the most common neoplasm diagnosed in women. It most often metastasizes to the lungs, liver, bones and brain. Cutaneous metastasis has a frequency of 1 to 10% among all metastatic cancer forms and breast cancer accounts for 30% of all cases. The most common neoplasms that metastasize to the skin are melanoma and breast cancer. Breast cancer is the most common metastatic neoplasm in women - mostly seen in the skin of the chest, but also on head and neck.

CASE REPORT: A 51-year-old woman was admitted to the Dermatology Clinic in Rzeszów in November 2021 for the diagnosis of nodular changes that have been present in the right breast for 6 weeks in good general condition. For 1.5 years she was undergoing oncological treatment of the right breast and had liver and lung metastases. A biopsy of the lesions was performed - the histopathological examination confirmed the presence of breast cancer metastases. The patient was referred to an oncology clinic for further treatment.

CONCLUSIONS: The presence of skin metastases indicates disseminated neoplastic disease and poor prognosis for patients. Palliative care is the treatment of choice.

Title: AN AMBIGUOUS CASE OF COMORBID VIRAL SKIN WITH DARIER'S DISEASE.

Author(s): Aleksandra Sokół[1], Konrad Bagiński[1], Małgorzata Duzinkiewicz[1]

Tutor(s): Assoc. Prof. Anna Baran, MD, PhD[1]

Affiliation(s):

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BACKGROUND: Darier's disease (dyskeratosis follicularis) is a genetically conditioned skin disorder, which may lead to not only follicular keratosis but also other types of keratosis beyond. Each new infection can significantly intensify the symptoms.

CASE REPORT: A 42-year-old patient, with a long history of brownish-gray papules in the limbs and trunk, was admitted to the Dermatology Department in order to diagnose and treat the one week history of skin lesions on his arms, chest, neck, and partially face. The lesions presented initially as intense erythema, then covered with multiple papules and grouped vesicles accompanied by burning sensation and fever. Ultrasonography of the cheek and neck on the left side revealed edema of the subcutaneous tissue without the abscess formation with numerous enlarged cervical lymph nodes. In the blood culture S. aureus MSSA was detected. No parasites have been founded in stool, anti-HSV-2 antibodies were negative, however IgG anti-HSV-1 antibodies were positive. Histopathological examination of the skin biopsy revealed individual cells containing eosinophilic cytoplasmic inclusion bodies, which in correlation with the clinical data may suggest Poxviridae infection along with a typical picture for Darier's disease.

CONCLUSIONS: Darier's disease is a rare autosomal dominant dermatosis. Especially hard to diagnose correctly because of localisation or widespread cutaneous viral infections. Eczema herpeticum, eczema vaccinating or other Pox-zoonosis could be the explanation of the severe course in our patient. The most important in diagnosis is the result of the histopathological examination. Due to the localisation of lesions in Darier's disease, superinfections are frequent. It is important to remember about UVB radiation as an exacerbating factor.

Title: VISION LOSS AS THE FIRST MANIFESTATION OF METASTATIC COLORECTAL CANCER – A CASE RAPORT

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BACKGROUND: Hypopituitarism frequently results from a primary pituitary tumour e.g. adenoma, which causes local mass effect. Pituitary metastases (secondary tumors) are extremely rare, accounting for about <1% of all intracranial ones. Malignant tumors that tend to metastasize to pituitary gland are lung, renal, and breast cancers, while colorectal cancer is uncommon. In recent years, there has been an increase in metastases of colorectal cancer to infrequent sites, which is probably due to improved treatment methods and increased life expectancy.

CASE REPORT: A 68-year-old woman was referred to an urgent head MRI due to sudden right eye vision loss. Two years before she underwent emergency surgery due to descending colon tumor-associated perforation and fecal peritonitis. Histopathological findings confirmed colorectal cancer with metastases to the greater omentum, liver, and ovaries. Head MRI revealed a pathological mass at the base of the anterior cranial fossa originating from the right side of the sella turcica, invading the cavernous sinus bilaterally. It affected optic chiasm and dislocated pituitary infundibulum to the left. The patient was referred to endocrinology assessment. On hospital discharge: multihormonal hypopituitarism in the thyroid-, gonado- and adrenocorticotropic axis, hyperprolactinemia, and diabetes insipidus were diagnosed. The patient was qualified for tumor removal via frontal access. Despite the optic chiasm decompression confirmed by follow-up MRI, the patient suffered from bilateral vision loss.

CONCLUSIONS: The rarity of metastases to the pituitary gland makes prompt diagnosis difficult. A patient with colorectal cancer should be evaluated for metastases also, in terms of the endocrine system. Magnetic resonance remains a method of choice for pituitary and the sella turica region tumors.

Title: NOVEL APPROACH TO TARGETED THERAPY RESISTANCE-INDICATING PREDICTIVE FACTORS IN NON-SMALL CELL LUNG CANCER (NSCLC). CASE REPORT OF NSCLC WITH L858R MUTATION TREATED WITH AFATINIB.

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BACKGROUND: Non-small cell lung cancer (NSCLC) is heterogenous group of malignancies with adenocarcinoma (ADC) about 40–50% of cases. Breakthrough in management of lung cancer have been observed, mainly in field of targeted therapy. Search for solutions may start in indicating the possible response for treatment. In NSCLC one of the clinical response predictor can be a common point mutations. The studies demonstrated that the presence of this mutations have predictive value in response to treatment with tyrosine kinase inhibitors (TKIs). We present a case of a patient with L858R mutation with poor clinical response for treatment.

CASE REPORT: Currently 75 years old female patient was admitted to the department of Clinical Oncology and Chemotherapy to continue the chemotherapy treatment. In September 2020, the patient underwent left lower lobectomy with lymphadenectomy, because of the mass which was found on CT scans. Histopathology following resection of the left lower lobe confirmed lung adenocarcinoma (pT3N1Mx). In October during the follow-up CT the metastases in the right lung were found. In the meantime, the molecular investigation was performed and patient was diagnosed with the EGFR mutation - the substitution in the L858R (exon 21st). After the consultation, the patient have been included into the drug program: first line treatment for the NSCLC with EGFR mutation – Afatinib- The Tyrosine Kinase Inhibitor (TKI). Currently the patient is in the 20th cycle of treatment with Afatinib. Foregoing tolerance of treatment was good, but the patient developed diarrhea (CTCAE grade 2) and skin lesions (CTCAE grade 1). Because of this symptoms, the drug supply was restricted and the dose was reduced from 40mg to 20mg /day. Comparison of CT scans from 8th March 2022 to CT scans 9th December 2021 showed disease stabilization, with no tumor-related bone lesions.

CONCLUSIONS: The results of registrational trial show that Afatinib is more effective in first-line treatment than chemotherapy in NSCLC patients with 21-L858R mutation. Toxicity of Afanitib is significantly less than toxicity of chemotherapy. Patient developed most common adverse events, but metastatic spread has been reduced. Numerous clinical trials and preclinical studies indicated presence of L858R mutation may indicate poorer response in contrary to other genetic profiles. Yet in case of our patient the stable disease (SD) was achieved. The future research is needed to specify predictive value of NSCLC mutations.

Title: EXCEEDING EXPECTATIONS RESPONSE FROM THE PATIENT WITH STAGE IIIB NON-SMALL CELL LUNG CANCER, WITH NIVOLUMAB AS THE II-LINE TREATMENT.X

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BACKGROUND: Medicine has achieved a great number of milestones in recent years, many of which are in the field of oncology. The introduction of immunotherapy turned out to give us a major advantage in the terms of treatment and its outcomes. Nivolumab, the fully human monoclonal immunoglobulin antibody to PD-1 is registered in the treatment of many diseases, such as the second-line treatment for patients with advanced non-small cell lung cancer. By avoiding the blockade of T-cells, our immune system can attack cancer cells. This type of therapy provides better results with a lesser amount of toxicity and adverse effects.

CASE REPORT: 61 years old patient presented with symptoms of cough and stabbing pain in the area of the sternum. The RTG of the chest was ordered and a pathological mass in the top of the left lung was found. Afterwards, in the computed tomography (ct) the results were confirmed, and infiltration of the descending aorta, left pulmonary artery and the chest wall were also found. Moreover, ct showed an enlarged lymph node (26x12mm) next to the aortic arch. The bronchoscopy was performed and the biopsies were collected. The diagnosis was squamous cell carcinoma of the left lung T4N2M0 (stage IIIB). Our patient received 6 cycles of Chemotherapy (PN scheme: cisplatin and vinorelbine). Despite the 18% regression (in the ct scans) after the 2 cycles of chemotherapy, another ct of the chest (after 6 cycles of chemotherapy) showed the progression of the disease. The patient was qualified for the second-line treatment - immunotherapy with nivolumab, the antibody to PD-1. The treatment (56 cycles) and progression-free survival lasted for 25,7 months. In the ct scans, patients reached stabilization of the disease after 6 cycles, and partial response after 13 cycles. Treatment was very well tolerated and no adverse effects were reported.

CONCLUSIONS: Despite the results from clinical trials for patients with advanced squamous cell cancer after progression (stage IIIB or IV), which stated the overall survival and progression-free survival rates as 9.2 months and 3.5 months respectively, we observed a much more optimistic outcome. The response rates are independent of PD-1 or PD-1L levels, but recent studies show the possible impact of circadian rhythm on response rates. Our case emphasizes the complexity of cancer treatment and underlines medical factors that we are not aware of at this state of knowledge, and we shall seek other predictive factors in the future.

Title: BILATERAL EXUDATIVE RETINAL DETACHMENT IN HLA-B27 POSITIVE PATIENT

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BACKGROUND: Retinal detachment is a common complication among patients suffering from anterior uveitis. However, simultaneous bilateral exudative retinal detachment is uncommon, accounting for 1.18-2.5% of all retinal detachments. This case presents a middle-aged, HLA-B27 positive, man who suffered from bilateral anterior uveitis with exudative retinal detachment, successfully treated by antibiotic-steroidal therapy, followed by another occurrence of bilateral exudative retinal detachment, a few months later.

CASE REPORT: A 59-year-old man, with a history of bilateral anterior uveitis with an exudative retinal detachment, was referred to the Ophthalmology Department, with a complaint of vision deterioration in both eyes. Patient's best corrected visual acuity according to Snellen Chart (BCVA) was 0.1 in both eyes, whereas, his intraocular pressure (IOP) was 14 mmHg and 15 mmHg in the right and left eye respectively. Slit-lamp exam revealed deposits on the cornea and lens opacification. Fundus examination of the right eye revealed the presence of a retinal pigment on the entire circumference and retinal detachment of the inferior hemisphere. A B-scan ultrasonographic test of both eyes revealed residual retinal detachment in the inferior quadrant on the far periphery. EDTA blood sample found expression of the HLA-B27 antigen. ANA, ANCA antibodies, QuantiFERON TB Gold Plus tests were all negative. Five months later, patient suffering from bilateral iritis with an exudative retinal detachment was admitted urgently, due to a deterioration in visual acuity in the left eye. In his left eye, a flat retinal detachment was present, moreover, in the macula, the retina was slightly raised. Other imaging studies (orbital MRI, AF, US), confirmed the diagnosis.

CONCLUSIONS: Bilateral exudative retinal detachment is a rare condition, where etiology remains sometimes unknown and difficult to treat. However, in our case, antibiotic-steroid therapy showed good results, locally and the visual acuity improved. Laboratory results did not allow for a clear diagnosis of the cause of inflammation.

Title: FORENSIC MEDICINE CASE REPORT - SAWDUST ASPIRATION INTO THE AIRWAYS

Author(s): Anna Kaczmarska[1], Patrycja Kłaptocz[1], Piotr Juda[1], Katarzyna Łukoś[1], Łukasz Wójcik[1]

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BACKGROUND: Death caused by suffocating on vomit usually affects people profoundly intoxicated with alcohol who falls asleep in a supine position. Sometimes, we report cases in which the cause of the death was the aspiration of yet another content into the respiratory tract. A possible mechanism of death in those circumstances may be related in general to severe intoxication with alcohol or can be associated with a seizure induced by alcohol, which leads to falling into the appropriate environment at the time of unconsciousness.

CASE REPORT: A 48-year-old man, while loading the bunker of the furnace that heats the workplace, falls head down into the container partially filled with sawdust. He died on the spot. The post-mortem examination revealed the presence of a dirty grayish content with small pieces of sawdust in the larynx and trachea, a gray-reddish content also containing numerous sawdust was found in the bronchi. On his body, there were a few minor abrasions to the epidermis near the right frontal tumor, on the left forearm, and on both lower legs. The toxicological examination showed 2.7 _ of ethanol in the blood and 39% HbCO.

CONCLUSIONS: Based on the post mortal examination no typical features of death from asphyxiation such as ecchymosis in the conjunctiva or emphysema in microscopics were observed. Despite the fact that there were no symptoms as mentioned, cause of death was most likely suffocation by sawdust. This case of the sawdust aspiration is so far the only one described in Cracow.

Case report VII

Pediatrics

Title: PREGNANCY COMPLICATED WITH INFECTION SARS-COV-2 - RISK OF INTRAVENTRICULAR BLEEDING IN NEWBORNS?

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BACKGROUND: SARS-Cov-2 virus infection, apart from the risk of severe course, may be associated with the occurrence of numerous complications. Research shows that newborns with virus-infected pregnancies are 3 times more likely to develop serious complications that result in admission to an intensive care unit. Intraventricular bleeding is one of the leading problems associated with the neonatal period. This paper presents case reports of two patients with coexisting intraventricular haemorrhage with SARS-Cov-2 virus infection.

CASE REPORT: The first case is a 4-week-old boy born in the 39th week of gestation. Pregnancy complicated with SARS-CoV-2 infection in the 1st / 2nd trimester, with maternal symptoms such as loss of taste and smell. In the 12th hour of life, the newborn showed signs of intraventricular bleeding (IVH grade III), apnea episodes, and additional tests showed a positive anti-SARS-Cov-2 antibody titer. After the treatment was started, the patient's condition improved. The second case is a 7-week-old boy born in the 38th week of gestation. Pregnancy complicated with SARS-Cov-2 infection in the perinatal period. In the adaptation period without complications, the trans-epithelial ultrasound showed signs of intraventricular bleeding - stage II. In the third week of life, the boy was hospitalized due to a respiratory tract infection. After the treatment, the boy's condition improved.

CONCLUSIONS: The above cases show clinical situations in which the features of intraventricular bleeding and respiratory symptoms were diagnosed in children from full-term pregnancies, resulting of hospitalization. In both cases, the pregnancies were complicated by infection with the SARS-CoV-2 virus, therefore it cannot be ruled out that the SARS-Cov-2 infection in pregnant women and the symptoms in the described newborns is a coincidence. These facts should be popularized in order to raise the vigilance of medical personnel in the event of suspected virus infection in pregnant woman.

Title: SECONDARY REFRACTORY LYMPHOBLASTIC LEUKEMIA IN THE PATIENT WITH LI-FRAUMENI SYNDROME

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BACKGROUND: Li-Fraumeni syndrome is inherited in an autosomal dominant manner. The occurrence of germline alterations in the TP53 gene is associated with a predisposition to the occurrence of neoplasms: brain tumours (medulloblastoma, choroid plexus carcinoma), sarcomas of soft tissues, bones, adrenocortical cancers, leukaemias and others. The TP53 gene encodes a protein responsible for regulating processes in the cell: cell division, apoptosis, DNA repair. The lifetime risk of cancer in men is 73% and in women 93%. The risk of developing cancer by the age of 20 is 30-40%.

CASE REPORT: 5-year-old boy was admitted to the hospital due to the fever, lymphadenopathy. The patient was diagnosed with the Choroid plexus carcinoma at the age of 4 months and underwent chemotherapy and surgery. Because of the diagnosis he was referred for genetic testing. The result of NGS described a heterozygous mutation in the TP53 gene. He was found to have a LiFraumeni syndrome. The patient's father was diagnosed too; after a year he developed prostate cancer and then glioblastoma. He died soon after. On admission, physical examination showed: petechiae, supraclavicularly lymphadenopathy, hepatosplenomegaly. In laboratory tests: pancytopenia (HGB 10g/dl, PLT 28000/mm3 , NEUT 530/mm3). The child's condition deteriorated quickly. An urgent biopsy of the nodal mass and bone marrow was performed and T-cell lymphoblastic infiltration were detected. He presented a superior vena cava syndrome. Life-saving steroid therapy was recommended and chemotherapy was started. Before the second block MRD showed features of molecular relapse. It was decided to modify the chemotherapy to 2nd and 3rd line. Venetoclax- a selective inhibitor of anti-apoptotic protein Bcl-2 - was included. The boy was qualified for hematopoietic stem cells transplantation.

CONCLUSIONS: Secondary malignancies are often resistant to treatment. This was also the case in the described patient. Trials of new drugs with low toxicity (kinase inhibitors, monoclonal antibodies) may increase patient survival. The bone marrow transplant offers hope for a cure of acute leukaemia. The patient cannot undergo radiotherapy due to his diagnosed Li-Fraumeni syndrome. It could significantly increase the chance developing another cancer. The boy will require three-stage very strict oncological monitoring.

Title: POTENTIAL ASSOCIATION OF USP34 AND XPO1 GENES MICRODELETIONS WITH MILD INTELLECTUAL DISABILITY AND DYSMORPHIC FEATURES IN A 12-YEAR-OLD PATIENT

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BACKGROUND: Intellectual disability (ID) is a developmental disorder that significantly reduces the general level of intellectual functioning. It is accompanied by a deficit in adaptive behavior. Genetic causes of ID, estimated to be the underlying cause of 50-65% of more severe forms of ID, range from large to small genomic imbalances and include single-gene, or monogenic disorders.

CASE REPORT: In June 2019, a 9-year-old boy was reported to the Genetic Diagnostics Clinic due to mild intellectual disability. During a visit to the clinic, a physical examination revealed features of craniofacial dysmorphia, overdeveloped subcutaneous tissue, squamous-valgus feet, and a sandal gap deformity. The history of psychomotor development shows a delayed onset of speech at about 4 years of age. Due to his increased mobility and hyperactivity, the boy remains under the care of a psychiatrist. During the visit, a normal male karyotype was observed in cytogenetic examination and an aCGH test was recommended. The results of the molecular karyotype with the CytoScan 750K microarray method showed a genome imbalance in the form of a deletion within the short arm of chromosome 2 in the 50 kpz 2p15 region. The deletion includes the USP34 and XPO1 genes. After genetic testing of the patient's parents, it was shown that the deletion found in the boy was de novo.

CONCLUSIONS: The deletion of the XPO1 and USP34 genes in the patient may indicate their association with the boy's features of craniofacial dysmorphia and intellectual disability. These findings suggest that the XPO1 and USP34 genes may be candidate genes for 2p15p16.1 microdeletion syndrome which is characterized, among others, by intellectual disability, developmental delay, and dysmorphic features.

Title: WHEN SHOULD WE DIAGNOSE A PATIENT WHO "HAS ONLY A SPOT"?

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BACKGROUND: 14-month-old girl with type 1 neurofibromatosis diagnosed in a genetic test was admitted to the Department of Pediatric Hematology and Oncology. Physical examination revealed the presence of strabismus, numerous café au lait spots on the skin all over the body. Additionally, the baby had growth disorders and neurological symptoms: musing, myoclonus during sleep and breastfeeding.

CASE REPORT: Due to a genetic disease, the girl underwent a scheduled MRI of the head. The examination was performed with the Siemens Magnetom Aera 48 1.5T scanner before and after intravenous administration of a paramagnetic contrast agent. The examination revealed the presence of a 19 x 19 x 22 mm isointense tissue-fluid lesion presenting intense contrast enhancement. The lesion extended into the supraoptic recess of the third ventricle, the frontal lobes and the right hypothalamus. The right optic nerve was affected in intra- and extra- ocular part. The picture most likely corresponded to the optic chiasm glioma. Additionally, a thickening of the right optic nerve (up to 6mm) was observed. Six months later, a control MRI of the head was performed on the girl using the same scanner and the same protocol. The examination showed a significant progression of the lesion. The tumor invaded the retrobulbar segment of the right optic nerve, the optic chiasm, the area of __the right hypothalamus and the optic tract up to the level of the lateral geniculate body. The right optic nerve was thickened to 7.3mm. The described lesion filled the basal cisterns andhe sphenoid bone in the area of __the sella turcica. The pituitary infundibulum as displaced

CONCLUSIONS: Among patients with type 1 neurofibromatosis there is an increased risk of developing tumors of the central nervous system. Surgical treatment remains the most common method of treatment so far. The quality and lifetime of patients depends on the time of diagnosis, therefore the most important is early diagnosis and monitoring of the course of the disease and its complications. Magnetic resonance imaging is the method of choice in the assessment of the central nervous system. Due to the high sensitivity and lack of exposure to X-rays, this test should be performed regularly in patients diagnosed with NF1.

Title: DELAYED DIAGNOSIS OF BRONCHIAL FOREIGN BODY FOR 8 YEARS

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BACKGROUND: Foreign body aspiration is a frequent problem in the paediatric population. 89,4% of cases include children under 5 years old. It is the main cause of death among infants. A common presentation, the penetration syndrome which includes choking, cough, and possible vomiting, is more common in adults. However it can be asymptomatic or oligosymptomatic, that's why taking a thorough medical history is of great importance.

CASE REPORT: A 16-year-old patient was admitted to the paediatric surgery ward with complaints of chest pain on the right side, increasing fever, and cough lasting 2 weeks. Physical examination findings included pain by palpation localised in the right scapula, lung sounds were decreased on the right side. His chest X-ray showed a metallic foreign body. The patient admitted to inhaling a piece of a nail clipper 8 years earlier. The finding was confirmed on a chest CT scan, additionally, it showed atelectatic and inflammatory changes and free fluid. Due to the worsening of the patient's condition a pleurectomy was performed. After 3 days a chest ultrasound was carried out, showing honeycombing of the right lung which indicated lung abscess development. Bronchoscopy did not reveal the foreign body. A surgical procedure was carried out. A thoracotomy was made, where the foreign body was removed and partial lobectomy was performed. No complications post-operation have been reported.

CONCLUSIONS: It is crucial, in case of foreign body aspiration, to implement rapid diagnosis and foreign body removal. Late intervention can lead to severe complications. The most frequent being atelectasis, bronchitis, pneumonia, or lung abscess. The significant majority of inhaled foreign bodies can be removed during bronchoscopy, however, in case of late intervention, an operation is often needed.

Title: VASCULITIS AS AN UNUSUAL COMPLICATION OF COVID-19.

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BACKGROUND: The COVID-19 pandemic is the third, after SARS and MERS, aggressive and at the same time the most severe epidemic of coronavirus infection in the human population of the 21st century. It is known that the SARS-CoV-2 virus causes an excessive inflammatory reaction in the body and can damage almost any organ. In children, one of the most common complications after coronavirus infection is the multisystem inflammatory syndrome associated with COVID-19. Rare complications include meningitis and vasculitis. The aim of the study is to present an atypical, rare complication of SARS-CoV-2 infection in children.

CASE REPORT: The medical records of a 3-year-old boy hospitalized three times in University Children's Hospital due to paroxysmal episodes of bruising followed by erythema of the skin of peripheral parts of the body, mainly the hands and feet, were analyzed. Skin lesions appeared in stressful situations and when the ambient temperature changed. They persisted from 30 minutes to 2 hours. On physical examination there were no abnormalities between paroxysms. Until now the boy was sick sporadically, mainly with upper respiratory tract infections. He is undergoing autism diagnosis. About a week before the first hospitalization, the child had contact with a person suffering from COVID-19. In the tests performed, the parameters of inflammation were normal, the level of immunoglobulins IgA, IgM, IgG, IgE was normal, the level of D-dimers was slightly elevated and the titer of anti-SARS-CoV-2 IgG was increasing. Antibodies: ANA, ENA, p-ANCA, c-ANCA, antiphospholipid were absent. In the Doppler ultrasound veins of the lower and upper limbs were normally patent. The patient was consulted surgically and rheumatologically. The treatment initially consisted of anticoagulants, then prednisone, antihistamines and CCB. The incidence of seizures has decreased.

CONCLUSIONS: 1. Changes with the features of acral-vasculitis, vasomotor disorders, Raynaud's phenomenon may be a rare complication of SARS-CoV-2 infection in children. 2. COVID-19 associated vasculitis can be effectively treated with steroids. 3. Children with a history of SARS-CoV-2 infection, regardless of the severity of the infection, require periodic pediatric monitoring due to the possibility of developing autoimmune diseases, including rheumatic diseases.

Title: INCIDENTAL FINDING IN A 9-WEEK-OLD BOY WITH HYPERTROPHIC PYLORIC STENOSIS

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BACKGROUND: Hypertrophic pyloric stenosis is a common cause of gastric outlet obstruction in infants. Patients present projectile vomiting, specific ultrasound images and undergo pyloromyotomy to alleviate the obstruction. Portal venous gas is typically associated with NEC, gastroenteritis, or after surgical intervention. Among patients with pyloric stenosis is a rare finding. In this case study, the incidental finding of hepatic portal venous gas in a 9-week-old boy with hypertrophic pyloric stenosis is presented.

CASE REPORT: The 9-week-old boy was admitted to the paediatric surgery department due to persistent vomiting after each feeding for 2 days. The infant spit up large quantities of feed earlier. He was born through caesarean section because of maternal indications. The patient appeared well but thin and weighed 2600g. After delivery, the USG was done, and no lesions were revealed. In the department, he was in a stable, severe general condition. The haemoglobin was 7.7 g/dl, the RTG and USG were ordered. Abdominal ultrasound showed a pylorus with a muscle thickness of 21 mm and a diameter of 14 mm. Unexpectedly, small, echogenic foci were seen throughout the liver, portal vessels and the splenic vein. The patient was diagnosed with hypertrophic pyloric stenosis with hepatic portal venous gas. The decision of a laparoscopic pyloromyotomy had been made. After the operation, the control USG revealed the regression of hepatic portal venous gas. The postoperative course was uncomplicated and the patient was discharged in overall good condition. During follow-up, the patient had gained weight appropriately and had no recurrence of post-feed emesis.

CONCLUSIONS: In conclusion, portal venous gas is a rare lesion. The benign clinical course in our case and in those reported in the literature would support treatment as other infants with pyloric stenosis but patients should stay under medical control. Abdominal ultrasound is sufficient to detect hepatic portal venous gas in infants, it should also be done through follow-up.

Title: DIAGNOSIS NOT ALWAYS SO OBVIOUS - GENETIC MUTATION AS A VERY RARE CAUSE OF ACTH-INDEPENDENT CUSHING SYNDROME

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Tutor(s): Karolina Stożek MD[1], prof. Artur Bossowski MD Phd[1]

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BACKGROUND: Cushing syndrome (CS) seldom occurs in children. Symptoms mainly weight gain and growth failure are caused by the elevated level of cortisol. Two types of CS are known: ACTH-dependent and ACTH-independent. The incidence of CS is about 2-5 new cases per million people per year. 10% of them are pediatrics cases. Primary pigmented nodular adrenocortical disease (PPNAD), known as Carney's syndrome, is the rarest form of ACTH- independent CS and can be assosiated with Carney's complex.

CASE REPORT: 10 years old male patient was admitted to the Department of Pediatrics, Endocrinology, Diabetology and Cardiology at the MUB because of excessive weight gain despite appropriate diet and regular physical activity and stunted growth (both above SDS). Physical examination revealed acanthosis nigricans on the neck and a round face. Hormonal studies revealed low morning serum ACTH levels and high urinary free cortisol. Exogenous supply of GCs or ACTH was excluded. Pituitary microadenoma and adrenal causes of CS was also excluded based on normal adrenal ultrasound and brain imaging. Due to that, the diagnostics was extended to genetic testing. DNA sequencing of the PRKAR1A gene identified heterozygous mutation c.1A>G/p.Met1Val. Bilateral adrenalectomy was performed. Pathological examination revealed micronodular hyperplasia. Genetic testing confirmed the presence of familial mutation in mother, who underwent bilateral adrenectomy in her 13’s due to PPNAD and in one of the brothers.

CONCLUSIONS: PPNAD represents a diagnostics challenge due to its heterogenous clinical presentation and normal adrenal glands on imaging studies, therefore genetic testing should be performed to confirm CS. Bilateral total adrenectomy is the treatment of choice and hormone replacement therapy is needed to prevent adrenal crisis. Although it is the rarest cause of CS, it should always be considered in the differential diagnosis of hypercortisolemia in children.

Title: ANSA PANCREATICA - A CASE REPORT OF PAEDIATRIC PATIENT WITH PANCREATITIS

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BACKGROUND: Ansa pancreatica (AP) is a rare anatomical variant of pancreatic ducts. The frequency of it is 0.25-1.1% among adults who had an imaging of bile ducts performed and 3-3.4% among children with recurrent pancreatitis. We reviewed all 19 cases of AP using Medline and Embase. Only one case concern paediatric patient. We would like to present a case report of boy from our Department with AP.

CASE REPORT: 12-years-old male patient was admitted to the hospital in due to recurring episodes of pancreatitis. In magnetic retrograde cholangiopancreatography (MRCP) was described an anatomical variant - ansa pancreatica. The other potential causes of chronic pancreatitis were excluded: no predisposing mutations of genes were found; the lipid panel, level of calcium and immunoglobulin G4 (IgG4) were correct; alpha-1 antitrypsin deficiency, cholelithiasis and coeliac disease were excluded; no medication and stimulants were noticed. During endoscopic retrograde cholangiopancreatography (ERCP) sphincterotomy and stent positioning were performed. During the 19-months observation, the stent was replaced in gradually increasing diameter every 3-4 months. The patient was still asymptomatic between hospitalizations. In follow-up no strictures of the main pancreatic were described in ERCP; the stents were removed. To date, the patient has had no recurrence of pancreatitis.

CONCLUSIONS: AP may be related to pancreatitis in children. MRCP is a diagnostic tool for AP. ERCP may be a diagnostic as well as therapeutic procedure in children suffered from pancreatis. Further research is needed.

Title: RARE INHERITED HYPERTHYROIDISM – A CASE REPORT OF A THREE-GENERATION FAMILY

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BACKGROUND: Familial non-autoimmune hyperthyroidism (FNAH) is not a common disease. So far 41 families have been diagnosed and 17 of them received their diagnosis in the third generation. FNAH is caused by a thyroid stimulating hormone receptor (TSHR) germline mutation. This anomaly leads to constant activity of the receptor and, in result, it generates symptoms of hyperthyroidism.

CASE REPORT: A family was diagnosed with FNAH in the third generation. The index male patient at age of 3 had symptoms of hyperthyroidism. Despite the introduced treatment (methimazole and propranolol) the young patient experienced large thyroid hormone level fluctuations frequently. Then, the goiter was observed to develop. The patient's mother, grandfather and two uncles from the same family side got diagnosed with hyperthyroidism and each of them underwent total thyroidectomy. The patient's younger brother, with symptoms of hyperthyroidism as well, responded positively to pharmacological treatment. After genetic testing of the index patient, his mother and brother, inherited TSHR germline mutation was detected in all of them, which has a negative effect on protein function. Consequently, the family was diagnosed with FNAH.

CONCLUSIONS: The only options to treat FNAH effectively are total thyroidectomy or radiofrequency ablation (RFA) of the thyroid gland. Common pharmacological treatment of methimazole and propranolol is generally unsatisfactory. Although FNAH is a rare disease, it ought to be emphasized that thanks to the proper treatment, unwanted and dangerous symptoms of the disease can be avoided.

Title: ACCIDENTAL DIAGNOSIS OF A VERY RARE DISEASE - PECOMA TUMOR IN A PEDIATRIC PATIENT

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BACKGROUND: Perivascular epithelioid cell tumour (PEComa) is a rare family of mesenchymal tumours composed of epithelioid cells. To date, approximately 100 cases of PEComas have been described, mostly in the form of case reports. The most common location of PEComas was the genitourinary system. Due to its very rare occurrence, little information is available on the imaging characteristics of this type of lesion.

CASE REPORT: A 16-year-old patient was admitted for diagnosis of an incidentally found lesion of unclear origin on MRI of the lumbar spine. Targeted MRI revealed a pathological solid-cystic (98x68x78mm) within the pelvis, in the left rectovesical pouch, infiltrating the bladder wall. The lesion underwent irregular post-contrast enhancement. A biopsy of the tumour was performed. On histopathological examination, a PEComa tumour was diagnosed. Control examinations were performed. The tumour was treated with embolization, surgical resection and Sirolimus therapy.

CONCLUSIONS: The tumour showed the characteristic features of PEC-oma on imaging studies reported in the literature. Radiological diagnosis is not fully specific, therefore histopathological examination is necessary for a definitive diagnosis. It is extremely important to document and evaluate PEComa cases, especially those with a longer clinical followup, to be able to better understand the biology of the lesion and to predict the possible future behaviour of these tumours.

Title: LONG QT SYNDROME IN CHILDREN - NOT ONLY A CONGENITAL PROBLEM?

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BACKGROUND: Paracetamol-intoxication is a well-known drug used to attempt suicide which can lead to hepatic toxicity and death. A lesser known, but severe consequence is the effect of the drug on the heart and the resulting impact. It can lead to acquired Long QT Syndrome which can cause life-threatening arrhythmias like Torsades de Pointes, Ventricular Fibrillation and Ventricular Tachycardia requiring urgent diagnosis and treatment.

CASE REPORT: We report about a 13-year old girl with history of hypothyroidism, preexcitation and AV block (from I to III degree) who attempted suicide by ingesting 22 paracetamol tablets (500mg each). Two weeks prior, her parents saw that she self-harms but decided to not give her psychological attention. After reporting vomiting and abdominal pain, she was admitted to the ER and received the first dose of N-acetylcysteine and as well potassium replacement, but still showed hypokalemia and toxic levels of paracetamol. ECG showed (except for previous changes like preexcitation and 3rd degree AV-block) long QTc which lead to VF and cardiac arrest leading to resuscitation. Afterwards she received adenosine and sodium bicarbonate which restored sinus rhythm. She was transferred to the ICU requiring oxygen but was breathing on her own. During her stay she had several episodes of bradycardia requiring atropine. She continuously presents features of preexcitation, 3rd degree AV block with ventricular rhythm 60 bpm and QTc 0,5-0,54 sec. which required ablation and the implantation of a pacemaker. The patient is taking aspirin for three months following the pacemaker implantation, and goes to periodical check-ups and psychological consultation.

CONCLUSIONS: Long QT Syndrome is not only a congenital disorder but can also be acquired in every disease with electrolyte disturbances and during therapy with some drugs, even in therapeutic dosages. It is a rare but life threatening complication which is often forgotten. Our patient requires cardiologic attention for the rest of her life and should as well be under close psychological and psychiatric care to prevent further suicide attempts.

Title: WHEN SIMPLE BECOMES NOT SO SIMPLE – RECURRENT RIGHT ILIAC FOSSA PAIN IN 12-YEARS-OLD GIRL. A CASE REPORT.

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BACKGROUND: Recurrent abdominal pain is defined as at least three episodes of pain that occur at least three months and affect the ability to perform normal activities. Recurrent abdominal pain is a common complaint in the pediatric population, however many cases resolve spontaneously. In this case study 12-years-old female patient with recurrent right iliac fossa pain of unknown origin is presented.

CASE REPORT: The patient was admitted to pediatric surgery department with abdominal pain, loss of appetite and constipation for 3 days. She was hospitalized due to abdominal pain one year ago. On examination, abdomen was soft with tenderness in the right iliac fossa. Inflammatory markers level and USG of abdomen were normal. She was treated conservatively and was discharged after one week. After two weeks, the patient was readmitted with the same symptoms. Results of general physical examination and laboratory research were the same. The MRI revealed elongated large intestine and decreased caecum. As the result of gastroenterologic consultation, the exploratory single port laparotomy was performed. During the operation, adhesion of caecum and appendiceal faecalith were revealed. Adhesiolysis and appendectomy were performed. The patient was discharged on day-2-post surgery without symptoms. Histopathology revealed diffused chronic inflammatory infiltration of appendical mucous membrane.

CONCLUSIONS: Chronic or recurrent abdominal pain in pediatric population is a common clinical problem. Conservative treatment should be deployed at first, because of high probability of spontaneous remission. Nevertheless, if symptoms form a handicap, diagnostic procedures should be proceeded. An exploratory laparoscopy should be considered equally as a diagnostic and a causal treatment modality.

Title: CARDIAC ARRHYTHMIAS AFTER THE CLOSURE OF SECUNDUM ATRIAL SEPTAL DEFECT (ASD II)

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BACKGROUND: Atrial septal defect (ASD) is one of the most common types of congenital heart defects. It occurs when there is a failure to close the communication between the right and left atria. Small atrial septal defects usually spontaneously close in childhood while large defects that do not close spontaneously may require percutaneous or surgical intervention to prevent further complications. Transcatheter closure of atrial septal defect (ASD) is an alternative to open-heart surgery and has become the method of choice to manage most patients with secundum ASDs. Although transcatheter closure of ASD with the Amplatzer septal o

CASE REPORT: A 10-year-old female patient with a history of percutaneous closure of Secundum Atrial Septal defect (ASD II) with the Amplatzer Septal Occluder at the age of 4 years and consequent multiple attacks of supraventricular and ventricular tachycardias, hypothyroidism, treated with various combinations of antiarrhythmic drugs was admitted to the ICU due to sudden cardiac arrest which occurred after swimming. Ventricular tachycardia and impaired cardiac contractility (in echocardiography) were diagnosed. One month later, after the subsequent episode of tachycardia, the patient was scheduled for ECG telemonitoring. Family history of DCM (father - DCM, father's brother - death after heart transplantation at the age of 23, father's mother - sudden death). Despite this, the genetic test excluded the involvement of genetic factors in the etiology of the disease with high probability. Two months later, after the second EPS, which failed to differentiate the ventricular tachycardia, the decision to implantation an endocavitary cardioverter-defibrillator system was made. A left-sided sympathectomy (Th2-Th5) was also performed. During a subsequent EPS examination, left atrial fibrillation was recorded. Performed cardioversion did not stop the se

CONCLUSIONS: In children, arrhythmias have an etiology, evolution and treatment strategy that often differs from that of adults. Although most arrhythmias in children have a benign outcome, recurrent arrhythmic events have a significant impact on quality of life. Recognition of the right cause is essential for appropriate treatment. In this case, we want to highlight the importance of attempting to establish personalized management workflows that can help clinicians when facing specific arrhythmias in children.

Title: WHAT YOUTH IS USED TO, AGE REMEMBERS - NEURODEVELOPMENTAL OUTCOME OF NEONATAL DEHYDRATION AND SEVERE MALNUTRITION.

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BACKGROUND: Neonatal dehydration is a serious, life-threatening condition that can lead to severe weight loss, renal dysfunction, or central nervous system disorders. The risk of dehydration is significantly age-related and there is a significantly higher risk among infants under 6 months of age.

CASE REPORT: The 3-week-old boy was admitted to the hospital in serious condition due to dehydration and suspicion of the urinary tract inflammation.Apgar scores were 10/10 and weight 3840g.The weight in the emergency room was 3120g(<3 percentile)-since birth, body weight decreased by 720g.During the admission,the boy was in a medium-heavy state.Physical examination revealed: heart rate:177/min,blood pressure:62/40 mmHg,standing skin fold and gray shadow around the mouth.Blood tests showed elevated CRP:26 mg/dl,close to the lower limit level of Na133 mmol/L and leukocytosis.During the rehydration,the saturation dropped to 78% and the passive oxygen therapy was required.There was a significant increase of E.coli in the urine culture,so the therapy included antibiotics and rehydration.During the 11-day stay in the hospital,the patient's weight increased by 900g.After the patient's condition improved,he was discharged home.Currently,the boy is diagnosed with autism due to disturbances in his behavior.

CONCLUSIONS: Dehydration can cause secondary neurologic complications due to circulatory shock with hypoxic damage.The infant's brain is less able to deal with dehydration and more susceptible to impairment.The development of autism is not yet fully understood.It has been suggested that genetics,along with early stage environmental factors,are the most significant.Further studies are needed to establish a correlation between dehydration/malnutrition and the development of behavioral disorders later in life.

Title: MULTIPLE MAGNETIC FOREIGN BODIES INGESTION

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BACKGROUND: Ingestion of foreign bodies in children is frequent. 80% of them pass the gastrointestinal tract without complications. However, ingestion of potentially dangerous objects such as numerous magnets, batteries, or sharp objects can be life-threatening. Magnet ingestions are not common but the number of reported cases is expanding because of the growing popularity of magnetic toys. Ingestion of a single magnet may not pose any threat. Nonetheless, multiple magnets ingestion can lead to serious complications, such as necrosis, obstruction, and perforation therefore, surgical intervention is needed.

CASE REPORT: A 17-month-old girl was admitted to the hospital following a history of vomiting for 2-days. The girl presented fever(38,3°C) and exhaustion. The examination revealed a distended abdomen, moderately tense, painless, with no peritoneal symptoms. The girl did not present any symptoms of the "acute abdomen" syndrome. Based on USG, X-ray, and clinical picture of the patient, gastrointestinal obstruction caused by the presence of a foreign body was suspected. The child was qualified for laparotomy. During the procedure the presence of small intestine perforation on the bedsores, corresponding to the size of magnetic beads, was found in three places. A total of about 20 cm of the small intestine was removed due to perforation, and 29 magnetic beads were removed. The control X-ray did not reveal the presence of magnetic beads in the abdominal cavity of the patient. Post-operatively, the patient was placed in ICU, where she spent 1,5 weeks under the influence of analgosedation. 2,5 weeks after surgery she was in a good condition and discharged.

CONCLUSIONS: Even though the majority of cases of foreign bodies ingestion do not cause any complications, parents should remain vigilant. Especially with children between 6 months and 3 years of age. Ingested objects may not cause any symptoms at first. The patient is asymptomatic therefore the diagnosis may be delayed which can lead to severe complications, in this case, such as perforation, obstruction, peritonitis, or even death.

Title: MULTIORGAN DYSFUNCTION IN A TEENAGER WITH COVID-19

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BACKGROUND: Pediatric Inflammatory Multisystem Syndrome (PIMS) is a life-threatening condition that occurs in the pediatric population following infection with SARS-CoV-2. PIMS causes a hyperinflammatory immune response that manifests throughout a wide range of organ systems. This relatively new syndrome shares features of both Kawasaki Disease and Toxic Shock Syndrome.

CASE REPORT: A 16-year-old male patient was admitted to the hospital with a main complaint of dyspnea. The patient presented with an altered mental status and was subfebrile (37.9_), yielding a positive PCR result for SARS-CoV-2. Patient history revealed fever, myalgias, malaise, vomiting, and diarrhea for five days prior to admission. Physical exam revealed a macular rash most prevalent on the patient's trunk and extremities, mucosal dryness, cheilitis, conjunctivitis, a 'raspberry tongue', hypotension, tachycardia, and tachypnea. Lab results showed severe hyponatremia (113 mmol/L), elevated inflammatory markers, decreased levels of antithrombin III, pancytopenia, hypoalbuminemia, as well as significantly elevated serum creatinine, troponins, transaminases, triglycerides, and D-dimers. Chest CT revealed both pleural and pericardial effusion, while abdominal US demonstrated hepatomegaly and peritoneal effusion. Corticosteroid, immunoglobulin, anticoagulation and fluid therapies were provided, along with albumin and carvedilol administration. The treatment was successful in normalizing the patient's laboratory parameters and correcting the aforementioned effusions. After 11 days of hospitalization, the patient was discharged in good condition.

CONCLUSIONS: Although a rare complication that may follow COVID-19 infection, careful investigation should be conducted in cases of PIMS. Keeping PIMS in mind as a differential diagnosis can be a life-saving decision, as it is a treatable condition.

Title: DIAGNOSTIC DILEMMA IN A PATIENT WITH LOWE SYNDROME: A CASE REPORT

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BACKGROUND: Lowe syndrome (the oculocerebrorenal syndrome of Lowe OCRL), is a rare X-linked recessive genetic disorder with a prevalence of 1:500 000 in the general population, which occurs in males and affects the eyes, nervous system, and kidneys. It is characterized by infantile glaucoma, congenital cataracts, muscular hypotonia, intellectual disability, and renal proximal tubulopathy, ultimately leading to the end-stage renal disease between the 2nd and 4th decades of life. The management includes early cataract surgery, glaucoma control, treatment of renal tubular dysfunction., and physical and speech rehabilitation.

CASE REPORT: We report on a two-and-a-half-year-old boy referred to the Department of Pediatric Nephrology at the age of 8 months due to nephrocalcinosis. The patient is the first child, born at the 37th week of pregnancy by c-section due to fetal arrhythmia, at 3300 g and APGAR score of 10. At the age of 3 months, a binocular cataract was then diagnosed and operated on soon after. Muscle hypotonia and poor weight gain prompted the mother to increase vitamin D3 daily dose to 2000 IU. Due to clinical deterioration and psychomotor retardation, diagnostics were carried out and revealed congenital cytomegaly, anemia, hypercalcemia (max. 3,55 mmol/dl), toxic levels of 25-hydroxy-cholecalciferol (> 100 ng/ml), decreased parathormone level (4 pg/ml). The features of nephrocalcinosis in the ultrasounds completed the clinical picture. Intoxication with vitamin D3 was confirmed and successfully treated. On the follow-up metabolic diseases, SMA were excluded. The previously suspected Lowe syndrome was not initially confirmed by analysis of exon 15 in the OCRL gene at the age of 1, however, 4 months later the whole-exome sequencing (WES) revealed a hemizygous novel pathogenic variant c.832C>G in the OCRL gene and confirmed the initial diagnosis.

CONCLUSIONS: The authors present a patient with Lowe syndrome genetically confirmed at the age of 16 months. A diagnosis was delayed because of comorbidities with symptoms overlapping with manifestations of this ultra-rare disease. Although the first genetic testing did not confirm the OCRL gene mutation, a next-generation sequencing method was carried out and revealed a novel pathogenic variant in this gene. Despite the incurable nature of the disease, a comprehensive analysis of clinical symptoms and genetic evaluation enable a correct diagnosis, appropriate management, and counseling with other family members.

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