



13th Warsaw International Medical Congress

Abstract Book

11th – 14th May, 2017

Warsaw, Poland

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General Information

Congress Dates

May 11-14, 2017

Congress Venue

Convention Centre, Medical University of Warsaw

2A Księcia Trojdena St., 02-109 Warsaw, Poland

GPS: N 52° 12' 21.19''; E 20° 59' 07.12''

Distance to airport: 3 km

Distance to the city centre: 1.5 km

Official Language

English

Congress Internet Service

Website: www.wimc.wum.edu.pl

Facebook: Warsaw International Medical Congress

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Invitation

Dear Colleagues,

On behalf of the Organizing Committee we would like to kindly welcome you to the 13th Warsaw International Medical Congress for Young Scientists. At the same time, we are honoured that you have chosen our Conference as the platform to share results of your research. Moreover, your presence in Warsaw during these four days gives us the greatest satisfaction we could ever think of and more motivation for the next WIMC editions.

Warsaw International Medical Congress is an event that draws more and more enthusiasts of science every year. This year, almost 700 young researchers and distinguished speakers gather again in the capital of Poland. Willingness to be a part of the scientific community, the joy of discovering new solutions and desire to exchange ideas- these all, and even more, brought you all here. It is you, dear participants, who fill this event with life and thought. We hope that taking part in the conference, beyond establishing a great tradition, will be for many of you the first step that will allow you to become a part of the scientific network and to achieve great goals.

We have also decided to continue last year tradition of plenary session, where the best participants will present their papers for the wide public and compete for the 13th WIMC Grand Prix. We have prepared for you a superb scientific programme which will be a perfect complement to the competition. Among keynote speakers, you can find the greatest minds in biomedical field from all over the world.

Together with our partner, Health & Environment Alliance, we would like to develop your awareness of global health problems. Therefore, you can take part in the interdisciplinary panel about air pollution, smog and their influence on general population health conditions.

This year edition is unique also for us as The Student Scientific Association celebrating this year 65th Anniversary. History of medical conferences organised by SSA dates back to early 50s when first meeting of young Polish scientists was organised. Year by year our predecessor had been working so hard to create so successful event gathering young scientists from all around the World.

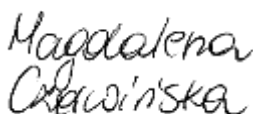
The 13th WIMC is a result of one-year-long work of nearly 100 enthusiastic young people – members of the organizing committee, session coordinators, workshop organisers; students of the Medical University of Warsaw. We have done our best to make the Congress a top-notch event. We cannot forget about our ambassadors and partner conferences who have helped us to spread the news about the congress to the furthest corners of the earth. Nonetheless, such an event would be pointless and impossible to hold if it was not for your participation. Therefore, now it is your turn to start creating your professional network together with other young scientists from over 30 different countries.

Together we can make this time a great festival of science!
We wish you all a great Congress and wonderful time In Warsaw!

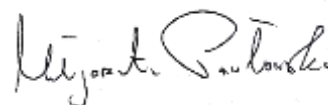
On behalf of the 13th Warsaw International Medical Congress Organizing Committee,



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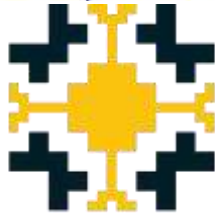


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Date:

Saturday, May 13th, 2017

Location:

Room 231/233, Didactics Center

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[1]

Effect of adipose-derived stem cells secretome on bladder cancer cells with stem cell-like properties

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Introduction: Mesenchymal stem cells (MSCs) possess unique biological characteristics that make them attractive tool for biomedical applications. MSCs synthesize a number of cytokines and growth factors that contribute to the acceleration of tissue regeneration. Yet, cell-based therapies may constitute a potential threat for cancer patients during remission due to activation of rare subset of tumor-initiating cells (CSCs). To better understand complex interaction between stem and cancer cells we analyzed the influence of MSC-secreted factors on biological characteristics of CSCs.

Aim of the study: To analyze influence of adipose-derived stem cells secretome on bladder cancer cells with stem cell-like properties.

Material and methods: Two human bladder carcinoma cell lines 5637 (ATCC) and HB-CLS-1 (CLS) were used in our study. Population of cells showing characteristics of CSCs was isolated with MicroBead Kit (Miltenyi Biotec) based on the CD133 surface marker expression. Isolated CSCs were cultured in secretome of human adipose-derived stem cells (ASC52telo, ATCC). Viability (MTT assay) and proliferative potential (BrdU incorporation assay) of CSCs was analyzed after 72h incubation in the presence of MSC-secreted factors.

Results: Conducted analysis revealed that incubation in secretome of adipose-derived stem cells increased proliferative potential of studied bladder carcinoma cell lines. Incorporation of labeled thymidine analogue into DNA strands of CD133 expressing cells was increased by 22.1% in comparison to control cells cultured in standard growth medium.

Conclusions: Our results indicate that soluble mediators secreted by adipose-derived stem cells induce proliferation of cancer cells, particularly cell population expressing CD133 surface marker. Accurate assessment of potential tumorigenic role that MSC may have in cancer recurrence and progression requires additional research, including induction of invasive phenotype that correlates with increased migration, invasion and metastasis of cancer cells.

[2]

High blood pressure is associated with increased permeability of the gut-blood barrier to TMA, a gut bacteria metabolite

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Trustee of the paper: Marcin Ufnal, MD, PhD

Introduction: Increased concentration of plasma trimethylamine N-oxide (TMAO) has been suggested to be a marker of cardiovascular mortality, however, the mechanisms of the increase are not clear.

Aim of the study: We checked if high blood pressure, a major risk factor of cardiovascular mortality, affects the gut-blood barrier (GBB) permeability to trimethylamine (TMA), a TMAO precursor.

Material and methods: We did experiments on male, 20-weeks-old, anaesthetized, normotensive Wistar-Kyoto rats (WKY), spontaneously hypertensive rats (SHR) and SHR treated with enalapril, an antihypertensive drug (SHR-E). To check the GBB permeability blood samples were collected from portal vein at baseline, 30 min, and 60 min after intracolonic administration of TMA or a vehicle. In a separate experiments arterial blood pressure and intestinal blood flow were measured at baseline and after TMA administration.

Results: At baseline SHR had higher arterial blood pressure, lower intestinal blood flow, and higher portal TMA level in comparison to WKY and SHR-E. Besides, SHR had significantly higher portal TMA level after intracolonic administration of TMA in comparison to WKY and SHR-E. Intracolonic administration of TMA did not affect arterial blood pressure and intestinal blood flow.

Conclusions: Hypertensive rats show an increased permeability of the GBB to TMA, a gut bacteria metabolite. This may result from a decreased intestinal blood flow resulting in the impairment of the intestinal barrier in SHR. It may be speculated that the impairment of the GBB in hypertension may lead to an increased plasma concentration of gut microbiota-derived molecules, and that the GBB permeability affects diagnostic value of new cardiovascular biomarkers such as TMAO.

[3]

Ultrastructure of mouse proepicardium

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Introduction: Mouse proepicardium (PE) is a small, transient, embryonic organ, localized on caudal pole of the heart tube, in the vicinity of the sinus venosus and the liver bud. PE consist of mesothelial cells forming bleb-like structures that detach from the PE surface and migrate in the naked myocardial wall to finally form the epicardium and a group of epicardium-derived cells, such as fibroblasts, coronary arterial smooth muscle cells, a population of cardiac myocytes, and presumably coronary endothelial cells. Our previous observations show that PE contains its own vascular network which undergoes rapid changes, along with the whole structure. PE plays a crucial role in regulation of cardiac morphogenesis such as the myocardial wall formation and its thickening as well as coronary vessel development, and despite broad knowledge about its development and function many aspects regarding its ultrastructure remain unknown.

Aim of the study: In our study we examined the ultrastructure of PE to better understand its morphology and the changes that lead to involution of this organ.

Material and methods: Mouse embryos were isolated from mice at ED 9.5 and 9.75 and were used for electron microscopy studies or for confocal analysis with apoptosis detection system (TUNEL) or autophagy detecting antibody (beclin-1).

Results: Ultrastructural analysis has shown differences in morphology between superficially and basally located cells in the PE. Endothelial cells in the PE are similar to mesothelial cells of the PE core. Some of the mesothelial cells possessed a single cilia. At ED 9.75 apoptotic or autophagic endothelial and mesothelial cells were observed in the base of PE.

Conclusions: Mouse PE consist of heterogenous population of mesothelial cells that differ in morphology. Ciliated cells probably are responsible for detection of fluid flow in the pericardial cavity, similarly to the zebrafish where formation and maturation of PE depends on heartbeat-driven pericardial fluid forces. Involution of PE after 9.75 dpc is not only the result of PE cell detachment and migration onto naked heart tube but also is the effect of apoptosis and/or autophagy in the PE core.

[4]

Ultrastructural analysis of morphologic characteristics of lymphocytes in patients with diabetes type 2

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Introduction: Diabetes type 2 (T2D) is a chronic metabolic disorder accompanied by immune response. As one of the most important components of the immune system, lymphocytes are expected to transform from resting to activated state as the development of T2D progresses.

Aim of the study: Aim of this research is evaluation of ultrastructural morphologic characteristics of peripheral blood lymphocytes obtained from patients with T2D that would indicate lymphocyte activation.

Material and methods: Mononuclear cells were isolated from peripheral blood samples of 5 patients with T2D and 5 healthy individuals. After separations cells were fixed in glutaraldehyde and embedded in EPON. Ultrathin sections were observed using transmission electron microscope. Ultramicrographs were used to determine the volume fraction of cytoplasm in lymphocytes, as well as heterochromatin and euchromatin ratio, circularity and

roundness of the nucleus. Morphometric analysis of cytoplasm was done using double point grid in Adobe Photoshop and nuclear shape and chromatin analysis were done by ImageJ software with area measurement and shape descriptors. Statistical analysis of data was done using Student T test.

Results: Increased share of euchromatin in the nuclei of mononuclear cells in patients with T2D, compared to the mononuclear cells of healthy individuals, was found to be of high statistical significance. Irregular shape, decreased circularity and roundness in mononuclear cells of T2D patients were found to be highly statistically significant in regard to the healthy control. No changes in the volume fraction of the cytoplasm were observed, however plasmocytes were identified in peripheral blood of patients only.

Conclusions: Despite absence of quantitative changes in cytoplasm volume fraction of examined lymphocytes, remaining characteristics of nuclei that were examined showed evidence of cell activation in T2D patients.

[5]

Indole, a gut microbiota-derived molecule, affects hemodynamic parameters in rats

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Introduction: Increasing evidence shows that gut microbiota affects functions of the circulatory system. Indole is a gut bacteria-derived metabolite of tryptophan, and its effect on arterial blood pressure has not yet been investigated.

Aim of the study: In this study, we examined hemodynamic effects of intracolonic and intravenous administration of indole in normotensive rats.

Material and methods: The experiments were carried out on male, 16-week-old, anesthetized, normotensive Wistar-Kyoto rats. Hemodynamic parameters were recorded at baseline and lasted 120 min after: 1) intracolonic (IC) administration of 50% DMSO (control) or indole at doses of 0.1, 1, 10, 100 and 1000 mg/kg of body weight (BW); 2) intravenous (IV) administration of 20% DMSO (control) or indole at doses of 1, 10, 30 mg/kg BW.

Results: There were no significant differences in mean arterial blood pressure (MABP) and heart rate (HR) between the groups at baseline. IC infusions of indole at doses of 100 and 1000 mg/kg BW resulted in a significant decrease in MABP, while indole at lower doses did not elicit any hemodynamic response. On the other hand, IV administration of indole at doses of 10 and 30 mg/kg BW increased MABP while at a dose of 1 mg/kg BW did not affect MABP. HR was not significantly affected by intracolonic nor intravenous administrations of indole.

Conclusions: Indole produces a dose-dependent hemodynamic effects. Interestingly, the effects of indole are also dependent on the route of its administration. This suggests that intracolonic indole triggers different mechanisms affecting arterial blood pressure than blood-borne indole. Given that IC infusions mimic physiological gut production of indole, the hypotensive response to indole seems to be more physiologically relevant. In conclusion, indole, a gut-microbiota derived molecule, may be involved in blood pressure control and may become a therapeutic target in hypertension.

[6]

Tumor necrosis factor contributes to hemodynamic response to acute stressor

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Trustee of the paper: Żera Tymoteusz, MD PhD

Introduction: A growing body of evidence indicates that pro-inflammatory cytokines play an important role in the cardiovascular system regulation by the central mechanisms. Tumour necrosis factor (TNF) is an archetypal pro-inflammatory cytokine, which has been shown to participate in detrimental behavioral adaptations to acute stress. However, the evidence is lacking if TNF acting in the brain affects hemodynamic adaptation to acute stress.

Aim of the study: To investigate how centrally administered TNF affects hemodynamic response to acute stressor.

Material and methods: The study was performed on adult male Sprague-Dawley rats. The animals were implanted with the intracerebroventricular (ICV) cannula placed in the lateral cerebral ventricle, which was followed by insertion of the arterial catheter into the femoral artery one week later. In conscious freely moving rats, mean arterial blood pressure (MABP) and heart rate (HR) were recorded during 60 min of ICV pretreatment with 0.9% NaCl (5 microl/h) (control group, n=7) or TNF (200 ng/5 microl/h) (experimental group, n=7). Following ICV infusions, acute stressor in the form of an air puff was applied on the rat's forehead and hemodynamic measurements continued for 10 min.

Results: The baseline MABP and HR were similar in both control and experimental groups. All rats responded to the air-jet stress with a significant increase in MABP ($p < 0.05$, Student's t-test). The rats pretreated with TNF had significantly higher maximum increase in MABP than control ones in response to the acute stressor ($p < 0.05$, Student's t-test). There were no significant differences in the HR due to high variability of HR changes.

Conclusions: Our results show that TNF administered into the brain augments pressor response to acute stressor in the form of air jet applied on the rat's head, suggesting involvement of the cytokine in the regulation of the hemodynamic adaptation to stress.

[7]

In vitro hemogenic potential of the mouse fetal heart cells

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Trustee of the paper: Ewa Jankowska-Steifer

Introduction: During embryogenesis, vasculogenesis and hematopoiesis are co-localized in the embryonic body. In areas of blood vessel formation, the focal fetal hematopoiesis appears. Some populations of the endothelial cells, known as the hemogenic endothelium, can differentiate into hematopoietic lineages. Hemogenic endothelium exhibits both endothelial markers (CD31, Flk1) and hematopoietic marker (CD41). The mammalian fetal heart has been reported to be a place of hematopoiesis, with the blood islands as particular spots of this biological event. It has been recently demonstrated, that in mice, cells expressing markers suggestive for the hemogenic potency, also exist in a subset of endocardial and subepicardial cells, in the period of 12.5-14.5 day post coitum (dpc).

Aim of the study: In the present work we tested whether CD31positive cells, isolated from the mice hearts at 12.5–14.5 dpc, are able to generate hematopoietic lineages in vitro.

Material and methods: Experiments were performed on F1 cross of C57BL/6 and CBA mouse inbred strains. Hearts derived from fetuses at 12.5, 13.0 and 14.5 dpc were digested with accutase. Isolated cells were sorted using MACS MicroBeads conjugated to antibodies against a CD31 antigen. CD31+ or CD31- cell populations were cultured in Methocult GF 3434 for 12 days. Colony forming cells were harvested for smears, stained with MayGrunwald-Giemsa or analyzed with a confocal laser microscope after immunohistochemical detection of markers: for hematopoietic stem and progenitor cells (CD34, c-kit, Notch), hematopoietic cells (CD41, Ter119, Gata2, Runx1, Fli1), and endothelial cells (CD31, Flk1, Tie2, Tal1, CD105).

Results: The clonal growth assay of CD31+ cells demonstrated formation of a primary colonies (CFU-GEMM), erythroid colonies (CFU-E, BFU-E), and leukocytic colonies (CFU-GM). Immunohistochemical evaluation of cells isolated from colonies, showed the expression of hematopoietic cells surface markers (CD41, c-kit, Ter119) coexisting with expression of transcription factors of hematopoiesis regulators (Runx1, Gata2, Fli1).

Conclusions: The results demonstrate, that mice heart cells expressing CD31 marker at the 12.5 -14.5 dpc, are able, in in vitro condition, form hematopoietic colonies. It is consistent, with the previous observation, that cells in vivo expressing markers suggestive for the hemogenic potency exist in a subset of cardiac cells.

[8]

Nanofabricated Poly(Vinyl Alcohol) meshes in Abdominal Hernia Treatment: In Vivo investigation on small animals

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Introduction: Abdominal hernias are defined as the expulsion or protrusion of an intestinal loop through a defect in the abdominal cavity. As one of the most frequent disorders treated in general surgery, treatment of such hernias has evolved throughout the years with current first choice treatment hernioplasty via a laparoscopic or open-surgical approach. Intraperitoneal fixation of presently applied non-biodegradable surgical meshes may cause complications more often than expected [1]. Electrospinning is a technique used today in various branches of Nanotechnology and Tissue Engineering. Through electrospinning, biocompatible but also biodegradable scaffolds can be produced that could prevent such post-operative complications.

References: [1] K. Breuing, et al., Surgery 148(3), 544-558 (2010).

Aim of the study: Objective of our research was the synthesis and production of a biocompatible, potentially biodegradable surgical mesh that could serve as a potential candidate for abdominal hernia repair.

Material and methods: Non-woven, nanofabricated poly (vinyl alcohol) (PVA) scaffolds were produced via electrospinning from the mixture of PVA and glutaraldehyde (GDA) solutions. Post electrospinning processing included folding, compression and cross linkage formation via scaffold immersion in HCl solution. Samples were sterilized with ClO₂ then stored in PBS at 37 °C. In Vivo examination was performed on Wistar rats (n=45), which were randomly sorted into three groups of 15 animals each. In Group I and II an artificial abdominal defect (2 x 2 cm) was created then PVA meshes (D: 2.5 cm) were used to repair it. Group III was a control group where only an incision on the skin and muscle was made. The animals in each group were dissected after 7th, 14th, 28th, 90th and 180th postoperative days.

Results: Implants were evaluated macroscopically and microscopically. All animals survived until termination date. Upon inspection, no signs of infection or other adverse reaction were found in the environment of the PVA scaffolds. Adhesion formation was found along the suture line rather than the PVA scaffold itself proving its biocompatibility. Histological examination revealed that all the meshes were integrated to the host tissue and kept their structure until the end of the experiments.

Conclusions: Our positive results reinforced that a PVA nanofabricated mesh is biocompatible and could be in the future a viable candidate in treatment of abdominal hernias. Acknowledgement: The research was supported from the Hungarian OTKA K 115259 foundation.

[9]

PROTECTIVE EFFECT OF THE NEW SELENIUM-METAL CONTAINING SUBSTANCE IN AN ACUTE EXOGENOUS HYPOXIA

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Introduction: In hypoxia it is necessary to use special tools that are called antihypoxants. These substances improve the utilization of oxygen in the body. The study of these properties of compound π Q1982 formed the basis of our research.

Aim of the study: The aim of the study was to assess antihypoxic effect of selenium-containing metal-complex compound π Q1982.

Material and methods: All experiments were performed on mice (n=30). Condition of acute exogenous hypoxia with hypercapnia (AH+Hc) was achieved by placing of mice into single hermetic glasses (250 ml). Protective effect of the substances was evaluated by the lifespan increase of mice under conditions AH+Hc. It was made the registration of ECG, breath rate (BR) and rectal temperature. The substance π Q1982 was injected into stomach by gastric intubation in doses 25 and 50 mg/kg 60 min before mouse placing in AH+Hc conditions.

Results: The lifespan of control group of mice (n=10) in AH+Hc was in averages 27 min (100 %). Under action of the substance π Q1983 introduced in doses 25 and 50 mg/kg the rectal temperature was decreased from 37.0° to 31.7° and 28.9° respectively. Besides, 10-15 min after introduction of the substance in a dose 50 mg/kg (n=10) were noted changes in common status and behavior of animals: a weakness of investigation activity, a loss of movement possibility. The BR in this case was decreased to 157±12/min (in control group 363±18/min). The rate characteristics of ECG were decreased too – from 654±22/min (control) to 345±16/min. The lifespan of treated mice in AH+Hc condition rose up to 72 min (128 %) and 124 min (279 %) in conformity with doses.

Conclusions: Analysis of BR and ECG characteristics with comparison of animal lifespan confirms the antihypoxic effect of the substance π Q1982 after its intragastral injection. It was found that the substance π Q1982 demonstrates the action dependent on a dose – after the dose 25 mg/kg the resistance of mice to the hypoxia was increased in 3 times, but after 50 mg/kg – almost in 5 times.

[10]

Effect of stromal-epithelial interactions on androgen action in prostate cancer cells

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Introduction: Androgens are important for the growth and function of the normal prostate, as well for the maintenance of prostate cancer (PC) cells. The biological function of androgens is exerted by activation of the transcriptional activity of the androgen receptor (AR). Disregulation of AR function in PC is related to changes in cyclins' expression and results in an abnormal profile of AR-regulated genes such as cell cycle regulators (e.g. cyclins) and proteins important for cell proliferation. AR is differently expressed in the stroma and epithelium, with both paracrine and autocrine control. Stromal-epithelial interactions depend on AR expression and signaling, which is combined with the expression of cyclins and PC cells' androgen-independence. In a properly functioning prostate tissue can be distinguished stromal cells (SC), which after the androgen stimulation regulate in an autocrine way the proliferation of the epithelial cells (EC). In PC progression EC gain the androgen-independence which enables the autocrine secretion of the growth hormones.

Aim of the study: The aim of the study was to: 1) examine the correlation between the cyclins' expression and main signaling molecules involved in prostate cancer progression: stromal, epithelial AR, PTEN, AKT 2) find out the differences in functioning of AR in EC and SC 3

Material and methods: The study was accomplished with stromal and epithelial prostate cell lines (ATCC) and tissues that were histopathologically verified with the Gleason grading system. The study of cyclins, PTEN, AKT and AR's expressions at the protein and mRNA level was carried out using Western Blot and RT-PCR techniques.

Results: During the study it was observed that cyclin A2, B1 and H indicated overexpression in SC with respect to expression in androgen-dependent cancer EC cells in LNCaP line. These cyclins showed also decreased expression compared to androgen-independent cancer EC in PC-3 line. Moreover, the expression of cyclin D1 in SC was lower according to EC cells in all examined lines. Additional loss of stromal androgen receptor leads to suppressed prostate tumorigenesis.

Conclusions: These studies confirm the fundamental changes in cyclins, SC, EC, AR and PTEN expression, which can influence the effectiveness of the standard therapies. Moreover, these obtained results are a precursor for a current research about PC and correlations in mentioned cyclins in SC and EC of human prostate.

[11]

Evaluation of ADAMTS4 expression in inflammatory bowel disease with immunohistochemistry staining of archival samples

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Introduction: Inflammatory bowel diseases (IBD) are complex, disabling disorders, characterized by chronic relapsing inflammation of intestine. They compose world-wide health-problem with continually increasing incidence. We distinguish two major subtypes of IBD: ulcerative colitis (UC) and Crohn's disease (CD). The etiology of IBD remains unclear, but it is considered as a result of interaction between genetic, epigenetic and environmental factors, including aberrant tissue remodeling due to imbalance between proteases and their inhibitors. Aggrecanase-1 (ADAMTS4) is a secreted proteinase belonging to ADAMTS family. It is responsible of cleaving specific proteoglycans: aggrecan, brevican, neurocan and versican. Dysregulation of ADAMTS4 have been described in gliomas and osteoarthritis, but there is no data about its expression in IBD. Simultaneously, there is also an increasing interest about role of micro-RNA in pathogenesis of IBD. These small, non-coding RNAs are responsible of post-transcriptional regulation of gene expression. It has been shown that changes of miRNAs expression levels can be associated with IBD.

Aim of the study: The aim of the project was to evaluate expression and localization of ADAMTS4 and chosen micro-RNAs: mir-200b and miR-146 in UC and CD in comparison with unaffected tissue.

Material and methods: The study included 25 formalin-fixed paraffin-embedded tissue samples: 10 from UC (5 colon samples), 10 from CD (5 bowel and 5 colon) and 10 unaffected by an inflammation (4 bowel and 6 colon). 10 µm sections of from each sample were stained using immunohistochemistry with anti-ADAMTS4 antibody (Abcam). An expression in each compartment: mucosa, submucosa, muscular and serosa was compared using IHC Profiler software. To check miR-200b and -146 expression in each compartment we used laser capture microdissection and qRT-PCR (Takara).

Results: There was no significant difference in ADAMTS4 expression, neither between patients with CD and UC, nor patients affected with IBD and unaffected. The expression of ADAMTS4 in each of analyzed compartments was also similar between UC, CD and unaffected patients. We revealed different expression pattern of chosen miRNA in each tissue compartment.

Conclusions: Our results may suggest that ADAMTS4 could not be used as a specific marker of IBD. We are also evaluating expression and localization of TIMP3 protein, which plays as inhibitor of ADAMTS in extracellular matrix.

[12]

GENDER-DEPENDENT PECULIARITIES OF CERTAIN LIPID BLOOD PARAMETERS IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE

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Introduction: Nonalcoholic fatty liver disease (NAFLD) is the most common nosology among liver diseases with the prevalence at 20% – 30% of adults in Western Europe and North America and 15% of adult population of Asia.

Aim of the study: The objective of the study was to investigate the gender-dependent peculiarities of certain lipid blood parameters in patients with NAFLD.

Material and methods: Materials and methods. The study involved 139 patients with NAFLD, who were divided into two groups according to their gender. The first group consisted of females with the average age $53,15 \pm 11,4$ years. The second group included males (average age $49,5 \pm 12,2$ years). The control group consisted of 20 practically healthy individuals correlative by their age and gender to the groups examined. Lipid profile investigation included measuring the content of cholesterol, triacylglycerols, cholesterol of high density

lipoproteins (HDL), cholesterol of low density lipoproteins (LDL), cholesterol of very low density lipoproteins (VLDL) in plasma. For each patient or practically healthy individual atherogenic index was calculated.

Results: Male patients with NAFLD were characterized by significantly lower at 10,6% ($p=0,03$) general cholesterol plasma level as compared with females. That was accompanied by decreased plasma concentration of cholesterol of HDL and LDL by 17,7% ($p = 0,001$) and by 15,4% ($p = 0,05$) respectively, as compared with female patients. Atherogenic index was higher in patients of both groups as compared with healthy volunteers. In patients of the first group this indicator was higher by 29,1% ($p = 0,01$) and in patients of the second group – by 39,8% ($p = 0,002$) in comparison with the appropriate control parameter. Significant differences in atherogenic index between patients of both studied groups were not found.

Conclusions: Female patients with nonalcoholic fatty liver disease were characterized by significantly higher general cholesterol plasma level together with elevated cholesterol of high density lipoproteins and low density lipoproteins concentrations as compared with males.

[13]

Macrophage phagocytic functions and induction of humoral response in mice is modifying by antihypertensive drugs

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Introduction: Hypertension is considered an inflammation-correlated disorder with the involvement of macrophages. Hypotensive drugs could achieve additional positive effects through immune modulation.

Aim of the study: Our studies aimed to examine the effect of clinically relevant hypotensive drugs on macrophages involved in antigen phagocytosis and induction of humoral response in mice.

Material and methods: Mouse-donors of oil-induced peritoneal macrophages were treated with propranolol (10mg/kg), carvedilol, captopril, verapamil (5mg/kg), amlodipine (3mg/kg) or olmesartan (1mg/kg) for 7 days. After harvesting, peritoneal macrophages were either stimulated to generate reactive oxygen intermediates (ROIs), cultured to release cytokines and NO, analyzed cytometrically or pulsed with sheep erythrocytes (SRBC) and transferred intraperitoneally into naive recipients, from which sera and spleens have been individually collected a week later for measurement of humoral immune response.

Results: Administration of amlodipine slightly increased ROIs and NO production by macrophages. In contrast, other drugs administration caused reduced macrophage ROIs and NO release along with decreased secretion of pro-inflammatory cytokines and slightly enhanced production of anti-inflammatory cytokines. Treatment with propranolol reduced surface expression of MHC and co-stimulatory molecules, while captopril induced reverse effect. SRBC-pulsed macrophages from mice treated with particular drug differed in ability to activate splenic B cells to release antigen-specific antibodies.

Conclusions: These studies demonstrate that hypotensive drugs may modulate the immune response by affecting macrophage secretory activity along with their ability to process and present antigen. Further research should be conducted to examine the clinical effect of these changes and to determine the usefulness of hypotensive drugs in cardiovascular disorders and maybe immune-mediated diseases.

[14]

Anti-hypoxic activity of new metal-based compounds (biometals)

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Introduction: Body organ and tissue metabolic effects may be provided by antihypoxants. One of these compounds is substance Пq1983 that is able to protect efficiently experimental animals (mice and rats) from harmful effects of acute exogenous hypoxia.

Aim of the study: The aim of the study was to evaluate the impact of a new metal complex following its intraperitoneal administration in the resistance of mice to acute exogenous hypoxia.

Material and methods: The experiments were performed on 62 male mice weighing 20-30gr. Screening of potential antihypoxants was carried out on the models of acute hypoxia - acute hypoxia with hypercapnia (AG+Hc). This state was induced in mice by placing them in a sealed glass container 0.25 l. Was recorded life span of mice, which are expressed in minutes. The death of the animals ascertained at the time of the complete cessation of breathing.

Results: After intraperitoneal administration in the course of formation of AG + Hc positively proven 3 of 8 metal complex compounds: $\Pi q2007$ $\pi q2063$ $\pi q2715$. At doses of 25 and 50 mg / kg $\Pi q2063$ substance increased resistance of mice to hypoxia hypercapnia with 25% and 31%. In these $\Pi q2007$ doses increased the lifespan of mice by 17% and 24%. Both compounds provided a distinct dose-dependent protective effect when administered.

Conclusions: Screening of antihypoxants of 8 new metal complexes revealed two highly effective substances: $\Pi q2007$ $\Pi q2063$ that provides a significant increase of resistance in mice in sharply increasing exogenous hypoxia. Intensity of the protective effect of the studied substances depends on their ability to reduce the animal rectal temperature.

[15]

DOXORUBICIN INDUCED HISTOMORPHOLOGICAL CHANGES IN THE KIDNEYS OF ALBINO RATS

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Introduction: Doxorubicin is an anthracycline antibiotic used in cancer chemotherapy. Like all anthracyclines, it works by intercalating DNA. It is commonly used in the treatment of a wide range of cancers, including hematological malignancies, many types of carcinoma, and soft tissue sarcomas. Its use is limited due to unwanted side effects that affect a variety of organs although it has been shown to be a clinically effective anti-cancer agent.

Aim of the study: To identify the histomorphological changes in kidneys of albino rats due to administration of doxorubicin in comparison to control groups.

Material and methods: Sixty wistar albino rats were used in the study. They were divided into two equal groups: experimental (n=30) and control (n=30). The experimental groups were administered with doxorubicin at a single intraperitoneal dose of 10mg/kg body weight and the control groups were given a single intraperitoneal dose of normal saline of equal volume of the drug.

Results: The adverse effect of doxorubicin was found in the kidneys of albino rats. The diameter of the renal corpuscles, glomerulus, proximal convoluted tubules, distal convoluted tubules and collecting tubules showed significant difference between the experimental and control group of rats in the both gender.

Conclusions: The study showed toxicity of the drug in the kidneys of albino rats. In conclusion, doxorubicin causes significant change in the diameter of renal corpuscles, glomerulus, proximal convoluted tubules, distal convoluted tubules and collecting tubules. The effect of drug between male and female was statistically insignificant.

[16]

Assessment of conditioned reflex activity under the influence of antihypnotic metal complex compound π Q1983

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Introduction: Antihypoxants are able to violate significantly processes of interaction between brain structures responsible for the participation of somatic and autonomic effectors in the formation of a behavioral act.

Aim of the study: The aim of the study was to investigate the dynamics of active avoidance reaction formation in the defensive conditioned reflex following π Q1983 injection.

Material and methods: We studied pharmacological properties of π Q1983 substance and discovered how it inhibits behavioral activity. The study involved 26 male mice investigated with the method of conditioned reflexes was chosen to assess brain's integral activity 1000 Hz tone of a sound generator served as the conditional signal (5 sec). Painful irritation of the animals' paws' skin with electricity (50 Hz) during 3 sec was performed as an unconditional strengthening. The plastic pole in the centre of the platform was used as the place for the unconditioned stimulus' effect avoidance. The animals were divided into 3 groups. In the 1st group (n=7) - control - the formation of the conditioned reflex was carried out without the use of antihypoxants; in the 2nd (n=7) and 3rd (n=12) groups - 60 min after intragastric π Q1983 and antihypoxant of Amtizol application (100 mg/kg), respectively.

Results: Group 1 was trained within 5 days and training the latent period duration of the conditioned reflex was $1,1 \pm 0,2$ sec, the active avoidance period - $34,9 \pm 3,1$ sec, and the weakening of reactions to external stimuli was registered 10-15 min following π Q1983 injection. 60 min later animals stopped reacting to the electrical impact. At the end of the 2nd group training period a conditioned reflex failed to develop in each of the animals. In the 3rd group behavioral changes were registered in 25 min after Amtizol application, but the inhibition of motor activity was expressed less than following π Q1983 injection. 5 days later the latent period duration was $5,8 \pm 0,7$ sec, the active avoidance period - $25,4 \pm 3,6$ sec.

Conclusions: The analysis of active avoidance reaction after π Q1983 and Amtizol injections allows to speak about the influence of these substances on the dynamics of a conditioned reflex formation as undesirable, but in clinical practice it's not absolute: for example π Q1983 can cause sedation in anxious patients on the background of inhibitory processes activation. π Q1983 is harmless for the CNS: motor activity of the animals completely recovered, and basic characteristics of the avoidance reaction in the conditioned reflex can normalize.

[17]

Baroreflex sensitivity and carotid body chemosensitivity in normotensive and hypertensive rats

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Introduction: The autonomic dysfunction with greater sympathetic drive has been established as an important factor in the development of essential hypertension. A growing body of evidence suggests that dysregulated autonomic modulation of cardiovascular system is associated with altered baroreflex sensitivity (BRS), but also abnormally enhanced carotid body chemosensitivity (CB). Decreased BRS has been found in hypertensive patients and it has been demonstrated that BRS has a strong prognostic value for cardiac mortality. BRS may be evaluated pharmacologically with vasoactive drugs, particularly the α -1 agonist phenylephrine. Overactive CB has been implicated in several diseases, including hypertension. CB chemosensitivity may be assessed pharmacologically with mitochondrial respiration inhibitors like cyanide.

Aim of the study: The study aimed to determine if baroreflex sensitivity and carotid body chemosensitivity differ between spontaneously hypertensive (SHR) and normotensive (WKY) rats.

Material and methods: We carried out the study on adult male SHR (n=6) and WKY (n=6) rats. Under anaesthesia with urethane (1.5g/1kg b.w.) we placed the catheters in the femoral vein and artery. Then, rats were

hemodynamically monitored and heart rate (HR) and mean arterial blood pressure (MABP) were gathered. Phenylephrine (10µg/100µl, iv) and then potassium cyanide (30µg/100µl, iv) were administered to assess BRS and CB chemosensitivity. BRS was measured as $\Delta\text{HR}/\Delta\text{MABP}$ after phenylephrine infusion and CB chemosensitivity was measured with ΔMABP and ΔHR after potassium cyanide infusion. Student's t-test was used for statistical analysis after variables normality had been confirmed with Shapiro test. Values are expressed as means \pm SD.

Results: We observed significantly lower BRS in SHR rats than in WKY rats, $\Delta\text{HR}/\Delta\text{MABP}$ after phenylephrine infusion was $(-0.70)\pm 0.36$ vs $(-1.12)\pm 0.23$ 1/mmHg*min respectively ($p=0.039$). SHR rats had also significantly higher ΔMABP after potassium cyanide infusion than WKY rats, 47.7 ± 14.0 vs 20.7 ± 3.9 mmHg respectively ($p=0.004$). However, hyper- and normotensive rats did not differ significantly in ΔHR after potassium cyanide infusion, 18.8 ± 38.1 vs 12.4 ± 23.3 1/min respectively ($p=0.736$).

Conclusions: Our findings show that decreased BRS and enhanced chemoreflex is present in hypertensive SHR, when compared to normotensive WKY rats. The results indicate that blunted BRS and enhanced CB chemosensitivity are associated with hypertension in our model of hypertension and are in line with previous evidence.

[18]

Introducing the left atrial appendage isthmus as a new target for ablation of arrhythmogenic substrate

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Introduction: The mitral isthmus is a part of the posteroinferior area of the lateral left atrial wall, located between the left inferior pulmonary vein (LIPV) ostium and the mitral valve annulus (MA). Clinically it is used as a site for linear ablation in peri-mitral flutter and as an adjuvant line to pulmonary vein isolation during radiofrequency catheter ablation for atrial fibrillation. Unfortunately, mitral isthmus ablation is challenging and the complete conduction block often may not be achieved and if this fails may be pro-arrhythmogenic.

Aim of the study: The aim of this study was to provide a detailed morphometric description of the mitral isthmus region and to propose another possible isthmus within the investigated heart area that may serve as a potential new ablation target.

Material and methods: A total of 200 autopsied, non-atrial fibrillation human hearts (23.5% females; mean age 47.6 ± 17.6 years) were randomly selected for this study. The anatomy of the posteroinferior area of the lateral left atrial wall was macroscopically assessed.

Results: We defined the left atrial appendage (LAA) isthmus as the shortest distance between the margin of the LAA orifice and the margin of the MA. The mean mitral isthmus length was 28.8 ± 7.0 mm and was significantly longer than the LAA isthmus (14.2 ± 4.8 mm) ($p=.00$). The LAA isthmus was longer in hearts with a common left pulmonary vein ($p=.037$). In 97% of hearts the mitral isthmus was longer than the LAA isthmus, with a mean difference in length of 15.2 ± 7.6 mm (range:0.1–53.6mm). In 67% of hearts the LAA isthmus was twice and more shorter than mitral isthmus and in 7% of hearts it was even four times shorter. In 65.5% of all cases the mitral isthmus area was completely smooth. In the remaining hearts, crevices and diverticula (18.0%), intertrabecular recesses (7.0%), trabecular bridges (3.5%), or coexistence of these structures (6%) could be observed. The LAA isthmus line was smooth in 95.5% of all cases, with only small crevices in the remaining 4.5%.

Conclusions: To our best knowledge, this is the most complex morphometric description of the postero-inferior area of the lateral left atrial wall that takes into account several different endocardial lines and mutual anatomical relationships between the LIPV ostium and LAA orifice. We proposed the LAA isthmus line for potential clinical use. The LAA isthmus is considerably shorter than the mitral isthmus. The mitral isthmus line has many unwanted structures that may entrap the catheter, which is not the case for the LAA isthmus.

[19]

4-methyloquinolinone derivatives and cytostatic activity against human pancreatic cancer cells

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Introduction: Cancer is the most severe medical problem of XXI century, therefore, substances with anticancer activity become very important subject of research. The series of 4-methyloquinolinone compound were invented and synthesized in Department of Drug Chemistry. Biological activity of obtained derivatives was examined in Department of Histology and Embryology (Medical University of Warsaw).

Aim of the study: Aim of the study was determination of effects of obtained compounds on mouse fibroblasts (NIH3T3) and human pancreatic cancer cells (PANC 02).

Material and methods: Activity of new compounds was examined on mouse fibroblast cell line (NIH3T3) and human pancreatic cancer (PANC 02). Cell lines were obtained from ATCC and cultured in standard conditions. 5-500µM range of concentration was used for cell viability tests (crystal violet and trypan blue staining). Based on results obtained after 48 hour of incubation IC50 was calculated. For the most active substance (AS25, AS 27 and AS31) were performed following experiments (all for 50µM): scratch test, colony formation assay, evaluation of cell morphology (JuLi, NanoTech, Korea). Cell cycle analysis was performed after staining cells with propidium iodide (FACS Calibur; Becton, Dickison and Company).

Results: Performed tests showed that some of novel derivatives have cytostatic/ cytotoxic effects against tested tumor. IC50 for compound selected for further studies were close to 50µM. In this concentration there were observed morphological changes in cells and inhibition of cell migration and formation of colony. Changes in cell cycle analysis were also observed.

Conclusions: Selected compounds of 4-methyloquinolinone showed different activity in test with mouse fibroblasts (NIH3T3) and pancreatic cancer cells (PANC 02). The derivatives presented cytostatic effect in case of PANC 02 cell line. Further studies are required to determine mechanisms of their action.

[20]

Expression of the cytokines' receptors in the brain of spontaneously hypertensive rats - the animal model of human primary hypertension

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Introduction: Primary hypertension have multifactorial background. Progressively, accumulating body of evidence emphasizes the role of the inflammation and dysfunction of the nervous system in the development of hypertension. Proinflammatory tumor necrosis factor (TNF) and anti-inflammatory interleukin 10 (IL-10) are the cytokines most widely implicated in the pathogenesis of cardiovascular diseases, including hypertension, by acting via TNF receptor 1 (TNFR1) and interleukin 10 receptor (IL-10R), respectively.

Aim of the study: To determine if the levels of TNFR1, IL-10R and their respective agonists TNF and IL-10 differ in the brain regions implicated in the regulation of cardiovascular homeostasis between spontaneously hypertensive (SHR) and normotensive Wistar-Kyoto (WKY) rats

Material and methods: Systolic blood pressure (SBP) was measured with volumetric tail-cuff method in adult male SHR (n=12) and WKY (n=12) rats. After terminal anesthesia, blood and brains were collected. Snap frozen brains were sliced in coronal plane by the use of rat brain matrix. The hypothalamus (HTS), the rostral ventrolateral medulla (RVLM) and the nucleus of the solitary tract (NTS) were excised from brain slices according to the functional rat brain atlas. After blood and tissue preparation ELISA tests were used to measure concentrations of TNFR1, TNF, IL-10R and IL-10 in the tissue supernatants, precipitates and serum. Student's t-test was used for statistical analysis.

Results: SHR SBP was significantly higher than in WKY rats. Expression of TNFR1 was also significantly higher in NTS of SHR than in WKY rats, whereas IL-10R was lower in NTS of SHR than in WKY rats. Expression of both TNF

and IL-10 in RVLM and NTS was significantly higher in SHR rats than in WKY rats. Concentrations of TNFR1, TNF, IL-10R and IL-10 in HTS and serum did not differ significantly between SHR and WKY rats.

Conclusions: Our results show that expression of TNFR1, TNF, IL-10R and IL10 is altered in cardiovascular regions of the brainstem in the rat model of primary hypertension. These findings suggest that cytokine dysregulation may be involved in the pathogenesis of primary hypertension.

[21]

Would the TGF β pathway and miR -21, -29a/b/c become new markers of arteriosclerotic vascular disease? Analysis of their expression in tunica media of rats' aorta expressed to low- and high-cholesterol diet

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Introduction: Arteriosclerotic vascular disease (ASVD) is a multifocal alteration of the vascular wall of medium and large arteries characterized by a local accumulation of cholesterol and non-resolving inflammation. The process advances over time what causes tunica media remodeling. To date TGF-pathway influence of the process is poorly examined. MicroRNA are single-stranded, 18-25bp long ribonucleotides, which regulate gene expression of responsive mRNAs. Altered levels of specific miRNAs are often related to inflammation. Their stability and detectability are important features as a disease biomarker. Due to thin layer of affected cells usage of laser microdissection (LMD) enables to evaluate miRNA expression only within precisely dissected fragments of the samples to avoid contamination with surrounding tissue.

Aim of the study: The aim of the study was to compare expression of chosen targets of TGF-beta pathway and miRNA in internal layer (tunica media) of fresh frozen rats' aorta from two groups - fed normally and on a high cholesterol diet.

Material and methods: 16 SPRD rats were divided into 2 groups depending on a diet – low and high cholesterol diet. After euthanasia (when rat reached weight of 450g), 16 samples of fresh frozen rat's aorta were mounted in OCT and then cut into 10 μ m slices and HE stained. The tunica media was selected and dissected with laser (LMD Zeiss). Total RNA from laser captured tissue fragments were extracted (Norgen Biotek). Finally, comparative qRT-PCR (Takara and UPL Roche) was performed to elicit TGF-beta pathway targets (SMAD2, 3, 4, 7, TGFBR1 and TGFBR2) and miRNA expression changes in collected samples. According to the literature 4 miRNA were chosen for the study: miR-21, miR29a/b/c.

Results: There was no significant difference in the miRNA expression between groups with different diet. However, from the expression pattern among samples we could elicit 3 groups-rats with high expressions of examined miRNA (cholesterol diet), while other low (normal diet), and no difference (both groups). We preliminarily confirmed dysregulation of TGF-beta pathway in tunica media of high-cholesterol rats. Exact TGF-beta pathway examination is still ongoing.

Conclusions: Animal model of arteriosclerotic vascular disease may reveal novel discoveries on the progression of the disorder. TGF-beta plays important role in inflammation which is an indispensable part of ASVD. We confirmed the dysregulation given high fat diet. For the moment miRNA expression changes were inconclusive.

[22]

Quinoline derivatives as potential cytotoxic drugs against melanoma

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Introduction: Melanoma malignant is a lethal disease. It amounts to about 2% of all cancers. Because of its high grade of malignancy, morbidity and mortality is still growing. It can develop in people with all races but it is especially common among white race. Unfortunately, melanoma is resistant to chemotherapy. Nowadays, natural substances are more commonly introduced to treatment. The examined derivatives were synthesized in the Department of Drug Chemistry at the Faculty of Pharmacy of the Medical University of Warsaw.

Aim of the study: The idea of the research was to identify compounds with the highest biological activity that would affect cancer cells and leave normal cells unaffected.

Material and methods: Keratinocyte cell line (HaCaT) and human melanoma cell line (MeWo) were implemented as models for the evaluation of the characteristic of new substances. These cell lines were derived from ATCC and grown in standard conditions. Cell viability was determined by two different tests (crystal violet and trypan blue staining) after a 48-hour exposition to compounds in a 5-500 μ M range of concentrations. IC₅₀ was calculated from the obtained results. The compounds used in subsequent research were those which IC₅₀ was around 50 μ M. A series of tests (all for 50 μ M) was implemented: scratch test, colony formation assay, evaluation of cell morphology (JuLi, NanoTech, Korea). Cells stained with propidium iodide (FACS Calibur; Becton, Dickison and Company) underwent a cell cycle analysis.

Results: The examination proved that some of the new derivatives have cytotoxic effects on melanoma cells. In the given concentration (50 μ M) there were observed morphological changes in tumor cells and inhibition of cell migration and colony formation. There were also observed changes in cell cycle.

Conclusions: Novel derivatives of quinoline displayed a different sort of activity against the examined cell lines. The study proves that three of them have cytostatic effect on melanoma cancer cells. Further studies are required to determine the mechanism of their action.

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Date:

Friday, May 12th, 2017

Location:

Room 231/233, Didactics Center

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[23]

Influence of energy drinks on hemodynamic parameters in young healthy adults – randomized double-blind placebo controlled cross-over study

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Introduction: An energy drink (ED) is a type of beverage containing stimulant drugs, caffeine, taurine, which is marketed as providing mental and physical stimulation. The popularity of product is increasing especially among teenagers and young adults. Some research suggest that its consumption may have negative effect on cardiovascular system.

Aim of the study: Assessment of the influence of single dose of ED on blood pressure, heart rate, ECG, cardiac output and vascular compliance in healthy volunteers.

Material and methods: A randomized double-blind placebo controlled cross-over study was conducted on 18 healthy volunteers (7 female, 11 male, mean age 23,67±1,19). Subjects received: 500 ml of energy drink containing 160mg of caffeine, 2g of taurine and 50mg of guarana or 500ml of placebo. Participants drank beverages in random order during two different meetings. Drinks did not differ in taste, smell and color. In all participants before and after consumption of a drink, in the same sequence and time intervals following procedures were performed: peripheral and central systolic and diastolic blood pressure (SBP and DBP) measurement, ECG recording, echocardiography, and pulse wave velocity analysis.

Results: ED consumption was related with significant increase of SBP in 75 min of observation compared to placebo (Δ SBP for ED 5,7±10,2 mmHg vs -0,3±7,2 mmHg for P, p=0,03). ED caused also increase in central SBP (107,8±13,2 vs 115,6±12,1 mmHg p=0,0005), and central DBP (73,9±11,9 vs 78,1±10,2 mmHg p=0,02). However comparison between placebo and ED revealed no significant differences in these parameters. Tendency for increase of PWV in ED group was observed (Δ PWV for ED 0,6±0,7 m/s vs 0,2±0,6 m/s for P, p=0,10), and significant reduction of augmentation index was noted (Δ AI for ED -10,5±17,9% vs 7,55±17,7% for P, p=0,005). The ECG parameters (HR, PQ, QRS and QTc intervals, axis of P wave, QRS complex, T wave) did not reveal statistical differences between groups. There were no differences in echocardiographically determined cardiac output and LVEF.

Conclusions: Single dose ED consumption increases peripheral and central SBP. This effect is probably mediated by vascular wall properties and not by cardiac performance. Further studies on the influence of chronic ED consumption on central and peripheral hemodynamic parameters are needed.

[24]

Comparison of bleeding rate in patients who use vitamin K antagonists and new oral anticoagulants

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Introduction: The use of anticoagulants is an integral part of preventing thromboembolic events in patients with non-valvular atrial fibrillation (NVAf) or those undergoing electrophysiological procedures, device implantation surgery, and AF ablation. Anticoagulants have severe side effects such as bleeding, which can lead to hospitalization. Warfarin, a commonly prescribed vitamin K antagonist (VKA), acts as a non-selective inhibitor of vitamin K-dependent clotting factors. In contrast, new oral anticoagulants (NOAC) selectively inhibit clotting factors: Dabigatran is a selective direct thrombin activation inhibitor, and Rivaroxaban is a highly selective direct Factor Xa inhibitor.

Aim of the study: The aim is to compare the frequency of bleeding episodes among patients using VKA and NOAC anticoagulants.

Material and methods: We conducted surveys of patients in Pauls Stradins Clinical University Hospital Latvian Center of Cardiology, and analyzed cases of 291 patients who used anticoagulants between August 1, 2016 and January 4, 2017.

Results: Of the 291 patients who used anticoagulants, 134 patients (46.1%) used Warfarin (VKA), 90 patients (30.9%) used Rivaroxaban (NOAC) and 67 patients (23.0%) used Dabigatran (NOAC). Mean CHAD VAS scale points are 2.97 points and mean HAS BLED scale points are 1.60 points. Bleeding episodes (BE) that are caused by all anticoagulants are divided into 3 groups - All patients with any BE(I); all patients that had only one BE(II); all patients who had more than one BE(III). 105 out of 134 VKA users (60.7% from (I)) had bleeding episodes, $p<0.005$. 43 of these 105 patients (51.2% from (II)) had only one bleeding episode, while 62/105 (69.7% from (III)) had more than one bleeding episode. These data are statistically significant ($p=0.013$). 27 of the 67 patients who used Dabigatran (15.6% (I)) had bleeding episodes, $p<0.005$. 15/27 (17.9% (II)) had only one bleeding episode, while 12/27 (13.5% (III)) had more than one bleeding episode, although this trend did not reach statistical significance ($p=0.428$). Of the 90 patients who used Rivaroxaban, 41 (23.7% (I)) had bleeding episodes, $p<0.005$. 26/41 (31.0% (II)) had only one bleeding episode, and 15 patients (16.9% (III)) had more than one bleeding episode. These data are statistically significant ($p=0.029$).

Conclusions:

1. Warfarin (VKA) users had significantly more bleeding episodes than users of both Dabigatran (NOAC) and Rivaroxaban (NOAC).
2. More than half patients (60.7%) had bleeding episodes associated with Warfarin usage.
3. Dabigatran users had fewer bleeding episodes compared to Rivaroxaban users.

[25]

PREDICTION OF SUCCESSFUL ELECTRICAL CARDIOVERSION OF ATRIAL FIBRILLATION

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Introduction: Atrial fibrillation (AF) is the most frequent cardiac arrhythmia in humans. AF has a high morbidity and mortality rate . Electrical cardioversion (ECV) is a first-line treatment of paroxysmal and persistent AF in cases of AF with haemodynamic instability for restoring sinus rhythm.

Aim of the study: to evaluate the correlation between the amount of electrical shocks as well as the total energy applied with maintenance of sinus rhythm 30 days after electrical cardioversion.

Material and methods: In this retrospective study data from 150 patients were collected in Latvian Cardiology Center which holds information about patients who had undergone electrical cardioversion to restore sinus rhythm. Questionnaires were administered and follow-up data were collected by phone patient survey from 30 days after ECV.

Statistical analysis was conducted using SPSS 20.0 software. Crosstabulation with multiple variables, Fisher's Exact Test, Mann–Whitney U Test were applied ($p<0.05$).

Results: 150 patients were questioned – 70% male ($n=105$) and 30% female ($n=45$) with a mean age of 65 (56-74) years. Electrical cardioversion was performed to all patients in this study. Sinus rhythm was restored in 145 of patients (96.7%). The success rate after a single discharge was 87.3%. 2 electrical shocks were required for 9.3% of patients and 3.3% of patients benefited from a third shock. A single discharge has a greater success rate for maintaining sinus rhythm for 30 days ($p=0.003$). In 10% of all patients cardioversion began with 150 J. Initial discharge was 200 J for 76.7% of patients, the total energy applied was 300 J for 6% of patients and 360 J for 3.3% of patients. The success rate for maintaining sinus rhythm for 30 days was greater with higher initial discharges ($p=0.004$).

Conclusions: Electrical cardioversion is a standard procedure and is very effective in the treatment of atrial fibrillation. It has a high rate of success in restoring sinus rhythm. A successful single discharge and higher total energy applied correlate with more stable sinus rhythm 1 month after electrical cardioversion was performed.

[26]

Relation of arrhythmia and Neutrophil to lymphocytes ratio (NLR) in population of patients with stable coronary disease

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Introduction: Neutrophil to lymphocytes ratio (NLR) is the proportion between neutrophils and lymphocytes calculated from Total Blood Count. It is considered to be biomarker of inflammation which is main cause of many cardiovascular diseases. Some studies showed that NLR may be useful predictor of Left Ventricular Remodeling, Atrial Fibrillation, Ventricular Premature Contractions and IHD.

Aim of the study: The aim of the study was to evaluate the prevalence of arrhythmias and role of NLR among the patients with stable coronary disease.

Material and methods: The 3291 patients, with stable coronary disease, admitted to Department of Invasive Cardiology between 2007 and 2016 were included into the study. All patients had ECG. Mean age was 66,71 years (SD= 10,05). 68,125% of patients were male. The retrospective analysis of ECG was performed. Patients were divided into 2 groups according to the level of Neutrophil to lymphocytes ratio (NLR). Mean NLR in study population was equal to 3,001 (SD= 5,39) and it was used as a cut-point value. 1st Group (group NLR+; NLR \geq 3,001) with 1187 patients and 2nd Group (group NLR-; NLR < 3,001) with 2104 patients, were created. T student and Chi square tests were used in the study for analysis. The p value of 0,05 was considered significant.

Results: The frequency of sinus rhythm was lower in group with higher NLR (83,57% vs 88,97%; $p=0.00000951$). It may be caused by higher prevalence of atrial fibrillation (11,96% vs 6,75%; $p=0.0000000001$). There was no difference in prevalence of implanted pacemakers ($p=0.10232$).

Atrioventricular blocks were found more often in NLR + group (8,59% vs. 5,32; $p=0.00175$) - 1° 7,83% vs. 5,23%, 2° 0,17% vs. 0,05%, 3° 0,08% vs. 0,05%; $p=0.01570521$). There was no difference in frequency of intraventricular block. Patients with higher NLR had higher prevalence of tachycardia (2,78% vs. 1,19%) and lower of bradycardia (22,66% vs. 31,61%).

Conclusions: NLR may be a promising predictor of arrhythmia in patients with coronary artery diseases.

Lesser prevalence of bradycardia in patients with higher NLR may be due to ineffective cardio protective pharmacotherapy.

[27]

Enhanced recovery after surgery (ERAS) protocol facilitates faster functional patient recovery in elective cardiac surgery

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Introduction: Fast-track cardiac surgery today is an established and safe method because of achieved early tracheal extubation that leads to decreased length of hospital stay (LOS) with no increased risk of complications. However, we hypothesized, that fast-track protocols not only improve such system-oriented outcomes as LOS or complication rate, but facilitate better patient-oriented outcomes such as functional recovery. Our fast-track protocol was based on ERAS society guidelines, which became a "golden standard" in perioperative care in various types of surgery. Functional recovery was assessed by a novel and validated tool – Postoperative Quality Recovery Scale (PQRS) which consists of physical, psychological, functional and cognitive domains. Continuous real time tracking of recovery allowed identification of patients in need of treatment adjustment, as poor recovery leads to increased morbidity and mortality.

Aim of the study: To compare ERAS fast-track protocol and conventional perioperative care in terms of functional patient recovery in elective cardiac surgery.

Material and methods: We compared 41 consecutive patients undergoing elective cardiac surgery based on ERAS protocol (preoperative education, optimization of chronic conditions, no prolonged fasting and bowel preparation, carbohydrate loading, combined low-dose opioid general/epidural anesthesia, multimodal

postoperative analgesia, early extubation, mobilization and feeding) (ERAS group) with cohort of 58 elective patients from 2016 who received conventional perioperative care (Control group). All of the patients were assessed with PQRS at these time points: baseline – a day before surgery, 1st, 7th and 30th postoperative days. Recovery was defined as return to the baseline or better. Statistical analysis was performed using the SPSS 20.0 software package. Chi-square test was used to find differences between groups. The results were considered significant when $p < 0.05$.

Results: There was no significant difference between groups in terms of demographics, comorbidities or types of surgery. None of the patients fully recovered on 1st postoperative day in either of groups. On 7th day 17 (29,3%) patients in Control group and 16 (40,0%) in ERAS group have recovered fully ($p=0,275$). On the 30th postoperative day, 25 (48,1%) patients in Control group and 24 (75,0%) in ERAS group have recovered fully ($p=0,015$).

Conclusions: Enhanced recovery after surgery perioperative protocol facilitated better patient functional recovery 30 days after elective cardiac surgery.

[28]

Anatomy of the human mitral valve leaflets: Implications for transcatheter and surgical mitral valve repair techniques

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Introduction: Mitral valve disease is one of the most prevalent valvular heart diseases. The rapid development of surgical and less-invasive percutaneous (MitraClip) mitral valve repair procedures has greatly increased the interest in mitral valve anatomy.

Aim of the study: We aimed to characterize the morphological variability of the mitral valve leaflets and to determine the size of their particular parts.

Material and methods: We included 200 autopsied human hearts of both sexes (25% females) with a mean age 47.5 ± 17.9 years. We measured the intercommissural and aorto-mural diameters of the mitral annulus and identified the leaflets and their scallops. Measurements of the length of the base and the height were obtained in the commissures, anterior leaflet (AL) and posterior leaflet (PL) with their scallops. The circumference of the mitral annulus was obtained and the mitral annulus area was calculated.

Results: Classical mitral valve was found in 141 (70.5%) specimens. The mean intercommissural diameter and aorto-mural were 28.0 ± 4.8 and 19.7 ± 4.8 mm, respectively. The mean circumference of the mitral annulus was 89.9 ± 12.6 mm and the mean mitral annulus area was 485.4 ± 171.4 mm². The mean ratio of the AL base to the PL base was 0.7 ± 0.2 . The AL encompasses $34.5 \pm 4.8\%$ of the mitral annulus circuit and the PL $50.7 \pm 5.1\%$. The PL was longer than the AL (45.1 vs. 30.8 mm; $p < 0.001$) but had lower height (12.9 vs. 20.6 mm; $p < 0.001$). The PL could be divided into three scallops (P1, P2, P3). The medial scallop (P3) had the lowest height ($p < 0.05$) and the middle had the highest ($p < 0.001$), among other PL scallops. The AL was not divided into scallops. Variations in PL were found in 55 specimens (27.5%), and variations in AL were found in 5 hearts (2.5%). The most common variations included valves with one accessory scallop (AcS) between P3 and commissure (7%), AcS between P1 and commissure (4%), connections of P2 and P3 scallops (4%), connections of P1 and P2 scallops (3%) and AcS in AL (2.5%). We did not observe any significant difference in mitral annulus shape in hearts with variations.

Conclusions: In all cases, the mitral valve is built by two main leaflets with possible variants in scallops (29.5%). The variations are largely associated with PL and are mostly related to the presence of AcS. Understanding the anatomy of the mitral valve leaflets helps with the planning and performing of mitral valve repair techniques. Variations in scallops may affect repair procedures, but unfortunately, cannot be predicted by any of the annular sizes.

[29]

The same or different patients? Randomized controlled clinical trials and real-world atrial fibrillation patients treated with oral anticoagulants - current results from the CRAFT study

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Introduction: According to the current European Society of Cardiology guidelines non-vitamin K oral anticoagulants (NOAC) are first line drugs in non-valvular atrial fibrillation treatment. However, it is unclear how success of NOAC approval trials (ROCKET AF (rivaroxaban), RE-LY (dabigatran) and ARISTOTLE (apixaban)) reflects on real-life clinical practice.

Aim of the study: To compare clinical characteristics of real-life AF patients (pts) with populations included in the randomized clinical trials (ROCKET AF and RE-LY).

Material and methods: The study included retrospective analysis of 1904 AF pts' hospital records from the ongoing, multicentre, retrospective CRAFT study (NCT02987062). Pts were treated with VKA (acenocoumarol, warfarin) and NOAC (dabigatran, rivaroxaban). CHADS2 score was used for risk of stroke stratification. In contrast to RE-LY and ROCKET AF, pts with creatinine clearance <30 ml per minute were not excluded (2.9% pts).

Results: VKA was prescribed in 341 (17.9%), NOAC in 1563 (82.1%) (dabigatran - 506 (26.6%), rivaroxaban - 1057 (55.5%)) of the 1904 pts. The VKA CRAFT pts were the oldest among investigated populations (74.6±10.1 years old, VKA RE-LY 71.6±8.6, VKA ROCKET AF 73.0±9.6; dabigatran pts 65.9±13.9, RE-LY 71.5±8.8, rivaroxaban pts 70.6±13.1, ROCKET AF 73.0±9.6).

The VKA CRAFT pts were at intermediate risk of stroke (CHADS2 2.6±1.2) between the VKA RE-LY group (2.1±1.1) and the VKA ROCKET-AF (3.5±1.0). The CRAFT NOAC pts (CHADS2 for dabigatran pts: 1.8±1.3 and rivaroxaban pts: 2.2±1.4) had similar risk to pts from the RE-LY (2.2±1.2) and had lower risk than pts from the ROCKET AF (3.5±0.9) study.

History of stroke or transient ischemic attack (TIA) among VKA pts was the most common in the ROCKET-AF pts (54.6% vs 19.8% in RE-LY and 13% in CRAFT pts). Stroke or TIA was also more frequent in NOAC pts from the ROCKET-AF (54.9%) and the RE-LY (20.3%) than the CRAFT pts (rivaroxaban pts 16.2%, dabigatran pts 12.1%). In contrast, prior myocardial infarction or peripheral artery disease occurred more frequently in VKA CRAFT pts (69.8%) than in VKA RE-LY or VKA ROCKET AF (16.1% and 24.2%, respectively) and NOAC CRAFT pts (dabigatran 35.4% vs. RE-LY 16.9%, rivaroxaban 48.2% vs ROCKET AF 22.2%).

Conclusions: Current analysis of the CRAFT study showed distinct clinical profile of real-world pts in comparison to pts from the RE-LY and the ROCKET AF studies. Real-life pts were more similar to pts included in the RE-LY than in the ROCKET AF in terms of stroke risk stratification by the CHADS2 score.

[30]

Comorbidities cause poor results of percutaneous coronary intervention in heart transplant patients, not heart transplant itself- case control study

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Introduction: Heart transplantation (HTX) is a method of treatment for end-stage heart failure. The survival of HTX patients is getting longer as the medical care improves. As a result a coronary artery disease becomes a new challenge in this group of patients. Percutaneous coronary intervention (PCI) is one of treatment methods used in heart transplant recipients with obstructive lesions in coronary arteries.

Aim of the study: The objective of this study was the assessment of survival and major cardiovascular complications in cardiac transplantation (HTX) patients who required PCI.

Material and methods: We retrospectively screened 31 heart transplant recipients after PCI in years 2005 to 2015 in single center in Cracow. They were matched by risk factors of coronary artery disease with 33 controls without heart transplant history. Out of all patients 75 % and 78% respectively were male. Mean age of patients was 54,6 (SD=11,4) years in HTX group and 58,8 (SD=10,8) years in controls. Median time from heart transplant

to PCI was 13 years (range 4,4 to 22,0 years). PCI was performed mainly in left anterior descending (42,3%) , in right coronary artery (27,3%) and in left circumflex branch (15,2%). There was no difference in standard risk factors of coronary artery disease between case and control groups, except chronic kidney disease and dyslipidemia. Chronic kidney disease occurred in over 63% of patients after HTX. Dyslipidemia occurred in 90% of patients in control group.

Results: The survival of patients after HTX was worse than in control group ($p = 0,04$ for Log-rank test). When adjusted for comorbidities in Cox regression model, there was no significant difference in survival between analysed groups (HR 1,06; 95%CI: 0,10;11,24). HTX patients had significantly higher incidence of severe bleeding compared to control group (22% vs 3,0%), $p < 0,05$. There was no difference in myocardial infarction rate, revascularization or hospitalization rates.

Conclusions: Clinical outcome after PCI was worse in HTX patients than in control patients, caused by comorbidities, not by heart transplantation history. Bleeding risk should be carefully assessed in HTX patient, as its incidence is higher in this group.

[31]

Clinical characteristics and prognostic factors of long-term outcomes of patients disqualified from the pulmonary vein isolation due to intra-cardiac thrombus

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Introduction: Atrial fibrillation (AF) is associated with high thromboembolic risk due to a frequent presence of an intra-cardiac thrombus (ICT). There is a need for better evaluation of clinical characteristic and long-term prognostic factors of patients (pts) with ICT.

Aim of the study: To evaluate clinical characteristics and prognostic factors of long-term outcomes of pts disqualified from the pulmonary vein isolation (PVI) due to ICT.

Material and methods: We performed a retrospective analysis of data (years 2005-2016) from electrophysiology department of pts primarily scheduled for PVI. Among these, we selected pts who were disqualified from PVI due to ICT. We assessed baseline characteristics of pts with ICT. To determine the risk factors of long-term mortality and composite endpoint (death, stroke, peripheral embolism, hospitalization due to cardiovascular causes), univariate and multivariate logistic regressions were performed. In multivariate logistic regression model all factors with p values lower than 0.1 in univariate analyses were used.

Results: The study included 75 pts with ICT. Median age of the study group was 60 (38-76) years and 55 (73%) pts were male. At admission AF was present in 41 (56%) pts. Median CHA2DS2VASC score was 2 (1-3) points including: 15 pts had 0 points, 19 pts had 1 point, 19 pts had 2 points and 22 pts had ≥ 3 points. Median creatinine concentration was 1.1 mg/dl (0.9-1.3). Anticoagulation before the index hospitalization received 84.0% of pts – vitamin K antagonist received 60 pts, while non-vitamin K oral anticoagulant only 3 pts. During follow-up 8 pts died and 28 reached the composite endpoint. Coronary artery disease, diabetes, hypercholesterolemia, serum creatinine concentration, AF during index hospitalization and CHA2DS2VASC score were predictors of mortality only in univariate analysis, but not in multivariate analysis. Higher serum creatinine concentration, higher heart rate at discharge and higher CHA2DS2VASC score were independent predictors of the composite endpoint in multivariate analysis.

Conclusions: Pts with diagnosed ICT had a low thromboembolic risk assessed by the CHA2DS2VASC score, which justifies the need for transoesophageal echocardiography in all pts before PVI. Serum creatinine concentration, heart rate at discharge and CHA2DS2VASC score were independent predictors of the composite endpoint.

[32]

OCULUS study: three-dimensional movie as a new weapon against poor compliance

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Introduction: Atrial fibrillation (AF) is still associated with a high incidence of stroke due to the poor patients' compliance. The improvement in advanced technologies makes the three-dimensional (3D) movie a future standard in e-medicine.

Aim of the study: The aim of the study was to examine whether the 3D movie-based knowledge transfer is effective in teaching patients about the consequences of AF and pharmacological possibilities in reducing the risk of stroke.

Material and methods: 100 consecutive patients (38% women) were included in the single centre prospective study, which was based on the survey, designed by the authors of the study. The survey enclosed questions about previous AF history, knowledge about consequences of AF and the role of oral anticoagulants (OAC) in prevention of stroke. Thenceforth, supported by oculus glasses and a smartphone the brief 3D movie was being shown. The movie was describing the risk of stroke in AF patients and possibilities of prevention due to the usage of OAC. Subsequently, another questions were asked due to the film's plot. Over a week afterward, comparable questions were asked due to a telephone survey.

Results: 62% of examined patients had a previous AF history. Prior to the projection of the movie 22% patients responded that stroke is the dangerous consequence of AF, 83% immediately after ($p < 0.0001$) and 74% a week after the projection, during the telephone survey ($p < 0.0001$ when compared to the knowledge before watching the movie). 88.3% of asked before watching the movie and 100% one week after the projection responded, that by using the specific pharmacological therapy the risk of stroke might be reduced ($p = 0.0625$). OAC were chosen as the drugs reducing the risk of stroke by 68% of patients before watching the movie and by 90% a week after the projection ($p < 0.0001$). Before watching the movie 57.2% of patients declared taking the OAC previously, whereas one week after the projection the usage of OAC was confirmed by 70.2% of asked ($p = 0.0042$). 3D movie was acknowledged as a useful tool to spread awareness of consequences of AF by 98% subjects. 99% of patients declared that they would enjoy watching comparable movies about various diseases. 97.9% declared using prescribed OAC due to the knowledge of the consequences.

Conclusions: The OCULUS study clearly shows that 3D movie is an effective tool in teaching patients about the consequences of AF and advantages of using the OAC. We suggest, that 3D movie may be a new solution to the problem of poor patients' compliance.

[33]

The role of cyclic lactate level measurements in monitoring early postoperative period in patients after heart transplantation

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Introduction: Nowadays, studies searching for biochemical markers with prognostic value of postoperative outcome in patients undergoing cardiac surgery are being conducted and the actuarial clinical value of numerous measurements is under investigation. Postoperative serum lactate levels have been proven to correlate with the hypoperfusion and oxygen deficiency in patients hospitalized in the Intensive Care Unit (ICU). Nevertheless, despite from a single-center study that investigated only the impact of hyperlactatemia ($>15\text{mmol/l}$) on early mortality in 58 individuals who underwent heart transplantation (HTX), the issue has not been discussed in the literature. In case of heart recipients, when hypoperfusion and low cardiac output syndrome is often observed within first hours post-surgery, defining a biochemical marker which is easily assessable could improve the postoperative care management.

Aim of the study: To assess the role and actuarial clinical value of cyclical serum lactate level measurements and the association with the early postoperative outcome in patients undergoing HTX.

Material and methods: In a retrospective analysis, we evaluated the data from the medical records of 46 consecutive patients who underwent HTX in the Department of Cardiovascular Surgery and Transplantology, John Paul II Hospital, Kraków. The majority of the study group were males (89.1%) with the median age 52.5 (40-59) years and were qualified for HTX due to the dilated cardiomyopathy (73.9%). The serum lactate level measurements were obtained from arterial blood gas analysis that were conducted every 6 hours within first 48 hours (h) postoperatively.

Results: The median serum lactate levels measured post-surgery valued: on admission to the ICU – 4.3 (2.3-6.4); 6 h – 6.6 (3.3-7.9); 12 h – 4.6 (3.7-7.6); 18 h – 3.8 (2.3-6.1); 24 h – 2.7 (1.9-3.9); 30 h – 2.3 (1.6-3.1); 36 h – 2.0 (1.6-2.5); 42 h – 1.8 (1.3-2.4); 48 h – 1.9 (1.3-2.3) mmol/l [normal range: 0.5-1.6 mmol/l]. The mean highest observed serum lactate level was 6.6 ± 2.5 mmol/l. The highest observed serum lactate level valued 11.3 mmol/l, and in 4 (8.7%) cases the level was ≥ 10 mmol/l.

There were no association observed between the highest serum lactate level and the acute cell-mediated rejection ($p > 0.05$). Death before discharge was observed in 6 (13%) cases. The highest observed serum lactate level was significantly higher in deceased patients (8.5 vs 6.3 mmol/l; $p = 0.04$). Moreover, individuals who required at least 3 pressor drugs within the early postoperative period, had higher serum lactate levels observed (7.4 vs. 5.1 mmol/l; $p < 0.01$).

Conclusions: Serum lactate level measurements from first 48 hours post-HTX have prognostic value for the early postoperative outcome in heart recipients.

[34]

Physical activity of STEMI patients after cardiac rehabilitation

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Introduction: While there is a common agreement regarding the efficiency of cardiac rehabilitation (CR) in improving the prognosis of patients after ST-elevated myocardial infarction (STEMI), improving physical activity (PA) after CR is another important goal in STEMI patients.

Aim of the study: The aim of our study was to estimate the levels of PA in STEMI patients after CR, also known as the third stage of CR and to analyse possible association of both early and late factors of CR and levels of PA in the future.

Material and methods: It was a retrospective analysis of STEMI patients who underwent invasive coronary angiography and percutaneous coronary intervention (PCI) after STEMI followed by CR in years 2007-2013. The group consisted of 141 patients; the average time of follow-up was 30.14 months (max. 96 months). Information on patients' current activity was assessed with validated International Physical Activity Questionnaire (IPAQ), which takes into consideration time per day and week spent on vigorous (e.g. lifting heavy weights, aerobics) and moderate (riding bike, playing volleyball) activity, walking and sitting. The analysed factors of further physical activity were: gender, age, body mass index (BMI), hypertension, diabetes mellitus type 2, atrial fibrillation, history of previous MI or stroke, ejection fraction, type of infarction related artery, localization of MI, peak levels of troponin I (TnI), creatine kinase-MB (CK-MB) mass, initial metabolic equivalent of task score (METs), METs after CR, improvement of METs, number of training sessions (12 or 24).

Results: In the analysed group of patients 97.89% of them maintained any form of physical activity. The percentages of patients classified to the high, moderate and low/absent level of activity groups were 20.57% ($n=29$), 59.57% ($n=84$) and 19.86% ($n=28$), respectively. No statistically significant relation between the factors and physical activity was observed.

Conclusions: The physical activity long after CR is maintained by the majority of patients. Most commonly patients maintain the moderate PA.

[35]

The Results of Mitral Plasty without a Prosthetic Ring

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Introduction: The affections of the mitral valve is one of the most frequent valvular heart disease . In 2/3 of the cases, the curative treatment will remain the surgery but the choice of the technique thus the indication of a mitral plasty or a valvular replacement will always be debatable. In this retrospective study we report our experience in surgical treatment for mitral regurgitation.

Aim of the study: The annular stability in not guaranteed after mitral repair without a prosthetic ring. The aim of the study was to elucidate the potential drawbacks associated to this procedure.

Material and methods: Retrospective study of 26 consecutive patients operated for primary mitral regurgitation over a period of six years (June2009-May2015) and who received mitral valve repair without ring. The most cases of mitral regurgitation are due to rheumatic fever and the consequent rheumatic heart disease (12). Uncommon causes are: infective endocarditis (4), degenerative (3), myxomatous(3), congenital (3), trauma(1). We have practiced 15 Commissural/P2 plication technique ,4 Commissurotomy /Mitral Papillotomy, 5 Valve resection, 3 Valvular Perforation Repair , 1 Decalcification .

Results: In postoperative we had 03 hospital death, 01 late death, 02 re-admission due to residual MR mitral regurgitation, 02 deep sternum wound infection and 04 new onset atrial fibrillation.

Conclusions: Failure of the plasty without prosthetic ring in the posterior leaflet restriction. However, the result is better with the anterior leaflet prolapse /chordal rupture compared to the first one.

[36]

Did off-pump CABG Performed in Nasser Institute from 1998-2015 have less postoperative complications than on-pump?

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Introduction: Coronary artery bypass graft (CABG) is a surgical procedure that aims to revascularize myocardial tissue supplied by diseased coronary arteries (luminal stenosis exceeding 50%). There are two type of operation (on-pump or off-pump). Regarding on-pump CABG, it's the traditional method where the heart is stopped and an artificial circulation system is introduced using cardiopulmonary bypass machine providing a bloodless motionless field for surgery. Another similar technique used is "off-pump coronary artery bypass" or "OFCAB". In this technique cardiopulmonary bypass is not performed, instead the surgery is done while the heart is still beating. Complications regarding CABG are subcategorized in the literature into 4 subcategories: operative mortality, early cardiogenic, early non-cardiogenic, and, long-term. In our study we are focusing on early complications. There's still a debate in the literature on the preference of both CABG methods (on and off pump) and which offers the greatest benefits and least complications for patients.

Aim of the study: Compare between on-pump and off-pump by-pass surgeries regarding outcomes and postoperative complications.

Material and methods: - Nasser Institute database and recording system.

All patients who performed CABG in Nasser Institute (1998-2015) are included in our study population, a total of 19250 on pump patients and 840 off pump. A Sample size was calculated with the "two proportion

Results: The sample size is 1014, 81.5% males and 18.1% females. The mean of age is 55.5 \pm 8 SD. Data was analyzed to estimate the post-operative proportions -or means- and the significance of their differences between the on- and off-pump groups. Quantitative variables were analyzed using T-test, whereas qualitative variables were analyzed using Chi square test.

Conclusions: Low cardiac output, cardiac tamponade and neurological complications occurred more frequently in on-pump patients. On-pump patients also had more hours of post-operative ventilation (P-value .007*), post-operative ICU stay (P-value .012) and they needed more blood transfusion (P-value 0.001*). However, there were no significant differences in post-operative arrhythmias, pulmonary, infective or renal complications.

[37]

Patients with cardiological events who are using anticoagulants - total amount of daily used drugs and within those the number of drugs that can interact with anticoagulants

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Introduction: Cardiac patients use anticoagulants to prevent thromboembolic events. However, these patients often have comorbidities that require daily use of additional drugs. Several medications have mechanistic interactions with anticoagulants, caused by P450 CYP3A4 inhibition or P-glycoprotein inhibition. Drug-drug interactions and different clinical factors impact anticoagulant plasma levels that can lead to both undertreatment or overtreatment.

Aim of the study: The aim of the study is to collect statistics about of total number drugs used by cardiac patients who use anticoagulants, and to identify within those the number of drugs that can interact with anticoagulants.

Material and methods: We performed analysis of 284 patients cases who used anticoagulants in Pauls Stradins Clinical University - Latvian Center of Cardiology between August 1, 2016 till January 4, 2017. The method used was patient's surveys.

Results: Out of 284 total patients 128 (45.1%) were women and 156 (54.9%) were men. Overall, 14 (4.9%) patients used 2 drugs daily, 29 (10.2%) used 3 drugs, 42 (14.8%) patients used 4 drugs, 56 (19.7%) used 5 drugs, 57 (20.1%) used 6 drugs, 34 (12.0%) used 7 drugs, 26 (9.2%) patients used 8 drugs, 14 (4.9%) patients used 9 drugs, and 12 (4.2%) patients used 10 drugs daily. Additionally, of the 284 surveyed patients, 61 (21.5%) used 1 medicament that has interaction with anticoagulants. 137 (48%) patients used 2 drugs that interact with anticoagulants, from which 95 (69.3%) used at least one excessive P-glycoprotein inhibitor ($p<0.005$). 66 (23.2%) patients used 3 drugs that can interact with anticoagulants, from which 61 (92.4%) used at least one excessive P-glycoprotein inhibitor ($p<0.005$). There were 15 (5.3%) patients who used 4 drugs with anticoagulant interaction, and all of them (100%) included at least 1 excessive P-glycoprotein inhibitor ($p<0.005$). Respectively, 4 (1.4%) and 1 (0.4%) used 5 and 6 drugs that can interact with anticoagulants.

Conclusions: Cardiac patients who use anticoagulants used, on average, 4 additional drugs daily. 8 out of 10 cardiac profile patients use 2 or more drugs that can interact with other drugs. There is statistically significant data that patients who use 2-4 drugs with drug-drug interactions in majority of cases have at least one excessive P-glycoprotein inhibitor.

[38]

Impact of the access site on daily changes in platelet count and allied hemoglobin level after TAVI

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Introduction: Transcatheter aortic valve implantation (TAVI) is an increasingly used technic to treat patients with symptomatic aortic stenosis. Several studies have indicated that a platelet count (PLT) drop as well as a hemoglobin (HGB) decline, are both independent predictors of poor outcome after TAVI. Aortic valve may be implanted from different access sites: transfemoral, transsubclavian, transaxillary, transaortic and transapical.

Aim of the study: Our goal was to assess whether the access site has an impact on the pattern and relation between PLT and HGB changes after TAVI.

Material and methods: Among the consecutive 293 pts (79.9 ± 7.5 years, 68% female, EuroSCORE=22±12%) treated with TAVI (Aug 2009–December 2016), serial changes in PLT and HGB were measured prior to and daily 7days post procedure.

Results: Valves were implanted from transfemoral (85.8%), transsubclavian&axillary (7.9%), transaortic (3.4%) and transapical (3.0%) sites. An early PLT drop was seen on day 1, reaching nadir PLT on day 2-3 post procedure ($\Delta\%PLT1=27\pm14\%$ and $\Delta\%PLTmax=43\pm15\%$, both $p<0.001$, respectively). An early HGB decline was seen on day 1st, reaching nadir HGB level at day 2-3 post procedure ($\Delta\%HGB1=14\pm9\%$ and $\Delta\%HGBmax=22\pm13\%$, both $p<0.001$, respectively). Patterns of an early PLT response and HGB decline were both equal among different

access sites (Fig A and B, respectively), with equal $\Delta\%PLT_{max}$ but increasing $\Delta\%HGB_{max}$ for transfemoral vs transsubclavian&axillary vs transaortic+apical (22 ± 14 vs 24 ± 5 vs 28 ± 20 , $p=0.030$ respectively).

Conclusions: An access site has no impact on the platelet count response after TAVI, but a relative hemoglobin decrease is greater for transaortic and transapical access sites.

[39]

Correlation between iFR and FFR measurements and its impact on the long-term outcome

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Introduction: Instantaneous wave-free ratio (iFR) is a physiological index which can be obtained at rest without hyperemic stimulation. iFR is conceptually different from fractional flow reserve (FFR), leading to lively scientific debate about this index.

Aim of the study: The aim of this study was to analyze the correlation between iFR and FFR measurements and its impact on the long-term outcome.

Material and methods: We prospectively enrolled patients with stable CAD who were qualified for FFR performance between January and August 2015. Patients had to have at least 50% stenosis in at least one coronary artery. FFR measurement was performed with the use of adenosine given i.c. or i.v. Additionally, prior to FFR measurement iFR measurement was performed. Clinical follow-up was planned at 12 months.

Results: We enrolled 112 patients in whom 301 iFR/FFR measurements were performed. The mean age population was 67 ± 8 years, and diabetes was revealed in 31.25%, hypertension – in 62.5%, and prior myocardial infarction – in 26.7%. The majority of measurements was performed in left anterior descending artery and its branches (71.4%) followed by left circumflex artery (48.2%), right coronary artery (44.6%) and left main (20.5%). One-vessel disease (1-VD) was found in 13.4%, 2-VD – in 61.6%, and 3-VD – in 25%. Adenosine was given as i.c. boluses in 87.5% of cases.

Regarding the lesion severity the correlation between iFR and FFR measurements was $r = 0.84$ ($p < 0.01$), $r = 0.82$ ($p < 0.01$), $r = 0.79$ ($p < 0.01$) for 50-60%, 61-70% and 71-89% lesions, respectively. When analyzing the advancement of the disease the abovementioned correlation was as followed: $r = 0.85$ ($p < 0.01$), $r = 0.84$ ($p < 0.01$), $r = 0.78$ ($p < 0.01$) for 1-VD, 2-VD and 3-VD, respectively. Interestingly, we also found differences in correlation regarding the dose of adenosine given: $r = 0.83$ ($p < 0.01$), $r = 0.82$ ($p < 0.01$), $r = 0.69$ ($p < 0.01$) for 120 ug i.c., 240 ug i.c. and 480 ug i.c., respectively.

At the time of WIMC 2017 we will present the complete data analyzing the role of iFR and FFR correlation on the long-term outcomes, i.e. the rate of major cardiovascular adverse events defined as cardiac death, myocardial infarction and target lesion revascularization.

Conclusions: Our results showed that iFR and FFR correlated best in patients with 1- or 2-VD disease as well as when moderate doses of adenosine (100 – 240 ug i.c.) were given.

[40]

Relationship between LVEF and neutrophil to lymphocytes ratio (NLR) among patients with stable coronary artery disease

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Introduction: Neutrophil to lymphocytes ratio (NLR) is proportion between neutrophiles and lymphocytes calculated from Total Blood Count. Some studies showed that NLR may be useful predictor of LV remodeling and IHD.

Reduced LVEF according to newest ESC guidelines is defined as a LVEF below 40% and is connected with higher mortality (poor prognosis).

Aim of the study: The aim of the study was to evaluate the prevalence of reduced LVEF in patients with stable coronary disease. Secondary goal was to measure impact of NLR higher than mean.

Material and methods: The 3291 patients, with stable coronary disease, admitted to Department of Invasive Cardiology between 2007 and 2016 were included into the study. Retrospective analysis included 1152 patients with previous echocardiography evaluation. T student, Chi square were used in the study for analysis. The p value of 0,05 was considered significant.

Among 3291 patients mean NLR was equal to 3,001(SD= 5,39). It was used for further division into 1st Group (NLR+; NLR \geq 3,001) and 2nd Group (NLR-; NLR < 3,001). Next each group was divided into 2 subgroups based on the history of MI. 1st Group (NLR+; n=415; NLR \geq 3,001) was divided into Subgroup MI+ n=197 and Subgroup MI- n= 218; 2nd Group (NLR -; n=737 NLR <3,001) into Subgroup MI + n=333 and Subgroup MI- n= 404. There was no difference in MI prevalence basing on NLR level (p=0.45).

Results: In this study were observed: lower mean LVEF in patients after MI (45,29%; 45,7% vs 51,08%; 53,52%; p<0,0001). Percent of reduced LVEF in patients with stable coronary artery disease was equal to 17,45%.

There was no correlation between NLR and LVEF in patients with history of MI (25,89% vs 25,83%; p=1). In patients without of MI in the past, NLR higher than mean was related with higher prevalence of reduced LVEF both defined as less than 40% (13,76% vs 8,42%; p=0.036) and 35% (<35%; 11,01 % vs 6,44%; p=0.045).

Conclusions: Neutrophil to lymphocytes ratio (NLR) may be a useful tool as a predictive factor of LV remodeling stable coronary artery disease. It can be used for stratification of reduced LVEF risk but there is a need of further evaluation.

[41]

Endovascular vs Open Repair in Abdominal Aortic Aneurysms in Young Patients: A Meta-analysis

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Introduction: Abdominal aortic aneurysms (AAAs) are traditionally treated by open repair (OPEN) with graft interposition for reconstruction of aortic continuity. Endovascular aortic repair (EVAR) by stent grafting has evolved as a popular surgical strategy for treating high surgical risk patients. However, the need for long-term follow up and more reinterventions with EVAR, especially in younger patients, is a significant concern. The role of OPEN versus EVAR of AAAs in young patients (40–65 years old) is controversial.

Aim of the study: This study aimed to examine the results of elective AAA repair with OPEN versus EAVR in young patients.

Material and methods: Full texts of relevant articles from 2008 to 2016 were collected from PubMed, EMBASE, Scopus, Science Direct, Web of Science, The Cochrane Library and China National Knowledge Infrastructure (CNKI) databases. The terms AAA, EVAR, OPEN surgery, and younger patients were searched. Data on in-hospital and long-term mortality outcomes were extracted and pooled into a meta-analysis. Odds ratio (OR) with a 95% confidence interval (CI) were calculated to compare young AAA patients undergoing elective EVAR and OPEN. Seven cohort studies were examined, including 28105 subjects.

Results: A total of seven cohort studies (n=28,105 patients) were included in the meta-analysis. A reduced risk of 30-day mortality (OR=0.37, 95% CI 0.15, 0.93; p=0.03) was observed in the EVAR as compared to the OPEN group. However, there were no significant differences between the two groups in reintervention (OR=0.95, 95% CI 0.47, 1.93; p=0.89) or long-term mortality (OR=0.66, 95% CI 0.19, 2.29; p=0.51)

Conclusions: These findings suggest that EVAR can play a protective role in AAA surgery for patients 40- to 65-years old. However, reintervention and long-term mortality did not differ for EVAR and OPEN, which may due to the better physical condition of younger patients.

[42]

Comparison of patients with atrial fibrillation treated with non-vitamin K antagonist oral anticoagulants and vitamin K antagonists

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Introduction: Non-vitamin K antagonist oral anticoagulants (NOACs) such as dabigatran, rivaroxaban or apixaban are alternatives to vitamin K antagonists (VKAs) for prevention of stroke and systemic embolism in patients with atrial fibrillation (AF). Incidences of left atrial appendage (LAA) thrombus formation, such as dense spontaneous echo contrast (SEC), low LAA velocity (LAAV) <20 cm/s under treatment with NOACs or VKAs have still to be investigated.

Aim of the study: The aim of the study was to compare the characteristic of patients treated with NOACs and VKAs who underwent transesophageal echo exam before ablation and cardioversion of AF as well as to compare the incidence of LAA thrombus formation, presence of dense

Material and methods: We studied consecutive 1033 patients (686 men, mean age 58,6±11,7 years) undergoing TEE before planned ablation (n = 834) and cardioversion (n = 199) for AF. In the presence of atrial thrombi interventions were postponed.

Results: Patients received acenocoumarol (n = 315), warfarin (n = 149), dabigatran (n = 210), rivaroxaban (n = 242) or apixaban (n = 1) for at least 3 weeks prior to investigation. 11.2% of patients underwent a procedure without prior anticoagulation treatment. Uninterrupted VKAs and NOACs was administered in 70,9 and 35,3 % of patients, respectively. There were no differences between the age, sex, BMI and risk factors, such as hypertension, diabetes, chronic heart failure, previous stroke, renal failure in both groups. Moreover, there were no differences between the type of AF in both groups: paroxysmal AF was observed in 56,3% patients treated with NOACs and 60,6% patients treated with VKAs, persistent AF occurred in 37,1% and 33% of patients, respectively. Mean CHA₂DS₂-VASc was 1,7 in NOACs and 1,8 in VKAs groups. There were no differences between HAS-BLED score in both groups (1,2 vs 1,2). The most frequent abnormality was LAA thrombus (6% patients treated with VKAs and 5% with NOACs), followed by dense SEC (5% patients in VKAs group and 3% in NOACs group) and low LAAV of less than 20 cm/s (5% patients with VKAs and 4% with NOACs)

Conclusions: There were no significant differences between patients treated with NOACs or VKAs in our study group. Moreover, the frequency of LAA thrombus formation, presence of dense SEC and low LAA velocity was similar in both groups.

[43]

Assessment of functional adaptation of the right ventricle to pressure- and volume overload by 3D echocardiography

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Introduction: Two major mechanisms contribute to right ventricular (RV) pump function: longitudinal shortening and radial contractions. However their relative contribution varies among different pathological conditions affecting the RV.

Aim of the study: Our aim was to quantify the longitudinal and the radial components of RV performance using three-dimensional (3D) echocardiography and to assess their relative contribution to RV function in conditions with pressure overload (primary pulmonary hypertension)

Material and methods: Twenty-twenty PHT and ToF patients and 40 gender matched healthy volunteers were enrolled in our current study. Beyond conventional echocardiographic protocol, full volume datasets were acquired using multi-beat reconstruction from 4 or 6 cardiac cycles. Using dedicated software for RV 3D and speckle-tracking analysis (4D RV-Function 2), 3D beutel model was created and exported volume-by-volume throughout the cardiac cycle. Beside end-diastolic volume (EDV) and total ejection fraction (TEF), we quantified

longitudinal (LEF) and radial ejection fraction (REF) by decomposing the motion of each vertex of the reconstructed 3D beutel model along three orthogonal axes and omitting the other two directions.

Results: EDV was increased both in PHT and ToF groups compared to controls (PHT vs. ToF vs. NC; 192 ± 77 vs. 205 ± 74 vs. 119 ± 29 ml, ANOVA $p < 0.001$). TEF was found significantly decreased in both pathological conditions (40 ± 11 vs. 44 ± 4 vs. $57 \pm 4\%$, ANOVA $p < 0.001$). In PHT patients longitudinal shortening remained an important component of TEF (LEF/TEF: 47 ± 7 vs. 48 ± 5 , $p = \text{NS}$) while the importance of radial contractions has decreased (REF/TEF: 35 ± 9 vs. 48 ± 6 , $p < 0.001$). On the other hand, in ToF adverse tendencies could be observed as longitudinal contractions had less determining role (LEF/TEF: 38 ± 10 vs. 48 ± 5 , $p < 0.001$) but the importance of the radial direction was preserved (REF/TEF: 46 ± 8 vs. 48 ± 6 , $p = \text{NS}$).

Conclusions: Our software allows to quantify longitudinal and radial motion of the RV separately using 3D analysis. Our current results confirm the empirical phenomenon on shift in relative contribution of longitudinal and radial contractions to global RV function in conditions with pressure- or volume overload. In PHT the decrease of radial contractions while in ToF the reduction of the longitudinal shortening could be observed.

[44]

Evaluation of the effectiveness of prevention against contrast-induced nephropathy in patients treated invasively for acute coronary syndrome

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Introduction: Contrast-induced nephropathy (CIN) is one of the most common causes of hospital-acquired acute renal failure which may occur after an exposure to a contrast agent. CIN is defined as a 25% increase in serum creatinine concentration from the baseline value or an increase of at least 0,5 mg/dL, which occurs within 48h after the administration of a radiocontrast and lasts 2 to 5 days. Due to increasing rates of diagnostic and therapeutic coronary interventions, it is necessary to use prevention because cardiac patients have a greater risk of developing CIN.

Aim of the study: The aim of the study was to evaluate the effectiveness of the prevention against CIN in patients treated invasively for acute coronary syndrome (ACS).

Material and methods: It was a retrospective study based on the analysis of medical data of patients hospitalized in a University Hospital. The survey involved individuals admitted to hospital from July to December 2016 with a suspicion of ACS. All of them underwent a coronary angiography with use of a low-osmolar contrast medium. An intravenous administration of 500mL 0,9% sodium chloride before and after a therapeutic coronary intervention was given as a standard prophylaxis to prevent CIN. Subjects were analysed for risk factors which could promote CIN development. The survey was based on the scale of the risk of CIN created by the Cardiovascular Research Foundation in 2004. Risk factors taken into consideration include: prolonged hypotension, congestive heart failure, intra-aortic balloon pump, age, anaemia, diabetes mellitus, dose of contrast medium and serum creatinine. Each of them had several points, which were summed up for all the patients.

Results: 90 consecutive patients (44 men, 46 women, mean age 71,1 years [range 22-91]) were included into the study. Individuals were classified into four risk groups of CIN development: group 1 – 34 patients with less than 6 points and the risk 7,5%; group 2 – 27 patients with 6-10 points and the risk 14%; group 3 – 18 patients with 11-15 points and the risk 26,1%; group 4 – 11 patients with more than 15 points and the risk 57,3%.

Regardless of assignment to different risk groups none of the patients developed CIN what indicates that intravenous administration of 0,9% sodium chloride is an effective prevention that decreases the incidence of CIN.

Conclusions: An evaluation of CIN risk factors are necessary in all ACS patients. Adequate prophylaxis against CIN is effective and should be administrated in each patient before coronary angiography.

[45]

Benefits of implementing invasive treatment recommended by Heart Team. CABG vs PCI retrospective cohort study

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Introduction: Revascularization is commonly recommended to patients with coronary artery disease (CAD). Nowadays the biggest challenge is a proper qualification for this kind of treatment. The Heart Team (HT) is considered to provide multidisciplinary approach to patients with CAD. Although a considerable number of patients is qualified to invasive treatment by HT during daily-meetings, there is still not enough data on long-term outcomes these decisions.

Aim of the study: To investigate an impact of HT recommendations related to revascularization (CABG, PCI) on the number of cardiac or cerebrovascular events (myocardial infarction, revascularization, strokes) and all-cause mortality.

Material and methods: A retrospective cohort study of 953 patients qualified to revascularization by HT between years 2012 and 2015 was performed by telephone follow-up from 23.03.2016 to 25.10.2016 with predetermined questionnaire.. There were no exclusion criteria.

Results: Median of follow up was 3,6 (range 0,4 to 4,7) years. All patients had high SYNTAX score. From 953 patients included into the study (average age 67,7±18,4years) HT decision was followed in 808 (84,78%) cases, in 737 (76,6%) cases of CABG qualifications and 71 (85,5%) of those qualified to PCI. HT recommendation were not followed in 145 cases (15,22%). In the subgroup qualified to CABG, survival was similar in patients who were treated according to Heart Team decision (Group A) and who were treated in an alternative way (Group B). Comparing Group A with Group B using 5 year Kaplan-Meier analysis we observed significant difference ($p=0,006$) in terms of surviving without myocardial infarction. In the subgroup qualified to PCI survival was better, when Heart Team guidance was successfully implemented ($p=0.003$). Our study do not reveal essential difference in other evaluated parameters like the number of revascularization events, stroke, bleeding and MACCE.

Conclusions: Heart Team recommendations according to PCI, when implemented, correlate with better clinical outcome. Patients undergoing CABG after HT decision had lower MI rate, when HT-proposed treatment was performed.

[46]

Prognostic factors for STEMI patients after cardiac rehabilitation in single academic cardiologic center

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Introduction: Cardiac rehabilitation (CR) has well-established efficiency in improving the prognosis of patients after ST-elevated myocardial infarction (STEMI).

Aim of the study: The main aim of our study was to analyse early and late factors which may be related to the improved prognosis of STEMI patients who participated in CR programme.

Material and methods: It was a retrospective analysis of STEMI patients who underwent invasive coronary angiography and percutaneous coronary intervention (PCI) after STEMI followed by CR in years 2007-2013. The group consisted of 141 patients; the average time of follow-up was 30 14 months (max. 96 months). Individual physical capacity was assessed at the beginning of CR by electrocardiographic exercise test. Information on patients' current activity was assessed with validated International Physical Activity Questionnaire (IPAQ). The analysed early factors included: gender, age, body mass index (BMI), hypertension, diabetes mellitus type 2, atrial fibrillation, history of previous MI or stroke, ejection fraction, type of infarction related artery, localization of MI, peak levels of troponin I (TnI), creatine kinase-MB (CK-MB) mass. Late factors included: initial metabolic equivalent of task score (METs), METs after CR, improvement of METs, number of training sessions (12 or 24).

The combined end point consisted of: patient's death or another cardiovascular event (stroke, myocardial infarction, any revascularisation).

Results: Higher BMI was associated with better prognosis of patients (Hazard Ratio HR=0.83; 95% Confidence Interval CI 0.71-0.93; p=0.012). There was observed a trend for the relation between the improvement of METs and better prognosis of patients (HR=0.57; 95% CI 0.38-0.86; p=0.007). No statistically significant relation between any of the early and late factors and any form of physical activity was found.

Conclusions: Increased BMI, itself a risk factor for coronary artery disease, is a positive prognostic factor for the outcome of CR (phenomenon known as the obesity paradox). Our study also shows that although the absolute value of METs achieved after CR had no significant impact, the thing that seems to improve prognosis is relative improvement of METs.

[47]

Prognostic value of pericardial effusions for patients operated for breast cancer

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Introduction: Tumor pathology is the second cause of pericardial effusions in pre-tamponade, often recurrent effusions and associated with other complications. In this retrospective study, we illustrated the relation between pericardial effusions & breast cancer observed in our cardiovascular surgery department.

Aim of the study: The objective of this study is to evaluate the prognostic value of these effusions in the patients operated for breast cancer.

Material and methods: From January 2011 to March 2013, 43 patients were treated for pericardial effusions in pre-tamponade at the cardiac surgery department at the ORAN EHU. 06 patients presented with operable breast cancer. The average age was 50 years (45 years - 66 years). Effusion appeared on average 2.5 years (1-7 years) after mastectomy. 04 patients had left mastectomy, 01 patient had right mastectomy, 01 patient had a double mastectomy. All the patients had benefited from chemotherapy & radiotherapy. The cytological study of the puncture fluid revealed the presence of carcinomatous cells in half of the cases, while in the other half the presence of inflammatory cells. 4 patients had died in the month following their puncture, the 5th patient after 8 months and the 6th patient had been lost to follow-up.

Results: In breast cancer the appearance of a pleural effusion is seen on average after 45 months and the average survival is 15.7 months after the appearance of this effusion. The mean survival of patients with pericardial effusion on breast cancer varies according to the series between 6.5 and 9 months with a 1 year survival rate not exceeding 33%. The use of intra-pericardial sclerosing or anti-mitotic treatment improves the prognosis.

Conclusions: The appearance of a pericardial effusion in patients who have been operated on for breast cancer is a sign of poor prognosis, especially if accompanied by other metastatic sites. Early and complete management of these patients would improve their prognosis.

Dentistry

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[48]

Indicators of a high number of cariogenic bacteria in pregnant women

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Introduction: High level of cariogenic bacteria *Streptococcus mutans* (SM) and *Lactobacillus* (LA) in the saliva of the mother is a risk factor of early childhood caries. Evaluation of cariogenic bacteria counts is not a part of a routine dental examination, therefore it is important to try to specify clinical and behavioral indicators of their high counts.

Aim of the study: Establishment of clinical and behavioral indicators of a high number of cariopathogens in the saliva of pregnant women.

Material and methods: The study comprised of 47 out of 91 women from a big city, who expressed informed consent, aged from 20 to 39 years old (mean age 29.9 ± 4.4 y), mean gestational age - 27.96 ± 8.48 weeks. Approval of the WUM Bioethics Committee was obtained (no. KB/93/2015 dated 5/05/2015). The study included: self-administered questionnaire (demographic data, hygienic and nutritional habits, dental treatment history), clinical examination (condition of oral mucosa, dentition, gingivae and hygiene) and assessment of SM and LA levels in saliva using CRT Bacteria test (Ivoclar Vivadent). The high counts of bacteria were stated at values $SM > 10^5$ and/or $LA > 10^5$ CFU. The collected data were statistically analyzed (Spearman correlation coefficient; STATISTICA 10, Statsoft; $p < 0.05$).

Results: The high level of SM was observed in 15 (31.91%) women, LA in 21 (44.68%). A positive correlation between $SM > 10^5$ and DMFT value and its components DT and MT and negative with the consumption of dietary sugar substitutes, chewing gum with xylitol, use of powered toothbrush and undergoing the dental check-up within 6 months prior to pregnancy was proved. $LA > 10^5$ was negatively correlated with the use of dental floss and positively with $SM > 10^5$.

Conclusions: A clinical indicator of the high level of SM is the presence of cavities. The use of dietary sugar substitutes and proper oral hygiene, especially with the use of powered toothbrush and dental floss are indicators of the low cariopathogen counts.

[49]

Practical usage of dentists/ cardiologist/ physicians knowledge of pre-dental treatment in cardiac patients

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Introduction: Nowadays due to an increase of the incidence of cardiovascular diseases such patients come to the dental clinic more frequently. In the process of preparing such patients to dental procedures doctors should consider reducing the risk of infections, bleeding and thromboembolic incidents related to possible modification of continuous treatment.

Aim of the study: Evaluation of doctors' and dentists' knowledge for proper perioperative care in cardiac patients prior to dental procedures, assessment of the risk of complications in patients from the high-risk group, thromboembolic complications and their influence on the dental treatment. Comparison of guidelines changes over the last few years.

Material and methods: Surveys carried out in various medical centers including 18 doctors (cardiologists and general practitioners) and 22 dentists with various seniority, workplace and academic title.

Results: The analysis of the questionnaires have shown that 82% (32 people) of respondents use antibiotic prophylaxis in cardiac patients without allergy to penicillin before dental procedures to prevent infective endocarditis. 79% (31 people) follow the guidelines appropriately, that is to say, recommend amoxicillin 2g administered orally or intravenously 1 hour prior to dental procedures, and 27% (10 people) use clindamycin 600 mg for 1 hour prior to the operation. 77% (30 people) consider $INR > 3$ a contraindication to the bloody dental procedure. 55% (12 people) of dentists would not discontinue any anticoagulants alone during dental procedures, or consult physician, 23% (5 people) discontinued aspirin prior to the surgery. 61% (11 people)

doctors regard that it is right to stop taking thrombin and factor X inhibitors, 50% (9 people) temporarily stop taking vitamin K antagonists prior to high bleeding risk dental surgery.

Conclusions: Doctors and dentists are aware of the appropriate pharmacological management of cardiac patients before dental procedures. Due to the introduction of new drugs, this knowledge may be insufficient, in particular new anti-platelet drugs like dabigatran or rivaroxaban. Therefore, the knowledge must be updated through participation in training courses, conferences, or based on the latest literature.

[50]

Knowledge of parents of children with malocclusion about the correct methods of feeding during infancy and early childhood

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Introduction: Awareness of parents about the occurrence of dysfunctions and parafunctions leading to the formation of malocclusion is an important factor in the orthodontics prevention. There are many scientific reports confirming the relationship between feeding dysfunctions and the presence of malocclusion.

Aim of the study: The aim of this study was to assess the knowledge of parents of children with malocclusion about the correct methods of feeding children during infancy and early childhood.

Material and methods: The material was a questionnaire containing 37 questions about feeding methods and pacifier use, information about respondents and their knowledge about the etiology of malocclusion. The questionnaire was distributed among more than a hundred parents of patients of the Department of Orthodontics Medical University of Warsaw. In children, concerning which a questionnaire survey was conducted extra-oral and intra-oral examination was performed and orthodontic diagnosis was made.

Results: Among 102 respondents aged 28 to 58 years 75.5% were women and 24.4% men. The research showed that mother's age and number of children in family wasn't affecting the level of awareness of parents. The lowest level of knowledge concerned questions about one-time breast-feeding / bottle feeding (79.2% wrong answers), the child's age, when parents should stop feeding the infant only using breast / bottle (79.2% wrong answers), and the consequences of leaning the bottle on child's chin during feeding (71.1% wrong answers). 50.6% of respondents believe that genetic predispositions do not belong to the etiological factors of malocclusion, while 62.3% of respondents believe that bad habits (parafunctions) have no effect on the development of malocclusion. The vast majority of respondents (77.6%) believes that the consistency of the food affects the development of the jaws. The research work is going to be extended.

Conclusions: The level of parents' awareness about research subject is low. There is a need to heighten awareness about methods of feeding children in infancy and early childhood in order to minimize the risk of malocclusion from the moment of birth. Dentists should work with pediatricians to achieve this goal.

[51]

Comparative analysis of the mechanical properties of polymethylmethacrylate resin reinforced with glass, carbon or aramid fibers in the form of rovings

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Introduction: Polymethylmethacrylate (PMMA) is a material of choice for the fabrication of complete dentures. Although PMMA-based denture resins are not ideal in all practical aspects, they are popular and universally used. The main drawbacks of PMMA are their mechanical failures. Many researchers have attempted to improve

mechanical properties of denture base resins by addition of different types of fibers. Glass fibers are the most frequently used to reinforce denture base resins, but also worth considering are carbon fibers and aramid fibers.

Aim of the study: The aim of this work was to analyze mechanical properties of acrylic material reinforced with glass fibers, carbon fibers, aramid fibers, glass and aramid fibers (glass-aramid hybrid), carbon and aramid fibers (carbon-aramid hybrid) in the form of roving

Material and methods: Glass fibers (ATG), carbon fibers (TORAY 3K), aramid fibers (Kevlar 1100D), glass-aramid hybrids (ATG, Kevlar 1100D) and carbon-aramid hybrids (TORAY 3K, Kevlar 1100D) were immersed in acrylic precursor (Estetic Wiedent) and polymerized according to recommendations of the producer. Composite materials to study were cuboid samples of 55×10×2 mm made in accordance with PN-EN ISO 178:2011/A1:2013-06. Forty-eight specimens were prepared. Tests of flexural strength were performed with the use of the Zwick 1435 machine and testXpert V.8.1 software.

Results: The highest increase in flexural strength relative to control samples ($\sigma=115.2\pm16.2$ MPa) was obtained for the sample reinforced with aramid fibers ($\sigma=148.0\pm13.2$ MPa). In contrast addition of glass fibers did not change flexural strength ($\sigma=117.8\pm14.6$ MPa) of the composite material. The highest deflection at maximum force was observed for the sample with glass fibers ($\epsilon F_{max} = 4.0\pm0.56$ mm) whereas the lowest for the sample with carbon fibers ($\epsilon F_{max} = 2.8\pm0.29$ mm). Elastic modulus was the highest when the resin was reinforced with carbon fibers (4.76 ± 0.56 GPa) but the lowest when glass fibers were applied (3.0 ± 0.47 GPa).

Conclusions: Based on the results of the study, one can conclude that glass, carbon and aramid fibers in the form of roving can be used to modify mechanical properties of PMMA-based denture resin. It was found that addition of carbon fibers increases stiffness, while addition of aramid fibers increases flexural strength of PMMA. Thus aramid and carbon fibers have much higher potential to modify mechanical properties of acrylic resin compared to glass fibers, which are commonly used in dentistry.

[52]

A CBCT-based analysis of selected anatomical features of the maxillary sinuses

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Introduction: The maxillary sinuses, are paired pneumatic spaces located in the body of the maxilla. The floor of the maxillary sinus is situated directly above the alveolar process. The vast alveolar recess may restrict the possibility of implant treatment in the maxilla. The sinus floor elevation procedure is performed in such cases and requires the operator to have expertise in maxillary sinus anatomy.

Aim of the study: Analyse the dimensions of the maxillary sinuses, the thickness of compact bone tissue forming the external sinus wall, and the existence of maxillary sinus septa in a randomly selected group of patients.

Material and methods: CBCT scans of the patients of the Department of Oral Surgery at the Medical University of Warsaw, taken with the Gendex GXCB-500 scanner. The examinations of randomly selected patients were submitted for analysis (every fifth). Criteria excluding from the study were applied: low-quality scans and too small field of vision. A 'study group' included 107 scans, which were being analysed. The maximum values of the width, length and height of the sinuses were measured. 3 sites were chosen for the measurement of the compact bone thickness. For the measurements the CBCT i-CAT Vision research browser was used. The following were considered in the analysis: sex, age, and the presence of septa and dentition. The results were submitted for statistical analysis using the Statistica 13.1 program licensed by the WUM. The significance level $\alpha = 0,05$ was adopted.

Results: The analysed group included 56 women (52,3%) and 51 men (47,7%) aged 17-89 years ($M= 44,5$; $SD= 17,16$; $Me= 40$).

The results:

1. A statistically significant dependence between one's sex and the dimensions of the sinuses ($p<0,05$).
2. No statistically significant dependence ($p>0,05$) between one's sex and the thickness of compact bone tissue.
3. In the upper measurement point the compact bone thickness of the left sinus decreases with age ($p=0,033$).
4. Maxillary sinus septa occur more often in the left sinus (23,4%, 25 cases) than in the right one (18,7%, 20 cases).

Conclusions:

1. The size of the maxillary sinuses in males is larger than in females.
2. There is no statistical dependence between one's sex and the thickness of compact bone tissue in the sinus outer wall.
3. The thickness of compact bone tissue in the outer wall of the left maxillary sinus decreases with age only in its upper part. No such relation concerning the right sinus has been indicated.

[53]

Evaluation of parents' knowledge about the bruxism of their children: Family knowledge of bruxism

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Introduction: Bruxism is a parafunctional activity- unaware, embedded disordered function of masticatory apparatus. Bruxism occurs frequently in the majority of population, however, 80% are unaware of this parafunction. Childhood bruxism may persist into adulthood.

Aim of the study: The aim of the study was to assess the level of knowledge parents have about the bruxism of their children to promote educational activities for families.

Material and methods: The study was conducted for parents of patients in Department of Pediatric Dentistry, MUW. Questionnaire was composed of 33 questions regarding the concept and causes of bruxism, psychological and sleep disorders, children's habits, behaviors and seeking medical help. Statistica 12 software and Spearman's rank correlation ($P < 0.05$) were used for statistical analysis. The study received approval from the Bioethics Committee (AKB5/146/16).

Results: Two hundred and forty- five parents participated in the study. The majority of the participants were mothers (73.1%). The mean age of the participants was $39.42 \text{ years} \pm 8.21$, the children's- $8.69 \text{ years} \pm 4.03$. Among participants 2.86% reports history of bruxism and 4.49% for their partners. According to the parents, bruxism was present in 6.94% of the children, others are unaware. Participants incapable of indicating the possible causes of bruxism were in majority (62.86%), whereas 71.43% admits to not knowing its symptoms. The participants believed that bruxism was associated with stress (21.6%), malocclusion (16.7%), parasites (14.7%) and dental problems (13.1%). A statistically significant association was found between childhood bruxism and frequent headaches, history of parasites, neurological, hormonal or psychological disorders and restless sleep. There is an association between certain attributes in children: being tearful, timid in new situations or short-tempered and symptoms of bruxism. A statistically significant association was found between childhood bruxism and bruxism in parents. Only 9.39% of the participants have consulted bruxism with specialists: dentists (51.28%), pediatricians (33.33%), speech therapists (10.26%), laryngologists and psychologists (2.56%). The majority of the participants wanted to receive more information about bruxism (81.22%).

Conclusions: The majority of participants are not aware of bruxism and its concepts must be clarified. The patient at risk should be referred to a specialist in order to perform an early diagnosis. Educational activities for families of pediatric patients should be promoted.

[54]

Association between dimensions of sella turcica and impacted canines

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Introduction: Sella turcica is an anatomical structure of the sphenoid bone, which functions as a hypophyseal fossa and is known to hold the pituitary gland. Impacted tooth is a fully developed tooth partially or totally covered in hard and/or soft tissues of maxilla or mandible, which fails to erupt within the expected physiological time period. In order to radiologically visualize and measure both sella turcica and impacted permanent canines, cephalometric radiographs are taken.

Aim of the study: The aim of the study is to find a correlation between any sella turcica dimension and canine impaction.

Material and methods: 50 patients of both sexes with unilateral and bilateral permanent canine impaction and 50 controls with physiologically erupted teeth were examined. Area, depth, diameter and length between the dorsum sellae and tuberculum sellae, called the interclinoidal distance, were radiologically measured. To compare the distances acquired among the patients suffering from the teeth impaction and the control patients, a t independent sample test was conducted.

Results: No significant correlation between areas, depths and diameters was found ($P > 0,05$). Interclinoidal distances among the patients with impacted canines are lesser than among the control group patients ($P < 0,05$).

Conclusions: Shortened interclinoidal distance occurs significantly more frequently among patients with the impacted canines and accordingly, the measurement of sella turcica may be used as an additional diagnostic factor in confirming the status of canine impaction.

[55]

Method of feeding in infancy and early childhood, parafunctions associated with the use of a pacifier to calm the child and its impact on the development of distoclusion and crossbite

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Introduction: The etiology of malocclusion is multifactorial. Besides the occurrence of a genetic predisposition, dysfunctions and parafunctions are factors influencing the presence of occlusal abnormalities. The most common abnormalities occurring in society are group of distal occlusions and crossbites.

Aim of the study: The aim of the study was to evaluate method of feeding in infancy and early childhood and its impact on the development of distoclusion. It was also examined whether parafunctions associated with the use of a pacifier to calm the child and the time of its

Material and methods: The material was a questionnaire containing 37 questions about the awareness of feeding a child and use a pacifier, information about respondents and their opinion about their knowledge of the etiology of malocclusion. The questionnaire was distributed among more than 100 parents of patients treated at the Department of Orthodontics, Medical University of Warsaw. In children, concerning which a questionnaire survey was conducted extra-oral and intra-oral examination was performed and orthodontic diagnosis was made.

Results: Among the 102 examined patients, the defect from the group of distal occlusion occurred in 38 patients (37.25%) and the defect from the group of cross-bites in 32 (31.37%). The study showed that the method of feeding the baby (breast feeding - 48%, bottle feeding -19.6%, mixed methods – 31.37%), or the type of teat used for feeding (anatomic shape -32.35%, non-anatomic shape - 19.6%) has no effect on the occurrence of defects from the group of distal occlusion. Statistically significant was time of introducing solid foods to children's diet. In the case of cross-bites, there was no correlation between the occurrence of malocclusion, and the use of a pacifier to calm a child (time per day, the age of giving up using of the pacifier). The survey results were analyzed statistically with a significance level of $p \leq 0.05$.

Conclusions: The method of feeding a child in infancy and early childhood, chosen by the parents has no effect on the incidence of distal occlusion, while the term for the introduction of solid foods may contribute to the occurrence of class II malocclusion. Paedodontists and pediatricians should pay more attention to diet and the date of the introduction of solid foods.

[56]

Awareness of pregnant women and parents of children up to 3 years old about the fluoride prevention, precautions when using preparations of fluorine and its side effects

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Introduction: Fluoride compounds are present in most of the measures for oral hygiene for adults and children. Because of proven preventive and therapeutic effect in dental caries process, they are used in home care and professional procedures in dental offices. However, in recent years fluoridation has become controversial because of public concern relating to the side effects of fluoride.

Aim of the study: The aim of the study is to examine the awareness of the positive impact of fluoride prevention, precautions when using preparations of fluoride and its side effects. A study group was represented by pregnant women and parents of children up to 3 years old

Material and methods: The material was a questionnaire containing 31 questions about the knowledge of fluoride prevention, information about respondents and their opinion about the side effects of fluoride. The questionnaire was randomly distributed among more than 100 pregnant women and parents of children up to 3 years old. The research work is going to be extended.

Results: In view of the fact that work is in progress the presented results are preliminary results. Over 90% of the respondents answered incorrectly at least one question concerning the awareness of the use of products with fluoride. Approximately 64% of the respondents did not realize that fluoride can be harmful to general health, and 1/3 believed that the correct use of prophylaxis fluoride can cause serious side effects, e.g. autism or increased bone fragility. Approximately 30% of the respondents would not recommend toothpaste with fluoride to pregnant women. The vast majority of the interviewees did not realize the curative effects of fluoride on dental caries. About 35% of the respondents had never done a professional fluoride prevention, in the vast majority of the cases the reason was a lack of knowledge about such procedures.

Conclusions: On the basis of preliminary results, it is assumed that the vast majority of pregnant women and parents of children up to 3 years have insufficient or incorrect knowledge about the prevention of fluoride. There is a need for increased education about fluoride products, their side effects and necessary precautions when used.

[57]

Comparative analysis of patients with diseases of temporomandibular joints

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Introduction: Dentistry practice demonstrates that many patients with diseases of the temporomandibular joint ask for their dentist advice, however, correlation of the disorders development with other pathologies has not been fully investigated.

Aim of the study: The aim of the study was to examine the incidence of diseases of the temporomandibular joint in 5th year Dentistry students and conduct a comparative analysis of the students with identified diseases of temporomandibular joints.

Material and methods: The study involved 40 Dentistry students (18 girls and 22 boys) and included history taking and routine dental examination. When taking history we focused on the traumatic injury of the temporomandibular joints, co-morbidities that may affect the temporomandibular joint as well the signs of connective tissue dysplasia. Examination also involved: palpation of the head of the temporomandibular joint, functional clinical trials, assessment of the range of the joint motion, synchronicity, noise effects, and their relationship to the mandible movements. Palpation of the masticatory muscles was also performed as well as psychometric scale Zung and Spielberger - Khanin to assess the psychological and emotional state of students.

Results: The study revealed that 92% patients had disorders of the temporomandibular joint. 15% of the patients complained of pain in the temporomandibular joint or worsening of the pain when opening the mouth, talking or chewing. The collection features "complaints of abnormal noise in the temporomandibular joint" - 85%. Such symptoms as pain in the masticatory muscles, muscles of the neck, squeezing or biting lips, clenching of teeth during the nervous strain, the habit of gnashing teeth indicated 40% of the students involved into the study.

Conclusions: Thus, the incidence of temporomandibular joint disturbances and their correlation with the syndrome of dysfunction painful at a young age are high. The disturbances also demonstrate a high direct correlation with the patients' level of anxiety.

[58]

Comparison of the accuracy of digital and conventional fabrication of metal substructure of bridge – are digital techniques ready to replace traditional procedures?

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Introduction: Dynamic development of digitalization of dentistry can significantly improve the work of a dentist. Through the use of modern methods of intraoral scanning, computer-aided designing and additive production techniques, known as 3D printing, it is possible to use only digital data to create new patients smile. In this paper, authors investigated every steps of bridge fabrication with conventional and digital techniques.

Aim of the study: The aim of the study was to compare each laboratory and clinical stage of fabrication of the bridge using digital and analog techniques with particular emphasis on evaluating accuracy as well as internal and marginal fit of final restoration.

Material and methods: On the model jaw teeth 15 and 17 were trimmed, impression of the jaws was taken and at the same time, digital impression, using intraoral scanner, was taken. Both analog and digital procedures, including making gypsum cast, 3D – printed resin model, wax pattern used in casting process and computer-aided designing followed by computer-aided manufacturing using selective laser melting technique (SLM) have been carried out. To evaluate accuracy of digital and analog method, every stage has been scanned with laboratory scanner and analyzed using professional engineering software. Internal and marginal fit of final restorations were assessed using the same tool.

Results: Results of the study are expected to confirm that intraoral scanning and 3D printing of diagnostic model and final prostheses allow to obtain clinical acceptance. Previous studies in the literature on the fit of conventional prostheses have reported marginal openings less than 120 µm to be clinically acceptable. However, a minimal space between the prosthesis and its abutment is important to ensure accurate insertion of the prosthesis and to allow interposition of an even layer of cement with mean values from 25 to 50 µm. Results of this study will be related to this numbers, described in the literature.

Conclusions: This paper shows that in some cases fully digital procedures can replace traditional techniques. Using intraoral scanner is less time-consuming and more comfortable for both patient and dentist. Computer-aided designing provides dental technician work. 3D printing technology, including Poly-Jet technique used for making resin model and SLM technique used for fabrication of final restoration is an alternative for traditional casting. However, further study is needed, especially clinical ones to confirm usefulness of digitalization of prosthodontics.

[59]

The usefulness of CBCT diagnostics before the planned extraction of the lower wisdom teeth

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Introduction: Inferior alveolar nerve paresthesia is one of the most unpleasant complications after extraction of lower third molars. An important part of treatment is an adequate preoperative diagnosis in order to reduce the risk of the nerve damage. To evaluate correlation between lower third molars and mandibular canal, panoramic radiographs are generally used. In special cases, CBCT examination is performed to present analyzed structures in 3D vision scans.

Aim of the study: The aim of the study was to evaluate if pantomographic imaging is sufficient to assess the location of lower third molars roots in relation to alveolar inferior nerve (before extraction) in case if the roots were conditionally superimposed on the canal in

Material and methods: The patients included in the study were referred to the Department of Dental Surgery, Medical University of Warsaw. Out of 500 CBCT performed examinations, 77 were chosen. CBCT images were analyzed using I-Cat Vision which allows to, besides of showing parts in all three dimensions, obtain a pantomographic reconstruction. The relationship between the third molar's roots and the mandibular canal on panoramic radiographs was classified, using the criteria reported by Rood & Shehab (Types A-H).

Finally, by analyzing CBCT images in three dimensions, actual position of the roots in relation to mandibular canal was evaluated.

Results: Based on the analysis of the pantomographic reconstruction, it is found that the most common type of location of the lower wisdom tooth root, relative to the inferior alveolar nerve canal, is type E detected in 48 patients (61,5%). Rarely observed were type G and H (8 patients each) and type A (7 patients).

The CBCT analysis in three dimensions allowed to determine the actual relation of the lower alveolar nerve to the roots of the tooth 8. Most commonly the mandibular canal ran buccally (36 cases) or under the roots of the lower wisdom tooth (31 cases). Less commonly observed, was lingual (17 cases) and interradial (5 cases) course of the nerve. The direct contact between inferior alveolar nerve and the lower third molar root was observed in 49 patients (65% of cases).

Conclusions: In case of radiographic emergency, CBCT is not a standard procedure recommended before a wisdom teeth extraction. However, when the analysis of panoramic radiograph is not clear for the operator, it is necessary to extend the diagnostics using CBCT.

[60]

Comparison of precision mapping of diagnostic models made using 3D printing and models made by traditional methods

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Introduction: Dynamic development of 3D printing creates the possibility of its application in dentistry. There are many systems performing restorations using CAD/CAM technology but diagnostic and working models are the basis for planning the treatment.

Aim of the study: Comparison of the accuracy of mapping the surface of dental arches on plaster models made using traditional impressions and models of 3D printing.

Material and methods: The accuracy of mapping the surface of dental arches were performed on 22 models made both techniques for a selected group of 11 men and women aged 20-22 years.

Impressions collected with alginate according to the manufacturer's instructions.

Based on scans HP 3D Structured Light Scanner Pro S2. Digital models in the software compatible with system with acrylic resin ABS 3SP® Tough.

To assess the accuracy of mapping the surface of circuit dental arches models digitizing system 3D scanner-MicroScribe G2X was used. The degree of matching 4-inch (101.60 mm) pattern Monson sphere and a sphere of radius at the optima approximation of the 20 reference points marked on the dental arches were assessed at the basis of parameters of dental arches surface shape in software MonsOpt 2.0- sphere.

Evaluation of dimensional stability was made by statistical comparison of related pairs of results for the level of uncertainty $\alpha = 0.95$ with a coefficient $k = 2$.

Results: Through measurements of the mechanical scanner the value of Monson curve's radius for each case is known. These values for the plaster models and 3D printed were compared. The average standard deviation of 3D printed samples of plaster are 4.04 for 20 tackled points and 2,94 for 14 tackled points.

Conclusions: Diagnostic models don't lost value in the process of digitization.

Printing models may become an alternative for traditional plaster models.

Digitization and the ability to print model in the future is a chance to solve the problem of storage medical records.

[61]

The evaluation of awareness of the mutual relation between the state of oral health and general health

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Introduction: The relation between oral health and general health has been supported by numerous scientific evidence. The caries disease as well as its complications or oral mucosa and periodontal disease can cause development of the systemic disease and modify its treatment. Equally general disease can manifest in oral cavity. Frequently it is required to modify dental treatment.

Aim of the study: The aim of the study is to evaluate public awareness regarding the mutual impact of oral health and general health.

Material and methods: The study group is comprised of more than 200 randomly chosen male and female respondents aged 18 – 75.

In the research work was used a questionnaire containing questions about the place of residence, age, education and socio-economic status. The research work is going to be extended.

Results: Therefore, the research is in progress there are presented preliminary results. About 35% of the respondents do not realize, that oral disease can cause exacerbation of the systemic disease. 2/3 of patients do not know that the systemic disease may modify the course of dental treatment. More than half of the respondents do not realize that dental caries is an infectious disease. In opinion of almost 60% of respondents pregnancy is the cause of the rapid decay progression.

Conclusions: It can be said, based on preliminary results, that the clear majority of the population has insufficient or incorrect knowledge about the relation between oral health and general health. To sum up, patients should be educated in terms of the prevention and treatment of oral and general diseases.

[62]

Bruxism in Varsovian children and adolescence: prevalence and associated factors

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Introduction: The prevalence of bruxism in children range from 3.5 to 40.6%. However, they are unaware of their parafunction. Clinical signs of bruxism are related to dental wear and muscular and joint discomforts.

Aim of the study: To evaluate the prevalence of bruxism and its associated factors in Varsovian children and adolescence.

Material and methods: The study was conducted in the Department of Pediatric Dentistry, MWU. Data was collected through a questionnaire and with a clinical examination assessing caries indexes, signs of dental wear (Tooth Wear Index, TWI), condition of masticatory muscles and temporomandibular joints, tongue or cheek indentation. Parents have answered a questionnaire concerning children's habits, general health, behaviors, psychological and sleep disorders. Descriptive analysis and Spearman's rank correlation ($P < 0.05$) were used for statistical analysis. The study received the Bioethics Committee approval (AKB5/145/16).

Results: Seventy- six subjects participated in the study (the mean age 8.89 ± 3.30 years). History of bruxism reported 2.63% of parents and 5.26% for their partner. According to the parents, bruxism was present in 9.21% of their children. Majority of the subjects did not report tenderness of masseter or temporal muscles. However, timid children and with gastroesophageal reflux more often reported tenderness of masseters. A statistically significant association was found between sleep disorders and tenderness of temporal muscles. Clicking of temporomandibular joint was detected in 9.21%, tongue indentation in 11.84%, whereas cheek indentation in 50%. There was a significant relation between bruxism and family history of bruxism, parasomnias, parasites. Majority of the children have worn teeth (84.21%) and score 2 is the most frequent severity. Subjects presented 7.9 ± 5.89 worn teeth. A statistically significant association was found between being prematurely born, Attention Deficit Disorders and the number of worn teeth.

Conclusions: Based on parents' report 9.21% of children suffered from bruxism. There was a significant relation between bruxism and family history of bruxism, parasomnias, parasites, high caries indexes, premature birth, Attention Deficit Disorders.

Dermatology

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[63]

Comparison of GPR109A (HCA2) and GPR43 expression and its induction upon butyrate treatment in healthy and psoriatic skin

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Introduction: Recently it has been shown that butyrate, a bacterial product from the fermentation of fiber in the colon, is involved in protection against colonic inflammation. The G protein-coupled receptors GPR109A/HCA2 and GPR43 are the best-known receptors for butyrate in the colon mucosa. The signaling of both promotes anti-inflammatory properties in colonic macrophages and dendritic cells and enables them to induce differentiation of IL-10 producing regulatory T cells (Treg). Skin autoimmune and chronic inflammatory diseases e.g. psoriasis are driven by dysregulated Treg responses. Since stimulation of GPRs is necessary for homeostasis in the gut and their deficiency enhances susceptibility to colitis, we asked whether a similar pattern can be found in psoriasis.

Aim of the study: To compare the expression of GPR109A/HCA2 and GPR43 and its induction upon butyrate treatment in the healthy and psoriatic skin.

Material and methods: Biopsies from the lesional and non-lesional skin of 6 psoriasis patients and 6 healthy controls were taken and analyzed for the expression of both receptors using immunofluorescence microscopy. Then biopsies from psoriatic and healthy skin were stimulated with sodium butyrate for 24 hours or left untreated. Afterward, immunofluorescence analysis was performed.

Results: The expression of GPR109A/HCA2 and GPR43 was significantly reduced in lesional skin in comparison to healthy control skin. The expression of both receptors in the non-lesional psoriatic skin was also decreased but to a lesser extent. Immunofluorescence analysis revealed a significant upregulation of both GPRs upon butyrate treatment, suggesting that butyrate is able to activate local skin Treg via enhancing the expression of GPR109A/HCA2 and GPR43.

Conclusions: These data suggest that skin microbiota may be important for the regulation of skin homeostasis and local inflammation. The role of sodium butyrate as an agonist of GPRs and potential inducer of Treg in inflammatory skin diseases may allow the development of new therapeutic strategies for psoriasis.

[64]

Does the presence of Staphylococcus aureus on non-lesional skin of patients with atopic dermatitis affect the clinical picture of the disease?¹Leszek Blicharz, ²Paulina Usarek

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Introduction: Variations in the skin microbiome have been associated with numerous dermatological disorders. Due to genetic predispositions (e.g. abnormal pattern recognition receptors (PRR) functioning and decreased antimicrobial peptide (AMP) production), patients with atopic dermatitis (AD) show deficient antibacterial response. As a result, selective expansion of Staphylococcus aureus and simultaneous reduction of natural skin microflora is observed. Numerous reports suggest that this phenomenon contributes to the exacerbation of atopic eczema. Nevertheless, data regarding the impact of non-lesional skin colonization by S. aureus on the disease course remain scarce.

Aim of the study: To assess the influence of non-lesional skin colonization by S. aureus on the clinical course of atopic dermatitis.

Material and methods: A total of 33 adult patients (19 males and 14 females, mean age: 31 years) with AD were enrolled in the trial. All of the patients were clinically examined in order to confirm the diagnosis according to Hanifin and Rajka criteria for atopic dermatitis and assess disease severity with SCORAD scale. Skin swabs were taken from non-involved areas of the body. Obtained biological material was used to perform bacterial culture on Chapman medium. The presence of S. aureus was verified based on mass spectrometry identification of

received bacterial colonies. Control group consisted of 33 healthy subjects who were sex- and age-matched with the study group. Results were statistically analyzed.

Results: The presence of *S. aureus* was confirmed in 53,8% and 6% of samples taken from the study group and control group respectively (results statistically significant, $p < 0,0001$). Mean value of Total and Objective SCORAD was considerably higher in patients whose skin was colonized by *S. aureus* than in subjects with negative identification results ($53,1 \pm 15,2$ vs $31,4 \pm 12,1$, $p < 0,00001$ and $41,5 \pm 13,4$ vs $22,9 \pm 8,7$, $p < 0,00001$ respectively). Severe cases of AD presented as erythematous lesions with excoriations (acute inflammation).

Conclusions: Presence of *S. aureus* on non-lesional skin of patients with AD correlates with a more severe disease course. This observation suggests that addition of substances reducing bacterial colonization to atopic skin care products is an adequate preventive measure of atopic eczema.

[65]

The serum tryptase level changes in patients suffering from systemic mastocytosis and cutaneous mastocytosis after psoralen and ultraviolet A (PUVA) therapy

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Introduction: Mastocytosis is a group of rare diseases characterized by pathological growth of mast cells in different organs. Serum tryptase level (STL) is used as one of diagnostic methods. In available literature there are different outcomes about STL changes in different types of mastocytosis. We wanted to find out how STL changes after PUVA therapy in our group of patients.

Aim of the study: The aim of the research was to find out if there are differences in STL in patients suffering from systemic mastocytosis (SM) and cutaneous mastocytosis (CM) after PUVA therapy and if it can be used to predict the type of mastocytosis.

Material and methods: A retrospective review of 17 patients with SM and CM was done. Included patients were admitted to Dermatology Clinic JU MC from 2014 to 2016. Study enrolled 8 (47,06%) women and 9 (52,94%) men. In this group 8 (47,06%) patients were suffering from SM and 9 (52,94%) patients were suffering from CM. The research regarded: the STL before and after PUVA therapy, the mast cells number and the number of PUVA exposures.

Results: The research revealed a decrease of STL in 7 patients and an increase of STL in 10 patients after PUVA therapy. In the group of patients with SM an increase was noticed in 6 patients (3 women vs 3 men) and a decrease in 2 patients (0 women vs 2 men) whereas in patients presenting with CM an increase was observed in 4 patients (4 women vs 0 men) and a decrease in 5 patients (1 woman vs 4 men). The median of STL before PUVA therapy in SM was 43,85 (min 22,30; max 112,00), in CM was 8,68 (min 3,01; max 22,00). Medium number of mast cells before PUVA therapy was increased in SM in comparison with CM (49 vs 35). In women with SM with significant elevation of STL before PUVA therapy the medium number mast cells was higher.

The limitation of research was small sample size which was connected with a fact that mastocytosis is a group of very rare diseases.

Conclusions: In the analysis the decrease of STL was more common in CM than in SM. In patients with SM higher STL before PUVA therapy and increased medium number of mast cells were observed. According to changes of STL it might be possible to predict a type of mastocytosis and to avoid more invasive diagnostic methods (marrow biopsy).

[66]

Evaluation of lipid profile in psoriatic patients: reason to labour the point?

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Introduction: Psoriasis is an immune-mediated chronic inflammatory skin disease with genetic and environmental background. Psoriasis usually occurs in the second-to-fourth decade of life. Males and females are equally affected. It is known that psoriasis is associated with abnormal lipid metabolism, which may be related to the high incidence of atherosclerosis. The association of dyslipidemia and psoriasis is controversial.

Aim of the study: To assess the lipid profiles in psoriatic subjects and to investigate the relationship between lipid profiles and severity of the disease.

Material and methods: The study consisted of 28 psoriatic patients (51.92 ± 15.00 years). All the patients gave an informed paper consent. The diagnosis of psoriasis was confirmed clinically or/and histologically. Subjects' weight, waist and hip circumference, Body Mass Index (BMI), visceral fat were measured by bioelectrical impedance analysis (BIA). The severity of the disease was assessed by Psoriasis Area and Severity Index (PASI) score, Body Surface Area (BSA) and Dermatology Life Quality Index (DLQI). Waist-hip ratio (WHR) was calculated as waist divided by hip measurement. The concentrations of serum lipids: total cholesterol (TCh), high density lipoprotein (HDL), low density lipoprotein (LDL), triglyceride (TG) were measured from blood samples by a standard methods.

Results: The prevalence of mild psoriasis was ($PASI < 12$) 10 cases, moderate ($12 < PASI < 30$) 13 and severe ($PASI > 30$) 5. The incidence of overweight was 39.29% ($n=11$) and of obesity was 35.71% ($n=10$).

We found a significant correlation between DLQI and waist circumference ($r=-0.447, p=0.019$), BMI ($r=-0.391, p=0.044$), WHR ($r=-0.422, p=0.028$), visceral fat ($r=-0.454, p=0.017$) and TG ($r=-0.44, p=0.022$). There was no significant association between BSA or PASI score and BMI, WHR, visceral fat, TCh, HDL, LDL and TG levels, TCh/HDL, LDL/HDL ratio.

Conclusions: This present study does not support the notion that lipid abnormalities may play an important role in the development of psoriasis. The role of serum lipids in development of psoriasis needs to be further investigated.

[67]

Melanoma - do we know what it actually is?

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Introduction: Melanoma is a malignant neoplasm that originates from melanocytes and can affect skin, mucosa or eye bulb and represents 2% of all skin neoplasms. It is a great interdisciplinary health problem because the morbidity and fatality still increase, approximately it doubles every 10 years.

Aim of the study: Asses the knowledge of medical and non-medical faculties students regarding melanoma, its risk factors and prophylaxis, also including responders' sun protection-associated habits.

Material and methods: In 2016 an original anonymous survey was carried. 277 people responded, 111 of them from medical faculties and 166 were non-medical students. They filled 17 questions: general, regarding responders' information and specific, regarding melanoma.

Results: In the analyzed group 76% were females and 24% males. The most common Fitzpatrick skin phototype was type II (34%), type IV (27%) and type III (26%). More than one sun burn in the past was reported by 69% of responders, only one by 16%, and 15% had no such experience. Possessing less than 50 moles was reported by 67% of responders and more than 50 by 23%. One responder was diagnosed with melanoma in the past. Melanoma diagnosed in the past among grandparents and distant relatives was reported by 3% and among parents by 2%. Most of responders (92%) considered melanoma as a malignant neoplasm, while 4% as a benign lesion and 4% did not know what it actually was. Responders' melanoma risk factors were: increased exposure

to sun (89%), melanoma in family members (82%), multiple moles (71%), bright skin color and history of melanoma in the past (59%), also past sun burns (56%). Skin lesions that would make people see the doctor were: mole enlargement (81%), irregular shape (71%) and color of the mole (63%), very dark color (51%) and melanoma among family members (45%).

Conclusions: Almost every responder identified melanoma correctly as a malignant neoplasm, nevertheless awareness of the risk factors for melanoma is insufficient what contributes to the increasing incidence of the disease. Medical students have slightly better knowledge regarding melanoma than non-medical.

[68]

How do we manage severe bullous pemphigoid in clinical practice - a single-center experience

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Introduction: Bullous pemphigoid is an autoimmune blistering skin disease that occurs predominantly among elderly persons. Oral corticosteroids are usually effective but the side effects are thought to contribute to the high morbidity and mortality rate. The disease is treated with topical clobetasol or systemically with immunomodulating agents, referred to as adjuvant drugs. However, there is no consensus regarding the choice of adjuvant drug.

Aim of the study: To compare the effectiveness and safety of topical clobetasol propionate 0.05% cream in monotherapy and in combination with the most popular adjuvant drugs – methotrexate and tetracycline with nicotinamide.

Material and methods: We retrospectively review medical records of the Department of Dermatology of the Medical University of Warsaw from the last 3 years, identifying all patients with bullous pemphigoid confirmed by immunofluorescence studies.

Results: We identified 82 patients with bullous pemphigoid. All patients received clobetasol propionate 0.05% cream as first line therapy. 30 patients were treated with tetracycline 1.5-2 g/day and nicotinamide 1.5-2 g/day and 25 patients received oral methotrexate 5-7,5 mg/week. After initial therapy all patients showed clinical remission assessed by Bullous Pemphigoid Disease Area Index. Discontinuation of therapy in the first 3 months after hospitalization was as follows -85% (23/27) for clobetasol propionate monotherapy (nursing difficulties, cost), 70% (21/30) for tetracycline with nicotinamide (inadequate compliance –additional 16 pills/day, cost, and gastrointestinal adverse effects) and 20% (5/25) for methotrexate (haematological and gastrointestinal adverse effects). There were no severe, life threatening or fatal adverse events.

Conclusions: All of the analysed treatment options were effective and safe for bullous pemphigoid. The use of potent topical steroids as well as tetracycline with nicotinamide is limited by inadequate compliance and nursing difficulties. Long-term therapy with low-doses of methotrexate may be useful in cutaneous pemphigoid management especially in terms of practicality, cost and tolerability.

[69]

Prognosis of erythema multiforme- an original study of Toxic Epidermal Necrolysis and Stevens Johnson Syndrom

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Introduction: Toxic Epidermal Necrolysis (TEN) and Stevens-Johnson Syndrom (SJS) are two acute dermatological states. Drug exposition is responsible for 95% of cases. SCORTEN scale, which includes seven factors is used to measure the clinical progres and prognosis.

Aim of the study: The analysis of corelation between SCORTEN scale and liver and renal parameters.

Material and methods: The studied population comprised of 38 patients with recognised TEN or SJS hospitalised between 2009 and 2015 in Department of Dermatology of Medical University of Warsaw, which were included into retrospective study. Information about SCORTEN scale, treatment and time of hospitalisation were gathered. R-pearson correlation test and Microsoft Office 2000 were used to assess the correlation between mentioned factors.

Results: The average SCORTEN score for TEN was 2,47, for SJS 1,35. 33% patients with TEN were transferred to the Intensive Care Unit and 0% patients with SJS. There was no relevant association between SCORTEN scale and the following in TEN: AspAT ($r=0,27$; $p=0,05$), AIAT ($r=0,12$; $p=0,05$) and following in patients with SJS: AspAT ($r=0,17$; $p=0,05$), AIAT ($r=0,24$; $p=0,05$). There also was no relevant association between creatinine and SCORTEN scale in TEN ($r=0,29$; $p=0,05$) and in SJS ($r=0,29$; $p=0,05$). The most often skin changes were caused by drugs-antibiotics (31,57%) and non-steroidal anti-inflammatory drugs (15,78%). Among antibiotics most often were beta-lactams (31,57%), sulfonamides, fluoroquinolones, tetracyclines.

Conclusions: SCORTEN scale obtains higher results for TEN than SJS. It is connected with higher risk of mortality-12,1% in TEN and 3,2% in SJS. SCORTEN scale results cannot be used as a predictive value of renal and liver dysfunctions. The most often TEN/SJS inducers were antibiotics with beta-lactams predominance.

[70]

Contact dermatitis trends in Greater Poland over period of 2008 to 2014 – a single centre retrospective study of 2670 cases

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Introduction: Contact dermatitis is an inflammatory process in the skin due to its direct contact with allergenic agent. Frequency of contact allergy's prevalence change over time as a result of variation in allergen exposure. Analysis of the data allows to visualize allergy trends in selected population and assists in tackling possible emerging epidemics.

Aim of the study: Aim of the study focused on the trends, incidence, age and sex distribution, place of exposure and other accompanying factors of contact dermatitis in Greater Poland

Material and methods: Retrospective analysis of 2670 patch test results of patients consulted in the Alergological outpatient clinic of the dermatological ward in the years 2008-2014. European baseline series patch test were performed and graded using ICDRG criteria and statistical analysis was carried out.

Results: Out of 2670 patients included in the study 52,1% (24,7% of them were male and mean age was 44.8 ($\pm 15,6$)) had reaction to at least one allergen and there was a significant relationship between female gender and a positive patch test result ($p<0.05$). Allergy to nickel and cobalt were the most common finding accounting for 49,95% and 31,08% positive reactions respectively at a stable rate throughout the reviewed period. Nickel reactions had statistically significant ($p<0.05$) predominance in females (50,67%) in comparison to males (19,48%). Detailed analysis of the data revealed a significant drop ($p<0.05$) in sensitization rate of methyldibromoglutaronitrile (MDBGN) followed by Chloro-2-methyl-p-isothiazolin (MCI/MI) increase ($p<0.05$). P-Phenylene diamine (PPD) sensitization rates showed to be increased in younger (0-25 years) and elder (40 or more years) patients. Interestingly Budesonide sensitization rates among male patients aged 20-40 years old proved to be also significantly elevated.

Conclusions: Study shows that prevalence of contact sensitization varies over the time. This is possibly the result of changing exposure as a consequence of legislation reflecting current technological, industrial and socioeconomical changes in local society. Albeit introducing law regulations nickel and cobalt sensitization remains a serious problem especially in female population. Such regulations may create shifts in case of sensitization prevalence as it is probable explanation of changes regarding MDBGN and MCI/MI. Monitoring of contact allergy trend might provide incremental information allowing to deploy preventive measures both on local and global level.

[71]

Heterogeneity within solid primary cutaneous melanoma lesion – analysis of somatic variation in compartments with different proliferative activity in archival samples

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Introduction: Melanoma is an aggressive malignancy which heterogeneity poses a challenge for personalized medicine. Intratumor heterogeneity ranges from 0,7% to 79%, what hinders treatment. As long as tumor has unlimited proliferative potential it can gain another mutation. Thus it may become more resistant to treatment, more invasive or metastatic. To explore precisely the biology of melanoma and overcome issues connected with analyzing archival samples we implement novel techniques (LCM, NGS, IHC). This research focuses on most often mutated genes and its sequences (BRAF, NRAS, MET, PHLPP2, PIK3R1, IDH1, KIT, STK11, CTNNB1, JAK2, ALK, and GNAS and more) in different compartment of solid primary melanoma lesions. Deep sequencing will provide us with proper and significant results on heterogeneity level.

Aim of the study: Determine the somatic variation in chosen panel of genes in the compartment of high and low proliferation activity.

Material and methods: 4 archival samples of primary cutaneous melanoma were obtained from the Department of Pathology of Witold Orłowski Clinical Hospital in Warsaw. 5um samples were stained with Ki-67 antibody (immunohistochemistry) to reveal high and low proliferation sites within tumor. 10 um section were prepared for Laser Capture Microdissection (LCM, Zeiss). We dissected 0,8 cm² from each compartment – with high and low proliferation activity, on the base of IHC staining. Subsequently we extracted gDNA (Norgen Biotek), then verified quantitatively and qualitatively (Qubit, Bioanalyzer, Quantimize Qiagen). Finally, 10 ng of DNA was used for library preparation with NEBNext Cancer Panel (NEB) and sequencing with next generation sequencing – NGS (Illumina, Department of Medical Genetics MUW).

Results: Obtaining genomic DNA from archival samples poses numerous difficulties due to high degradation level of such DNA. Nonetheless, we confirmed the possibility to obtain sufficient amount of material for amplicon-based NGS analysis (80 ng/ul, QC ratio >1,8). By using LCM we precisely excised profiled fragments of tumor. To date, we are awaiting results of NGS sequencing (50 genes, deep sequencing).

Conclusions: In the research we aimed at precise determination of level and range of genetic variation in differently proliferating melanoma tumor sites. These analyses may lead to improved prediction of treatment response, especially targeted drugs (eg. Vemurafenib).

Endocrinology & Diabetes

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[72]

DOES NOVEL, FLASH GLUCOSE MONITORING SYSTEM IMPROVES METABOLIC CONTROL IN CHILDREN WITH TYPE 1 DIABETES (T1D)?Karolina Kunecka¹, Katarzyna Ignasiak¹, Barbara Nowak¹, Anna Ramotowska²

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Introduction: T1D is an autoimmune disease affecting more and more frequently the youngest children. We observe worldwide increase incidence of T1D. Self blood glucose control is crucial element in functional insulin therapy, it's recommended minimum 6 measurements per day. In clinical practice we observed 8 to 12 measurements in most cases, making with use of blood glucose meter (BGM). Flash Glucose Monitoring is a new glucose sensing technique, accessible from 2014. System measures interstitial glucose levels for up to 14 days. Additional information is the trend of glucose seeing on the monitor. Scanning the sensor to obtain glucose values does not require lancets, which is particularly important in the youngest population.

Aim of the study: The aim of our study was to compare Flash Glucose Monitoring System (FGMS) with conventional BGM and evaluate its impact on diabetes control in the pediatric population.

Material and methods: The study group consisted of 75 children (42 girls) with the mean age $11,67 \pm 4,21$ years and mean diabetes duration $4,23 \pm 3,96$ years. Patients' data were collected as a reports generate in specific software. We compare the outcomes between the time of using standard BGM and FGMS. Analysed period included 2 weeks of using standard or novel device. The results are given as mean with standard deviations (SD). The Gaussian distribution was tested using D'Agostino and Pearson omnibus normality test. The differences in outcome measures between groups were made using Student's t-test (unpaired, two-tailed) or Mann-Whitney U statistic, P values < 0.05 were considered statistically significant. The analysis was performed using GraphPad prism 7.

Results: We observe significantly more measurement per day in the time of using FGMS compared to BGM (19,3 times/day vs 6,1 times/day, $p < 0,0001$). Frequency of hypoglycemia (< 70 mg/dl), was statistically greater during the period with FGMS than BGM (15 episodes/2 weeks vs 4,5 episodes/2 weeks, $p < 0,0001$). FGMS showed significantly more episodes of nocturnal hypoglycemia (0 episodes/2 weeks vs 2 episodes/2 weeks, $p < 0,0007$). There was no differences in hyperglycaemia, HbA1c, mean glycaemia, daily dose of insulin.

Conclusions: Hypoglycemia can be fatal and it is a limitation of intensive insulin therapy in diabetic children. Using of FGMS is easier than BGM and gives a possibility to reveal and prevent hypoglycemia more effectively. Longitudinal observation is needed to estimate further advantages for the patients.

[73]

CHANGES OF THYROID STATUS OF RATS WITH COMBINED IODINE AND COPPER DEFICIENCY

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Introduction: Combined deficiency of essential microelements, in particular, iodine and copper, is considered as one of the reasons of increasing the thyroid hypofunction (TH). Copper deficiency has negative influence, because copper takes part in the conversation of inorganic iodine to its organic forms, is a component of active enzymes centers, that take part in its metabolism (iodine peroxidases, tyrosinases, thyroperoxidases and other), participates in the process of thyroid stimulating hormone (TSH) synthesis as component of protein kinase.

Aim of the study: To examine thyroid status changes in rats with TH on the background of combined microelementosis.

Material and methods: The research has been carried out on 60 rats weighting 150-180 g, which have been kept on based iodine deficient diet. Animals were divided on 2 research groups – with TH on the background of iodine deficiency (THI, n=30), and with combined iodine and copper deficit (THI+Cu, n=30). TH was modeled by adding merkazolilum to drinking water (7.5 mg/100g of body weight) during 45 days. The copper deficit was modeled by adding to drinking water d-penicillamine (100mg/100g of body weight) from 25th to 45th day of experiment.

Analogical indexes were examined in 30 intact animals. Thyroid status was assessed by determination of free triiodothyronine (fT3), thyroxine (fT4), and TSH in the blood serum by enzyme immunoassay with considering the fT3/fT4 ratio.

Results: In rats with THI the decrease of fT3 content on 63.62% ($p < 0.05$) in the blood serum in comparison to analogical indexes of control group was observed. In the same time, fT3 and fT4 contents in blood serum of animals with combined microelementosis was lower on 56.00% ($p < 0.05$) and on 65.00% ($p < 0.05$) relatively to the same data of intact rats. In rats with THI+Cu the level of TSH in blood serum become higher than analogical index in animals of 1st research group on 78.00% ($p_{1-2} < 0.05$), and fT3/fT4 ratio has become in two times bigger ($p_{1-2} < 0.05$).

Conclusions: Copper deficiency potentiates thyroid status changes in animals with TH. The increasing of TSH content in blood serum and violations of thyroid homeostasis balance (increasing of fT3/fT4 ratio) confirm it. Such changes show the negative influence of copper deficit on functional ability of thyroid gland. The determination of fT3/fT4 ratio can significantly improve early diagnostics of thyroid dysfunction, give possibility to detect preclinical TH changes and concretize possible character of functional disorders of hypothalamic-pituitary-thyroid axis.

[74]

ITLN1 gene polymorphism as a predictor in development of diabetic foot

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Introduction: Nowadays, due to WHO records, 422 millions adults have diabetes mellitus (DM). 10-15% of them have developed or will have develop diabetic foot (DF). This devastating complication of DM is result of neuropathy and atherosclerosis of lower limbs. Treatment of DF is tough and very expensive. Therefore doctors look for new methods to diagnosis and risk factors to prevent DF before it occurs. One of factors which may take an important protective role in developing neurovascular complications is omentin. Omentin is adipokine produced from visceral adipose tissue. Due to its endothelial vasodilator activity and its antiinflammatory actions, omentin could be taken into account as a protective factor in diabetic angiopathy. There are papers assessing the impact of plasma concentration of omentin in relation to vascular changes. However, according to our knowlege no one assessed omentin gene (ITLN1) polymorphism in patients with DF.

Aim of the study: The aim of study was to check if occurrence respective alleles in ITLN1 gene polymorphism rs2274907 are related to DF in patients with type 2 diabetes mellitus (T2DM).

Material and methods: The study included 670 individuals: 204 with T2DM and DF (DF group), 299 with T2DM without DF (T2DM group), and 167 healthy controls. The genetic material was isolated from the whole blood samples collected in EDTA probes using the salting out method.

Results: In our study DF group patients were younger than the T2DM group (64.45 ± 9.67 vs. 67.14 ± 11.62 y, $p = 0.001$, OR = 0.98; 95% CI: 0.96–0.99). Males were more in the DF group than the T2DM group ($p = 0.00001$). Comorbidities such as ischemic heart disease, retinopathy, nephropathy, neuropathy, obesity, hyperlipidemia, and active smoking were more frequent in the DF group than in the T2DM group. As a result of our study we confirm that allele A of the rs2274907 polymorphism was more frequent in the DF group compared to healthy controls in a co-dominant model. This effect was also sex-specific for males in both the co-dominant and recessive models. However, no differences in the distribution of alleles was observed between the DF and T2DM groups.

Conclusions: The allele A of rs2274907 polymorphism of ITLN1 gene is associated with the prevalence of DF.

[75]

Types Of The Pathological Thyroid Gland ATPases And Their Kinetic Parameters

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Introduction: Plasma membrane of human thyroid gland, apart from the transport Mg-independent HCO₃—ATPase, has been found to contain also HCO₃—ATPase of ecto-ATPase type, whose activity is not conditioned by the Mg-ion and with substrate in the form of free ATP (ecto-HCO₃—ATPase). Activity of such kind is found in both healthy cells and those affected by carcinoma. However, in the latter cells, this characteristic of the enzyme is much higher than the norm.

Aim of the study: We studied certain kinetic properties of the Mg-independent HCO₃—ATPase, namely relation of its activity to the quantitative content of the HCO₃—ions and the substrate (free ATP), as well as the pH of the reaction medium.

Material and methods: The object of our research was the gland tissue extracted by surgery from patients with various thyroid gland pathologies. For determination of HCO₃—ATPase activity was evaluated using the difference between active (in the presence of HCO₃—ions) and passive (when instead of NaHCO₃ an identical concentration of NaCl was introduced into the reaction medium) ATPase. Protein concentration was measured with a Protein Assay Kit (Sigma, USA), according to the manufacturer's protocol.

Results: The experiments showed that plasma membrane of human thyroid gland shows existence of two types of ATPase, whose activities differ according to the functional state of the gland. In particular, healthy glands are characterized by high HCO₃—ATPase activity, HCO₃—ATPase being an Mg-dependent enzyme and classified as P-type transport ATPase due to its properties. Alongside it functions the non-Mg-dependent ecto-HCO₃—ATPase, whose activity in the norm is lower if compared to that of the Mg-dependent HCO₃—ATPase. However, as pathological processes develop, its activity significantly rises.

Conclusions: Thus, it can be assumed that in a certain form, it must be involved in formation and development of the pathology. This subject is still under study.

[76]

Plasma soluble Tumor necrosis factor–Related Apoptosis-Inducing Ligand (sTRAIL) and its receptors' R2 and R3 level status and usefulness in disease progression assessment in patients with gastro-entero-pancreatic neuroendocrine neoplasmsMikołaj Radziszewski¹, Dorota Kaczmarek-Turek MD², Miłosz Matalowski¹, Anna Liszcz¹, Zbigniew Bartoszewicz PhD^{2,3}

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Introduction: Gastro-entero-pancreatic neuroendocrine neoplasms (GEP-NEN) are heterogeneous, rare group of tumors. Tumor necrosis factor–related apoptosis-inducing ligand (TRAIL) is a member of TNF family. It occurs in membrane and soluble (s) form and acts via various receptors (R) either promoting (R 1, 2) or inhibiting apoptosis (R 3, 4). TRAIL targeted therapy and s-form measurement are widely studied and known as potentially effective in neoplasms.

Aim of the study: To evaluate plasma levels status of sTRAIL, sTRAIL-R2 and sTRAIL-R3 in patients with GEP-NEN and those markers' potential usefulness in biochemical disease-progression assessment.

Material and methods: We studied prospectively a historical cohort of 12 patients (median age: 60 years) with well-to-moderate differentiated GEP-NEN. We had chosen two plasma samples (S1 and S2) referred to each patient with 6 months period of difference between, associated with a consecutive computed tomography scan (S2 collection). We included matched healthy controls (HC; n=19) into research as well. Patients were divided

into two subgroups based on radiological criteria: with disease's progression (Pr) and no progression (N-Pr). During observation patients have been treated with either somatostatin analogues (SSA) or peptide receptor radionuclide therapy (PRRT). To determine sTRAIL, sTRAIL-R2 and sTRAIL-R3 plasma levels we used multi-analyte kit, Luminex Screening Assay on magnetic microparticles (R&D Systems). Graph Pad Prism V.6.01 was used for statistics. A statistical significance was set at p value <0.05.

Results: Five out of 12 patients presented with disease progression. We noticed significant difference for median sTRAIL, sTRAIL-R2 concentrations for both S1 (111.75, 44.99 [pg/ml]) and S2 (130.0, 43.15 [pg/ml]) vs. HC (29.27, 21.64 [pg/ml]), $p < 0.0001$. The sTRAIL-R3 levels were also higher in GEP-NEN individuals in comparison to HC (tendency to significance). There was no significant difference between Pr and N-Pr subgroup. Of importance, we observed increasing plasma sTRAIL concentration between points of measurement in patients treated with PRRT vs. SSA therapy - RR: 2.0 (95%CI: [1.0-4.0]), $p = 0.2$. None of those patients presented disease progression too - RR: 2.67 (95%CI: [1.09-6.53]), $p = 0.081$.

Conclusions: Plasma levels of sTRAIL and sTRAIL-R2 are increased in GEP-NEN patients. Mentioned markers do not differentiate patients in case of 6-month progression assessment. Although they might be promising in PRRT cases monitoring, it undoubtedly requires further studies.

[77]

Biochemical and clinical factors associated with differences in platelet reactivity and their influence on survival in patients with type 2 diabetes treated with acetylsalicylic acid: an observational study

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Introduction: Major established cardiovascular (CVD) risk factors, including diabetes, hypertension, hyperlipidemia and smoking are found in most, but not all, who develop CVD. Endothelial dysfunction is also thought to contribute to development of CVD. Several inflammatory and hemostatic biomarkers of endothelial dysfunction have been associated with CVD, such as C-reactive protein, interleukin-6, fibrinogen, fibrin D-dimer, and cellular adhesion molecules. Von Willebrand factor (vWF) is a glycoprotein produced by vascular endothelial cells, which mediates platelet adhesion to injured endothelium, the first step in thrombus formation. Given its role in thrombosis, and the possibility that vWF could serve as a biomarker of endothelial damage, the role of vWF in prediction of CVD has been studied extensively.

Aim of the study: Our aim was to evaluate the role of both biochemical and clinical factors on risk of all-cause mortality and cardiovascular events in T2DM patients in long term follow-up.

Material and methods: We assessed demographic information, medical history, medications, and lifestyle habits for factors known to influence cardiovascular prognosis in 236 T2DM patients. Plasma vWF levels and other inflammatory biomarkers (IL-6, TNF- α), platelet activity markers (sCD40L, 11dTXB2, sPsel, 8-isoPGF2 α) were quantified by enzyme-linked immunosorbent assay. After a follow-up period (mean duration 5.9 years), we obtained information on vital status. The primary endpoint was defined as a death from any cause. The secondary endpoint included primary endpoint and thromboembolic events (ischemic stroke, myocardial infarction, transient ischemic attack, and acute lower limb thrombosis).

Results: Among the 236 patients included in the follow-up, death from any cause occurred in 34 (14.3%) and cardiovascular events in 51 (21.5%) patients within a median observation time of 71 months. Among more than 30 different biochemical and clinical factors included into multivariate analysis, we found that only age (HR 1.05, 95% CI 1.09-5.00, $p = 0.029$) and von Willebrand factor (HR 1.77, 95% CI 1.09-5.00, $p = 0.029$) are associated with primary endpoint in long term follow-up.

Conclusions: Higher levels of vWF and older age were associated with risk of CVD in people with T2DM, suggesting that vWF may be a risk factor unique to this group. The association with elevated levels of vWF was a particularly potent, independent risk factor in participants with diabetes, supporting a role in the pathogenesis of atherosclerosis and CVD in this population.

[78]

Frequency and risk factors of dyslipidemia among children with type 1 diabetes mellitus – a retrospective study

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Introduction: The mortality and morbidity of cardiovascular diseases (CVD) are markedly increased in diabetic individuals compared with the non-diabetic population. Moreover, type 1 diabetes mellitus (T1D) is probably independent risk factor of lipid profile disorders. Insulin deficiency leads to increased lipolysis and decreased activity of lipoprotein lipase, promoting hypertriglyceridemia and following atherogenesis. Management of lipid abnormalities plays a key role in reducing further complications of the disease.

Aim of the study: The aim of this study was identification of risk factors and assessment of frequency of dyslipidemia in children with T1D.

Material and methods: We identified lipids disorders in 89 diabetic children (49 boys, 4-17 years) in the mean age 11.0 ± 3.9 years, duration of T1D over a 1 year (mean time 4.52 ± 3.07 years), followed at the Pediatric Diabetes Clinical Unit. Children with co-existing metabolic disorders were excluded.

Results: 26% of patients had abnormal concentration of at least one of the lipids fraction: LDL (15% of patients), total cholesterol (22,5%), triglycerides (3%). Poorly controlled patients, expressed as HbA1c levels, had significantly higher concentrations of triglycerides ($p = 0.0211$). Hypertriglyceridemia was statistically more frequent in children > 13 years ($p = 0.0478$) and in subjects with higher BMI ($p = 0.0357$). Additionally, girls have 16% higher average level of LDL than boys. No correlation was found between age, diabetes duration and concentration of HDL, total cholesterol or LDL.

Conclusions: Inadequate control of diabetes, pubertal age and female sex are risk factors of hyperlipidemia. We should also pay attention to modifying factors (diet, weight) of diabetic children to prevent CVD.

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[79]

The influence of serum albumin macropinocytosis on the Warburg effect in K-ras mutated colon cancer cells under tissue normoxia and hypoxia

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Introduction: The common feature of cancer cells is the Warburg effect - synthesis of abundant amount of lactate even in the presence of oxygen. Lactate can be synthesized from glucose but also from L-glutamine and other amino acids in oxygen-dependent glutaminolysis pathway. The uptake of serum albumin (macropinocytosis) is an amino acid supply route for K-ras mutated cancer cells. Therefore, macropinocytosis may influence lactate synthesis and the Warburg effect in the dependence on oxygen level.

Aim of the study: The aim of the study was to evaluate the influence of serum albumin on the Warburg effect on K-ras mutated primary and metastatic colon cancer cell lines under various oxygen level.

Material and methods: The study was carried out on the primary (SW480) and metastatic (SW620) colon cancer cell lines cultured in hypoxic chamber at 1% (hypoxia), 10% (tissue normoxia) and 21% oxygen level. Bovine serum albumin was added to the medium at 0,38% and 0,91% concentrations. Glucose and lactate concentrations were determined using colorimetric assay kits and calculated per 10⁶ cells. The Warburg effect was assessed as lactate/glucose ratio.

Results: Lactate synthesis was increased in the presence of albumin (Alb) compared to control in both cell lines. It was 2-fold higher at 0,91% than 0,38% Alb concentration at all oxygen levels. Lactate synthesis was more intensive at SW480 than SW620 cells. Lactate/glucose ratio was about 2-3 fold higher at 10% oxygen than 1% hypoxia and exceeded 2.0 only at 0,91% Alb concentration in both cell lines. There were no significant differences in glucose utilization between 0,38% and 0,91% Alb concentrations.

Conclusions: Serum albumin increases lactate synthesis in K-ras mutated colon cancer cells. Lactate production is greater at higher Alb concentration. It confirms that Alb derived amino acids are used for lactate synthesis. The Warburg effect is more pronounced at 10% tissue normoxia compared to 1% hypoxia (in vivo oxygen levels). It indicates that oxygen enhances lactate synthesis from amino acids. Lactate/glucose ratios exceeding 2.0 (i.e. maximal stoichiometric ratio) merely at higher Alb concentration reveal that only an excess of amino acids is converted to lactate. Thus amino acids derived from serum Alb are used not only for protein building but also contribute to the Warburg effect in K-ras mutated primary and metastatic colon cancer cells.

[80]

Molecular mechanism of ulipristal acetate action in leiomyoma regression and its effect on transforming growth factor- β signaling pathway

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Introduction: Uterine leiomyomas (ULs) are the most common benign gynecological tumors in women of reproductive age. Despite their prevalence no effective medical treatment is available due to poor understanding of their underlying pathobiology. Ulipristal acetate (UPA; SPRM) seems to be the most promising because progesterone has the critical role in growth of ULs. Compared with normal myometrium, leiomyomas overexpress estrogen and progesterone receptors and also several growth factors and cytokines, from which transforming growth factor- β (TGF- β) seems to be a key factor in the pathogenesis of tissue undergoing fibrosis.

Aim of the study: The aim of this study was to evaluate the molecular mechanism of ulipristal acetate action in leiomyoma regression and effect of ulipristal acetate on transforming growth factor- β (TGF- β) signaling pathway in leiomyoma cells.

Material and methods: Leiomyoma and myometrial smooth muscle cells were isolated, plated, cultured and exposed to ulipristal acetate, progesterone and combinations thereof in dose-, and time-dependent manner. Subsequently, cells growth was measured by MTT assay. Cells were collected and lysed using TRIZOL reagent and stored in -80°C. The reverse transcription (RT) was performed using high-capacity complementary DNA (cDNA)

RT kit and gene expression was analyzed by StepOne Real-Time PCR. Assessment of translocation of SMAD3 was performed by ICC method.

Results: Progesterone significantly stimulated, whereas ulipristal acetate at 1 μ M or higher doses inhibited leiomyoma cells growth and reversed the effects of progesterone. Leiomyoma cells expressed significantly higher level of TGF- β 1 and all of TGF- β receptors and SMAD3 compared with myometrial smooth muscle cells. Ulipristal acetate treatment significantly downregulated TGF- β 1 and SMAD3 expression. Moreover, ulipristal acetate inhibited nuclear translocation of SMAD3 in leiomyoma cells.

Conclusions: In conclusion, our results suggest that leiomyoma growth inhibition induced by ulipristal acetate may be mediated through altered TGF- β family signaling pathway. Furthermore, findings that UPA decreases their expression in leiomyomas suggest that they are biologically relevant in tumor development. Better understanding of leiomyoma biology and molecular mechanism of ulipristal action may lead to identify potential targets for development of novel therapies.

[81]

Immunoreactivity of sera of patients with prostate cancer to human Hsp60

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Introduction: Heat shock protein 60 (Hsp60) is overexpressed in prostate cancer (PCa) cells compared to normal prostate epithelium. Highly expressed Hsp60 can be found at the surface of cancer cells as well as in circulation. It is known that tumor cells can actively secrete Hsp60 through extracellular vesicles. Extracellular and membrane associated Hsp60 like a microbial Hsp60 is considered to be a danger signal for the immune system inducing a humoral immune response against Hsp60. Previously we have shown the presence of IgG antibodies to GroEL (prokaryotic homolog of Hsp60) in sera of patients with PCa (Grygorenko et al., 2016).

Aim of the study: The aim of this work was to evaluate the levels of IgG antibodies reactive to human Hsp60 (hHsp60) in sera of patients with PCa by Western blotting and to reveal some peculiarities of the effect of these antibodies on PCa cells in vitro.

Material and methods: We studied 55 patients with I-IV stage prostate cancer. The immunoreactivity to hHsp60 of sera of patients with PCa were determined by Western blotting. Obtained and purified recombinant hHsp60 was used as antigen. Donor's sera with low reactivity to hHsp60 were used as a control. Dose dependent effect of IgG antibodies affinity purified from sera of patients with PCa was studied by MTT test performed on LNCaP prostate cancer cells.

Results: PCa patients' sera demonstrated strong immunoreactivity to hHsp60 in 74.4% of cases. Frequency of anti-hHsp60 positive serum was higher in patients with the end-stage PCa. High levels of anti-Hsp60 antibodies before surgery were observed in all patients who developed recurrence after radical prostatectomy (observation period – 2 years). High serum immunoreactivity to hHsp60 observed in Western blotting may be mediated not only by anti-hHsp60 itself but also by the cross-reactivity of antibodies to microbial Hsp60 presented in sera. IgG antibodies affinity purified from highly reactive to hHsp60 PCa patients' sera significantly reduce the viability of LNCaP cells by 35% at concentration of 5 mkg/ml ($p \leq 0.005$) compared to untreated cells. We didn't observe significant effect of other studied concentrations.

Conclusions: Immunoreactivity to hHsp60 in sera of patients with PCa increased with the aggressiveness of the disease. IgG anti-hHsp60 antibodies from sera of PCa patients were found to decrease viability of LNCaP cells in vitro.

[82]

MiR-382 and miR-410 function as the tumor suppressors in endometrial cancer by targeting MMP-16

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Introduction: Endometrial cancer (EC) is the most common invasive gynaecological malignancy in developed countries. The identification of potential molecular targets indicates promise for the treatment of EC. Micro RNAs (miRNAs) are short, noncoding RNA molecules that regulate gene expression. They are involved in EC pathogenesis, acting either as oncogenes or tumor suppressors. MiRNAs could regulate the components of the extracellular matrix by targeting matrix metalloproteinases (MMPs) and its inhibitors (TIMPs). However, the exact mechanisms of miRNA-mediated MMPs deregulation in EC development remains unclear.

Aim of the study: In this study we aimed to analyze the expression of MMP2, MMP16 and TIMP2 and identify miRNAs involved in their regulation in EC.

Material and methods: Expression of MMP2, MMP16 and TIMP2 was analyzed by immunohistochemistry in 20 formalin fixed paraffin embedded (FFPE) EC samples. Sections were divided into 3 areas according to different proximity to histologically distinguishable tumor (areas of cancer, normal and transient tissue). Excision of the 3 areas from FFPE samples was performed using laser capture microdissection, followed by RNA isolation and qPCR. Based on bioinformatical analysis we selected miR-377, miR-382, miR-410 (targeting MMP16) and miR-200b (targeting TIMP2) for expression analysis. To validate the miRNA and target genes interactions we performed dual luciferase assays. The protein levels after miRNAs overexpression and inhibition was assessed in Ishikawa cells by Western-Blot.

Results: MMP2 and MMP16 were significantly upregulated ($p < 0.01$) and TIMP2 was downregulated ($p < 0.05$, $p < 0.01$ respectively) in cancer and transient zones comparing to normal endometrium. MiR-377, miR-382 and miR-410 were downregulated in cancer area and negatively correlated with MMP16 (Pearson $r = -0.58$; -0.49 ; -0.41 respectively). On the contrary, miR-200b was more abundantly expressed in cancer zone ($p < 0.0001$) and correlated negatively with TIMP2 ($r = -0.371$). Luciferase reporter assays confirmed that miR-382 and miR-410 negatively regulate MMP16 and miR-200b inhibits TIMP2. Overexpression of miR-382 and miR-410 in EC Ishikawa cell line decreased MMP16 protein levels, while inhibition of miR-200b increased TIMP2 levels

Conclusions: To our knowledge, this paper's findings are the first describing suppressive role of miR-382 and miR-410, negatively regulating MMP16 in EC. Novel mechanisms underlying microRNA-mediated MMPs deregulation could provide further insights into the diagnosis and treatment of these tumors.

[83]

MLL3 may function as a tumor suppressor in Head and Neck Squamous Cell Carcinoma as determined by next generation sequencing studies and genetic knockoutJoanna Janowska¹, Marcin Machnicki¹, Monika Pepek¹, Ewa Osuch-Wójcikiewicz², Anna Rzepakowska², Piotr Stawiński³, Rafał Płoski³

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Introduction: Head and Neck Squamous Cell Carcinoma (HNSCC) is one of the most frequent cancer worldwide. Due to the wide use of its main risk factors – tobacco and alcohol the number of cases is still rising. The current treatment bases on surgery, chemotherapy and radiotherapy depending on cancer localization and staging. Even though the mutational pattern of this cancer is well recognized, there is no successful targeted therapy so far. Our research into hypopharyngeal carcinoma – one of the HNSCC with worst prognosis using next-generation sequencing (NGS) confirmed previously reported mutations of TP53, CDKN2A, NOTCH, PIK3CA, EGFR but also revealed some less frequent mutations, which role has not been described yet in this type of cancer. One of those mutated gene appeared to be Mixed Lineage Leukaemia 3 (MLL3) gene also known as KMT2C (Lysine (K)-Specific Methyltransferase 2C) which has been shown to play important role in other types of cancers.

Aim of the study: The aim of my study was to investigate the influence of MLL3 mutation on proliferation of FaDu cell line, an in vitro model of hypopharyngeal carcinoma.

Material and methods: Human hypopharyngeal carcinoma cell line (FaDu) has been sequenced with NGS and checked to have wild-type MLL3. Then using the CRISPR/Cas9 (Clustered Regularly Interspaced Short Palindromic Repeats) method the MLL3 gene was disrupted as confirmed by PCR. The clonogenic assay estimating proliferation potency of both MLL3-targeted cells and non-target control cells was performed. Western blotting and RT-qPCR was used to screen expression of genes involved in cell proliferation.

Results: Upon gene editing with CRISPR/Cas9 methodology we obtained clones of FaDu cells with knockout of MLL3 gene mimicking mutations found in samples from patients with hypopharyngeal carcinoma. Clones with disrupted MLL3 gene expressed increased proliferation potency and dysregulated expression of essential cell cycle check points.

Conclusions: MLL3 gene found to be mutated in hypopharyngeal carcinoma – one of HNSCC may be an important factor controlling growth and progression of the cancer.

[84]

Polymorphism of CYP2C9 and VKORC1 Genes in Georgian Population

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Introduction: It is known, that there is a correlation between CYP2C9 and VKORC1 Gene products and warfarin dosage in the treatment of thrombosis. Warfarin is an anticoagulant, causing the inactivation of the VKORC1 gene product, which is one of the clotting factors. The protein product of CYP2C9 gene is involved in the metabolism of warfarin.

Aim: The aim of our research was to study the frequency of different alleles of VKORC1 and CYP2C9 genes for healthy donors and patients with thrombosis, in Georgian population.

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Material and methods: Genotyping of peripheral blood samples for studied genes alleles was carried out using a tube scanner (ESE Quant Tube Scanner - is a small easy-to-use fluorescence measurement system), which gives possibility to identify SNPs.

Results: In the studied group of patients with thrombosis the wild-type homozygous genotype - by the VKORC1 gene was – 60 %; heterozygous – 34 %; mutant homozygous – 6 %. In the healthy donor's group this pattern was a little different: predominated heterozygous genotype (45 %); homozygous wild type was - 40%; mutant homozygous -15 %.

By CYP2C9 gene, in patients with thrombosis, the homozygous wild and heterozygous genotypes were 41% and 44%, respectively; mutant homozygous were revealed the ratio 11%. On the other hand, in healthy donors, the frequency of wild-type homozygous was 67%, heterozygous and mutant homozygous were 32 % and 1 % - respectively.

Conclusions: The genotypes in Georgian population by CYP2C9 and VKORC1 genes are various. VKORC1 and /or CYP2C9 genes polymorphisms are presented in numerous clinical dosing algorithms and clinical trials. It is revealed the significant variation of genotypes in patients with thrombosis, which indicates the importance of genotype testing in treatment process, as well as for the prevention of thrombosis.

[85]

Interleukin-6 Gene Polymorphism (-572 C>G) In Type 2 Diabetes of Bangladeshi Origin

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Introduction: Type 2 diabetes mellitus has been empirically shown to be a partially inheritable disease, in which a genetic component plays a significant role in disease aetiology. It has been estimated that 30-70% of type 2 diabetes risk can be attributed to genetics. It is not yet known how many genes are involved or how much control they exert over the development of the disease, but recent research has identified a number of promising candidates including Interleukin-6 gene.

Aim of the study: To determine the prevalence of -572 C>G in the Bangladeshi type 2 diabetic population.

Material and methods: Peripheral blood samples were collected from human subjects. Both diabetic patients and controls were of same ethnic origin. Anthropometric and certain biochemical parameters were recorded for each of the study subjects. Genomic DNA was extracted from whole blood by using faborgen DNA extraction kit. The polymerase chain reaction-restriction fragment length polymorphism was used to genotype the -572 C>G polymorphism in IL-6 gene.

Results: Evaluation of the -572 (G>C) polymorphism in IL-6 by BsrBI digestion revealed the prevalence of GG, CG and CC genotypes in both diabetics and controls. The observed genotypic frequencies were in Hardy Weinberg Equilibrium. The frequency of G and C alleles did not differ significantly between the diabetic and control groups. The SNP rs1800796 was also analyzed against type 2 diabetes quantitative traits which was not found to be associated with any of the phenotypic traits.

Conclusions: The conflicting data still exist demonstrating the association between IL-6 polymorphism and type 2 diabetes. In this study, genotyping based analysis was performed to understand the relationship between -572 C>G polymorphism and type 2 diabetes in Bangladeshi population. However, further studies are required with larger population size to establish the firm association of -572 C>G polymorphism and type 2 diabetes.

[86]

Evaluation of LRRK-2, PTEN, DJ-1, PINK-1 activation in correlation with Mek/Erk and PI3K/Akt/mTOR pathways in childhood medulloblastoma

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Introduction: DJ-1 is one of the key regulators of oncogenesis, PTEN is an inhibitor of PINK-1 modulating neurogenesis, LRRK-2 is one of the factors influencing excessive growth of nerve cells, p90-RSK activates S6 transcription factor, 4E-BP1 binds protein translation initiation factors, PDK-1 activates Akt, p70-S6 kinase is activated by mTOR, leading to cell proliferation and tumorigenesis. These factors have been linked to cancer, but their effect on the pathogenesis and degree of pathway activation in the brain is so far unknown.

Aim of the study: The aim of this study was to evaluate the activation of Mek/Erk and PI3K/Akt/mTOR pathways in correlation with PTEN, DJ-1, LRRK-2 and PINK-1 in childhood medulloblastoma tumors.

Material and methods: Molecular studies were performed on tumor tissues from 13 patients from the Department of Neurosurgery Children's Health Institute in Warsaw, obtained intraoperatively in 2009-2012. The study included tissue confirmed histologically as medulloblastoma: classical (6 patients), desmoplastic (4 patients) or anaplastic (3 patients) cases. Activation of p90-RSK, pS6, p70-S6K, p4E-BP1, PDK1, PTEN, DJ-1, LRRK-2 and PINK-1 was evaluated by Western Blot using monoclonal antibodies.

Results: We observed increased activation of pS6, p90-RSK, p70-S6K, PDK-1, DJ-1, LRRK-2 and PINK-1 as well as decreased activation of PTEN in all types of medulloblastoma tumors (classic, desmoplastic, anaplastic). There

were no statistically significant correlations between the hyperactivity of Mek/Erk or PI3K/Akt/mTOR pathways and hyperactivity of LRRK-2, PTEN, DJ-1 or PINK-1.

Conclusions: Increased activation of Mek/Erk and PI3K/Akt/mTOR pathways with decreased activation of PTEN in all types of medulloblastomas indicates their crucial role in the pathogenesis of these tumors in children. The coexistent hyperactivation of LRRK-2, PTEN, DJ-1 and PINK-1 in all histological types of medulloblastoma should be further investigated in order to estimate their potentially useful role in differential diagnostics of this group of tumors.

[87]

Impact of gene knockdown on dendritic cell's development

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Introduction: The dynamic field of dendritic cells' biology gives us ever new opportunities in such domains as immunology and cancer research. Among them, the plasmacytoid dendritic cells remain a considerably faintly understood group.

Aim of the study: In the presented work I researched the role of chosen genes in the development and differentiation of classical dendritic cells (cDCs) and plasmacytoid dendritic cells (pDCs), with a strong emphasis on the less known pDCs, in order to understand better th

Material and methods: In the experiment, immortalized hematopoietic stem and progenitor cells were subjected to transfections with a lenti shRNA virus in order to knockdown researched genes: IRF7, Est1, phf17 and Zfp719. After the transfection differentiation into DCs was induced and after 4-5 days cell counting and flow cytometry were performed.

Results: The flow cytometry results and cell counts showed a strong impact of each of the genes on the survival and ratios of differentiation into cDCs and pDCs, compared to LacZ knockdown control. Normally highly expressed in pDCs, the genes proved to be crucial for their development – with the strongest effect observed for IRF7 knockdown.

Conclusions: These results give new insight into the DCs' biology and show possible footholds for influencing their function. This in turn is very likely to prove useful in designing vaccines, fighting infections and paving the way for new immunotherapy possibilities in cancer.

[88]

Rho kinase pathway as a potential target for therapy in CML cells in vitro

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Introduction: Chronic myeloid leukaemia (CML) is a myeloproliferative neoplasm characterized by the presence of balanced genetic translocation t(9;22)(q34;q11.2). This rearrangement known as the Philadelphia chromosome generates BCR-ABL1 fusion oncogene encoding the still active tyrosine kinase. The tyrosine kinase inhibitors (TKIs) appeared to be the first successful targeted therapy and enable many patients to achieve remission. However, CML is still an untreatable disease. Leukaemia stem cells (LSCs) are insensitive to the TKIs and accumulate genetic aberrations during disease course which leads to TKIs resistance and progression. One of the potential target in TKIs resistant CML may be the Rho kinase pathway. Rho kinase (ROCK) in cells bearing BCR-ABL is constitutive active which leads to phosphorylation of several proteins responsible for actin polymerization and increase in growth, survival and cell mobility. Inhibition of ROCK may impair leukaemic cells proliferation and disease progression.

Aim of the study: The aim of my study was to investigate the influence the ROCK inhibitors – H1152 and Glycyl-H1152 and their combination with TKIs on the proliferation of CML cells in vitro.

Material and methods: The experiments were performed with human CML blast crisis cell lines: KCL-22 WT sensitive to TKIs and KCL-22 T315I resistant to all TKIs apart from ponatinib. Cells were treated with ROCK inhibitors – H1152 and Glycyl-H1152, TKI- nilotinib and the combination of both. Then growth and cell viability was assessed by cell counts and flow cytometry with Annexin V/DAPI staining. Also flow cytometric analysis of cell cycle with propidium iodide DNA staining was performed.

Results: Testing the effect of ROCK inhibitors alone and in combination with TKIs in KCL-22 WT cell line we observed a synergistic effect in growth inhibition when the combination was used instead of single drug. Also treating TKIs-resistant cell line with ROCK inhibitors caused effective growth inhibition. This reduced proliferation rate is caused by the significant increase in cell apoptosis and cell cycle arrest in M/G2 phase. Glycyl-H1152 compering to H1152 was more potent in single drug or combination treatment.

Conclusions: ROCK inhibitors by affecting Rho-kinase pathway in BCR-ABL bearing cells induce apoptosis independently to their TKIs sensitivity which may be a great opportunity for CML patients resistant to TKIs. Moreover, synergistic effect of the combination of ROCK inhibitors and TKIs may eliminate LSCs and be crucial for CML therapy.

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[89]

Students of medicine – a threat or victims? Estimation of nasal carriage and epidemiological origin of methicillin-resistant *Staphylococcus aureus* (MRSA) among 3rd year medical students of Medical University of Warsaw

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Introduction: Methicillin-resistant *Staphylococcus aureus* (MRSA), which remains insensitive to almost all beta-lactams, is a common pathogen which causes increased morbidity and mortality, as a health care-associated hospital onset HAHO-, health care-associated community onset HACO-, or community-associated CA-MRSA. Similar to sensitive variants, MRSA strains are well adapted to colonize human body parts (0,3-42% of SA). Nasal asymptomatic carriers are three times more likely to develop infections than noncarriers, they are also a potential vector/donor of MRSA to others.

Aim of the study: The aim of the study was to evaluate the nasal carriage of MRSA among students of medicine from the Medical University of Warsaw, and assess the epidemiological origin of isolated strains: HAHO-, HACO-, or CA-MRSA.

Material and methods: Nasal swabs were collected from 467 3rd year students, who were screened for SA carriage. The swabs were inoculated and isolated on mannitol salt (MSA) and Mueller Hinton agar plates. Identification was performed by means of Pastorex Staph-Plus (BioRad) kit, which detects the presence of: fibronectin affinity factor ClfA/B, protein SpaA, capsular polysaccharides Cap of SA, and/or in some cases with mass spectrometry MALDI-TOF MS, BioMerieux. The isolates were tested for susceptibility to ceftazidime (FOX, 30µg) and mupirocin (MUP, 200µg) with the disk diffusion method, according to EUCAST guidelines.

Each isolate which manifested resistance to FOX underwent PCR to define the mechanism of resistance. Both *mecA* and *mecC* genes were detected and differentiated with primers (*mecA*-F/R, *mecC*- FP/RP, -mFP/RP, -mFP/mRP). Additionally, MR strains were tested by VITEK2 cards AST P644, to indicated the resistance profile to 20 other antibiotics.

Results: Out of 467 tested students, 99 (21,2%) were SA carriers. 4% of isolates expressed the MR-phenotype (diameter of inhibition zone range 18-20 mm), which was determined by *mecA* gene. All MRSA isolates were also resistant to: macrolides, lincosamides, streptogramins B (MLSB), amikacin, tetracycline and expressed mechanism of constitutive cMLSB. One strain was also insensitive to ciprofloxacin. The prevalence of MRSA in screening population was 0,8%.

Conclusions: All identified MRSA strains were multi drug resistant and relatively close related. They were probably health care-associated community onset HACO-MRSA variants, which leads to the conclusion that colonized students are both victims and a potential source of infection to their future patients and co-workers.

[90]

What can thyroid hormones tell us about an outcome of sepsis patients?

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Introduction: According to the 3rd International Consensus sepsis is defined as a life-threatening organ dysfunction caused by a dysregulated host reaction to infection. Despite significant developments in intensive care, there is an upward trend in sepsis prevalence and mortality rate worldwide. Sepsis leads to hypoxia and therefore reduces ability of cells to produce ATP. This process is also influenced by thyroid hormones. Some of the previous studies revealed association between mortality rate in sepsis and levels of thyroid hormones.

Aim of the study: The aim of our study was to evaluate free triiodothyronine (fT3) and thyroxine (fT4) predictive value in sepsis patients with euthyrosis.

Material and methods: Forty-nine adult patients with sepsis admitted to the Intensive Care Unit (ICU) of the Jagiellonian University Medical College over the years 2015-2017 were enrolled in the study. Blood samples for fT3 and fT4 level measurements were obtained from septic patients immediately after establishing the diagnosis.

Primary endpoint was patients 30 days survival rate. Secondary endpoint was death anytime during ICU stay. Statistical analysis was performed using U Mann-Whitney test and ROC curve analysis.

Results: Patients who died within 30 days had significantly lower level of fT4 compared to those who survived (9,76 vs. 12,72; $p=0,033$). As for fT3 level its median was also lower in the group of non-survivors [1,61(1,29-1,94)] than in survivors [1,82(1,52-2,39)], but there was no statistically significant difference between these 2 groups of patients ($p=0,059$). In turn, as far as secondary endpoint is concerned both fT3 (1,59 vs. 1,84; $p=0,021$) and fT4 (9,76 vs. 12,74; $p=0,019$) levels were significantly lower among non-survivors in comparison with survivors. In the group of those who died everyone had fT3 value under the lower limit of norm which was not the case for fT4. ROC curves for thyroid hormones as predictors of survival revealed that AUC values were moderate and slightly better for secondary endpoint – death anytime during ICU stay [fT3 (AUC=0,7; $p=0,009$); fT4 (AUC=0,7; $p=0,014$)] than for primary endpoint - 30 days survival rate [fT3 (AUC=0,66; $p=0,04$); fT4 (AUC=0,68; $p=0,028$)].

Conclusions: Thyroid hormones levels are significantly lower among patients who died during ICU stay. Results suggest that fT3 and fT4 may be taken into consideration as new prognostic factors in sepsis. In the future their replacement may play some role in sepsis management.

[91]

Assessment of antibiotic-resistant bacteria in the wounds of the lower limbs of homeless patients

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Introduction: The increasing antibiotic resistance of bacteria is currently the crucial issue influencing the costs of treatment, as well as the length of hospital stay and the mortality rates. Homeless people are a particular group of patients, often presenting numerous injuries, especially in the lower limbs, most exposed to damaging factors. The wounds are often critically neglected, and frequently improperly healed due to poor patient compliance and usually too early termination of the therapy, which may result in antibiotic resistance and treatment failure.

Aim of the study: The aim of this study was to identify the bacterial strains in lower limbs wounds of homeless patients and to assess their antibiotic resistance. It can contribute to discussion on empiric antimicrobial therapy patterns for uninsured people.

Material and methods: The swabs were collected from the lower limb wounds of 27 homeless patients. Bacterial species were identified with commercial biochemical tests. Assessment of susceptibility was determined in accordance with the recommendations of European Committee on Antimicrobial Susceptibility Testing guidelines.

Results: The study involved 74 bacterial strains revealing (40%, $n=28$) *Staphylococcus* spp., (26.1%, $n=18$) Enterobacteriaceae family, (21.7%, $n=15$) *Streptococcus* spp. and (5.8%, $n=4$) *Pseudomonas* spp. Bacterial strains involved in this study were predominantly susceptible to the tested antibiotics. However, within the *Staphylococcus* spp. strains (39.3%, $n=11$) were resistant to macrolides, lincosamides, and streptogramin B, (28,6 %, $n=8$) were resistant to methicillin and (21.4%, $n=6$) to ofloxacin. Among the Enterobacteriaceae species a sole strain of *Proteus* spp. expressed the extended-spectrum beta-lactamases phenotype (5, 6%, $n=1$). In *Streptococcus* spp. a sole *S. agalactiae* isolate was resistant to macrolides, lincosamides, and streptogramin B (6.7%, $n=1$). Also, all strains of *Pseudomonas* spp. were resistant to tested antimicrobials, with one metallo- β -lactamases phenotype (25%, $n=1$).

Conclusions: The significant antibiotic resistance was observed within *Staphylococcus* spp. and *Pseudomonas* spp. strains. This conceals a serious clinical problem concerning patients of a lower socioeconomic status and reveals the need to set the detailed protocols for empiric antimicrobial treatment of such patients.

[92]

Tick-borne diseases - a real threat or a myth?

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Trustee of the paper: dr n. med. Maria Pokorska-Śpiewak**Introduction:** The most common tick-borne diseases in human include borreliosis, tick-borne encephalitis and anaplasmosis.**Aim of the study:** The aim of the study was to analyze the frequency of tick-borne diseases in children, who were referred to the Department of Children's Infectious Diseases in Warsaw with suspicion of any disease related to the tick bite and to evaluate the diagnostic and**Material and methods:** We analyzed retrospectively medical documentation of 3466 children, referred to our Department between 10.2015-09.2016 and selected 498 patients (262 girls, 236 boys, mean age 8.36 years) with a suspicion of a tick-borne disease.**Results:** Among these 498 patients, 308/498 (61.85 %) children had a tick bite history. The remaining 190/498 (38.15%) were referred because of symptoms related to the lyme borreliosis, without any history of a tick bite. In 16/498 (3.21%) cases a microbiological examination of the tick removed from the skin was performed, and in 165/498 (33.13%) patients serological blood testing for borreliosis was done. The most frequent symptoms presented by the patients included erythema migrans (204/498, 40.96%), headache (41/498, 8.23%), joints ache (27/498, 5.42%), red lump on auricular lobe (10/498, 2%), facial palsy (4/498, 0.8%). 66/498 (13.25%) children were asymptomatic. On our consultation, 162/498 (32.53%) children were diagnosed with a tick-borne disease. Lyme disease was diagnosed in 157/162 (96.91%) cases, including: erythema migrans (130/162, 80.25%), neuroborreliosis (11/162, 6.79%), lyme arthritis (7/162, 4.32%), borrelial lymphocytoma (8/162, 4.94%). Anaplasmosis was diagnosed in 2/162 (1.23%) cases, tick-borne meningoencephalitis in 2/162 (1.23%), tularemia in 1/162 (0.62%). 297/498 (59.64%) children had no symptoms of tick-borne disease, 110/498 (22.09%) of patients were healthy. 169/498 (33.94%) children were diagnosed with other diseases (not related to a tick bite). 47/498 (9.44%) children required hospitalization. In 271/498 (54.41%) cases recommendations on the diagnosis and treatment of tick-borne diseases were not conformed in primary care.**Conclusions:** Borreliosis is the most common tick-borne disease in children in Poland. Other diseases resulting from tick bites are rare. In many cases, diagnostic and therapeutic proceedings concerning tick-borne diseases in primary care are inadequate. Asymptomatic patients with a tick bite history should not be diagnosed with any tick-borne disease.

[93]

Prevalence of virulence genes and antibiotic resistance profiles among uropathogenic strains of Escherichia coli isolated from patients with community-acquired urinary tract infections in Białystok

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Trustee of the paper: dr hab. n. med. Katarzyna Leszczyńska, dr n. med. Sylwia J. Chmielewska**Introduction:** Uropathogenic strains of Escherichia coli (UPEC) are the most common cause of urinary tract infections (UTI). Due to the escalating antibiotic resistance there is a need for development of novel therapeutic strategies. Understanding the molecular pathogenesis of virulence and resistance of UPEC may facilitate this task.**Aim of the study:** The aim was to evaluate and analyze the correlation between the antibiotic resistance, virulence factors and phylogenetic background of UPEC isolated from patients with community-acquired UTI in Białystok.**Material and methods:** The total of 113 E. coli strains collected from 55 (48,7%) adults and 58 (51,3%) children/adolescents with community-acquired UTI in 2015 at the Department of Microbiology, Medical University of Białystok were investigated. The Hoeprich method was used to determine the significant growth of bacteria. Identification of E. coli isolates was done on the basis of spectral fingerprints using the MALDI-TOF-MS.

Presence of virulence genes (*fimH*, *papC*, *sfaDE*, *afaBC*, *iroN*, *irp2*, *hlyA*, *cnf1*, *vat*, *agn43*, *usp*, *traT*, *chuA*, *yjaA*, *Tspe4.C2*) was assessed by the magnetic beads extraction technology and multiplex PCR. The antibiotic resistance profiles of UPEC were performed using the disk diffusion method according to EUCAST criteria. The data were analyzed using Chi-square and Mann-Whitney U tests ($p < 0.05$).

Results: Isolated *E. coli* strains belonged to three phylogenetic groups: 69.9% to group B2 ($n=79$), 16.8% to group A ($n=19$), 13.3% to group D ($n=15$). Of the 113 isolated *E. coli*, 34.5% strains were resistant to trimethoprim/sulfamethoxazole (SXT), 26.6% to nalidixic acid (NA) and 15% to ciprofloxacin (CIP). Furthermore, 10.6% of *E. coli* strains were multidrug resistant. The most abundant pattern of virulence genotypes including adhesions (*fimH*+, *papC*+, *sfaDE*+) iron acquisition systems (*irp2*+, *iroN*+) toxins (*vat*+, *hlyA*+, *cnf1*+) and other virulence factors (*usp*+, *agn43*+) was noted in 23.9% of UPEC. Statistically significant correlation between the absence or the number of the genes of virulence factors and antibiotic resistance was observed ($p < 0.05$).

In this investigation, CIP-R (*papC*, *sfaDE*, *vat*, *hlyA*, *cnf1*, *usp*), NA-R (*vat*, *hlyA*, *cnf1*), SXT-R (*vat*, *hlyA*, *cnf1*) UPEC showed reduced prevalence of virulence factors compared with susceptible isolates.

Conclusions: UPEC resistant to quinolones, fluoroquinolones and trimethoprim/sulfamethoxazole have reduced virulent potential. Further studies are needed to help understand the association between resistance and virulence of UPEC.

[94]

Prophylactic vaccination in patients post hematopoietic stem cell transplantation: adherence to recommendations

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Introduction: The hematopoietic stem cell transplantation (HSCT) is becoming more common in Lithuania. The survival rates after HSCT are improving progressively worldwide. Therefore, physicians are faced with new challenges caring for such patients. One of significant problems is patients susceptibility to vaccine-preventable diseases. Based on internationally approved recommendations, a set of local guidelines on vaccination of immunosuppressed adult patients were introduced at our institution.

Aim of the study: Evaluate the adherence to the published local guidelines on vaccination of immunosuppressed adult patients.

Material and methods: We conducted a retrospective review of recipients of autologous and allogeneic HSCT who were vaccinated at Vilnius University Hospital Centre for Infectious Diseases between 2013 and 2016. The data was collected from patients' medical records and analyzed using descriptive statistics to highlight any deviation from the guidelines.

Results: A total of 39 patients were included into our study (16 females, 23 males), with the mean age of 46 ($SD \pm 15$). The follow up time at the point of data collection ranged from 8 to 66 months from the HSCT. 19 patients received their first vaccination within the recommended 6 months, 14 within 7-12 months and 6 were delayed for over 12 months since HSCT. Full course of vaccinations was administered in 10 cases with pneumococcal conjugate vaccine, 19 with tetanus-diphtheria, 15 with polio and 25 with hepatitis B vaccine. There were no patients vaccinated with the meningitis C vaccine, only 2 received the meningitis B vaccine and 2 were vaccinated with tick-borne encephalitis vaccine. The intervals between vaccine doses were in line with the local guidelines.

Conclusions: In over half of all cases the first vaccinations were administered later than 6 months after transplantation, which was not compliant with the local guidelines. There was no patient, who received the entire course of all recommended vaccinations. The situation highlighted appears to be unsatisfactory and should be improved. This can be achieved through educating both patients and medical professionals in the importance of specific infectious diseases prophylaxis of immunosuppressed patients. We note that the lack of certain vaccinations in this population could also be associated with financial difficulties: patients were more likely to receive the vaccinations which were funded by the national health insurance, whereas the ones to be funded personally were often omitted.

[95]

Frequency of *Pneumocystis jiroveci* pneumonia among lung transplant recipients – 3 years observations in Silesian Center for Heart Diseases in Zabrze

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Introduction: *Pneumocystis jiroveci* pneumonia (PJP) is significant opportunistic infection in immunocompromised patients, such as lung transplant recipients. It can cause major complications and affect a survival of patients.

Aim of the study: The aim of the study was to assess frequency of PJP during last 3 years of Lung Transplant Programme of Silesian Center for Heart Diseases in Zabrze (SCCS).

Material and methods: Study group consisted of 43 patients (21 women and 22 men; mean age 37.19 yr.) transplanted between 2014-2016 in SCCS. During this time 29 double lung transplantations (DLT) and 14 single lung transplantations (SLT) were performed, including 2 retransplantations. In respiratory samples, *P. jiroveci* was detected using an indirect immunofluorescence method.

Results: 11 out of 43 graft recipients developed PJP during 2014-2016. The average time between lung transplant procedure and occurrence of PJP was approximately 107 days; min: 25 days; max: 598 days. Among 10 patients, who were transplanted in 2014, 50% developed PJP. In 2015 only 14.3% of 14 patients was diagnosed with PJP. In 2016 a frequency of PJP among 19 donor recipients was 21%. PJP frequency in DLT was 27.59% (n=29) and 21.42% (n=14) in SLT. The difference was not statistically significant ($p=0.6639$).

Conclusions: PJP is a recognized problem and should be monitored. In our center PJP is early diagnosed during continuous monitoring of our patients, which results in lower mortality rate.

[96]

Healthcare students' and workers' knowledge about Zika virus infections

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Introduction: Zika virus (ZIKV) is a mosquito-borne flavivirus, first identified in Uganda in 1947. ZIKV became a leading public health problem in 2015 due to epidemic outbreak and association between vertical ZIKV transmission and microcephaly.

Aim of the study: The aim of the study was to assess healthcare students' and workers' knowledge about ZIKV and recommendations concerning reproduction during the outbreak.

Material and methods: It was a cross-sectional study performed by means of an online survey distributed among Polish medical students and young physicians. The survey included 28 questions about ZIKV epidemiology, prevention, transmission, symptoms, complications, detection, management and reproductive guidelines. In the end of the survey correct answers were provided in order to educate respondents.

Results: 293 answered surveys were collected. Mean age of respondents was 24.5 years. 53% of respondents were students, 29% were during post-graduate internship. The study group included students or alumni of 11 universities. 82% of the surveyed came across information about ZIKV, most of them in the Internet (83%) and television (61%), 22% learned about ZIKV at the university. 85% indicated that ZIKV is spread by mosquitoes but only 44% answered that prevention includes repellent application. 77% of respondents were aware of vertical transmission. 23% knew about the incubation period, 66% identified flu-like symptoms and 49% answered that treatment is symptomatic. 47% indicated that diagnosis is based on serological tests, 66% selected molecular testing. Only 34% knew that ZIKV is a flavivirus which causes serological cross reactions. 36% answered that cross reactions are possible in dengue infections, whereas only 8% were aware of cross reactions with tick-borne encephalitis virus endemic in Poland. 74% answered that microcephaly is the result of ZIKV vertical transmission. Other fetal complications were identified as follows: hypotrophy by 28%, ocular abnormalities by 23% and

arthrogryposis by 8%. 14% of the surveyed knew the guidelines concerning reproduction in the area of ZIKV outbreak. 22% answered that they can find reliable information about current ZIKV endemic regions.

Conclusions: Knowledge about ZIKV is not consistent and often incomplete, especially information required in medical practice - about diagnostic process, reproductive health and travel medicine. Physicians consulting patients who often travel should systematically complement their knowledge about current infections outbreaks.

[97]

Predictive factors in developing host reaction to bacterial infection

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Introduction: The most recent consensus definition of sepsis focuses on the importance of the maladaptive and potentially life-threatening host response to infection. The infection may be bacterial, fungal, viral or parasitic - in which bacterial are most common. Treatment guidelines call for the administration of broad-spectrum antibiotics within the first hour following diagnosis of septic shock. Risk of death increases by approximately 10% for every hour of delay in administering antibiotics.

Aim of the study: In the research the predictive factors for bacterial reaction were studied in an attempt to find new clues to decide in proper time about administering antibiotics.

Material and methods: We recruited 49 adult patients diagnosed with sepsis who were admitted to the Intensive Care Unit (ICU) of the Jagiellonian University Medical College. Bacterial infections were identified in 19 patients (39% of the study population). The remaining group of patients were infected by viruses (most common AH1N1) and fungi. All patients were evaluated on admission in terms of the typical data available for patients with sepsis - age, sex, laboratory tests, microbiological tests (BAL, urine culture and blood culture tests), APACHE IV. Risk factors of developing bacterial infection were assessed using U Mann-Whitney test and Chi2 test.

Results: TSH levels (0,892 vs. 0,274 $p=0,023$), APACHE IV (118 vs. 108 $p=0,048$ and sex (63,0 vs. 57,5 $p=0,023$) were significantly higher among patients who had developed bacterial infection in comparison with the group with non-bacterial infection. Secondary, developing bacterial infections entail significantly lower albumin levels (22 vs. 26 $p=0,19518$) hemoglobin (9,7 vs. 12,1 $p=0,013$), hematocrit (29,6 vs. 35,3 $p=0,023$) and glucose (7,1 vs. 9,9 $p=0,03$) in comparison to the group with no bacterial infection. Other factors such: age, length of ICU stay, level of procalcitonin, white blood cells, platelets and erythrocytes were insignificant in comparison with those two groups.

Conclusions: New predictive factors of developing bacterial infection may be taken into consideration in an attempt to improve the assessment of bacterial infection in patients with sepsis. This improvement could shorten the time of antibiotics administration which may decrease risk of dying in sepsis.

[98]

EVALUATION OF HIV-1 DRUG RESISTANCE SPREADING IN RUSSIA IN 2011-2015

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Introduction: Since 2006 in Russian Federation highly active antiretroviral therapy (HAART) became widely available. For 10 years the number of HIV-infected people under treatment has increased more than 10 times. WHO and UNAIDS Program "90-90-90" implies a further increase of patients on effective therapy. This is the reason of increasing of the risk of new HIV drug resistance mutations among people, who receive the treatment (Acquired Drug Resistance) and following spreading of resistant variants (Transmitted Drug Resistance).

Aim of the study: The analysis of HIV-1 drug resistance mutations (DRM) spreading in Russian naïve and therapy experienced patients with diagnosis date 2011-2015.

Material and methods: We analyzed the nucleotide sequences of HIV-1 samples genome isolated from 143 patients receiving HAART, and from 391 naïve patients by on-line tools CPR V.5.0 and HIVdb Program v.7.0.

Results: 5.88% (23/391 samples) of naïve patients were infected by drug resistant viruses and 43.36% (62/143 samples) of viral samples from treated patients harbored DRM. The most frequent mutation in viruses among naïve patients was K103N (8 /23 samples-34.78%), on the second place in this group was M184V (5/23 samples 21, 74%). Another 3 samples (13, 04%) contained G190S mutation. In viral samples from treated patients there was another frequency of occurring mutations. The most frequent mutation was M184V (50/62 samples-80, 65%). K103N mutation was found in 15 samples (24, 19%); G190S-in 12 samples (19, 35%). In both groups of patients we found the low frequency of DRM to protease inhibitors.

Conclusions: The prevalence of DRM in Russia from 2011 to 2015 among naïve patients was 5, 88% and among treated patients 43, 36%.

The highest level of drug resistance was found to drugs commonly used in first-line regimens of HAART, according to national protocols of HIV-1 treatment (EFV, NVP, 3TC).

Low prevalence of drug resistance to protease inhibitors in both groups of samples shows, that this class of antiretroviral drugs is high effective in Russia.

Despite HIV-1 DRM spreading in Russia HAART schemes used in our country are effective, because they includes drugs belonged to different antiretroviral classes and may successfully suppress viral replication. However, monitoring of HIV-1 drug resistance in Russia should be ongoing.

[99]

Chemsex among HIV infected patients

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Introduction: There is a new phenomenon, and it consists of a psychoactive drug intake directly before or even during the sex act – it's called chemsex and the scale of it has been increasing during past time. The purpose is to facilitate or enhance sexual contacts. Most commonly used substances are GBL (γ -Butyrolactone), GHB (γ -Hydroxybutyric acid) and amphetamine, but the spectrum is much wider. It's thought that undertaking risky behaviours is more likely after the drugs intake.

Aim of the study: The aim of the study was to analyse the frequency of chemsex among male group of HIV infected patients.

Material and methods: The anonymous questionnaire voluntarily filled by 29 HIV infected male patients, who are during antiretroviral therapy in the Department of Infectious and Tropical Diseases and Hepatology of Medical University of Warsaw. The data was collected between November 2016 and January 2017. Patients were asked about drugs use (kinds, frequency, route of administration), sexual contacts (places, number of partners, casual sex), other sexually transmitted diseases and condoms use.

Results: In our group of 29 patients, 19 were men who have sex with men (MSM). Patients were between 27 and 71 years old (average was 43,4). This term chemsex was familiar to 18 patients. Out of the whole group 8 patients used psychoactive substances while having sexual contacts or right before them (6/8 were MSM), but only half of them knew, they were representing a phenomenon called chemsex. After the drugs intake 6 patients have had unprotected sex (5/6 were MSM) and 4 didn't use condoms even though they knew about them or their partners being HIV infected (all of them were MSM).

Conclusions: Chemsex is a new phenomenon which occurs mostly among MSM. The MSM group is much more likely to undertake risky sexual behaviours. The chemsex subject should be discussed between patients and their doctors in order to give information, support and prevent undertaking risky behaviours.

[100]

Types of microbiological pathogens in the infected amniotic fluid among women who had Caesarean Section and their association with maternal medical history and newborn perinatal outcome

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Introduction: The scientific literature reports that intrauterine infection is a risk factor for premature birth and prematurity. Moreover, infection of the newborn with pathogen in the amniotic fluid is described as a factor which increases perinatal mortality of infants.

Aim of the study: Determine type of bacteria which are isolated from infected amniotic fluid. Determine factors associated with bacterial pathogens presence in infected amniotic fluid. Comparisons of types of pathogens in terms of maternal and neonatal complications post-d

Material and methods: Women after Cesarean Section (CS) delivery with confirmed presence of pathogens in the amniotic fluid and their children were included in the study. CS procedure and culture of the amniotic fluid were performed at the 2nd Department of Obstetrics and Gynecology, Medical University of Warsaw in 2013. All women were characterized in terms of socio-economic and anthropometric factors. The following crucial points of study: course of pregnancy, assessment of the type of pathogen present in the amniotic fluid, maternal and newborn complications post-delivery were collected. Data for the analysis was obtained from the medical records of patients and their children.

Results: Pathogens most frequently isolated from amniotic fluid were: *Escherichia coli* (40%), *Enterococcus faecalis* (26%) and *Streptococcus agalactiae* (16%). It has been stated that higher incidence of *Enterococcus faecalis* or *Prevotella bivia* (PB) presence in amniotic fluid was associated with previous obstetrics and gynecology surgical procedure ($p < 0.0001$ and $p < 0.03$). Whereas, presence of PB in the infected amniotic fluid in comparison to other pathogens detected was associated with higher presence of pathogen in newborn (at least 40%, 95% CI: 40%-100%, $p < 0.03$). The presence of *Candida Albicans* in infected amniotic fluid involved the smallest risk of complications in newborn in comparison to bacteria. The results presented in the abstract are preliminary. We will present a distribution of other types of pathogens and their relationship with maternal and newborn perinatal outcome.

Conclusions: Types of pathogens present in the infected amniotic fluid were detected. Predominant pathogens were *Escherichia coli* and *Enterococcus faecalis* (EF). Among patients who underwent CS, obstetrics and gynecological history determined the EF and PB presence in the infected amniotic fluid. Moreover, *Prevotella bivia* in the infected amniotic fluid had negative impact on the newborn.

[101]

Application of succinate containing antioxidants in patients with severe abdominal sepsis

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Introduction: The mortality rates in patients with sepsis remains at the level of the 20th century. Extracorporeal haemocorrection (EH) in the intensive care of sepsis has not led to a significant improvement in outcomes. Thus, we need to search for new options in intensive therapy of sepsis. One of the ways to solve the problem is to correct free-radical oxidation (FRO) and increase the activity of the antioxidant support network (ASN).

Aim of the study: The aim of the study was to investigate the processes in free-radical oxidation and the antioxidant support network in patients with severe sepsis.

Material and methods: The study involved 37 patients aged 45 - 78. The patients were divided into 2 groups. The control group ($n = 15$) was given a routine intensive care and EH. The study group ($n = 22$) had also metabolic therapy with succinate containing antioxidants. The study had four phases: before the EH, 1 day, 3 days and 5 days after the 1st session of EH. To measure the free-radical oxidation we evaluated the concentration of malondialdehyde (MDA) in blood serum using enzyme multiplied immunoassay, general light sum (Sgen) and the

maximum intensity of the flash (Fmax). Induced chemiluminescence was used to characterize the activity of the antioxidant support network.

Results: There were no significant differences between the study and control groups at the 2nd stage (MDA $2,7 \pm 0,3$ to $2,5 \pm 0,6$, Fmax $4181,5 \pm 58,7$ to $4180,5 \pm 57,3$, Sgen $30163 \pm 81,6$ to $28720 \pm 62,7$). The results were different from the initial in the main group at the 3rd stage (MDA $2,1 \pm 0,7$ to $3,1 \pm 0,3$, Fmax $4880 \pm 127,3$ to $3393,5 \pm 26,1$, Soбщ $25107 \pm 49,9$ to $40960 \pm 73,2$). On the 4th stage the parameters in the study group were different from the control group (MDA $1,62 \pm 0,3$ to $2,4 \pm 0,3$, Fmax $4393,5 \pm 145,4$ to $2393,5 \pm 104,0$, Sgen $21362 \pm 96,5$ to $25364 \pm 72,0$). The analysis of the ASN changes showed negative dynamic in the control group at the 2nd and 3rd stages and an improvement on the 4th stage (tgα $63,6 \pm 1,8$; $57,7 \pm 2,1$ and $82,2 \pm 2,3$ on the 2nd, 3rd and 4th stages). The parameter improved on the 2nd and 3rd stages in study group. On the 4th stage the indicator was higher than initial ($64,4 \pm 1,3$; $75,0 \pm 2,3$ and $98,0 \pm 1,8$ on the 2nd, 3rd and 4th stages).

Conclusions: Traditional therapy for severe sepsis and extracorporeal haemocorrection with metabolic protection therapy with succinate containing antioxidants results in more efficient correction of oxyradical stress and early recovery of the antioxidant support network.

[102]

MICROBIOLOGICAL FEATURES OF PNEUMONIA CAUSED by INFLUENZA VIRUS A(H1N1) pdm09

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Introduction: Nowadays Influenza A (H1N1) virus has the highest epidemiological value. The first influenza pandemic of the 21st century started in 2009 caused by new virus subtype A/H1N1/pdm09. Another pick in incidence was recorded in winter 2016. A feature of these epidemics was a large number of complications such as viral and bacterial pneumonia which determined the severity of the disease and the lethal outcome of the infection.

Aim of the study: The aim of the study was to ascertain etiology of the suspected pneumonia in patients died of the flu caused by virus H1N1/pdm09 in the city of Smolensk in 2009 and 2016.

Material and methods: Autopsy material was investigated with direct microscopic and bacteriological methods. The inoculation of the material was performed on Brain Heart Infusion agar, Egg-yolk Salt Agar, Selective Enterococcus Agar, MacConkey agar, Sabouraud agar. Identification of selected pure cultures and determination of antibiotic sensitivity was performed with standard test kits.

Results: 23 samples of pulmonary tissue were examined: 12 samples in 2009, 11 samples in 2016. Clinical diagnosis of "flu" was confirmed antemortem or postmortem in all cases. In 2009 83% cases (10 samples) were isolated Staphylococcus aureus. In 17% cases (2 samples) the bacterial or fungal microflora were not revealed. In 2016 it was selected strains of non-fermenting bacteria - Acinetobacter baumannii (55% - 6 cases) and the association of non-fermenting and fermenting microorganisms: Acinetobacter baumannii and Klebsiella pneumoniae (18% - 2 cases). All isolated strains had developed antibiotic resistance. In 18% cases it was ascertained strains of Staphylococcus aureus (2 case). In 9% cases etiologically significant microorganisms was not detected (1 case). Thus, the occurrence of severe pneumonia with a fatal outcome in influenza in 2009 and 2016 was due to the accession of bacterial flora most often and only in some cases the cause was the virus itself. In 2009 the emergence of bacterial pneumonia as a flu complication was due solely to Staphylococcus aureus whereas in 2016 Acinetobacter and Klebsiella was dominated. Antibiotic resistance indicates their nosocomial origin.

Conclusions: Etiological structure of fatal pneumonia case during a flu epidemic in Smolensk in 2009 and 2016 was variable, each with its specific features. In 2009 the pneumonia was caused by Staphylococcus aureus. In 2016 it was nosocomial pneumonia that was resulted in patients' stay in the Intensive Care Units.

[103]

Unwanted souvenirs from international travel - characteristics of travel-associated diseases in children

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Introduction: The number of the Polish citizens participating in international travel is constantly increasing. In 2015, Polish residents have joined in over 10.9 mln international travels. The majority of them was performed in touristic purpose and more than 60% were self-organized. A growing number of travelling parents takes their children with them. However, international travel may pose a risk to the travelers, in particular, the risk of acquiring an infectious disease.

Aim of the study: The aim of this study was to analyze the most common symptoms and factors associated with travel-related diseases in children consulted in Department of Children's Infectious Diseases, Medical University of Warsaw after international travel.

Material and methods: We analyzed medical documentation of patients consulted in our department between January 2014 and December 2016, including patients, who presented with any symptom after international travel. We collected information about sex, age, country of travel, major complaints, and final diagnosis.

Results: 127 patients (63 males and 64 females) aged 6.9 ± 4.9 years were included. 32 (25.2%) of them required hospitalization (mean duration of hospitalization was 4 days). Main regions of travel were South-Eastern Asia (29.9%), Southern Europe (14.2%), and Eastern Africa (10.2%). The most frequently presented symptoms were: fever (58.3% of patients), skin disorders (31.5%), and gastrointestinal disorders (28.3%). 9.4% of patients were consulted due to the exposure to an animal bite and the need for rabies prophylaxis. Among other patients, the most frequent diagnoses were: chronic or acute diarrhea (15.1%), acute respiratory infection (12.2%), skin disease caused by Enteroviruses (8.6%) and unspecified febrile illness (7.2%).

Conclusions: In the majority of consulted cases, the diagnosis did not reveal any tropical disease, even though the symptoms might have been suggestive for it. Stress associated with visiting foreign place and poor sanitary conditions may lead to a higher susceptibility to common childhood diseases during and after travel. It may suggest that pretravel consultation with physician should be an essential part of preparation for the travel, which may contribute to take proper precautions for travel-related diseases.

Internal Case Report

Jury:

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Date:

Sunday, May 14th, 2017

Location:

Room 231/233, Didactics Center

Case Report:

Monika Król
Paweł Bryniarski
Marek Stopa
Julija Mironova
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Malgorzata Ponikowska
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[104]

A case of subcutaneous sparganosis in a patient from Poland

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Background: Human sparganosis is a zoonosis caused by plerocercoid larvae (sparganum) of the genus *Spirometra*. Although *Spirometra* spp. have a worldwide distribution, most of the cases of human sparganosis are reported in Southeast Asia. In the literature, only ten human sparganosis cases have been reported in Europe. Clinical picture of the disease varies depending on the site of involvement. Sparganum may invade subcutaneous tissue, eyes, visceral organs and central nervous system. Oral praziquantel is effective in some cases of sparganosis, however surgical removal of the parasite is considered the treatment of choice in operable patients. Herein, we present the first case of human sparganosis in Poland.

Case: A 60-year-old patient was admitted to the Department of Infectious Diseases and Neuroinfections because of suspicion of sparganosis. She had already undergone a surgical removal of subcutaneous nodules in the abdominal area 5 months prior to the hospitalization and histopathological analysis revealed *Spirometra* sp. On admission, examination of the left arm showed nodular lesion (2,5 cm in diameter) on erythematous basis and edema from shoulder to wrist. Ultrasound image of the palpable nodule of left arm revealed a focus of heterogeneous reflections, hyperechogenic, with linear hypoechogenic areas in the central part (12x3mm). Patient was treated with albendazole and clinical improvement was achieved. She was discharged home with a recommendation of a follow-up visit. After one and a half month of treatment she was admitted again because of edema, pruritus and inflammation of the left arm. Symptoms have exacerbated over the last several weeks. Praziquantel was ordered and surgical removal of the nodule was scheduled. The patient underwent the surgical excision of the lesion in local anesthesia. The material was sent for parasitological examination. No complications were observed during perioperative period.

Conclusions: Human sparganosis is rarely diagnosed in Europe. Lately, *Spirometra* sp. plerocercoids were found in wild animals in north-eastern Poland. It has also been discovered that consumption of wild boar meat can lead to human sparganosis. Awareness about the risk and consequences of this zoonosis should be raised. Patients once diagnosed with sparganosis require follow-ups due to the risk of disease recurrence.

[105]

57 year old breast cancer patient with bone and liver metastases suffered from hyperalgesia induced by opioids

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Background: Hyperalgesia is a paradoxical state of increased pain sensitivity to painful stimuli, which arises as a result the acute and long-term exposure to opioids and is manifested outside the initial painful area. The frequency of OIH (Opioids Induced Hyperalgesia) in patients receiving opioids is 28% (by Akerman studies).

Case: 57 year old patient with breast cancer with multiple metastases to the bones and the liver was admitted to the Palliative Care Department, because of severe pain despite of complex analgesic therapy. The patient who was diagnosed 2 years ago, had got mastectomy and chemio-radiotherapy and was treated with Fentanyl TTS. Detailed physical examination, medical history including history taken from family and care givers was taken upon admission –showed anemia, hypoalbuminemia, elevated LDH, lymphocytosis. Patient had got burning pain with accompanying allodynia induced by mechanical stimuli, stabbing pain, rushing from the interscapular, which aggravated in the supine position NRS 9/10 and dull pain at the hip left lying on its side, radiating along the left thigh. Doctor decided to change fentanyl to morphine, but the pain was severe despite of escalating doses of morphine. Because of that doctor made decision to change morphine to methadone. Due to usage of methadone significant improvement of pain control was observed within two hours after starting the treatment. On the 4th day the patient reported symptoms of palpitations, dizziness; without electrolyte disturbances. In ECG QT

interval were prolonged. Doctor decided to decrease dose of methadone to 60% of the primary dose and administered half patch of buprenorphine TD in dose 35 ug/h. After four days normalization of ECG was observed.

Conclusions: Sometimes when we try to treat a patient with opioids we cannot relieve the pain, but even increase of the severity and change pain character is observed. In such case a decision of decrease of dose of opioid should be taken (to half of the dose), with a change the type of opioid (for buprenorphine or methadone, usage of NMDA antagonists, administration of naloxone in infusion (really low dose) and multimodal pain therapy (use opioids with non-opioid drugs and coanalgetics).

[106]

The complications in last weeks of pregnancy - effects of rare congenital heart defects on cardiac function

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Background: Congenitally corrected transposition of the great arteries (ccTGA) is a very rare congenital heart defect characterized by atrioventricular (AV) and ventriculoarterial (VA) discordance and, hence, by a physiologically normal direction of blood flow.

In some cases the defect is asymptomatic and it is diagnosed incidentally. The defect may be associated with severe rhythm disturbances. The prognosis is usually good and it often does not require surgical procedures.

Case: A 34-years-old woman with situs inversus, ccTGA and congenital complete AV block was admitted to Cardiological Ward with congestive heart failure after caesarean section. Prior to pregnancy she was not treated pharmacologically (systemic ventricle ejection fraction 50%)

and she did not present any symptoms. 7 days before the admission (39th week of the pregnancy) the patient was consulted by cardiologist. The patient complained of dyspnea increasing from 7th month of the pregnancy, limitation of activity (NYHA III). On examination the patient presented with orthopnea, pitting oedema of both lower limbs, cyanotic lips. In ECG ventricular escape rhythm - 50 beats per minute. In echocardiography systemic ventricle ejection fraction was 40%. After consultation with cardiologist the intensive treatment was introduced and pregnancy was delivered by cesarean section. After the procedure patient required non-invasive ventilation. Due to deterioration of general condition, despite of intensification of the treatment, the decision to implant pacemaker was made and patient was transferred to Cardiology Ward. Dual-chamber, rate-modulated (DDDR) pacemaker was implanted and general condition of the patient immediately improved. After 6 days of hospitalization she was discharged home in a stable condition.

Conclusions: In spite of the fact that patients with ccTGA may be asymptomatic for years, the pregnancy may lead to heart failure. Cause may be various - volume overload, lack of adaptation to the hemodynamic changes in pregnancy or chronotropic incompetence as a result of a complete AV block.

[107]

DETECTION OF HUMAN PAPILLOMAVIRUS IN LUNG METASTASIS CASE

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Background: Human papillomavirus (hereinafter "HPV") is one of the most common infectious factors causing cancer in various parts of human body. Most commonly it causes cervical cancer and other mucous tissue tumors. Until recently, it was widely believed that virus infection is only local, i.e. it does not spread with blood, lymph or any other way. Over the last few years the new data has been registered on possible hematogenous or lymphatic transmission. HPV was found in distant organs, such as lungs, breast, prostate and others.

Case: In 2014, a 49-year-old woman underwent a lung tumor surgery. As a part of Cancer Genome Atlas project, the sample was examined in the Biobank of NCI to identify the HPV infection. The virus was identified with Real-Time PCR method, using Ampli Sens RT-PCR HPV kit, determining phylogenetic groups A5/A6, A7, A9. The test found A9 phylogenetic group HPV. Viral load of 5,2 lg copies/cell, which indicates clinically significant infection level. A9 phylogenetic group includes carcinogenic HPV types 16 and 18, although exact type in this case has not been specified. The histological examination showed that it was not lung cancer but metastasis.

In 2005, the patient was diagnosed with cervix adenocarcinoma T1b N0 M1 G1. There was performed conization of cervix, following with Wertheim's hysterectomy. Final diagnosis – Ca cervitis uteri IVB. Chemo- and radiotherapy was administered after the operation. In 2013, the patient had acute bronchitis, which is why she visited the NCI. The CT scan showed a peripheral tumor in the lower lobe of the left lung. The tumor had been resected (lobectomy inferioris sinistra), there were no complications after the operation. As of February 2017, there is no data about death of this patient.

Conclusions: This case analysis highlights the importance of differentiating primary tumor from metastasis, because HPV in this case infected lungs with metastatic cells. This data could also give us an idea about the new pathways of HPV associated cancerogenesis when virus infected squamous epithelium cells spread with blood or lymph and initiate the metastatic process in distant organs.

[108]

APPLICATION OF COMBINED FERTILITY PRESERVATION FOR YOUNG CANCER PATIENTS

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Background: In the past decades young individuals are increasingly diagnosed with oncological diseases. Patients are treated using aggressive chemotherapy, radiotherapy and/or get surgical treatment. Survival rate is improving dramatically after application of the modern and progressive cancer treatment. However, patients suffer from sub fertility or infertility problems after aggressive cancer treatment. Given these reasons it is very important to offer and apply various programs or methods to preserve young cancer patients' fertility.

Case: A 20 years old woman was admitted to the Vilnius University Hospital Santariskiu Klinikos (VUHSK) due to rib bone fracture in November of 2016. The malignant process was suspected and histological analysis was performed in National Center of Pathology of VUHSK. After histological analysis the patient was diagnosed with Ewing sarcoma of the rib, pT3N0Mx, stage IIB. After consultation with hematologist an aggressive chemotherapy was prescribed. After consulting reproductive specialist the new fertility preservation scheme was designed: cryopreservation of the ovarian tissue followed by the ovarian stimulation, aspiration and freezing of oocytes and additional ovarian suppression treatment. On the 16th of December, laparoscopic resection of right ovary was performed for cryoconservation. Afterwards the patient was started on drugs for stimulation of follicular maturation. On the 26th of December 30 eggs were aspirated, 22 mature eggs were frozen. On the same day, the patient was prescribed with Ganirelix for the ovarian suppression therapy. Next the anticancer therapy based on EE2008 protocol was initiated starting with the VIDE scheme of induction chemotherapy. On the 27th of January 2017, the young woman had undergone two chemotherapy cycles so far, her condition was good, patient underwent for the remaining cycles of the chemotherapy.

Conclusions: The "triple insurance" method of combined fertility preservation was applied for the first time in Lithuania. It is essential to consult the patient about new fertility preservation technologies and apply the best method in a timely manner. In our case the patient was consulted before the cancer treatment, in the University Hospital where the fertility preservation program is introduced and the best method for unmarried women was applied - cryopreservation of ovarian tissue and oocytes, and application of additional suppression of ovaries.

[109]

ANDROGEN INSENSITIVITY SYNDROME

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Background: Complete androgen insensitivity syndrome is a rare clinical condition that is characterized by a female phenotype and a karyotype 46,XY due to mutations in the X-linked androgen receptor coding gene (AR) Xq11-Xq13, where different types of mutations can occur. These changes lead to complete resistance to the biological actions of androgens and fetal sex differentiation that results in a female phenotype, but in adolescence is characterized by excess aromatisation of androgens and consequently the development of secondary female characteristics. Patient care should be individualized, but it is recommended to perform gonadectomy due to the risk of malignancy, which is described as up to 30% in late adulthood for patients without gonadectomy.

Case: A 48-year-old patient was admitted to hospital in August 2016 with suspected germinoma due to complete androgen insensitivity syndrome. In further investigations MRI revealed oval structures without follicular activity, while pelvic ultrasound showed bilateral masses present in the inguinal canals with resemblance of testes. Laboratory analyses revealed excessive luteinizing hormone, follicle-stimulating hormone, testosterone and androstenedione concentrations. General examination: female phenotype, Prader stage 0, Tanner grade IV (breast development). During palpation elastic oval mass was noted in the right inguinal canal. The medical history revealed that patient had primary amenorrhea and a karyotyping report showed a male karyotype, 46,XY. Additionally androgen receptor coding gene exon sequencing was performed. Patient underwent bilateral orchidectomy in September 2016. Histopathologic examination of the specimen revealed atrophic changes, fibrosis, hyalinosis, hemorrhages and necrobiosis, but without spermatogenesis and malignancy. Post-operative laboratory results remained elevated raising suspicion of possibly retained testes structures, which was confirmed by further investigation and led to another gonadal extirpation.

Conclusions: This case report not only represents the typical characteristics of the syndrome, such as karyotype, phenotype, hormonal changes and findings in radiological examination, but also reveals notable distinctions in form of long term complications of retaining testes structures and polyorchidism, thus proving the importance of individualized and multidisciplinary patient management.

[110]

Heck's disease and epidermodysplasia verruciformis – two rare diseases of HPV transforming potential

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Background: Heck's disease, known as focal epithelial hyperplasia, is a benign condition associated with acquired HPV type 13 and 32 infection, causing multiple painless nodules of oral mucosa. Epidermodysplasia verruciformis is a genetic disease characteristic of its susceptibility to HPV infections, mainly with 5 and 8 subtype of the virus, which predispose to development of squamous cell carcinoma on sun-exposed skin areas.

Case: Our first case refers to 24-year old patient consulted at Department of Dermatology with the presence of asymptomatic soft and sessile coalescent nodules on both sides of his tongue. Previously diagnosed as lichen planus, the patient was treated with topical tacrolimus, vitamin A derivatives as well antifungal drugs without significant improvement. After unsatisfactory treatment and mucous changes not corresponding to oral lichen planus, two biopsies with histopathological examination were performed revealing the presence of epithelial hyperplasia with acanthosis and parakeratosis as well as keratinocytes with nuclear fragmentation (called mitosoid cells) and elongated rete ridges. All the findings lead to Heck's disease diagnosis. The second case is 33-year old patient with the history of numerous skin cancers, including basal cell, squamous cell carcinomas and Bowen's disease, presenting with multiple wart-like lesions on the dorsal areas of hands and forearms as well as slightly scaling erythematous plaques on his chest, back and calves. Patient was diagnosed with Darier's disease in his childhood, but the clinical presence of multiple skin cancers and characteristic skin lesions suggested epidermodysplasia verruciformis. The histopathological examination confirmed the presence of large

pleomorphic and vacuolated keratinocytes with pigmented cytoplasm seen in granular layer as well as hyperkeratosis and acanthosis, all characteristic for HPV infection. The patient was implemented with oral acitretin, topical moisturizing agents and instructed about strict photoprotection.

Conclusions: Two different rare diseases of HPV related keratinocyte transformation, in which one is benign as in Heck's case whilst another is malignant leading to early carcinogenesis, are presented. We would like to point out the most characteristic features of HPV infection in keratinocytes since the proper diagnosis is crucial for treatment regimen and prognosis.

[111]

Unusually mild course of Mantle Cell Lymphoma in patient with HCV infection

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Background: Previous clinical epidemiological studies have demonstrated an increased risk of B-cell lymphoproliferative disorders in patients with chronic HCV infection, however there is no literature illustrating the relationship between HCV infection occurring after the diagnosis of the lymphoma and course of the disease. HCV infection of B cells is the likely cause of B-cell dysregulation disorders, so interesting issue is its' interaction with transformed cells. This case study reports the unusually mild course of Mantle Cell Lymphoma associated with HCV (genotype 1b) infection which occurred after the diagnosis.

Case: The 62 year-old male with blastoid variant of MCL with bone marrow and peripheral blood involvement diagnosed in 2012, infected with HCV during diagnostics in 2013, received two full cycles and one part of R-hyper-CVAD chemotherapy, which had to be stopped due to therapy-induced liver damage and poor general state. The patient was then sent home, however he decided to travel to Dominican despite medical advice to rest and avoid possible infections, where his state got significantly worse- liver failure caused jaundice and massive lower extremity swelling. He was transported back to Poland and hospitalized in gastroenterology ward, where his state slightly improved and he was sent home again. After some time his liver function surprisingly turned back to normal and the patient's state improved to the point where his life activity was comparable to normal, then he decided to visit hematologist. The trepanobiopsy was performed (in May 2015) and it showed no bone marrow involvement, what was very unusual considering the unfinished chemotherapy. Unfortunately the patient refused performing PET-scans, which could have been helpful in assessing if the lymphoma is still present. Currently he is living a normal life, his blood parameters are mostly in a normal range and he finished HCV Ombitasvir-Paritaprevir-Ritonavir and Dasabuvir therapy with positive outcome. Patients with MCL present globally a median OS of 36 months that drops to 18 months for the blastoid variant, and the patient presented in this case is living 52 months with almost no treatment.

Conclusions: The HCV infection may play a role in the course of MCL in presented case, as none other factor which might have an impact on the disease has been found.

[112]

Infection occurring in foot with neuropathic arthropathy

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Background: Neuropathic arthropathy (Charcot joint) is a rare form of diabetic foot syndrome. The clinical presentation includes swelling, increased warmth, pain, bone resorption and deformities of joints. Charcot joint is often misdiagnosed with inflammation of soft tissues, which leads to unnecessary incisions and long-term healing of iatrogenic ulcerations.

Case: 57-year-old-man presented to hospital with a pain of his right foot and walking difficulties. The foot was red and swollen. These symptoms were present for a week and 9 days before the patient got injured by his shoe. He also had high fever for the whole week. The initial diagnosis was phlegmon of right foot.

The patient suffered from type 2 diabetes, chronic kidney disease and hypertension. PE showed redness, swelling and increased warmth of the right lower leg and diabetic foot syndrome of the left foot. Ultrasound excluded DVT and revealed capsule of fluid, located in dorsal part of the right foot. Radiography showed expanded space between I and II metatarsal bones, subluxation of talonavicular joint and dorsal destruction of navicular bone. Blood tests showed high level of inflammatory markers: CRP 266,1 mg/l and WBC 15,77 103/ μ l.

During hospitalization the patient was treated with insulin and antibiotic. The right leg was elevated. The fluid from capsule was drained and sanguinary liquid was sent to laboratory. Blood tests, performed on 6th day of hospitalization, showed decrease of CRP and WBC levels. The patient was transferred to diabetes ward.

The patient's condition remained stable, but it was noted that right foot still exhibits features of phlegmon. Due to it the surgeon incised the capsule one more time. Necrotic tissues (including sequestra) were removed. After the lab tests had shown that foot tissues were infected with *Staphylococcus aureus*, patient was treated with targeted antibiotic. When decrease of inflammation parameters was obtained, the patient was discharged from hospital with recommendation to report after week.

Conclusions: In case of patients with diabetes it is important to avoid treatments, which lead to formation of hard-to-heal wounds. It is even more difficult to decide to perform an operation, knowing that Charcot joint could give similar symptoms as infection. However, it should not be overlooked that Charcot foot could be infected as in the case above. If patient's foot exhibits distinct signs of infection, operation is the right and necessary choice.

[113]

CHRONIC MUCOCUTANEOUS CANDIDIASIS – case report

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Background: Chronic mucocutaneous candidiasis (CMC) is a primary immunodeficiency disorder with Th17 cell defects and refers to persistent candida infections of the skin, nails, scalp and mucous membranes. The disease can be associated with endocrinopathies such as hypothyroidism, diabetes mellitus or Addison disease. Symptoms usually begin during infancy as refractory thrush, candidal diaper dermatitis, or both. Older patients present with persisted thrush, alopecia and cracked, thickened, discolored nails with erythema and edema of the surrounding periungual tissue.

Case: We present a 32-yo female with a long history of whitish flat plaques on her tongue, extensive, erythematous, crusted skin lesions of the distal parts of her upper and lower limbs including nails and alopecia. She was diagnosed with acrodermatitis enteropathica at her first year of life, but her symptoms did not improve after Zinc supplementation.

Other important findings from her medical history included diabetes mellitus type 1 diagnosed at age of 27, selective immunoglobulin G2, G4 deficiency diagnosed at her age of 21, diffuse micronodular changes in her lungs detected four years ago and degeneration of her thoracic spine. Since early childhood she was treated with antifungal drugs: ketoconazole, itraconazole since micological and histopathological examinations revealed chronic fungal infection. The patient was hospitalized several times (years 2009 – 2014) to receive i.v. immunoglobulins. She had been treated since 2008 with acitretin alternating with isotretinoin up to max. dose of 40mg daily with little improvement.

She was admitted twice to the Department of Dermatology in 2014 due to aggravation of her skin lesions and symptoms. *Candida albicans* was detected from her mucous lesions and confirmed by PAS stain on her skin biopsies.

Consulting immunologist rose up the suspicion of chronic mucocutaneous candidiasis and implemented her amphotericin B since fungal cultures showed significant resistance to many systemic antifungal drugs. Improvement was achieved for a short time and her chronic infection reappeared again.

Conclusions: CMC is an extremely rare disease with genetic background including mutations of STAT genes (1 or 3), IL-17, IL-17RA, decreased number of Th17 cells or IL-17 activity. CMC should be suspected in such resistant cases and require immune analysis.

[114]

Multiorgan IgG4- related disease in a young man with orbitopathy - pitfall in diagnosis and treatment of newly recognized entity

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Background: IgG4 related disease (IgG4RD) is a heterogenous fibroinflammatory disorder of an unknown etiology quite recently recognised as a separate entity. This systemic condition has a tendency to form tumefactive lesions at multiple sites with characteristic histopathological appearance: dense lymphoplasmatic infiltrates, rich in IgG4-positive plasma cells and sclerosing fibrosis, accompanied by elevated serum IgG4 concentrations. The head and neck region is perhaps the most commonly affected region of the body, wherein the orbit involvement accounts for more than half of the cases. Together with Graves' or, in minority, Hashimoto thyroiditis that can cause thyroid- associated orbitopathy (TAO) giving similar clinical symptoms, it may become challenging to diagnose.

Case: A 32-year-old man with 3 years' history of Hashimoto disease (treated effectively with levothyroxine), hypertension and myocardial infarction with ST elevation event at age 30, was admitted to the Clinic due to increasing symptoms of orbitopathy (eyelid swelling, proptosis). Additionally, long- standing lymphadenopathy of head and neck regions was observed. Laboratory tests revealed an increased level of anti-TPO antibodies (177IU/mL) and active, severe TAO was recognised. As a result, the patient was qualified for the therapy with intravenous methylprednisolone followed by 3 months of oral prednisone administration. Due to the recurrence of symptoms, the patient had to repeat the therapy with methylprednisolone and, subsequently, underwent orbital decompression. Progression of the orbitopathy was soon observed, with persistent lymphadenopathy, hepatosplenomegaly and noticeable skin lesions appearing. Histopathological evaluation of the lymph nodes, skin specimen and orbital adipose tissue along with an increased level of serum IgG4 revealed multi- organ IgG4RD. Successful treatment with a second-line therapy using rituximab (a monoclonal antibody against the CD20 protein) in 2 courses was performed. After 6 months of follow-up remission was sustained.

Conclusions: IgG4RD has the potential to affect essentially any tissue, thus may mimic or coexist with many more recognisable entities of internal medicine. It may involve several organs simultaneously as well as remain limited to one, e.g. rare IgG4 related thyroid disease resembling Hashimoto's disease, hindering the adequate medical management. In case of glucocorticosteroids' (first- line treatment) lack of efficiency, rituximab is recommended.

[115]

Case report of Fabry disease - discovered just 3 years after second kidney transplantation

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Background: Fabry disease (FD) is inherited in X-linked manner and results in a deficient activity of the enzyme alpha-galactosidase A (α -Gal A) and progressive lysosomal deposition of globotriaosylceramide (GL-3) in cells throughout the body. The diseases' prevalence in patients with renal replacement therapy in Europe is 1:5309 (Peter Kotanko et al). The main symptoms are appearance of angiokeratomas, acroparesthesia, hypohidrosis, corneal opacities, proteinuria. Disease usually results in renal insufficiency, cardiac and cerebrovascular involvement. The screening for FD in suspected patients' groups was began at Latvia in 2016.

Case: The patient is a now 65-year-old male who was diagnosed with chronic glomerulonephritis in 1976, but kidney biopsy was not done at that time. He had mild to moderate proteinuria and microhematuria for years. He received a symptomatic treatment. The disease progressed to end stage renal disease in 2002. The patient started continuous ambulatory peritoneal dialysis and was included in kidney transplant waiting list in 2004. He received a kidney allotransplant from expanded criteria deceased donor in 2007. In 2011 serum creatinine increased up to 200 μ mol/l (2.26 mg/dl) and proteinuria 1.76 g/24 h was detected. Acute graft rejection reaction (grade I-A) and chronic graft nephropathy (grade III) were diagnosed by biopsy. In 2013 chronic kidney disease (CKD) in the graft progressed to stage IV-V and patient was included in waiting list for repeated kidney transplantation. In October 2013 patient received second kidney allotransplant from standard criteria donor and has a good transplant function up to now (serum creatinine 120 μ mol/l (1.36 mg/dl)) with no proteinuria. In June

2016 α -Gal A activity in plasma was measured and its level was decreased - 2.0 $\mu\text{mol/l/h}$ (reference: $>2.6 \mu\text{mol/l/h}$) The concentration of the biomarker lyso-Gb3 was normal. A diagnosis of FD was confirmed by detection of hemizygous mutation in exon 3 of the GLA gene, c.376A>G (pSer126Gly). The detected mutation is classified in class 1 (pathogenic).

Conclusions: Fabry disease is under-diagnosed and screening of high-risk groups is important for case finding. This case report highlights the importance of screening patients with unexplained chronic kidney disease. According to the results of a study by Schwarting et al. enzyme replacement therapy with α -Gal A may be used to prevent the deterioration of renal function and need for kidney transplant in patients with Fabry disease.

[116]

Pregnancy related atypical hemolytic uremic syndrome at Vilnius University Hospital „Santariskiu klinikos“: a prompt diagnosis leads to an effective treatment

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Background: Pregnancy related atypical hemolytic uremic syndrome (pr-aHUS) is rare a thrombotic microangiopathy, fatal in 50-60% of cases. Its typical clinical presentation is a triad of microangiopathic hemolytic anemia, thrombocytopenia and acute progressive renal failure. Plasmapheresis therapy is recommended as a specific treatment.

Case: 44-year old 34th week pregnant woman was admitted to the Vilnius University Hospital „Santariskiu klinikos“ (VUHKS) with the signs of preeclampsia.

In 2005, the carcinoma of the left breast carcinoma pT1N2M0 was diagnosed and treated. On the 12th week of pregnancy, the cancer relapse was determined and a radical mastectomy was performed. The postoperative period was uneventful.

When preeclampsia was diagnosed, antihypertensive treatment was prescribed. As the pathology progressed, pregnancy was terminated by performing a lower segment caesarean section.

During the postoperative period, the classical triad of aHUS was observed. The most deviant laboratory values were: hemoglobin 61 g/l, lactate dehydrogenase 525 U/l, platelets $52 \times 10^9/\text{l}$, urea 22,1 mmol/l, creatinine 437 mmol/l.

The differential diagnostics between HELLP, myelodysplastic, atypical hemolytic uremic, disseminated intravascular coagulation syndromes and thrombotic thrombocytopenic purpura was carried out. ADAMTS13 activity of 36,4% was a beneficial criteria to distinguish between aHUS and other microangiopathies.

As the diagnosis of pr-aHUS was settled, plasmapheresis procedures were initiated. In total, 146 units of fresh frozen plasma were used for 14 procedures. For the symptomatic treatment 13 units of red blood cells and 4 units of platelets were used and 6 procedures of hemodialysis were performed. Due to preeclampsia, antihypertensive treatment as well as anticonvulsant medications and thromboprophylaxis were applied during the hospitalisation.

The complex treatment significantly improved the general condition of the patient, the laboratory signs of hemolysis disappeared and kidney function was restored. The patient was discharged 24 days postpartum.

Conclusions: Pr-aHUS requires prompt diagnostics and treatment by a multiprofessional team as well as the large expenses of a healthcare institution. A precise differential diagnostics of thrombotic microangiopathies ensures patients the access to the most clinically effective treatment. Timely and complex treatment, including plasmapheresis therapy, significantly improved the outcome of the patient.

[117]

Unfortunate coincidence in the course of the rare illness in a young man

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Background: Nodular regenerative hyperplasia (NRH) is a rare liver disease defined as benign and diffuse hepatic micronodular transformation, without significant fibrosis and septa formation within the liver. The pathogenesis of NRH is uncertain. However, it is common in patients with recurrent vascular and infectious complications as well as following drugs use. The thrombosis of liver vessels followed by a regenerative response to vascular injury may also be a causative factor, with NRH developing in patients with Budd- Chiari syndrome.

Case: A 38- old male patient with advanced NRH of the liver in the course of Budd- Chiari syndrome, extensive portal vein thrombosis, and huge splenomegaly, was admitted to the Department of Hepatology for splenic artery embolization. The indication for this procedure was hypersplenism, abdominal discomfort and a risk of spontaneous spleen rupture. His medical history included essential thrombocythemia diagnosed in 2005 with secondary bone marrow fibrosis. The coexistent portal and mesenteric veins thrombosis was considered a contraindication to liver transplant. The procedure a partial distal embolization of the splenic artery was performed and followed by typical sings of postembolization syndrome. Within the next days, the symptoms of heart failure and pulmonary congestion were observed and associated with dyspnea and particularly platypnea. Contrast echocardiography was done and sings of hepatopulmonary syndrome (HPS) were found. Following typical conservative management the condition of the patients improved and he was discharged home.

Conclusions: The development of HPS resulting from intrapulmonary arteriovenous dilatations in patient with Budd-Chiari syndrome and an advanced nodular regenerative hyperplasia is described. The complication developed following splenic artery embolization, which may be associated with significant risk and side effects that follow. In the presented case the attempts to relieve the symptoms by interventional radiology procedure, led to a significant, but temporary deterioration of the quality of life. This shows that the risk-to-benefit ration of any procedure in such difficult patients may be very hard to predict.

[118]

Peritoneal dialysis in an intellectually disabled patient with tetralogy of Fallot

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Background: Tetralogy of Fallot (TOF) is a congenital heart defect which nowadays can be cured with total surgical repair. Blalock-Taussig operation used in the past was a palliative procedure with a rare longterm complication – cardio-renal syndrome (CRS). We are presenting a unique case of a patient with TOF who developed CRS and was treated with peritoneal dialysis.

Case: A 41-years old female was admitted to the hospital because of an acute effort dyspnoea and massive peripheral oedema due to a sudden worsening of the CRS. Prior to the hospitalization, the patient had suffered from hypoplasia of the pulmonary vascular bed, hypertension and renal failure. The precondition for that was TOF treated with modified Blalock-Taussig shunts when the patient was 12 (right side) and 14 (left side). However, when the patient was 33, the right shunt became occluded and the left-side shunt became stenosed, so 5 years later it underwent angioplasty. The patient was slightly intellectually disabled and was always assisted by her mother. Physical examination revealed dyspnoea, cyanosis and atrophy of the upper body muscles. The patient suffered from mixed acidosis (pH=7,196, pCO₂=35,8mmHg, HCO₃=13,6 mmol/l, pO₂=41mmHg), elevated creatinine (3,5 mg/dl) and urea (256 mg/dl). Ultrasound revealed elevated echogenicity of the kidneys and X-ray showed cardiomegaly. In electrocardiography dextrogram was present, peaked P waves indicated right atrial enlargement and increased amplitude in V1-lead suggested right ventricular hypertrophy. Echocardiography confirmed severe hypertrophy of both right atrium and right ventricle. Improvement of renal function was achieved through conservative treatment. Peritoneal dialysis was chosen as a further renal replacement therapy taking into consideration both the medical conditions and the patient's place of residence. Since the introduction of peritoneal dialysis, controls have been carried out every 6 weeks with no need for hospitalizations caused by

complications. The patient's condition has been stable for 24 months now and as circulatory sufficiency improved, the life quality increased greatly too.

Conclusions: Peritoneal dialysis was a vast success in this case as it enabled the patient to live much more comfortably than before and with no unexpected hospitalizations. It was only possible thanks to the patient's mother who took care of her intellectually impaired daughter unable to deal with maintenance of peritoneal dialysis herself.

[119]

Burkitt lymphoma of the heart

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Trustee of the paper: Paweł Balsam

Background: Burkitt lymphoma is a non-Hodgkin's lymphoma in which cancer starts in B-cells. It is associated with impaired immunity and can result fatal if left untreated. It occurs most commonly in malaria endemic regions, EBV or HIV patients.

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Case: In July, 2014, a 45-yo patient submitted to the Cardiology Department in Clinical Hospital in Lublin with feverishness, cachexia and 2 months long increasing post-exercise dyspnoea, decreasing exercise capacity, tachycardia, and chest pain radiating to two upper limbs. ECHO revealed a infiltrating tumor mass in right atrium and atrium's walls stiffness. Thorax CT and angio CT of cardiac arteries confirmed presence of the infiltrated tumor in: the whole wall of right ventricle, ostium of the upper vena cava and right atrium lumen. Abdomen CT didn't show any pathologies. The patient was sent to Clinic of Heart Surgery MUW where due to CT, TEE and TTE results, a removal of pathologies in right atrium with partial reconstruction of its wall was done. A result of the histopathology examination was Burkitt lymphoma (c-myc+; CD20+; CD10+, Bcl2; Bcl16+; TdT-; MIB+ 100% cells). After the surgery, echocardiography did not show significant stenosis of tricuspid valve but a presence of tumor infiltration in tricuspid valve ring and wall of right ventricle. Two months after identification and two weeks after the operation a patient was sent to Hematology Clinic of MU Lublin. A patient was submitted in ECOG scale-4 state with infective endocarditis treated with teicoplanine. A life-saving chemotherapy- protocol GMALL was introduced. A cytostatic treatment was continued until February, 2015. A progressing improvement of the patient's health was observed and significant improvement (by 55-60%) of the LV EF in following echocardiography examinations (TTE and TEE). The PET/TC valuation after C1 cycle and after ending the protocol GMALL proved a complete metabolic remission. Now, 2,5 years after the ending the chemotherapy treatment (01.2017) the patient is in a very good state (ECOG 0/1) and professionally active. He is under the cardiology and hematology control.

Conclusions: The Burkitt lymphoma located in heart is a life threatening condition. The malignancy localization required surgery and chemotherapy which proved effective. If only chemotherapy was used it could end fatal. The cooperation of different health centers helped in complete remission of the disease and saving patient's life.

[120]

Transient visual disturbances as the only one symptom of cerebellopontine angle tumour reported by the patient

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Background: Vestibular Schwannoma, also known as acoustic neuroma, is a benign tumour of Schwann cells of the vestibulocochlear nerve and is the most common tumour appearing in cerebellopontine angle. It mostly occurs spontaneously to people at age of 30 to 60, but also can be related with neurofibromatosis 2. The first typical symptoms of the acoustic neuroma are: loss of hearing, tinnitus, dizziness and balance problems.

Case: A 51-year-old male patient presented to the ophthalmologist with transient blurred vision, lasting from 3 to 45 minutes. Ophthalmoscopy revealed equivocal image of the fundus of the left eye similar to branch retinal vein occlusion. Due to these findings he was referred to MRI examination, which pictured cerebellopontine angle tumour. Further diagnostics revealed elongated neuronal conduction in the left ear in BAER examination and broaden internal acoustic canal in CT, what manifested as tinnitus, although the patient did not report hearing impairment.

The patient was admitted to Department of Otolaryngology of Medical University of Warsaw in order to perform surgical removal by translabirynthine approach. The tumour was described as T3 and was deriving from two of vestibular nerves. After the operation the patient developed left facial nerve paralysis with lagophthalmos and triple otorrhoea, which were successfully treated. Since then, the patient has been under ophthalmological and laryngological care.

Conclusions: Transient and non-specific visual disorders may be the only noticed symptom of the cerebellopontine tumour in advanced stage by the patient. Carefully collected medical history and complete eye examination extended with additional tests, allowed doctors in a short time to diagnose acoustic neuroma and to start the treatment. The presented case draws attention to the symptomatology of the vestibular nerve tumours and may practically help in differentiation of ambiguous symptoms of optical disorders.

[121]

Low-grade intestinal neuroendocrine tumor imitating solitary plasmacytoma in a multiple myeloma patient – a case report

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Background: Gastroenteropancreatic neuroendocrine tumors (GEP-NETs) arise from neuroendocrine cells of embryonic gut. They constitute 2% of gastrointestinal neoplasia. GEP-NETs may be hormonally active, and most common (50% of GEP-NETs) are carcinoid tumors secreting serotonin. Carcinoids of small intestine may cause strong desmoplastic reaction resulting in intestinal obstruction. We report a case of diagnostic difficulties of GEP-NET, enhanced by its occurrence as second primary neoplasm in multiple myeloma (MM) patient.

Case: 55-year old female was admitted to our Department due to recurrence of partial intestinal obstruction symptoms in course of suspected MM progression. She was diagnosed with MM IgG, stage I ISS, with free lambda light chains and light chain amyloidosis in 2011, during sensomotor polyneuropathy diagnostics. For MM, the patient received 4 chemotherapy cycles (cyclophosphamide+dexamethasone) reaching stable disease, followed by two autologous hematopoietic stem cell transplantations (partial remission twice), and lenalidomide with dexamethasone, resulting in very good partial remission in 03.2014. The patient was hospitalized in 10.2015 due to small intestine obstruction. Ileocecal tumor was found, histopathological verification from right hemicolectomy revealed plasmacytoma infiltration. MM progression as solitary plasmacytoma removed completely required no further chemotherapy. Before admission to our Department in 07.2016, the patient observed face flushing, chronic diarrhea, progressive weight loss and was diagnosed for paroxysmal tachycardia. At admission, computed tomography of abdomen presented ascites, peritoneal and mesenteric lesions, intestinal infiltration, hypodense liver lesions. Histopathological results from liver biopsy revealed GEP-NET G1. Re-examination of hemicolectomy samples changed primary diagnosis – from plasmacytoma to GEP-NET G1.

Carcinoid syndrome was diagnosed based on symptoms and increased 24-hour HIAA urine levels. The patient required symptomatic treatment; surgical removal of the tumor was not possible. Currently she has complete remission of MM.

Conclusions: Multiple neoplasia, both solid and hematological, become an increasingly important problem in clinical practice. Lesions occurring during oncological observation may be independent primary neoplasms. Early and proper histopathological diagnosis is crucial. Histopathological verification must be conducted in clinical context to avoid diagnostic mistakes.

[122]

Multiple percutaneous coronary interventions in patient with end-stage renal disease

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Background: Chronic kidney disease (CKD) is a well-known risk factor for early development of coronary artery disease. Cardiac event may occur long before progression to end-stage renal disease (ESRD). Although coronary artery bypass grafting (CABG) offers adequate revascularization, patients with ESRD are usually disqualified due to high perioperative mortality risk. Percutaneous coronary intervention (PCI) is a feasible alternative but may not provide sufficient revascularization.

Case: 70-year-old male patient with ESRD on hemodialysis treatment was admitted to Department of Internal Medicine and Cardiology, Medical University of Warsaw with NSTEMI. Presenting complaints were chest pain and shortness of breath. Life parameters were stable: HR=72/min, BP=110/70mmHg. Auscultation revealed crepitations and rhonchi. ECG showed unspecific ST-T segment depression in V5-V6 and left-ventricular hypertrophy. Laboratory tests showed elevated troponin I level=0,038µg/l. Soon after, coronary catheterization was performed, showing severe calcifications in both arteries with no critical lesions. 5 days later, the patient reported exacerbation of his symptoms. Chest x-ray suggested pulmonary effusion and additional haemodialysis was scheduled. Echocardiography revealed LVEF=25% with global impairment of contractile function. After that, the patient was escorted for emergency PCI. Operators used left transfemoral access to reach heavily calcified left common iliac artery and aorta. The left main coronary artery (LMCA) was narrowed to 30% of original lumen. Then, sirolimus-eluting stent Ultimaster 3,0x18mm was implanted at 22atm in proximal 11th segment of the circumflex artery. The procedure ended with good result. In the past, the patient has been hospitalized multiple times. Together the patient underwent 6 procedures, including total implantation of 7 stents. Syntax Score>30.

Conclusions: In patients with ESRD, advanced percutaneous procedures give hemodynamic improvement but due to rapid progression of atherosclerosis they require numerous repeats. PCI was technically challenging in our patient because of severe iliac calcifications and advanced coronary atherosclerosis. Further assessment of risk and benefits must be conducted to proceed with the most suitable treatment.

[123]

Anti-NMDAR autoimmune encephalitis

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Background: Autoimmune encephalitis (AE) is a rare inflammatory condition causing loss of memory, impaired cognition and suppression of consciousness up to coma. It is a challenge for clinicians because of variability of symptoms and a broad differential diagnosis. Diagnosis is based on exclusion of other possible causes and autoantibody testing. Time to recovery may reach several months but remaining cognitive deficits are still possible.

Case: 25-years-old woman was transported to Riga East Clinical University hospital in comatous condition. A week ago she was admitted in Riga Psychiatry and Narcology centre due to polymorphic psychiatric symptoms. She was treated with neuroleptics but her level of consciousness progressively decreased. On primary

neurological assessment patient did not react to verbal or pain stimuli, Glasgow coma scale (GCS) = 4. Lumbar puncture (LP) was done, cerebrospinal fluid (CSF) analysis revealed lymphocytic pleocytosis and increased glucose level. Empiric therapy with Ceftriaxone and Acyclovir was started. Head MRI showed no pathologic findings. With therapy there was no improvement, patient developed generalised tonic seizures. Diazepam and sodium valproate was added. Despite treatment her condition worsened, facial myoclonus and dyskinezias occurred. After 2 weeks there was no significant improvement in patient's condition, GCS =5/6. CSF was negative for bacterial, fungal and viral infections. Considering clinical manifestations, MRI results and no positive effect of therapy, AE was suspected and plasmapheresis was started with no improvement. Acyclovir and Ceftriaxone were cancelled and pulse therapy with Cyclofosfamide and Methylprednisolone was started. CSF was tested for autoantibodies and was positive for anti-NMDA IgG. After therapy her condition remained severe but she regained consciousness and started obeying commands, however remained mute. On continuous immunosuppressive therapy her condition gradually improves and 4 months after the initial onset of symptoms the patient is stable – she shows cognitive deficits including memory impairment, however she is talking, eating and actively involved in physiotherapy.

Conclusions: Acute psychiatric manifestations combined with progressive decrease in the level of consciousness, abnormal movements and no evidence of pathology on MRI scan and LP are suggestive of autoimmune encephalitis. In case of suspected AE immediate initiation of immune therapy and CSF testing for autoantibodies is required.

[124]

Liver transplant performed in a patient due to Acute Intermittent Porphyria (or AIP)

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Background: AIP is an autosomal-dominant condition associated with a half-normal activity of the heme biosynthetic enzyme called hydroxymethylbilane (HMB), which results in increased levels of porphyrin precursors: 5-aminolevulinic acid (ALA) and porphobilinogen, which are presumed to have a strong neurotoxic effect. Its clinical manifestation include acute neurovisceral abdominal pain that is accompanied by nausea, vomiting, and diarrhea. Other symptoms include hypertension, tachycardia, arrhythmia, constipation, seizures and peripheral neuropathy leading to chronic neuropathic pain. These attacks are triggered by certain drugs, food and changes of the hormone levels that cause increased hepatic expression of ALA synthase 1 (ALAS1). Current available treatment consists of hemin. The aim of injecting it is to provide hepatocytes with high levels of free heme that downregulate ALAS1 and decrease the levels of its precursors.

Case: 35-year old women, diagnosed with AIP, was admitted to our department in order to receive a liver transplant. Her history consisted of multiple hospitalizations due to severe attacks of AIP (6 times in the last 6 months). Each time she was treated with intravenous hemin infusions due to which she developed thrombosis in both common iliac veins and in right subclavicular and left brachiocephalic vein, leaving only one already existing port in the left iliac vein that was still active. She was receiving regular prophylactic doses of hemin. However periods of time between recurrent attacks were irregular, becoming shorter each time. This made controlling the disease challenging, it also required increasing doses of hemin and morphine to fight back the attacks. As a result the patient suffered from a very poor quality of life. She had also an insufficiency of thyroid due to autoimmune thyroiditis. Finally, she underwent an orthotopic piggy-back liver transplant. Surgical complications (haemorrhage) occurred and required reoperation. After 6 weeks she was discharged from the hospital in good condition. She didn't have any attacks of AIP since then. To our best knowledge, the presented case is the first liver transplant performed in Poland due to AIP.

Conclusions: Liver transplant should be considered as a viable treatment of AIP in patients who show decreasing efficiency of the pharmacological treatment. It should be performed before complications of hemin infusions (thrombosis) become an absolute contraindications for surgical treatment.

[125]

Needle in a haystack

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Background: Phosphaturic mesenchymal tumour is an extremely rare benign neoplasm of soft tissue and bone that inappropriately produces fibroblast growth factor 23 (FGF-23). This tumour causes systemic phosphate depletion and leads to oncogenic osteomalacia or rickets. Typical time from the onset of symptoms to a presumptive diagnosis of tumour-induced osteomalacia is often > 2.5 years.

Case: 52-year-old male was admitted to the rheumatology department complaining of an intense back pain, upper and lower limb muscle weakness, exercise intolerance and chronic fatigue. The symptoms first appeared 2 years ago and slowly progressed resulting in height loss (up to 6cm) and severe kyphosis. Radiologic imaging demonstrated degenerative dystrophic changes of the spine along with multiple compression fractures. A diagnosis of Paget's disease was formed and the patient was sent home for an outpatient treatment. 2 years later, due to ever-progressing symptoms, conflicting lab results and unresponsiveness to treatment it was decided to investigate further. CT, MRI, skeletal scintigraphy, SPECT/CT and bone marrow trephine biopsy showed nonspecific diffuse changes in bone density including avascular necrosis of right femur head that did not correlate with the diagnosis of Paget's disease. Interdisciplinary team of experts suggested looking for bone tumour markers. Heavily elevated level of FGF-23 was found which is a pathognomonic sign for a phosphaturic mesenchymal tumour. SPECT/CT with specially marked somatostatin radioisotopes was performed and 24mm metabolically active tumour in the right femur head was discovered.

Conclusions: The existing difficulty for what concerns these tumours is the diagnosis, because even most recent radiologic imaging tests have their limits. If doctors do not exactly know what they are searching for it is like looking for a needle in a haystack. Simple physical examination and blood testing sometimes can reveal more than expensive and toxic radiologic testing.

Internal Medicine

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[126]

Exogenous risk factors of chronic erosive gastritis in patients with negative results of a Helic-test

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Introduction: Erosive forms of chronic gastritis and duodenitis can result not only from *Helicobacter pylori* (HP) in the gastric mucosa, but they can also be due to some medications, which can have an aggressive effect on gastroduodenal mucous membranes.

Aim of the study: The aim of the study was to identify the frequency of detection of bacteria HP in the gastric mucosa with a Helic-test in outpatients with gastroduodenal erosions, and assess risk factors of the erosive forms of gastritis without HP identified.

Material and methods: The study involved outpatients examined with a respiratory urease test (Helic-test). Totally 3318 diagnostic decisions of gastroduodenoscopy have been analyzed and 59 patients' cards of outpatients with gastric erosions having negative Helic-test have been investigated as well. For statistical analysis of results obtained some nonparametric tests (χ^2 , Fisher's exact test P, χ^2 critical=3, 96, significance level $\alpha=0, 05$) were used.

Results: Patients with the negative results of Helic-test were divided into three subgroups depending on the patients' age: 20-40 year old, 41-60 year old, 61 years old and older. The first subgroup included 13, 56% patients, the second – 42, 37% and the third one – 44, 07%.

In each subgroup the following exogenous risk factors were identified: taking aspirin and other nonsteroidal drugs, smoking, the subgroup which had two risk factors or more and the subgroup without any risk factors. In the first subgroup the risk factors were not statistically significantly determined (Fisher's exact test $P=0, 00006$, $p<\alpha$). In the second subgroup in the determination of the risk factors statistically significant differences were not found as well. In the third subgroup the risk factors were determined authentically more often (χ^2 calculated =11, 08 > χ^2 from critical, $p<\alpha$) with dominance of taking aspirin ($P=0, 0018$, $p<\alpha$). Two and more risk factors were identified in older age ($P=0, 006$, $p<\alpha$), because with age the amount of nonsteroidal drugs and aspirin because of concomitant diseases can be increased ($P=0, 00006$, $p<\alpha$).

Conclusions: The older the age of the patient, the chances to have chronic erosive gastritis because of taking nonsteroidal drugs and aspirin are higher compared to identification of HP in gastric mucosa ($P=0, 00006$, $p<\alpha$).

[127]

OXIDATIVE METABOLISM IN COMMUNITY-ACQUIRED PNEUMONIA (CAP)

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Introduction: Community-acquired pneumonia is responsible for high morbidity and mortality rates. Active forms of oxygen (AFO) are important in pathogenesis of inflammatory respiratory diseases. AFO in low concentration can have an antimicrobial effect. However, high concentrations of AFO cause oxidative stress leading to lipid peroxidation which can result in damage to cell membranes and chronic illnesses but the role of oxidative metabolism (AFO) is often ignored.

Aim of the study: The aim of the study was to identify the role of oxidative metabolic processes in CAP and influence of conventional drug therapy on free radical peroxidation.

Material and methods: The 230 study involved patients, divided into two groups: Group 1 with 30 CAP patients with moderate severity pneumonia aged 30-50 and Group 2 with 200 healthy volunteers.

Results: The effects of AFO were assessed, based on the laboratory and instrumental diagnostic methods. Free radical hemostasis data were recorded before and after the treatment. Patients with CAP received conventional antibiotic therapy. Free radical peroxidation hemostasis parameters were analyzed: serum lipid hydroperoxide (LOOHs) level, serum total antioxidant activity (AOA) level. Iron-induced chemiluminescence was used. In order to evaluate the immune resistance of the body, white blood cells of whole blood with barium crystals were used

to generate AFO with luminol-dependent chemiluminescence. Initial parameters of free radical homeostasis in patients with CAP differed from those in healthy volunteers. Patients (n=30) had an increase in the lipid hydroperoxide LOOHs ($121,1 \pm 5,75$ % the normal value, $p > 0,05$) and a decreased total of antioxidant activity (AOA) ($81,9 \pm 9,53$ % to normal, $p > 0,05$) serum. Imbalance prooxidant-antioxidant systems was 1.54.

Chemiluminescent tests showed that in patients with CAP after the traditional antibacterial treatment, LOOHs levels tended to increase. The K coefficient increased to 1.89. Patients ROS generation by leukocytes whole blood before treatment was higher than norm and $240,2 \pm 23,41$ % to the normal ($p < 0,05$). In antibiotic therapy indicator of ROS generation of leukocytes slightly decreased to $198, 1 \pm 37$, 90% to the norm.

Conclusions: In patients with community-acquired pneumonia there may be an imbalance of free radical homeostasis, mainly due to a decrease in total antioxidant activity. Conventional antibiotic therapy does not eliminate disorders of oxidative metabolism.

[128]

Helicobacter Pylori- the leading or one of the local factors of aggression in origin complicated duodenal ulcers?

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Introduction: Nowadays HP(Helicobacter Pylori) takes position of main etiological factor in duodenal ulcer disease. But there is the point of extremely growing rates of antibiotic resistance of this microorganism.

Aim of the study: Study role of HP in duodenal ulcers and improve methods of diagnostic and treatment HP infection.

Material and methods: Since 2012 to 2016 228 cases with complicated duodenal ulcer have been treated. Men were 173 people (75,9%), women –55 (24,1%). 2 groups were formed of them. Patients of basic group received antibiotics, to fight peritonitis and PPIs during 7-10 days. Patients of control group additionally(since 4-7 day) received standard eradication triple-drug therapy(through 14 days). Results were checked by modified HP test(we combine microbiological and biochemical tests).

Results: From anamnesis it was found that among 107 patient with chronic duodenal ulcer 24(22,4%) regularly take drugs, other have period of remission spontaneously. 142 (62,3%) were men (from 20 to 40 years old) which smokes and has inadequate food status. 72% women (average age $56,3 \pm 12$) smokes. There is no statistically significant difference with infection in men (50,9%) or women (49,1%)($P > 0,05$), while rates of morbidity are 75,9% and 24,1%($P < 0,05$) in men and women. After treatment HP test was negative in 85,4% in basic group and 88,2% in control($P > 0,05$). Frequency of side effects was 34,15%(basic group) and 78,94%(control group). Direct urease test was positive in 79,1% but microbiological test only in 41,7% cases(sensitivity and specificity around 100%).

Conclusions: There is no gender difference in colonization of HP but rate of morbidity is different(men:women-3:1). In 22,4% cases remission were starting spontaneously. We must admit, that majority of patient were smoking and have inadequate nutrition. Positive direct urease test was riched in 79,1% and microbiological test in 41,7% cases. In view of the above, in large part leading is peptic factor. Therefore, duodenal ulcer is polietiological disease, where HP is one of the aggression factors(but not the leading). Also adding standard eradication triple-drug therapy in postoperative period not allows to increase the efficiency (eradication HP was reached in 88,2% and 85,4% cases, in accordance($P > 0,05$)), but increase rate of side effects in two times.

[129]

Efficacy of speech therapy in management of difficult-to-treat chronic cough

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Introduction: The results of management of chronic cough in adults are still unsatisfactory. Unexplained and difficult-to-treat chronic cough cause significant impairment in patients' quality of life. Speech therapy a non-pharmacological method to manage chronic cough. The results of recent studies suggest that speech therapy is

one of a few methods, which are useful in management of persistent chronic cough. However, this method has not been available in Poland so far.

Aim of the study: To implement a method of speech therapy to our patients and analyze its efficacy in our patients with difficult-to-treat chronic cough.

Material and methods: 18 patients with chronic persistent cough were included into the study. Speech therapy was conducted by a speech therapist using a method developed by our team based on the technique described by Vertigan et al. It included education of vocal hygiene, teaching strategies to relax diaphragm and reduce cough and laryngeal irritation. Breathing and vocal exercises along with education were used. The entire therapy consisted of eight 45-minute sessions once a week, 2 of those were individual- and 6 were continued in a group. Before and after speech therapy, cough severity and its influence on quality of life was assessed by Visual Analogue Scale (VAS; range 0-100 mm) and Leicester Cough Questionnaire (LCQ; range 3-21 points; the higher the value, the better quality of life in patients with cough) in accordance with ERS recommendations. Moreover, cough challenge test with capsaicin was performed to assess the sensitivity to inhaled irritants measuring C2 and C5-concentration of capsaicin, which induces 2 and 5 coughs during provocation with capsaicin. We assessed the results of speech therapy using Wilcoxon test.

Results: Complete data of 15 patients were available for analysis (all women, median age 66 yrs, median duration of cough 60 months). There was significant decrease in cough severity measured by VAS (46 vs 28 mm, $p=0.016$) and significant improvement in patients' quality of life measured by LCQ (10.7 vs 14.6, $p=0.004$). The sensitivity of cough reflex measured by capsaicin challenge test was lower (C2-1,96 vs C2-3,92 μM , $p=0.03$; C5 -3,92 vs 7,84 μM , $p>0.05$). After the speech therapy, one patient declared complete improvement, the others (14/15) declared significant subjective partial improvement. All patient declared, that breathing exercises were the most effective component of the speech therapy.

Conclusions: Speech therapy resulted in a significant decrease of cough severity and improvement of patients' quality of life.

[130]

Probiotics and their influence on experimental nonalcoholic steatohepatitis

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Introduction: Nonalcoholic steatohepatitis (NASH) develops as a result of fatty liver, which is defined today as non-alcoholic fatty liver disease (NAFLD), occurring in 10-40% of population. NAFLD is caused by an increased intake of fats and dysbiosis, which cause insulin resistance. The latter syndrome is a base of type 2 diabetes, metabolic syndrome, obesity and atherosclerosis.

Aim of the study: We proposed to apply pro- and prebiotics to prevent steatohepatitis. Recently, a drug "Quetruilin", has been proposed as an antidysbiotic remedy (ADR). The objective of the research was to determine the curative and preventive efficiency of combined usage

Material and methods: The study involved 24 rats of the line "Vistar" (males, aged 8 months), distributed in 3 groups: 1- control one; the 2nd and 3rd - ESH model; the 3rd group was getting oral application of a "Quetruilidon" gel and "Symbiter" every day for 21 days. By keeping the rats on high-calorie diet ESH was remodeled. On the 22nd day the animals were killed under anesthesia. We obtained blood serum and liver tissue. We determined the level of inflammation markers in the liver homogenate: malondialdehyde (MDA) contents, elastase activity. We determined the alkaline phosphatase (AP) activity, urease activity, lisocym activity, the dysbiosis degree. In addition, we determined the triglycerides and total cholesterol contents.

Results: Analyzing the findings, we established that rats with ESH had an increased content of triglycerides in the liver (by 16,3%) and in blood serum (by 83,0%). Oral applications of ADR ("Quetruilidon" and "Symbiter" gels) decrease reliably the content of triglycerides both in the liver and in the blood serum. The results of cholesterol in the liver and in the blood serum: these findings only show reliable cholesterol level increase in the serum (by 32,6%). The cholesterol content in the liver increases by 25%, but $p>0,5$. Using ADR decreases cholesterol level both in the liver and in the blood serum, but in both cases $p>0,5$. In the rats with ESH the level of MDA in the liver and in the blood serum increases reliably by 55,3% and 9,4% respectively.

Conclusions: Calculating by these indices, the dysbiosis level in rats liver with ESH increases by 3,8 times. Oral applications of ADR decrease the dysbiosis degree reliably, but they do not restore it to its norm.

[131]

Features of peptic ulcer disease in patients with chronic obstructive pulmonary disease

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Introduction: In this studies we examined pathology of the gastrointestinal tract and respiratory insufficiently. In patients with chronic obstructive pulmonary disease (COPD) and peptic ulcer disease(PUD) associated with *Helicobacter pylori*(Hp) infection. The common factors of both diseases are smoking, abuse of neurohumoral regulation, hypoxemia, systemic inflammation, microcirculatory disorders, endothelial dysfunction. One of the main pathogenesis of PUD and in patients with COPD is considered hypoxia caused by severe pulmonary insufficiency. In addition changes in immune status lead to evaluation of prevalence of COPD associated with PUD, and identify the most significant risk factors combining these diseases .

Aim of the study: To examine the prevalence, risk factors and prognosis of COPD associated with PUD, the correlation between severity of COPD and the presence of Hp.

Material and methods: Analyzed the medical history of 163 patients with PUD treated at the Clinical Hospital, in Kyiv during 2016 including 93 (55.7%) patients in which PUD combined with COPD. In the study included case histories of patients aged 35 to 62 years with moderate and severe COPD. The average age of female was 59, men - 62. The average rate of FEV1 according spirometry in comorbidity patients was in stages: I - 82.67%, II- 58.89% III - 41.79%. All patient were identified to the presence of Hp, by detecting IgG in serum.

Results: The incidence of COPD is around 7% of the adult population of Ukraine. The prevalence of COPD associated with PUD is 17.2% in population. 55,7% of the studied patient PUD combined with COPD. HP was detected in 57% of 93 patients with comorbidity, and 23,5% among the control group which included 70 persons ($p = 0.026$). Proportion of Hp+ associated ulcer among patient with varying severity of COPD are I- 53.2%, II- 61.9%, III-70%. In analyzing there are direct strong positive relationship between the severity of COPD and the presence of Hp+ PUD. The correlation coefficient 0.99. Exacerbations of COPD in patients with PUD three or more times per year was observed in 12 patients (12.32%).

Conclusions: Our data indicate the relationship between PUD and COPD, which is more than just a general susceptibility to various risk factors. Early detection of COPD associated with PUD, knowledge of some common risk factors and common mechanisms of disease pathogenesis will further optimize the complex health care and rehabilitation of patients with this comorbidity.

[132]

Control of arterial hypertension on an out-patient basis

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Introduction: Arterial hypertension is a common cardiovascular disease. There is a great variety of medicines to manage the disease; however, the treatment isn't always effective enough, one of the reason being patients' low compliance.

Aim of the study: The aim of the study was to assess efficacy and potentials of out-patient control of arterial hypertension.

Material and methods: The study involved 100 arterial hypertension out-patients, 29 of them being male patients) aged 24 – 92 (the average age was 61, 9±11, 07 years) with arterial hypertension, 46% patients suffering from the disease for more than 10 years. 62% individuals were overweight or had obesity, 26% had diabetes type II. All participants of the study filled in a special formulary which was anonymous and included questions concerning the number of hypotensive drugs administered, patients' compliance, duration of arterial hypertension and frequency of doctor-patient meetings. Also the respondents were asked to assess the quality

of treatment. The study also involved gender aspects. For comparison between the groups the Pearson correlation coefficient was used.

Results: The average number of administered drugs was $1,84 \pm 0,72$. Only 72% respondents took antihypertensive drugs every day, 25% individuals followed doctors' recommendations strictly. 58% patients kept certain regimen of using drugs. Female patients had a higher compliance, 64,7% of them kept the prescribed regimen strictly versus 38,46% of men, $p < 0,05$. Some patients (13%) forgot to take drugs, 21% used them in improvement of the symptoms. 14% patients had elevated blood pressure above 140/90 mm hg every day, 29% – some times per week, which didn't correspond to the targeted values. 37% hypotensive respondents had daily blood pressure above 150/100 mm hg and considered it normal. About a quarter of patients visited their general practitioner once a year or less (37,9% of men and 15,46% women, $p < 0,05$). As a result, 39% hypertensive patients considered their treatment ineffective.

Conclusions: The study disclosed low compliance of out-patients, their dissatisfaction with treatment, and insufficient frequency of target blood pressure attainment. It is patients' education like hypertonic schools, booklets and media that are able to increase public awareness of the disease and patients' compliance.

[133]

Peptic ulcer: *Helicobacter Pylori* infection in gastric mucosa in different seasons

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Introduction: *Helicobacter Pylori* (HP) in gastric mucosa can influence on clinical presentations and intensity of stomach diseases as well as the rate of exacerbation in different seasons and the correlation should be taken into consideration when decision curative and the preventive measure is made.

Aim of the study: The aim of the study was to investigate influence correlation between HP infection in gastric mucosa, the rates of exacerbation frequency and severity of stomach ulcer depending on a season.

Material and methods: 268 patients with the exacerbation of stomach ulcer have been examined. Esophagogastroduodenoscopy with biopsy was performed in patients in different seasons. HP identified with urease test and the direct microscopy. The severity of the disease exacerbation was estimated by the degree of clinical symptoms intensity. Nonparametric tests were used for the statistical analysis of results (χ^2 critical=3,84, Fisher's exact test, the Pearson correlation coefficient). Significance level $\alpha=0,05$.

Results: The study showed that in patients with the stomach ulcer the infection degree by HP in mucous coat of stomach and the exacerbation frequency changed depending on seasons. The infection degree was significantly higher in patients with the exacerbation of the stomach ulcer in autumn ($32,5 \pm 2,9\%$, χ^2 calculated = 4,49 $> \chi^2$ from critical, $p < \alpha$) and in spring ($34,7 \pm 2,9\%$, χ^2 calculated = 4,58 $> \chi^2$ from critical, $p < \alpha$). Assessment of clinical exacerbation intensity in patients at the time of different seasons showed that grave conditions of disease statistically more significant were observed in spring as compared with other seasons. But the exacerbation frequency of mild and average severity did not differ by seasons (χ^2 calculated = 0,33 $< \chi^2$ from critical, χ^2 calculated = 0,82 $< \chi^2$ from critical accordingly, $p < \alpha$).

Conclusions: The infection degree with *Helicobacter Pylori* (HP) in gastric mucous in patients with the stomach ulcer has more severe manifestations in spring and autumn. There is a correlation between the HP infection and exacerbation rates of gastric ulcer. The higher rates of the infection are associated with more severe clinical manifestations of the disease exacerbation.

[134]

EFFECT OF COMBINED ANTIHYPERTENSIVE THERAPY ON THE FUNCTIONAL STATE OF THE VASCULAR WALL AND THE INDICATOR OF OXIDATIVE STRESS IN HYPERTENSIVE PATIENTS WITH ABDOMINAL OBESITY

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Introduction: Hypertension (HT) is one of the most common diseases in the world and occupies the first place in the structure of the cardiovascular system. Oxidative stress plays an important role in the pathogenesis and complications of HT. However, the exact mechanisms of its effect on the vascular wall are insufficiently studied. It is supposed that one of them is the decrease of the endothelial nitric oxide synthase (eNOs) level, resulting in reduced NO production. Thus eNOs level is of interest to us as an indicator of oxidative stress and allows to evaluate the efficiency of antihypertensive therapy, which should not only enable to achieve target blood pressure levels but also will have a beneficial effect on the state of the vascular wall as a target organ in hypertensive patients with abdominal obesity (AO).

Aim of the study: To improve the quality of diagnosis and treatment of patients with HT with or without abdominal obesity (AO), based on the study of the functional state of the vascular wall and the dynamics of eNOs.

Material and methods: The study enrolled the 110 patients. 3 groups were formed: 1st – HT patients (n=30), 2nd - patients with HT and AO (n=51), 3rd - healthy people (n=29). The patients were divided by sex and age. The average age was (60±4,6) years. eNOs levels in serum - ELISA («Uscscn Life Inc. Wuhan», China) and endothelium-dependent vasodilation of the brachial artery (EDVD BA). Used a combination of olmesartan 20 mg with amlodipine 5 mg per day. «StatSoftInc10».

Results: The lowest eNOs levels - in HT patients without AO, which amounted to (295,4±26,6) ng/ml (p<0.05). In HT patients with AO the essential difference of eNOs level compared to the control group was not found. The correlations between eNOs levels and EDVD BA in HT patients with AO (r=0,68; p<0,05) shown significant role of it in development of disorders of endothelial vasoconstriction. Antihypertensive therapy increased the eNOs and EDVD BA levels in HT patients with AO by 18.8% and 3,64%, (p<0,05) and HT patients without AO to 16.7% 2,9%, (p<0,05).

Conclusions: The combination antihypertensive therapy makes the functional state of the endothelium better in both groups by increasing the eNOs blood level, but more in patients with AO.

[135]

The role of anti-PLA2R immunoglobulins in recognition of glomerulonephritis type

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Introduction: The nephrotic syndrome (NS) is a symptom of the glomerulonephritis. The gold standard for the diagnosis of this disease is a renal biopsy which involves a risk of complications such as haematoma, kidney rupture or bleeding. Scientists seek new non-invasive methods that enable to make a right diagnosis and also administer the aiming treatment. One of biomarkers is an anti-PLA2R immunoglobulin (anti-phospholipase A2 receptor antibody). They can be found in the blood and they are used for a diagnosis of the primal membranous nephropathy (MN). Moreover, anti-PLA2R antibodies can be used as prognostic marker to evaluate and monitor the disease process.

Aim of the study: The aim of the study was to provide information about usefulness of measuring anti-PLA2R antibodies for the diagnosis of glomerulonephritis in patients indicating signs of nephrotic syndrome, and comparing compatibility of this method with biopsy findings

Material and methods: Blood was collected from 102 patients (45 women – 44%, 57 men – 56%) with symptoms and signs of nephrotic syndrome in order to detect anti-PLA2R antibodies. To recognise them an immunofluorescence quality method was used. Slightly positive and doubtful results were checked by the ELISA quantity method. All of the patients had undergone the biopsy procedure. The material was evaluated in a light and immunofluorescent microscopy. The compatibility of antibodies result and biopsy results were compared.

Results: In the group of 102 patients there were 14 patients (13.7%) with positive results of anti-PLA2R antibodies (in 4 women and 10 men) what corresponded with the diagnosis of the membranous nephropathy in biopsy in 100%, and there were also 88 patients (86.3%) (41 women and 47 men) with negative results of anti-PLA2R antibodies. They had different forms of glomerulonephritis (including membranous nephropathy in 5 (5.6%) patients). In these patients is required to seek secondary causes of the membranous nephropathy.

Conclusions: Positive anti-PLA2R results are pathognomonic for the primal membranous nephropathy. This examination might be very useful for glomerulonephritis with nephrotic syndrome diagnostics, especially in patients who cannot have biopsy performed.

[136]

The correspondence between inhalation technique training, mistakes made during inhalation and the course of asthma and COPD

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Introduction: Asthma and COPD are common pulmonary diseases the therapy of which is based mainly on inhaled medications. However, mistakes during inhalation therapy are very common and may influence the course of both diseases.

Aim of the study: The aim of this prospective study was to determine, if mistakes conducted during inhalation therapy recur and whether a single inhalation technique training affects the number of mistakes and the course of asthma or COPD.

Material and methods: Patients with either asthma or COPD, aged 18-80, who took their inhaled medications (pMDI or DPI) for at least 6 months, were enrolled into the prospective, randomized study (NCT 02131454). The number and type of mistakes associated with inhalers use were checked twice in a 6 months interval. Then patients were randomized to a single short training of inhalation technique or control; after that 2 consecutive visits followed every 3 months. The difference in the number of mistakes made during inhalation, number of exacerbations of asthma or COPD, symptoms severity and the quality of life in comparison to the period before the randomization were analyzed.

Results: 100 Patients were enrolled into the study, out of which 90 attended all the planned visits (45 patients with asthma and 45 with COPD). 47 patients were randomized to intervention, while 43 were placed in the control group.

The most common mistakes conducted by the patients before the training were: too rapid and forceful inhalation, lack of expiration before the inhalation among the pMDI users; slow and not forceful enough inhalation and too early breath holding among DPI users. Too short breath holding time was a common mistake among both DPI and pMDI users. Only 8% of patients did not make any mistakes during the first assessment. Most of the conducted mistakes turned out to recur. Only 3 types of mistakes were not repetitive.

Moreover, the educated patients conducted less mistakes during inhalation than the control group (32/47 vs 20/43). However, there was no statistically significant reduction in the frequency of asthma or COPD exacerbations, disease control or patients' quality of life.

Conclusions: Most of the mistakes, conducted by asthma or COPD patients during inhalation therapy turned out to recur. For this reason, they may be easier to eradicate. Single inhalation technique training leads to a reduction of the number of mistakes, but it does not influence the course of asthma or COPD.

[137]

The impact of severe obstructive sleep apnea and obesity on nonalcoholic fatty liver disease

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Introduction: Obstructive sleep apnea (OSA) and its associated intermittent hypoxia have been implicated in the pathogenesis of nonalcoholic fatty liver disease (NAFLD).

Aim of the study: Evaluation of the relationship between severe OSA and NAFLD and correlation between features of NAFLD with the clinical course of OSA.

Material and methods: We enrolled 85 consecutive patients (62 men and 23 women, mean age 56.2 ± 11.3 yrs) with severe OSA ($AHI > 30/h$) confirmed by polysomnography (mean $AHI - 59.4 \pm 19.7/h$). Alcohol abuse was a major exclusion criterion. All subjects underwent blood laboratory testing. Severity of liver steatosis was assessed by ultrasound (US) (GE, Vivid 9) using tissue intensity analysis software (GE, Echopac, Q analysis) and based on the difference in echogenicity (DIFF) between liver parenchyma and the cortex of the right kidney. The echogenicity difference of > 5 dB was applied as diagnostic criterion for fatty liver. Data from patients with $AHI 30-60/h$ and $AHI > 60/h$ were compared.

Results: Overall, US criteria for fatty liver were found in 57 (67%) patients. The severity of liver steatosis showed a weak but significant correlation with BMI ($r=0.23$, $p=0.046$) and AHI ($r=0.31$, $p=0.005$). We did not find any correlations between the severity of liver steatosis and age, oxygen desaturation index (ODI), serum cholesterol and triglycerides. There were no differences in the severity of liver steatosis in patients with $AHI 30-60/h$ (45 subjects) and those with $AHI > 60/h$ (40 subjects) – 49.5 vs 49.8 units, respectively, $p>0.05$.

Conclusions: Our study showed that BMI and AHI are associated with non-alcoholic fatty liver in subjects with severe OSA.

[138]

Forced vital capacity and the clinical course of obstructive sleep apnea (OSAS) in morbidly obese patients – a preliminary report

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Introduction: Obesity, one of the main risk factors for obstructive sleep apnea (OSAS), may lead to a restrictive ventilatory pattern. Although lung restriction is defined as a decrease in total lung capacity, a decreased forced vital capacity (FVC) in the absence of airway obstruction in spirometry may serve as a simple screening tool for the diagnosis of this ventilatory pattern.

Aim of the study: The aim of the study was to evaluate the relationship between restrictive ventilatory pattern assessed in spirometry and the clinical course of OSAS in morbidly obese OSAS patients.

Material and methods: This study is a part of a larger project on lung function in patients with OSAS. We retrospectively analyzed patients referred to the out-patient clinic of the Department of Internal Medicine, Pulmonary Diseases and Allergy, Medical University of Warsaw because of snoring and excessive daytime sleepiness who had undergone polysomnography, arterial blood gases measurement and spirometry. The two inclusion criteria were apnea/hypopnea index (AHI) $> 5/hour$ and BMI $> 40 kg/m^2$; chronic lung diseases and airway obstruction in spirometry were the major exclusion criteria. Restrictive ventilatory pattern in spirometry was defined as $FEV1/FVC > lower\ limit\ of\ normal\ (LLN)$ and $FVC < LLN$. Correlations between FVC and clinical data were sought.

Results: We enrolled 155 (119M, 36F) consecutive, morbidly obese OSAS patients (mean age 52.0 ± 11 yrs, mean BMI $45.1 \pm 4.7 kg/m^2$ and mean $AHI 71.1 \pm 30.4/h$) who met the predefined criteria for restrictive ventilatory pattern in spirometry.

There were no correlations between FVC and AHI, oxygen desaturation index (ODI), arterial blood gases and mean blood oxygen saturation during sleep.

Conclusions: A decreased FVC in morbidly obese OSAS patients is not associated with the clinical course of OSAS.

[139]

A promising method for S.aureus treatment and decolonization in peritoneal dialysis patients

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Introduction: Staphylococcus.aureus (S.aureus) carriage in peritoneal dialysis (PD) patients is associated with increased risk of PD catheter-related infection including peritonitis, which is a leading cause of death in PD patients. Rapidly developing antibiotic resistance puts us under necessity for innovative treatment methods. Bacteriophages have antimicrobial potential in treating and preventing bacterial infections.

Aim of the study: To investigate the effect of bacteriophages on S.aureus strains obtained from peritoneal dialysis patients in Pauls Stradins Clinical university hospital Peritoneal Dialysis Department, Latvia.

Material and methods: Swabs from nasal, inguinal and PD catheter sites were obtained between November 2016 and January 2017. Microbiological analysis was performed after overnight swab culturing on trypticase soya broth, mannitol-salt agar, Baird-Parker agar with egg-yolk tellurite. Coagulase detection, catalase test and latex agglutination (Oxoid) were performed. For S.aureus final identification VITEK-2 (bioMerieux) system was used. The antibiotic susceptibility testing was performed according to the EUCAST Version 4.0, 2016. Screening for susceptibility to bacteriophage spot test method was performed. Centrifuged bacteriophage lysate from "Sekstofag", Mikrogen were used. Phage effect was identified by plaque visual morphology. The positive reaction was classified as confluent lysis (CL), semi-confluent lysis (SCL), overgrown lysis (OL) and no lysis i.e., resistant (R) for negative reaction.

Results: Sixty patients were included in the study. 55% (n=33) male, 45% (n=27) female, mean age 56,7 (SD±15,7) years. S.aureus carriers in at least one of the sites were 31,66% (n=19). In total 29 strains were obtained, one strain was resistant to 6 antibiotics. None of the isolated strains were MRSA. There were 93,1% (n=27) strains susceptible to bacteriophage, although there was different degree of effectiveness. CL was found in 10,3% (n=3) cases, SCL- 72,4% (n=21), OL-10,3% (n=3) and R in 6,9% (n=2) cases. Two isolated strains from the same patient were found to have different phage activity (R and SCL respectively).

Conclusions: Bacteriophages have a great lytic potential against isolated S.aureus strains. More studies should be performed to confirm possible phage significance. Bacteriophages could be used for S.aureus decolonization of PD patients as well as treatment of S.aureus infections. For further S.aureus strain characterization typing should be performed.

[140]

Post transplant lymphoproliferative disorder (PTLD) – a series of 28 cases in solid organ transplant recipients

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Introduction: PTLD remains one of the major life-threatening complications in solid organ transplantation (SOT) recipients. Second only to skin cancers in frequency, it is estimated that this heterogeneous group of neoplasms affects between 1%-20% of SOT recipients, yet its pathogenesis remains to be fully understood. While several risk factors have already been found (i.e. allograft type, immunosuppressive [IS] treatment protocol, recipient's age or coexisting viral infections), it still proves a challenge to identify patients at risk, provide them with an early diagnosis and effective treatment.

Aim of the study: In this study we attempt to describe the characteristics of a group of liver, kidney or both graft recipients, who have developed PTLD, analyse the disease management and its outcomes.

Material and methods: We have conducted a database search for histopathologically verified cases of PTLD which were diagnosed in a time period spanning from 2002 to 2016. The gathered data consisted of the information on SOT recipients (i.e. indications, sex or age at SOT), IS treatment (induction therapy, occurrence of acute rejection [AR] and its treatment, IS drug regimen), virological status (regarding EBV, CMV, HBV, HCV), PTLD (type, localisation, treatment and outcomes). Patient death, graft loss and failure to attend follow up visits were chosen as endpoints in our study.

Results: 28 cases matched our criteria, 17 (61%) male, and 11 (39%) female, of which 20 (71%) received a liver graft, 6 (21%) a kidney transplant, and 2 (7%) received both grafts. The average age at transplantation was 39,8 years (range 9-70). 12 (43%) received basiliximab as the induction therapy, 10 patients (36%) had a history of AR episodes and 25 (89%) tested positive for at least one of the mentioned viruses. The most frequent PTLD types encountered were either early lesions like plasmacytic hyperplasia or monomorphic, with emphasis on various subtypes of diffuse large B cell lymphoma. 15 (54%) patients remain alive and attend follow up visits, 10 (36%) died, of which 5 (18%) due to PTLD unrelated causes, and 3 (11%) were lost to follow up.

Conclusions: This series of cases suggests that SOT recipients who develop PTLD are not a uniform group of patients, and as such they require continuous study and efforts in the development of novel diagnostic tools, that could allow us to detect and to treat the disease at its earliest stages. The co-operation of medical professionals of various fields - as in our case - is mandatory to implement prompt diagnosis and therapy.

[141]

The relationship between excessive daytime sleepiness and Apnea-Hypopnea Index in severe obese patients

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Introduction: The American Academy of Sleep Medicine defines Excessive Daytime Sleepiness (EDS) as the inability to maintain wakefulness and alertness during the major waking episodes of the day, with sleep occurring unintentionally or at inappropriate times almost daily for at least three months. EDS is a main sign of obstructive sleep apnea (OSA) which is defined broadly as an apnea-hypopnea index (AHI) greater than five events per hour as measured by a polysomnogram. OSA has been associated with increased all-cause and cardiovascular mortality in both males and females. The strongest risk factor for OSA is obesity.

Aim of the study: The aim of the study was to assess EDS according to the AHI in patients with severe obesity.

Material and methods: 240 severe obese patients with Body Mass Index (BMI) >40 which underwent standard Polysomnography and had AHI>5 were taken into account. Patients were divided into 3 groups according to score of AHI (moderate: AHI≥5 ; <15, average: AHI≥15 ; <30, and high: AHI≥30) Subjective Epworth sleepiness scale (ESS) was used for assessment of sleepiness, where a score >10 was defined as existence of sleepiness.

Results: In the study group of 21 (8,8%) people was moderate AHI, 36 (15%) people was average AHI and 183 (76,3%) was high AHI. In these groups, the number of patients who presented with EDS amounted 9 (42,9%), 19 (52,8%) and 119 (65%) respectively. The average number of points in ESS were 10,2±5,1 vs. 10,9±5,9 vs. 12,7±5,8.

Conclusions: The prevalence of EDS increases with the AHI. The values of ESS in patients with AHI>30 suggest that in this group, we have a significant percentage of patients with EDS.

[142]

Psoriasis and obesity: a gold rush in metabolic disorders?

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Introduction: Psoriasis is a chronic inflammatory skin disease affecting 2-3% of worldwide population. Both genetic polymorphisms and environmental factors are contributing to the development of the disease. It has been emerged that obesity is an important risk factor for psoriasis and understanding the epidemiological relationship between obesity and psoriasis is important for delineating the risk profile for the obesity-related comorbidities commonly found among psoriatic patients.

Aim of the study: The study aimed to evaluate body composition parameters in psoriatic patients.

Material and methods: The preliminary analysis included 28 psoriatic patients (51.92±15.00 years) admitted to the Department of Dermatology, Medical University of Warsaw from October 2016 to January 2017. All subjects have given an informed written consent. All patients undergone a comprehensive medical examination and the following had been recorded: weight, Body Mass Index (BMI), visceral fat, total muscle, body fat, Waist-Hip Ratio (WHR). The diagnosis of psoriasis was confirmed clinically histologically. The severity of the disease was assessed by Psoriasis Area and Severity Index (PASI) score, Body Surface Area (BSA) and Dermatology Life Quality Index (DLQI). The obesity was defined as BMI >30 kg/m². The prevalence of overweight was 39.29% (n=11) and of obesity was 35.71% (n=10). The concentrations of serum lipids were measured from blood samples by a standard methods.

Results: The prevalence of mild psoriasis was (PASI<12,) 10 cases, moderate (12<PASI<30) 13 and severe (PASI >30) 5. The analysis revealed significant correlation between DLQI and waist circumference ($r=-0.447, p=0.019$), BMI ($r=-0.391, p=0.044$), WHR ($r=-0.422, p=0.028$), visceral fat ($r=-0.454, p=0.017$) and TG ($r=-0.44, p=0.022$). There was also significant correlation between BSA and total muscle ($r=0.4753, p=0.029$). There were not significant statistical association between BSA or PASI score and BMI, WHR, visceral fat, TCh, HDL, LDL and TG levels, TCh/HDL, LDL/HDL ratio.

Conclusions: This preliminary analysis did not support the theory that worse body composition negatively affects the course of psoriasis. What is curious, factors related with dyslipidemia and obesity find correlation only with subjective exponents of psoriasis severity. Further analyses are needed to assure about such statements.

Laryngology

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[143]

Molecular view on chronic rhinosinusitis with and without polyps

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Introduction: Chronic sinusitis is a common condition in which the cavities around nasal passages become inflamed and swollen for at least 12 weeks, despite treatment attempts. Despite being widespread, little is known about the etiology of this illness. Chronic rhinosinusitis may be noninfectious and related to allergy, cystic fibrosis, gastroesophageal reflux, or exposure to environmental pollutants. Some research notice that the SWI/SNF (switch/sucrose nonfermenting) is a crucial component of steroid receptor signaling. The SWI/SNF chromatin remodeling complex plays an important role in several distinct processes including the control of growth and development of cell.

Aim of the study: The aim of the study was the evaluation of the SWI/SNF complex in chronic rhinosinusitis.

Material and methods: Tissue samples were obtained during functional endoscopic sinus surgery from 10 patients suffering from sinusitis with and 10 without polyps. The control group included 10 patients who underwent septorhinoplasty surgery. In the process of molecular examination activities of 3 subunits BAF, BRG1 and BRM were measured.

Results: Outcome indicated significant differences between patients with rhinosinusitis and control group. Microscopic analysis showed decreased numbers of receptors in patients suffering from this condition. The activity of the SWI/SNF complex did not vary in patients with and without polyps. Moreover, different results were obtained regarding activity of each subunit.

Conclusions: Reduced activity of SWI/SNF complex may have prominent role in pathogenesis of this disease entity. Furthermore, the presence of polyps did not show any distinctiveness in comparance with condition without it. In future studies the correlation between activity of separate subunits and the development of the disease will be examined.

[144]

Analysis of results of intraoperative monitoring of hearing by electrocochleography in patients undergoing removal of vestibular schwannoma

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Introduction: Cerebellopontine angle operation in patients with vestibular schwannoma aims for total removal of the tumor and preservation of patient's neurological functions, especially hearing on the affected side. Acoustic neuromas usually develop from the lower portion of vestibulocochlear nerve and grow in different directions so their first symptoms are otologic.

Nowadays, intraoperative monitoring of neurological functions is not only possible due to developing technology, but also necessary for legal reasons.

Aim of the study: This study aims to analyse results of intraoperative monitoring of hearing by electrocochleography (EcochG) in patients undergoing removal of schwannoma of the VIII nerve.

Material and methods: The study was based on outcomes of intraoperative monitoring procedure of 12 patients (6 with stage I, 6 with stage II tumors) undergoing vestibular schwannoma surgery performed using the middle cranial fossa approach. The group consisted of 7 women and 5 men with an average age of 51 years.

The results of preoperative assessment of hearing and intraoperative EcochG were analysed and compared with the postoperative results of audiometry and results of EcochG at the end of the operation.

Results: In 9 out of 12 patients, hearing was completely or partially preserved. The EcochG records were present to the end of the surgery in 10/12 patients. Preoperative latency of N1 wave was on average 2,23 ms, SD 0,46. Average postoperative latency of N1 wave was 2,83 ms, SD 1.03.

The change of the amplitude of action potential (AP) was more significant - with the average preoperative AP amplitude 7,5 microV, SD 9,7 and the average postoperative AP amplitude 2,83 microV, SD 4,1. Improvement of EcochG record was observed in 3 patients - the latency decreased and the amplitude increased. In these patients the hearing was preserved on the preoperative level. Strong correlation was observed in analysis of the results of intraoperative monitoring and postoperative audiometry. However, in 2 patients the hearing deteriorated despite "positive" intraoperative data.

Conclusions: Hearing preservation during surgical removal of vestibular schwannoma is possible in over 50% cases. The results of EcochG conducted during the operation help predict the final effect of hearing preservation, therefore these methods of monitoring should be used routinely.

[145]

Characteristics and frequency of so-called gusher phenomenon among children who underwent cochlear implant surgery

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Introduction: Gusher phenomenon is associated with the leakage of cerebrospinal fluid (CSF) during cochleostomy procedure. There are two types of leakage: a strong flow under high pressure (gusher) and a slow, mild flow (oozing). In some cases, it can lead to complications with the most important one: recurrent meningitis.

Aim of the study: The aim of the research is to analyse past medical history and course of surgery of patients who underwent cochlear implant surgery complicated by CSF leakage during the procedure.

Material and methods: The obtained results were given a retrospective analysis, with particular focus on age, sex, type and aetiology of hearing impairment, type of CSF leakage, type of surgical approach, type of implant, type of electrode and the results of imaging studies.

Results: All children presented bilateral sensorineural hearing loss since birth or early childhood. In this group, a large amount of patients was burdened with congenital defects, inner ear malformations as well as perinatal complications. In terms of type of CSF leakage, oozing appeared more often, however, in the group of patients with inner ear malformations gusher was more frequent. There were no problems with placing electrodes in the course of surgeries.

Conclusions: CSF gusher should be suspected particularly in children with inner ear malformations. Proper technique of surgery results in effective cochlear implantation, thus preventing postoperative complications.

[146]

Assessment of tinnitus in patients with Bonebridge hearing implant before the implantation of the devicePenar K.¹, Kutyba J.², Skarżyński P. H.^{1,2,3,4}

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[147]

The use of three dimensional printed ossicles in ossiculoplasty

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Trustee of the paper: Adam Orłowski**Introduction:** Current applications of 3D printing in medicine include developing patient-specific implants, prostheses and realistic anatomic models for surgical planning and education. However there are only few applications of 3D printing in laryngology until now. Nowadays, few different size prostheses and autografts can be used in ossicular chain reconstruction. Nevertheless, they do not have always optimal size or shape. Possibility of the use of 3D printed patient-specific ossicular prostheses can significantly improve outcome of ossicular chain reconstructions.**Aim of the study:** The objective of the study was to devise method of 3D printing of ossicular prostheses and examine if 3D printed ossicular prostheses can be used in ossiculoplasty.**Material and methods:** 6 freshly frozen temporal bones were scanned by Cone Beam Computed Tomography (CBCT). Obtained images were converted to 3D models of tympanic cavity. Models of 3D ossicular prostheses were performed using 3D modelling software, which were then printed in three dimensions. In the end patient-specific prostheses were implanted into the appropriate tympanic cavity (Malleus- Stapes Assembly) and whole temporal bones were scanned again by CBCT to analyse obtained results.**Results:** We successfully printed and implanted patient-specific ossicular prostheses into appropriate temporal bones. Optimal positions of prostheses and angles between malleus and stapes were obtained.**Conclusions:** Ossiculoplasty with the use of patient-specific 3D printed ossicular prostheses is very promising and prospective method. However, it still require further development and examination. Additionally, 3D printing with titanium will be next step to bring this method into effect.

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Tinnitus in brainstem implants

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Introduction: Auditory brainstem implants are the modern method of treating hearing impairment caused by auditory nerve damage. They are dedicated mainly to patients diagnosed with neurofibromatosis type 2 (NF2). Tinnitus is the hearing of sound without presence of acoustic source. This problem often affect patients qualified to brainstem implantation.

Aim of the study: The aim of this study was to evaluate the influence of brainstem implantation on tinnitus reduction and hearing quality.

Material and methods: Patients who underwent the auditory brainstem implantation in the Institute of Physiology and Pathophysiology of Hearing were asked twice to fill in the forms evaluating hearing abilities and tinnitus severity. First measurement pertained situation before implantation, second referred to present situation, it is minimum two years of using the device. Questionnaires which were used: Tinnitus and Hearing Survey (THS), Tinnitus Handicap Inventory (THI), Tinnitus Functional Index (TFI), Nijmegen Cochlear Implant Questionnaire (NCIQ) and Abbreviated Profile of Hearing Aid Benefit (ABHAB).

Results: Based on the questionnaires results tinnitus severity and objective hearing improvement were established.

Conclusions: Brainstem implantation leads not only to hearing quality improvement, but also to reduction in the severity of tinnitus in adult patients.

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Comparative evaluation of 4-phase-rhinomanometry and PNIF

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Introduction: Objective and subjective parameters of nasal obstruction remain to be a subject of controversy. Several methods exist to provide that objective analysis, but still there is a lack of agreement between ENT practitioners.

Aim of the study: To evaluate practical application of 4-Phase-Rhinomanometry and PNIF

Material and methods: 29 healthy volunteers were tested with Active Anterior Rhinomanometry (4-Phase-Rhinomanometry) and Peak nasal inspiratory flow meter (PNIF) before and after decongestion with 0.1% Xylometazoline spray. The tests were repeated after 4 – 6 weeks.

Results: At the first series of measurements PNIF showed a mean value of 162.759 l/min (SD +/-54.7003) before decongestion and 180.345 l/min (SD +/-58.4003) after.

Calculated total logarithmic resistance showed 0.37359 (SD +/- 0.172978) before decongestion and 0.34616 (SD +/- 0.143260) after.

At the second series PNIF showed a mean value of 165.862l/min (SD +/- 58.4635) before decongestion and 182.414 l/min (SD +/- 63.7324) after.

Calculated total logarithmic resistance showed 0.43839 (SD +/- 0.132094) before decongestion and 0.33693 (SD +/- 0.104714) after.

Conclusions: Both PNIF and 4-Phase-Rhinomanometry can be used to detect nasal obstruction. Many volunteers experienced collapse of ala of nose while performing PNIF.

4-Phase-Rhinomanometry measurements present a greater variance between series than PNIF measurements. PNIF measurements are not consistent so there should be performed at least 5 tries for each individual. PNIF measurement relies on the volunteer's compliance and inspiratory strength of lungs. PNIF is quick and easy, but does not evaluate the characteristics of obstruction.

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Correlation between olfactory dysfunctions and quality of life

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Introduction: Olfactory dysfunctions are common laryngological problems, but mostly unheralded in the clinical examination. Hyposmia leads to loss of wide range smells. Patients with hyposmia can not feel pleasure connected with smells and tastes and may have problem with avoiding danger, like spoiled food or toxic substances. It is a significant problem leading to reduced quality of life.

Aim of the study: The aim of this study was to assess correlation between olfactory dysfunction caused by nasal polyps, deviated nasal septum or nasal polyps and deviated nasal septum and patients' quality of life.

Material and methods: 40 patients with deviated nasal septum, chronic sinusitis with polyps were examined using forced choice University of Pennsylvania Smell Identification Test (UPSIT) and completed AQoL-8D (Assessment of Quality of Life) questionnaire.

Results: In examined group 22,5% of patients had decreased quality of life, attributable to olfactory dysfunctions.

Conclusions: A significant group of patients due to olfactory dysfunctions had decreased quality of life. The Assessment of Quality of Life - 8D (AQoL-8D) instrument seems to be appropriate to assess a quality of life in group of patients with rhinological problems, but there are required further studies to confirm this assumption. For patients with olfactory dysfunctions, septoplasty and polypectomy create a possibility to improve their quality of life.

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Hearing screening among children attending to primary schools in the Małopolskie Province

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Introduction: Late diagnosis of hearing loss can negatively impact not only on children's development of speech and language, but also on their emotional maturity, social-emotional or intellectual progress.

However, screening tests give opportunity for early detection of hearing disorders, and an appropriate rehabilitation, which is opportunity for normal functioning in society.

Aim of the study: The aim of the study was to analyze the level of hearing, among children attending to primary schools in the Małopolskie Province, in order to detect hearing loss.

Material and methods: Examination was conducted by the Sensory Examination Platform, using Pure Tonal Audiometry. As valid results, were considered those tests, that took at least 72s. Moreover, the ones whose credibility could not be verified by the lack of cooperation with child, bad acoustic conditions, or poor health condition, were rejected. After introduction the criterion, the study group was counting 11613 subjects, between 5 and 13 years of age. As a positive results (abnormal hearing) were considered those of the hearing threshold, greater than 20 dBHL for at least one frequency. The main criteria of analysis were age and sex.

Results: According to the established criteria positive results were almost 6%. Girls results showed 49,2%, while the boys' came up to 50,8%. Additionally, 3% of children were recommended to further systematic audiological control, due to their abnormal audiogram.

Conclusions: According to the analysis, the percentage of patients with hypoacusis in the Małopolskie Province is relatively low, which may indicate a good prevention of hearing loss in this region of Poland. Thanks to screening it is possible to detect hearing problems in early age and react quickly. Together with appropriate intervention and efficient rehabilitation it is all critical to general, proper development of children.

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The discomfort of tinnitus in patients with CODACS hearing implants before and after the implantation of the device

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Introduction: In 2012 the first implantation of CODACS hearing implant in Poland was conducted. The procedure was carried out at the World Hearing Centre. The implants provide the chance to improve hearing in patients with severe otosclerosis, who otherwise would not have regained natural hearing after surgical intervention alone.

Aim of the study: The purpose of this work is to evaluate the discomfort of the tinnitus coexisting with the hearing loss in this group of patients.

Material and methods: Patients were asked to fill in three questionnaires evaluating tinnitus – Tinnitus and Hearing Survey (THS), Tinnitus Handicap Inventory (THI) and Tinnitus Functional Index (TFI). The questionnaires were translated to Polish.

Results: The comparative analysis of the results of the questionnaires regarding pre- and post-operative period has confirmed the presence of hearing problems and the problems with tinnitus amongst the patients. The problems were diminished due to the CODACS implant. On the basis of the THI questionnaire, the general discomfort of tinnitus in each of the discussed cases was determined. The areas of life that are mostly affected and disturbed by the tinnitus were identified using the TFI questionnaire.

Conclusions: Hearing implantation contributes not only to the improvement of hearing gains, but also has the positive impact on the reduction of the discomfort connected with tinnitus amongst the patients with CODACS implants.

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CLINICAL AND NEUROPHYSIOLOGICAL FEATURES OF DIABETIC POLYNEUROPATHY

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Introduction: Diabetes - "noninfectious epidemic of XXI century". According to the IDF in 2011, the number of diabetic patients in the world reached a record figure of 366 million. In Ukraine from diabetes suffer more than 1.3 million patients (Ministry of Health of Ukraine, 2013). The severity of the problem determines not only its prevalence, but also the rapid development of complications. It is known that every third patient with DM suffers from distal symmetric polyneuropathy - a major neurological complication of diabetes, which in 3 - 32% of patients is presented by strong neuropathic pain, is responsible for substantial morbidity, increased mortality and reduced quality of life.

Aim of the study: Conduct a survey, determine the neurological symptoms and neurophysiological features of patients with diabetic polyneuropathy.

Material and methods: It was examined and analyzed the clinical cases of 12 patients with DPN who were treated in the department of vascular surgery of Lviv regional hospital, using neurological clinical examination, doppler ultrasound, EMG, neuropsychological examinations, questionnaires DH4 and VAS.

Results: The study involved 12 patients with DPN aged 60 to 75 years; including 9 men and 3 women. It was observed such clinical picture: 1) violation of the polineural sensitivity type in 100% of patients; 2) neuropathic pain syndrome in 81%; 3) a symptom of peripheral paresis in 59%; 4) vascular syndrome in 96% of patients. Also, 60% of patients had a manifestation of anxiety-depression. In assessing the clinical status of patients and the development of optimal treatment strategy was important the differential diagnosis of DPN and chronic ischemia of the extremities, and their combination. It was found that ischemic component characteristic symptom is intermittent claudication (occurrence / increase in pain while walking), increased pain at night and their relief when lowering the limb. For the diagnosis of ischemia was crucial ultrasonic duplex scanning of lower limb arteries and determination of characteristic changes in blood flow in them.

Conclusions: 1. Diabetic neuropathy - a serious disabling complication of diabetes. 2. In clinical picture prevail painful form of DPN with neuropathic pain domination. 3. The duplex ultrasound of lower limb arteries is important for the differential diagnosis of DPN.

[154]

Incidence and clinical correlates of self-injurious behavior in Gilles de la Tourette syndrome

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Introduction: Self-injurious behavior (SIB) is deliberate, non-accidental infliction of self-harm without suicidal intent. According to previous studies it is also quite frequent among individuals with Gilles de la Tourette Syndrome (GTS) affecting 30 – 60% of patients.

Aim of the study: To evaluate the incidence and clinical correlates of SIB in Polish patients with GTS.

Material and methods: We analyzed demographic and clinical data of 114 patients with GTS, 87 males (76.3%), 60 children (52.6%). Mean age at the time of examination was 18.3 ± 10.1 years, mean disease duration 10.7 ± 8.7 years.

Results: SIB occurred in 36% (41/114) of GTS patients. Mean age of onset, known for 32 patients, was 12.7 ± 7.5 years (range: 1-38). Age of SIB onset oscillated between ages 1-9 ($n=10$), 10-15 ($n=14$), 15-20 ($n=5$) and over 20 ($n=3$). The average time between age of tic onset and age of SIB onset was 6.3 ± 6.7 years. The onset of SIB occurred before worst ever tic severity time by 6.1 ± 6.9 years but in half of the patients (16/32) this period was shorter than 2 years. SIB was positively correlated with Yale Global Tic Severity Scale (YGTSS): total score ($r=0.50$, $p=0.00$), motor tic severity ($r=0.43$, $p=0.00$) and impairment of daily living ($r=0.45$, $p=0.00$). Moreover the total number of complex motor ($r=0.18$, $p=0.0499$) and vocal tics ($p=0.0008$) as well as worst-ever peak tic severity ($r=0.23$, $p=0.017$) were also correlated with SIB. Psychiatric correlates of SIB included Attention Deficit

Hyperactivity Disorder (ADHD, $r=0.35$, $p=0.00013$), compulsions ($r=0.295$, $p=0.0014$), depression ($r=0.28$, $p=0.0023$) and aggression ($p=0.00088$).

Conclusions: SIB represents different phenomena in GTS, may appear anytime in the course of the disease, and affects patients with more severe and complex tics, compulsions and ADHD. It may also lead to depression and greater impairment of daily living.

[155]

The role of new generation sequencing test in differential diagnosis of patients with hereditary muscle diseases

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Introduction: Hereditary muscle disorders are a genetically heterogeneous group of rare diseases with similar clinical features, what often makes establishing a diagnosis difficult. Usually, only advanced genetic testing provides required information. For only a few of these diseases a real treatment is nowadays available. Genetically confirmed diagnosis is necessary for participation in clinical trials and qualification for future targeted therapy.

Aim of the study: To identify a molecular background in a cohort of patients with undiagnosed limb-girdle weakness and to characterize their phenotypes.

Material and methods: Department of Neurology, Warsaw Medical University, participated in an European multicenter project MYO-SEQ. The aims of the project were to contribute to the diagnostic pathway for patients affected by unknown forms of limb-girdle weakness, to seek for so far unknown mutations triggering muscle disorders and to speed up introduction of NGS (New Generation Sequencing) into the healthcare system. Patients included in the project were at least 10 years old, had elevated serum CK activity and/or unexplained limb-girdle or respiratory muscle weakness.

Based on these criteria we identified a group of 75 patients treated in our Department. Their DNA samples and clinical data were sent to MYO-SEQ coordinating center at John Walton Muscular Dystrophy Research Centre, Institute of Genetic Medicine, Newcastle University. With the patients' consent, the samples were tested using NGS method, comprising 169 genes of proven relation to muscle disorders.

Results: In total of 75 tested samples, 50 (66,7%) showed specific mutations responsible for the patients' symptoms including 45 (60,0%) with mutation in a single gene. This, in combination with clinical data, allows to establish a precise diagnosis. In 5 samples (6,7%), mutations in more than one gene were found, which suggests that corresponding phenotypes are complex and originate from different diseases. In 25 (33,3%) samples, no known mutations were found.

Conclusions: NGS is a useful method to establish a diagnosis for patients with muscular disorders. In two cases included in our cohort, NGS allowed to apply a therapy currently available: a patient with Pompe disease can be treated with an enzyme substitution (acid maltase) and a patient with congenital myasthenic syndrome with RAPSN-gene mutation is treated with acetylcholinesterase inhibitors. When new therapies become available, NGS test should be included in a standard diagnostic procedure of myopathies.

[156]

Skin reactions and timing of their occurrence in Polish patients with epilepsy as an adverse effect of antiepileptic drugs

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Introduction: Antiepileptic drugs (AEDs) are commonly associated with adverse effects such as cutaneous manifestations. Early recognition constitute an important aspect of treatment with epileptic drugs that may prevent potentially fatal outcome and might influence on therapeutic decisions.

Aim of the study: The aim of this study was to assess the incidence of skin reactions to AEDs in Polish patients with epilepsy.

Material and methods: We assessed retrospectively and prospectively 753 consecutive patients with epilepsy. A detailed survey of medical records concerning all treatment with AEDs was performed.

Results: A total of 753 patients who were exposed to 18 different AEDs were included. Mean age of patients was 35.8 (± 14.2), mean age at onset of epilepsy was 20 (± 15.4) and 417 (55.4%) were females. AED-related skin reactions occurred in 54 patients (7.2%). Mean age at onset of skin reactions was 28.9 (± 17.8). There were no differences between patients with skin manifestations to AEDs in terms of age, sex, type of epilepsy, and age at onset of epilepsy. 92.5% of the reactions occurred to patients on lamotrigine (LTG) (27 patients), carbamazepine (CBZ) (20 patients), or oxcarbazepine (OXC) (3 patients). 4 patients developed skin reaction to lacosamide (LCZ), phenytoin (PHT), levetiracetam (LEV), and valproate (VPA) (one patient to each drug). In 26 patients, skin reaction occurred to first-line treatment of new onset epilepsy (16 to CBZ, 10 to LTG); for the remaining 28 patients, to the add-on treatment. In 16 patients, the culprit drug was added to VPA. Median interval between institution of treatment and onset of rash was 10 days (range: 5-14). Whereas between onset of rash and AED discontinuation there were 4 days (2-10). In the next 7 days (5-12) rash subsided. 6 patients with AED-related skin reactions reported history of rash with other AED. The most common type of skin reaction was maculo-papular exanthema, one patient developed Drug Reaction with Eosinophilia and Systemic Symptoms and three patients were diagnosed with Stevens-Johnson syndrome.

Conclusions: Skin reactions are a common adverse effect of AED use and are reported more frequently with aromatic AEDs.

[157]

Thyroid diseases in multiple sclerosis

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Introduction: Some immune system disorders, such as Hashimoto's thyroiditis, Graves' disease and sclerosis multiplex (SM), share common features: the presence of autoantibodies and self reactive T-cells.

Aim of the study: The aim of our study was to assess the coexistence of these diseases.

Material and methods: In our study, we used 104 medical histories of SM patients.

Results: Among the data collected, we found out 14 patients with thyroid diseases among which 6 patients with Hashimoto's thyroiditis and 2 with Graves' disease. Comparing these values to population data, we have not found more frequent comorbidity ($p < 0.05$).

Conclusions: We are aware of a small research group, which is why we plan to expand a group of consecutive patients and look at other autoimmune disease.

[158]

Complementary and alternative medicine (CAM) in multiple sclerosis: questionnaire-based study in polish population

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Introduction: Multiple sclerosis (MS) is a chronic, progressive and disabling neurological disease with significant influence on quality of life. Nowadays there is no cure for MS. Although efficacy and safety of complementary and alternative medicine (CAM) is not scientifically confirmed, many patients are using CAM as complementary or alternative to conventional therapy.

Aim of the study: To assess the prevalence, predisposing factors and characteristic of CAM use among MS polish patients.

Material and methods: The data was collected via self-designed survey consisted of 33 questions. Questionnaire was distributed among MS patients hospitalized during 2016 in MS Unit at the Department of Neurology, Medical University of Warsaw. The study group consisted of 75 patients (47 females, 28 males, mean age 44,6±12,5) with clinically definite MS.

Results: According to the questionnaire 48 patients (64%) have used CAM at least once. Most of the patients declared to see their possible (58%) or marked (43,7%) positive effect. 61,4% of CAM users reported reduced fatigue and improved mood (33,3%). There were a significant correlations between CAM use and social status ($p<0,04$), disease progression ($p<0,03$) or lack of disease modifying therapies efficacy ($p<0,04$). There were no significant correlations between CAM usage and sex, habitation, education, marital and professional status. The most frequently used CAM were vitamins (48%), polyunsaturated fatty acids (36%); psychophysical methods (44%) including manual therapies (24%) and relaxation techniques (17,3%) as well as herbal medicine (29,3%). Physicians taking care about MS patients using CAM were considered as the most reliable authority in both conventional treatment (97,3%) and CAM (67%). CAM users significantly more often discuss this issue with their doctors (56%) if compared with patients who did not use alternative medicine ($p<0,05$). However about 54% of patients did not reveal to their physicians that they used CAM. Responders said that the physicians did not initiate the discussion on it (55,9%) however 44% of patients would like to have a possibility to talk to doctor about CAM.

Conclusions: Although the CAM efficacy and safety is not confirmed one should keep in mind that most of the MS patients use alternative methods, especially those with more severe disease course. Physicians are mostly perceived as reliable authority, therefore they should discuss this issue with MS patients in order to eliminate drug interactions and to improve the compliance.

[159]

COGNITIVE IMPAIRMENT ASSESMENT SCALES IN PATIENTS WITH TYPE II DIABETES MELLITUS

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Introduction: People with type 2 diabetes mellitus (DM) have higher risk of cognitive impairment, thus useful screening instruments, as clock drawing test (CDT) and six-item cognitive impairment test (6CIT) are necessary.

Aim of the study: To assess cognitive impairment and influence of demographic factors in patients with type 2 DM by using CDT and 6CIT.

Material and methods: We conducted a cross-sectional study from 2016 - 2017 in Department of Endocrinology of LUHS. 45-75 years old patients with type 2 DM were assessed for cognitive impairment. Exclusion criteria: history of any neurological disease, mental illness, use of any sedatives, any systemic disease affecting their ability to participate. Patients were interviewed for demographic factors (education, duration of DM, memory complaints, etc.). After their vision was checked with Sloan ETDRS format near vision chart, they were asked to perform 6-CIT and CDT. 4 components of CDT were evaluated: position of 12 hours, small and big hands, symmetry of 12, 3, 6, 9 hours. Patients who scored 3 out of 4 or less were considered cognitive impaired. 6-CIT

consists of 6 questions, total score of: 0-7, 8-9, 10-28 evaluated as normal, mild, significant cognitive impairment, respectively. Statistical data analysis was performed with SPSS 22.0, using Crosstabs, Pearson's Chi-Squared test, Cramer's V, Kappa tests. The values were considered to be statistically significant when $p < 0.05$.

Results: In total, 72 patients participated. Mean age was 60.19 ± 7.4 years. Less than half of patients had 12 years of education (41.7%), 34.7% had 13 to 15 years, 23.6% - more than 15 years. Mean duration of type 2 DM was 12.25 ± 6.57 years. The majority of patients (70.8%) had uncontrolled glycated hemoglobin (HbA1c $> 7\%$), with a mean of $8.93 \pm 2.9\%$. 54.2% of patients had memory complaints, 69.4% - presence of chronic limb pain. Gender, memory complaints, chronic limb pain, HbA1c, DM duration, BMI did not have any significant impact on both tests score. Correlation between level of education and CDT score (Cramer's 0.31, $p = 0.008$), between age and 6-CIT score (Cramer's 0.305, $p = 0.035$) was found. Only 9.7% of patients scored 4/4 in CDT. According to 6-CIT results, 59.7% were evaluated as normal, 12.5% as having mild, 27.8% - significant impairment. Both tests together considered 10% participants as healthy, 38.6% - cognitively impaired, 51.4% of results mismatched (out of all healthy 6-CIT participants, 83.7% scored 3 or less in CDT).

Conclusions: Cognitive impairment was found in majority of patients with type 2 DM. Impact of education on patients' CDT score may have influenced the percentage of mismatch between both tests in deciding whether patient is cognitively impaired or not. Especially, when education had no statistically significant correlation with 6CIT score.

[160]

Epidemiologic, Clinical and Radiologic Characteristics and Predictors of Outcome in Patients with Cerebral Venous Sinus Thrombosis; a Retrospective Study

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Introduction: Cerebral Venous Sinus Thrombosis (CVST) is an important cause of stroke involving young adults especially women. Unlike Western countries, it is not an uncommon condition in Middle East with a relatively high morbidity and mortality.

Aim of the study: In this study we investigated characteristics and predictors of outcome of CVST in Shiraz, Iran.

Material and methods: In a retrospective study, we included all adult patients admitted in Namazi Hospital, Shiraz, Iran during 2013-2015 with diagnosis of CVST by standard imaging. Demographic data, radiologic findings, clinical presentation, risk factors and outcome on discharge were obtained from medical records. Chi square and linear regression tests were used for data analysis.

Results: Among 81 eligible patients, 63(78%) were female. The mean age was 37.2 ± 10.5 . Thirty-nine percent presented with intracranial hemorrhage and 30% with venous infarction on initial brain imaging. Transverse and superior sagittal sinuses were the most common involved locations, respectively. Most frequent presentations included headache (90%), papilledema (33.8%), seizure (31.3%) and focal neurologic deficit (27.5%). The major risk factor of CVST was oral contraceptive pill consumption (45.6%). CNS and ENT infections accounted for 11.1% of all causes. Fifty-two patients (65%) had good outcome on discharge defined as Modified Rankin Scale (MRS) = 0-2. Five patients (6.2%) expired due to CVST complications within hospital course. Coexistence of both hemorrhage and infarction ($p = 0.001$), coma (GCS < 9) ($p = 0.013$) and decreased alertness (GCS = 9-14) ($p = 0.001$) were predictors of poor outcome and headache ($p = 0.003$) was the predictor of good outcome.

Conclusions: CVST patients with hemorrhage and or infarction, decreased alertness and coma on admission are susceptible to death and functional dependence. CVST should be diagnosed and treated early in its course to prevent further complications and poor outcome.

[161]

COL-CAP concept vs traditional evaluation in botulinum toxin treatment of patients with cervical dystonia

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Introduction: COL-CAP (Collum-caput) is a new diagnostic concept prepared in order to help clinicians to evaluate the affected muscles in patients suffering from cervical dystonia, who need botulinum toxin injections. On the other hand, there are some other methods (besides the experience of the neurologist) like USG or electromyography which were used to find the muscles which need to be injected.

Aim of the study: The aim of our study was to compare the traditional evaluation of patients with cervical dystonia with Col-Cap concept in order to verify the usefulness of the new diagnostic evaluation.

Material and methods: We included 18 patients suffering from cervical dystonia, who are treated with botulinum toxin injections (8 men, 10 women; mean age 53,2 years in mean time of the treatment 8,3 years). The patients were organized in 2 groups: 8 patients in Col-Cap concept and 10 patients treated after “traditional” evaluation. All of the patients were evaluated using TWSTRS before and in 1-month period after the botulinum toxin injections.

Results: Both groups of patients significantly improved after botulinum toxin injections. The better improvement was observed in traditionally evaluated patients (median TWSTRS 64 points before and 19 points after injection vs 46,5 points before and 19,5 points after injections with the use of Col-Cap concept. There were no statistical differences between improvement in particular TWSTRS parts between both groups ($p>0,05$).

Conclusions: Col-cap concept is an useful method in diagnostics of affected muscles in cervical dystonia patients. However, there is no statistically significant improvement after botulinum toxin injections in patients evaluated using Col-Cap concept in comparison to traditionally examined patients.

[162]

Multiple Sclerosis - evolving views of therapy goals in patients on different stages of treatment

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Introduction: Multiple sclerosis is the most common autoimmune inflammatory disease of the central nervous system. There are different therapy options which slow down the progression of the disease. However, there is very little known what therapeutic goals are the most important for the patients and which symptoms would be of the greatest value to eliminate. The new aggressive treatments promise improvement of results in multiple sclerosis (MS) therapy, however with risk of serious complications. In this study we analysed patients' acceptance for risks connected with the MS treatment.

Aim of the study: Obtaining data from people suffering from MS about what effects of their treatment would be most rewarding and also what their therapy should be focused on. Obtaining data what risk the patients would accept if the cure of the disease was achievable with modern therapies.

Material and methods: The study was designed as a prospective online questionnaire. It was distributed to the members of an international social forum for the people suffering from Multiple Sclerosis

Results: The questionnaire was filled by 77 patients, 52 women and 25 men. 66% had relapsing-remitting MS, 21% had secondary-progressive, 5% had primary-progressive. Their average EDSS score was 4.1 points. As the most inconvenient they reported arms or legs weakness (86%), fatigue (84,5%), balance problems (82 %) among others. For 29% of the patients relief of those symptoms was synonymous with “cure”, but most of them defines “cure” as stopping the disease progression at the current stage (almost 60%). No matter the number of the

treatments about 73% of all the patients were willing to accept 1% risk of the mortality for the treatment that achieves self-defined cure.

Conclusions: This study is an international continuation of our survey for the patients from Poland that was checking their definition of “cure” and accepted mortality rates for their therapy. The patients with MS accept much higher risk than the risk connected with the treatments such as autologous hematopoietic stem cell transplantation.

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[163]

Stereotactic Radiosurgery for Brain Metastases: Outcomes from Two Gamma Knife Centres

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Introduction: Stereotactic radiosurgery (SRS) administers high-dose radiation to targeted areas of the brain whilst sparing normal functioning tissue. In the context of brain metastases, SRS has revolutionised management of patients with oligometastatic disease. SRS is associated with high rates of local tumour control, has a favourable risk/benefit profile and is cost effective.

Aim of the study: To assess the overall survival of patients with brain metastases who underwent SRS at any point during their management.

Material and methods: A retrospective database of 370 patients treated for brain metastases via SRS from October 2013 to May 2015 was reviewed. The cohort consisted of patients from two unmatched Gamma Knife centres, one located in Toronto, Canada and the other in Bristol, England. Each centres used the Leksell Gamma Knife® Perfexion™ model to deliver focused ionizing radiation to metastatic brain lesions according to standard protocol. Analysis of the data was performed and overall survival estimates were determined using the Kaplan–Meier method.

Results: The median overall survival time was 16.1 months (95% CI 12.2–22.7) with a 1-year overall survival rate of 56%. Of the 370 patients the mean age at brain metastases diagnosis was 60. The most common primary tumour sites were lung (37%), breast (21%) and melanoma (17%).

Conclusions: This study provides evidence that SRS offers good overall survival in selected patients with metastatic brain disease. Our study's median overall survival time and 1-year survival rate are favourable compared to the current literature suggesting that both centres are performing well.

[164]

Spinal cord injury and its neuroregeneration on example of Wistar C rats

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Introduction: The study presents possibilities of detecting subtle gait dysfunctions of rats that underwent an operating spinal cord injury, without disturbing the structure of the spine.

Aim of the study: The main point of this work is to assess the influence of neuroregenerating factors on the motor functions regaining.

Material and methods: Spinal cords were damaged using a precisely directed stream of compressed air generated by the impactor. This method was used to simulate a damage causing spinal cord injury in humans, which occurs during traffic accidents. After surgery the animals were subjected to differentiated therapies based on the administration of neuroregenerating substances -NAP and implantation of Schwann cells and microglia. The aim of our study was to evaluate the changes of gait parameters in rats, using the 9.0 XT Catwalk system. The effectiveness of this method in the evaluation of movement dysfunction of animals was confirmed in many studies (e.g. concerning Parkinson disease).

Results: After surgery, on 4. And 7. Day and, 2.4 and 6 week the rats were functionally tested with CatWalk XT device. Many static (e.g.the size of paw prints) and dynamic (e.g. velocity of raising paws from the ground) parameters were tested. Results were precisely analysed (using Statistica software) and they were compared to the rest of results from appropriate group. Results proved that scale of regeneration process depended on used therapy.

Conclusions: The longer our study lasted, the more unresolved aspects appeared. More experiments concerning this problem must be conducted, but this discovery gives hope for curation to disabled people with central nervous system damage, including the spinal cord dysfunction.

[165]

Quantitative CT analysis to identify the relationship between the percentage of hematoma drained and the preoperative CSDH density

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Introduction: Chronic subdural hematoma (CSDH) is a common form of an intracranial hemorrhage. The structure and density of a hematoma is changing in the course of time and this has an impact on the drainage of the haematoma. Analysis of the density and structure can be useful in predicting the effectiveness of the drainage.

Aim of the study: The aim of this study was to find the relationship between the percentage of hematoma drained and the preoperative CSDH density. The analysis also included the internal architecture of the hematoma. We aimed to identify a critical value of these parameter

Material and methods: We retrospectively analyzed computed tomography (CT) and clinical data of CSDHs in 30 patients who were admitted to the Department of Neurosurgery and underwent evacuation of the hematoma through 2 burr holes with irrigation. To examine the relationship between percentage of hematoma drained, internal architecture of the hematoma and preoperative CSDH density we used quantitative image-based analysis to measure the volume and the density. Additionally, we calculated the average density, expressed in Hounsfield units over the entire hematoma volume and visualised data from computed tomography.

Results: The authors discovered that the percentage of hematoma drained is correlated with the preoperative CSDH density. This correlation is dependent on the internal architecture of the hematoma.

Conclusions: Quantitative image analysis provided evidence that the percentage of hematoma drained is correlated with the preoperative CSDH density and the internal architecture of the hematoma.

[166]

Determinants of the long-term facial nerve function after vestibular schwannoma surgery

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Introduction: Vestibular schwannomas are benign tumors that have three possible management options: surgery, radiation treatment or active surveillance. The main goal of treatment in our Department is to assure a permanent cure by complete tumor resection, as most patients have a long-life expectancy. At the same time, however, efforts are made to preserve facial and auditory nerve function.

Aim of the study: To analyze the impact of various pre-, intra- and post-operative factors that could influence the long-term facial nerve (CNVII) function after vestibular schwannoma surgery (VS).

Material and methods: This study included 273 patients operated on for sporadic VS (mean tumor size 30mm, total resection-267, near total resection-6, retrosigmoid approach-268, translabyrinthine approach-5). A multivariate regression analysis of 32 factors (preoperative-20, intraoperative-10 and postoperative-2) was performed for the long-term CNVII function as a dependent variable.

Results: The stepwise regression analysis found seven factors that independently influenced the long-term outcome: 1. the short-term CNVII postoperative function ($p=0,000$), 2. CNVII function at the end of the procedure ($p=0,000$), 3. any previous VS treatment ($p=0,012$), 4. CNVII displacement pattern ($p=0,012$), 5. Internal acoustic canal (IAC) widening ($p=0,013$), 6. tinnitus ($p=0,031$) and 7. hearing class at presentation ($p=0,050$). The factors which did not show an independent influence were: gender, age, vestibular and cerebellar signs, trigeminal nerve dysfunction, headaches, hydrocephalus and CNVII weakness at presentation, symptom duration, tumor stage, size, side, volume, histopathological type and consistency, surgeon experience, surgical approach, the use of nimodipine and intraoperative monitoring, postoperative complications, and others. When the intraoperative and short-term CNVII functions are not taken into account, the independent factors are: 1. tumor stage according to the Hannover scale ($p=0,000$), 2. CNVII weakness at presentation ($p=0,000$), 3. sequence of the operations i.e.

growing center experience ($p=0,023$), 4. hearing class according to AAO-HNS scale at presentation ($p=0,022$), 5. IAC widening ($p=0,023$) and 6. side of the tumor ($p=0,023$).

Conclusions: The prediction of the long-term facial nerve function is important in different time windows. Our analysis showed that the most important preoperative factor is the tumor stage, intraoperatively – the neurophysiological CNVII response and postoperatively – the short-term postoperative CNVII function.

[167]

The asterion and its relation to the junction of the transverse and sigmoid sinuses

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Introduction: The asterion is a craniometrical point located at the junction of the lambdoid, occipitomastoid and parietomastoid sutures. According to literature it can be used as a landmark for retrosigmoid approach. The asterion is also defined as lying within a few millimeters of the posterior-inferior of the junction of the transverse and sigmoid sinuses intracranially. Determining the location of the sinuses precisely is crucial for proper lateral suboccipital approaches.

Aim of the study: To determine the precise relation of the asterion and the transverse-sigmoid sinus junction (TSSJ).

Material and methods: The cohort consisted of 19 randomly assigned patients (38 sides), 14 female and 5 male, mean age: 47 yo (range: 24-73 yo), treated in the Department of Neurosurgery, Medical University of Warsaw. Three-dimensional reconstructions were made in 3D Slicer-software using Computed Tomography Angiography. In every reconstruction we identified two sets of points: 1. the asterion (P) and its correspondent point inside the skull, located on the bony surface (Q), 2. the posteroinferior aspect of TSSJ (R) and its correspondent point on the outer cranial surface (S). We measured the linear distances between P and S and assessed the location of Q (at the level of TSSJ, below or above). We excluded 8 results from the cohort for the reason of bones fusion (mean age: 62 yo).

Results: In 25 (65,8%) cases Q was at the level of the transverse or sigmoid sinuses (group A), in 7 (18,4%) was supratentorial (B) and 6 (15,8%) infratentorial (C). The mean distance between P and S in A was $9,1 \pm 4,1$ mm (range: 3,4-18,1 mm); in B consecutively $17,0 \pm 3,7$ mm (13,0-21,6 mm); in C $9,1 \pm 1,8$ mm (6,3-11,1 mm). In 5 cases there were unilateral sutural bones all located on the right side. For this group we obtained the results: mean distance $13,7 \pm 5,2$ mm (5,0-20,5 mm).

Conclusions: In most cases the asterion is located at the level of the transverse and sigmoid sinuses. For the reason of interpersonal differences concerning location of the asterion, presence of sutural bones and bones fusion impeding designation of the asterion, it should be used as a determinant for retrosigmoid approach with consideration.

[168]

Animal model of femoral to sciatic nerve transfer

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Introduction: Spinal cord injury (SCI) is an irreversible chronic condition. Especially SCI at cervical level is devastating, as essential hand functions are lost or deeply impaired. In some cases motor functions of the upper limb can be partially restored by reconstructive surgical procedures-nerve transfers (neurotizations).

Neurotization procedure includes repair of distal denervated nerve (recipient) by connecting it with proximal, healthy nerve with less significant function (donor). Beside clinical assessment of motor and sensory function and electrophysiological examinations, methods of molecular analysis of neurotizations in human are limited.

Aim of the study: The aim of this study was to determine whether femoral (donor) to sciatic (recipient) nerve transfer in rat model is possible to perform with restoration of sciatic nerve function, which has never been described in literature.

Material and methods: 3 SPRD male rats were treated with left side femoral to sciatic nerve neurotizations on the level of lumbar spine, right side of the rat served as a control. Animals were observed for 50 days. On day 50 pinch test of each hind limb has been performed to evaluate restoration of sensory and motor function, afterwards retrograde fluorescent axonal tracers (1µL, 2% solution) were injected into each sciatic nerve on the level of proximal thigh (True Blue into left nerve and Diamidino Yellow into right nerve). On day 57 rats were anesthetized and sacrificed. Spinal cord was harvested and analyzed histologically.

Results: During pinch test, rats were retracting hind limbs after needle pinching, left limb retraction compared to right limb was: less intense and observed after stronger stimulus. Tracers' injections resulted in retrograde axonal transport of fluorescent tracers from site of injection to the body of neural cell located in the spinal cord. Tracers were visualized with fluorescent and confocal microscopy of spinal cord sections. True Blue in cells on left side and higher segment of spinal cord (greatest density at L3 level), than Diamidino Yellow present in cells on right side and lower segment of spinal cord (greatest density at L5 level).

Conclusions: On the side of performed neurotization (left side) innervation originated from higher segments of spinal cord than on the untreated (right) side, which implies that femoral nerve axons grew into damaged sciatic nerve and innervated its distal targets with good functional outcome, which was confirmed by pinch test (restoration of sensory and motor function).

[169]

Assessment of anatomical variety of mammillary body angle

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Introduction: Mammillary body angle (MBA) is defined as the angle formed by the intersection of a plane tangential to the base of one of the mammillary bodies with the plane tangential to the floor of the fourth ventricle in the midsagittal plane. Latterly it becomes significant in evaluation of the parasellar and third ventricle pathologies, especially in differentiating localisation of craniopharyngiomas. Acute and obtuse MBAs explicitly distinguish between intraventricular and suprasellar localisations respectively. Furthermore, the pre- and postoperative values may be compared to assess the results of treatment. Notwithstanding, there is still no explicit report about anatomical variety of MBA under normal conditions.

Aim of the study: Aim of the study was to assess the anatomical variety of MBA in regard to gender and age. Addition of this data may improve methods basing on measurement the MBA, especially the evaluation of the postoperative condition as a comparison with population average

Material and methods: Material contained 151 magnetic resonance images performed in years 2009-2017 obtained from collection of the Department of Neurosurgery. All images included in this study concerned patients carrying no intracranial pathological conditions. Patients were allocated into 9 age groups starting from 0-9 and ending up with 80-89 years old. Measurements of MBA were performed using radiological software.

Results: Collected values of MBA vary from 44 to 89 degrees (median 68) with no differences between genders. However, the study demonstrated increase of the MBA with age, starting from average of 55 in group 0-9, ending with 80 in group 80-89. Not only does the average MBA increase in following age groups, but also the contribution of MBAs greater than 70 degrees increases with age.

Conclusions: Study demonstrated significant anatomical variety of the MBA in patient of various ages. Explicit evaluation based on measurement of the MBA cannot omit taking into consideration anatomical conditions depending on patient's age.

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[170]

A comparison of labor induction with misoprostol and dinoprostone

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Introduction: In 2010 25% of labors in developed countries were induced, and these percentage is increasing. Induction of labor is performed when the continuance of pregnancy is a danger for mother or fetus and the risk of complications exceeds the benefits. In case of insufficient effacement, the induction is preceded by preinduction. The most frequent pharmacological methods are dinoprostone (PGE2) and misoprostol (PGE1).

Aim of the study: The aim of this study was to compare obstetric outcomes in the groups of patients who underwent preinduction of labor with PGE1 and PGE2.

Material and methods: A retrospective study involved 98 randomly selected patients who underwent preinduction in the Department of Obstetrics and Perinatology CM UJ in 2015-2016. Group 1 (G1) consisted of 48 patients who were administered PGE1. Group 2 (G2) included 50 patients who were treated with PGE2. No other preinduction methods were used. We analysed obstetric medical history, Bishop score, the time since the implementation of preinduction to delivery (PD), necessity of oxytocin infusion, the percentage of caesarean sections (CS), Apgar score and weight of the newborn.

Results: Groups did not differ in parity, age, BMI, Bishop score and the weight of the newborn. Duration of pregnancy was shorter in G1 (median 283 days vs 286 days in G2, $p=0.03$). For both groups, the most common indication for preinduction was postterm pregnancy (56% of responses in G1 and 60% of responses in G2). In G1, patients were qualified to preinduction due to abnormalities in cardiotocography (CTG) or ultrasonography (USG) more frequently ($p=0.01$). There were no differences in the length of PD in case of vaginal birth (10.5h vs 11h). In case of CS necessity, PD was shorter for G1 ($p=0.01$). No difference in the rate of performed CS was observed. In G1 fetal distress was more frequent indication for CS (85% vs 31%, $p=0.003$), and it occurred in 25% of patients receiving PGE1. Its occurrence did not correlate with abnormal USG and CTG on qualification. In G2, infusion of oxytocin was more often required (79% vs 21%, $p=0.001$). There was no difference in Apgar score.

Conclusions: The use of PGE2 was associated with nearly 4-times more frequent necessity of oxytocin administration, while in the group using PGE1, signs of fetal distress were more frequently observed. Comparison of the effectiveness requires randomized trials, in groups of patients not differing in the length of pregnancy and obstetric history.

[171]

CORRELATION BETWEEN PREGNANT WOMEN AND THE RISK FACTOR OF ANEMIA BASED ON WOMEN'S AGE, EDUCATION, OCCUPATION AND PARITY AT DR. SOETOMO HOSPITAL, SURABAYA, EAST JAVA INDONESIA

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Introduction: In developed countries approximately 23% women having anemia in their pregnancy, while in developing countries there are 52%. A survey shows 28% caused death in pregnancy. Prevalence of anemia in Indonesia increase significantly. The total patient of anemia in Indonesia are 70%. There are several factors caused by anemia in women pregnancies, such as malnutrition, iron deficiency, the women's age, education, occupation, or parity.

Aim of the study: This research is aimed to find the correlation between the pregnancies and risk factors anemia at RSUD Dr. Soetomo Surabaya in January - December 2013

Material and methods: This research is retrospective study which is analyzed using chi-square method by collecting datas from medical record in pregnancy installation I Dr. Soetomo Hospital, Surabaya East Java, Indonesia from January to December 2013. This research is using pregnan women's data from Pregnancy Installation I Dr. Soetomo Hospital period January – December 2013. The data is presented in a statistic table.

Results: From the medical record there are 70 pregnant women, including 32 are anemic and 38 are normal. The result shows that the anemia risk factor affect pregnant women is education. The educated women trying to collect a lot of information to fulfill their nutrition, both women and their babies. While the age, occupation, and paritas do not give any significant influence to anemia in pregnancies.

Conclusions: There are no correlation between pregnant women and the risk factor of women's age, occupation, and parity. Nevertheless, there is a correlation between pregnant women and education.

[172]

Impact of transobturator tape treatment on stress and mixed urinary incontinence

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Introduction: Urinary incontinence is a relevant economic, social, psychological and medical issue. More than 35% adult women in Europe have felt involuntary loss of urine at least once a month. Surgery using a sling as a solution can be used for stress or mixed incontinence. One of the most frequently used method of surgery is using transobturator tape (TOT).

Aim of the study: To assess influence of TOT surgery results in women with stress or mixed urinary incontinence.

Material and methods: It is a prospective study of cases, when female patients stress urinary incontinence was treated using TOT operation from January 2014 to December 2014. Patients who had TOT surgery were included in the study. The indication for procedure was stress or mixed urinary incontinence with predominant stress urine incontinence. Women received an original questionnaire before and 1 year after the surgery. Patient's anamnesis and quality of life information were analyzed before surgery. The efficiency of surgery, postoperative process and postoperative signs were analyzed after surgery.

Results: Total 54 patients were included into the study. The average age was 54,26. The mixed urinary incontinence was determined for 29 (53,7%), stress urinary incontinence – 25 (46,3%). The efficiency of TOT surgery after 1 year was 94,5% ($p < 0,05$). In this group 30 (55,56%) women did not have any symptoms of stress urinary incontinence, 21 (38,9%) improved, but had symptoms of overactive bladder, 3 (5,56%) did not feel any improvement. One intraoperative complication (1,85%) – urethral damage and one postoperative complication – E. coli infection occurred.

Conclusions: The transobturator approach is a very effective treatment for stress or mixed incontinence. Longer follow-up is needed to assess the long-term reliability.

[173]

The impact of oral contraception on obstetrics outcome

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Introduction: 29% of Polish women using contraception choose oral contraceptives. Possible side effects of using this method have been analysed numerous times and it is regarded as safe. However, only a few new articles about its influence on planned pregnancy can be found in open bases of medical literature.

Aim of the study: The purpose of this study was to assess the obstetrics outcome in population of women using oral contraception before pregnancy.

Material and methods: The study involved 309 patients after singleton delivery, whose children were alive at birth, hospitalised between November 2015 and June 2016 in the Department of Obstetrics and Perinatology CM UJ. The part of the study concerning contraceptives was executed as a questionnaire and this information was supplemented with patient's medical history details. The group of patients using contraception was defined

as having taken oral contraceptive pills for at least 6 months and ceased this therapy no sooner than a year before conception.

Results: 39 patients (12,6%) used oral contraception in accordance with the inclusion criteria. This group did not differ significantly from the control group in terms of pregnancy length, parity, chronic illness incidence, education and location of residence. However, patients under the age of 30 tended to employ oral contraceptive methods more frequently ($p=0.004$). In the studied groups there was no significant variation in the occurrence of complications characteristic to general population of pregnant women, such as premature birth, premature rupture of membranes, hyperemesis gravidarum, gestational hypertension, intrahepatic cholestasis of pregnancy. The impact of oral birth control on the incidence of gestational diabetes remains on the verge of statistical significance ($p=0.052$). No significant difference was observed in frequency of labor induction or proportion of caesarian sections due to sudden causes. The use of contraceptives showed no significant correlation on the condition of the newborn (weight and length of the body, Apgar-score).

Conclusions: Oral contraceptives appear to not influence the obstetrics outcome. However the method employed in the study does not allow for the evaluation of its impact in the early phases of pregnancy. Due to the group quantity, the results were not analysed in terms of the active ingredient in the pill. The studies need to be repeated on a larger group of patients.

[174]

Influence of gestational hyperglycemia on birth weight and mode of delivery

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Introduction: Gestational diabetes mellitus (GDM) is one of the most common metabolic disorders in pregnancy, but the role of a hyperglycemia, particularly on the first prenatal visit is not clear and has scientific and practical interest for prognosis of GDM associated complications.

Aim of the study: The aim of the study was to find out association between level of glucose (in early pregnancy and in the 28-32 weeks) and birth weight and cesarean section (CS).

Material and methods: Retrospective analysis of 149 pregnant women's records aged $29,6 \pm 5,0$ (17 - 43 years). The analysis of fasting plasma glucose level in the 1st and 3rd trimester, birth weight and mode of delivery was done.

Results: The blood glucose level $\geq 5,1$ mmol/l in the I trimester was registered in 26 (17.5%), in the III trimester – 17 (11.4%) ($p>0,05$). The birth weight of infants born by mothers with a hyperglycemia in the I trimester 3663 ± 611 g. It was significantly more compared to normoglycemic group - 3420 ± 474 g ($p=0,02$). In the III trimester a difference was more significant - 3738 ± 716 g and 3429 ± 469 g ($p=0,01$). Fetal macrosomia was found in 4 (15.4%) patients with diabetic hyperglycemia in the I trimester and in 4 (23.5%) in the III trimester. There were 13 (50.0%) CSs out of 26 deliveries in pregnant with hyperglycemia in the I trimester, 31 (25.2%) out of 123 normoglycemic (RR 2.0, $p=0.013$). In the III trimester CS rate: 9 (52.9%) out 17 hyperglycemic and 34 (25.8%) out 132 normoglycemic (RR= 2,1, $p=0,024$).

Conclusions: Hyperglycemia cases were identified in 17.5% pregnant women on the first prenatal visit and in 11.4% – in III, 5.4% were registered in I and III trimesters. In I and III trimesters the level of glucose exerts impact on fetal growth, increasing risk of a macrosomia, which is higher in cases of hyperglycemia throughout pregnancy. These findings suggest that higher levels of glucose ($\geq 5,1$ mmol/l and above), regardless of time of its identification, are associated with higher GDM risk (RR 2.0-2.1).

[175]

Cerebroplacental ratio in prediction of adverse neonatal outcome

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Introduction: Recently, cerebroplacental ratio determined by color Doppler has been shown to be a good predictor of fetal well-being. CPR= Ratio of middle cerebral artery (MCA)/Ratio of umbilical artery (UA). It measures the proportion of blood flow supplying brain and placenta.

Fetuses with an abnormal CPR have a higher incidence of the following when compared with fetuses with a normal CPR: lower gestational age at birth, lower mean birthweight, higher rate of cesarean delivery for fetal distress in labor, higher rate of Apgar scores less than 7 at 5 minutes, an increased rate of neonatal acidosis, an increased rate of newborn intensive care unit admissions, higher rate of adverse neonatal outcome, and a greater incidence of perinatal death. The CPR is also an earlier predictor of adverse outcome than the biophysical profile, umbilical artery, or middle cerebral artery.

Aim of the study: The aim of the research is to study cerebroplacental ratio (CPR) evaluation in predicting adverse neonatal outcome and to determine whether the CPR is a better predictor of adverse neonatal outcome than the MCA RI or the UA RI used alone.

Material and methods: We explored 130 medical records, compared the CPR with neonatal outcomes and the MCA RI and the UA RI.

Results: In the abnormal CPR group the abnormal records were significantly more frequently observed (75.0%) than in normal CPR group (20.0%). The comparison of selected Doppler indices revealed that CPR showed the highest sensitivity in prediction of the adverse neonatal outcome (90.0%).

Conclusions: The CPR shows the highest sensitivity in prediction of adverse neonatal outcome. The CPR was a better predictor of adverse neonatal outcome than either the MCA RI or the UA RI. The CPR is useful in clinical practice in antenatal monitoring.

[176]

Clinical and ultrasonographic data in women with gestational arterial hypertension

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Introduction: Hypertension in pregnancy can be categorized into gestational hypertension (GAG); arterial hypertension (AH) which a woman can have before becoming pregnant also called symptomatic hypertension and combined hypertension with GAG and proteinuria, hypertension and ungraded hypertension. In any case, hypertension can have an unfavorable impact on the course of pregnancy.

Aim of the study: The aim of the study was to assess clinical and ultrasonographic parameters in pregnant women with gestational hypertension.

Material and methods: Clinical examination of 183 patients aged 16 - 45 (mean age 27, 9 ± 4 , 7) with GAG has been performed. The course of the disease was $8,8 \pm 4,0$ weeks with an average systolic blood pressure (SBP) on admission - $150,2 \pm 4,8$ mm Hg and diastolic blood pressure (DBP) - $93,1 \pm 6$ mm Hg. The control group consisted of 152 females without any clinical somatic pathologies. In the main group dominated women with systolic-diastolic hypertension, the 1st degree (48.1%), systolic hypertension, 1st degree, diastolic and systolic-diastolic hypertension 2nd degree was in 15, 9, 19.7 and 10.4% patients, respectively.

Results: The most common symptoms in patients with a combination of GAGs were headache, asthenia and vegetative syndrome, abdominal pains and dyspeptic symptoms associated with AD dynamics. All women had a lack of exercise, regardless their age. In the control group 41.4 and 56.6% females had low and moderate physical activity, respectively. In the group with GAG there was also a low level of physical activity (55.7%). Officially married dominated in the control group (81.8%), 51.8% women with GAG were married, 35.7% patients had non-formal family relations. Analysis of the structural and geometric parameters of the heart in patients identified a

number of significant differences in echocardiographic parameters in a group with GAG compared with the control group. Dilatation and spherization of the left atrium (LA), the form of which was intermediate between the normal ellipsoid and hemodynamically less favorable configuration were revealed. Diameter PL and spherization index (SI) LP in the group with GAG was significantly greater than in the control group. In the main group the index of the left ventricular mass (LVM) was significantly higher than in the control group.

Conclusions: Gestational hypertension can contribute to worsening social and medical history as well as become a risk factor for cardiovascular diseases.

[177]

Obstetric patients' admissions to intensive care unit

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Introduction: Pregnancy, delivery and puerperium can be complicated by severe maternal morbidity. About 1% of all obstetric patients need to be admitted to intensive care unit (ICU). Management of these patients requires a multidisciplinary approach involving both obstetrician and anesthesiologist.

Aim of the study: The aim of this study was to examine obstetric admissions to ICU at our Department over a 3-year period and to identify the risk factors for the admissions.

Material and methods: We retrospectively analysed 86 women who were admitted to ICU during pregnancy and up to 42 days postpartum between 2014 and 2016. Demographic data, past medical history, pregnancy, intrapartum and postpartum data, as well as indications for ICU admission were collected.

Results: Out of 9000 women who gave birth during the study period, 86 (0.95%) were admitted to the ICU. The general characteristics of the patients were: a median age of 32 years, in a single pregnancy (90.5%), after caesarean section (CS) at median gestational age of 25+6 weeks, during their second pregnancy (33.7%) and second delivery (41%). A median blood loss was 300 ml.

12 patients were transferred there during pregnancy. 72 patients (96%) were submitted to CS, 49 (68.1%) of which were emergency indications included birth asphyxia or lack of progress in labor (12%) and placental abruption (6.8%). Only 3 patients admitted to ICU had vaginal delivery.

Most common chronic diseases occurring in our patients were hypertension (26%), hypothyroidism (15.3%), thrombocytopenia (15.3%), heart disease (10.6%), respiratory disease (9.4%), diabetes (8.2%). Perinatal hysterectomy was performed in 28.3% of the patients.

Indications for the admission to ICU were: hypovolemic shock in 30.6% of cases, respiratory failure in 24.7% of cases, preeclampsia accounting for 15.3% of cases and other reasons (23.5%).

3 patients (3.48%) died during their stay at ICU. The average stay at ICU was 4 days.

Conclusions: ICU admission of obstetric patients occurs infrequently. Basing on the results of our study, the main risk factors for the admission in our patient population were emergency CS and chronic disease in pregnancy. Although obstetric conditions are responsible for most of the hospitalizations, still there are cases of anaesthesiological complications. Therefore, both obstetricians and anaesthesiologists should pay special attention to the patients likely to develop conditions requiring transfer to ICU.

[178]

Endocervical curettage diagnostic value assessment, depending on medical indications in clinical practice

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Introduction: The main indications for endocervical curettage (ECC) are abnormal cytology or colposcopy results. However in clinical practice the ECC is performed more often as a part of dilatation & curettage (D&C).

Aim of the study: The aim of this study is to check effectiveness of ECC in detection cervical pathologies depending on indications.

Material and methods: 539 women who underwent ECC were included to this retrospective study. The age of the patients included in the study was between 17 and 87 years with the average of 48.8 years. The samples obtained during diagnostic ECC were subjected to histopathological examination. Due to the clinical indications to ECC two groups were formed: 1) in suspicion of cervical pathologies, as cervical polyps, abnormal cytology/colposcopy (287 patients); 2) in suspicion of endometrium abnormalities found in transvaginal ultrasonography (252 patients). ECC was performed as only procedure in first group of patients and as a part of D&C in the second group. Statistical analysis was carried out using 'Statistica12', with statistical significance equal to 0.05.

Results: In the first group cervical dysplasia was detected in 30 cases (10.45%), whereas in the second group there was not a single case of CIN (0%) ($p < 0.05$). Insufficient samples for histopathological examinations were found in 9 cases (3.14%) in the first group and 18 (7.14%) in the second group ($p < 0.05$).

Conclusions: ECC is an important diagnostic examination for suspected abnormalities of the cervix. If there is no suspected abnormalities of the cervix ECC may be redundant.

[179]

Life Expectancy of 5 and 10 years in patients diagnosed with cervical cancer

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Introduction: According to the Lithuanian Institute of Hygiene data, cervical cancer is 5 of the most common cancer types of woman. It is also takes 8 place in woman death from malignant diseases list. When patient is diagnosed with cervical cancer, especially with higher grade cancer, one of the most important question for doctor and the patient is prognosis, to answer this question, survival rates and their determining factors play important role.

Aim of the study: to evaluate the life expectancy of 5 and 10 years and the factors which determine it in patients diagnosed with cervical cancer and treated in the LUHS Hospital, the Department of Obstetrics and Gynaecology.

Material and methods: The medical histories ($n=61$) of patients who were diagnosed with cervical cancer (CC) in 2006 and who were treated in the LUHS Hospital Kaunas Clinics, the Department of Obstetrics and Gynaecology were analysed retrospectively (permit of bioethics No. BEC-MF-309). The data about patients who died during the span of 10 years was received from the Lithuanian Institute of Hygiene. The age, stage of the disease, level of differentiation, methods of treatment and the effect of the histological type to life expectancy were analysed. The Kaplan-Meier method was used to evaluate life expectancy and to determine the differences between the groups, the Log-rank test was applied. To establish the relative risk (RR) of the progression of the disease, the COX proportional hazards model was applied. The difference of the indications was held statistically significant when the level of significance was $p \leq 0.05$.

Results: The average age of the women in the analysed group was 51.8 ± 14.0 . After diagnosed with CC, 63.9% ($n=39$) of the patients lived for 5 or more years and 36.1% ($n=22$) died. The patients were in stages IA1 to IIIB according to the FIGO classification. IIB and IIIB CC stages statistically significantly reduces life expectancy of 5 years. 55.7% ($n=34$) of the patients lived for 10 or more years and 44.3% ($n=27$) of them died. The median of life expectancy reached more than 60 years by women, diagnosed with IIB and IIIB stage and treated with

chemotherapy and radiotherapy. It was determined, that statistically life expectancy of 10 or more years is influenced by age and the stage. The level of differentiation, treatment methods and the histological type did not have much influence on life expectancy.

Conclusions: One sixth of the patients diagnosed with CC lived for at least 5 years. The death-rate was highly influenced by the stage of the illness. Less than half of patients diagnosed with CC died within 10 years of diagnosing, this was mainly influenced by age and the stage of the illness.

[180]

Treatment of uterine fibroids with a.uterina embolisation: the experience of Lithuanian University of Health Sciences hospital Kauno Klinikos, Republican Vilnius University hospital, University hospital of Klaipeda

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Introduction: Uterine fibroids are among the most common benign uterine tumors, with an incidence between women of childbearing age various from 20 to 40 percent. After the evaluation of the most disturbing complaints of women, the patient's age, uterine myomas size, type and localization, it is necessary to choose the most appropriate treatment according to the patient's wishes. One of the alternatives to surgery or hormone treatment is uterine artery embolization.

Aim of the study: To evaluate the frequency, results and the response of the patients to which the uterine artery embolization was applied, when treating uterine fibroids.

Material and methods: The medical histories of women treated in 2008-2015 in hospital of LUHS Kauno Klinikos, the Republican Vilnius University Hospital and the University of Klaipeda Hospital were analysed retrospectively. Uterine artery embolization was applied to these women when treating uterine myomas. A questionnaire was conducted aiming to evaluate if the women are content with the procedure. The statistical analysis was carried out using the software Excel for Windows 2007 and SPSS 20.00 for Windows. The chosen level of significance is $p < 0,05$.

Results: 13 women who were had uterine artery embolisation when treating uterine fibroids took part in the research. The average age of the women was $41,69 \pm 3,69$ years. 61,5% (N=8) were diagnosed with anaemia prior to uterine artery embolisation. Before the procedure, all women experienced heavy and painful menstruation. Almost half (46,2%) had the feeling of pressure and full stomach. Some women (23,1%) suffered neurological symptoms, 15,4% of women had urination disorders. Prior to uterine artery embolization (UAE), 23,1% (N=3) of women had uterine fibroids removed surgically, for others UAE was their first choice of treatment. When evaluating the ultrasonography data after UAE, the results were: in 76,9% of the cases the size of the fibroids reduced, in 15,4% of the cases the women do not know if the size changed, one woman had a hysterectomy. All patients evaluated the procedure positively. The average time the patients had to spend in hospital was $4,77 \pm 1,36$ days. All patients no longer suffered painful and heavy menstruation, the feeling of pressure reduced. After UAE, only 1 out of 8 women continued to suffer from anaemia which was diagnosed prior to the procedure.

Conclusions: The embolization of uterine arteries is a safe and effective procedure when treating uterine fibroids. In majority of the cases, the size of the fibroids reduced and only one of the patients needed operating after UAE. All women reviewed UAE positively.

[181]

Prevention of breast and ovarian cancer using prophylactic bilateral salpingo-oophorectomy for BRCA1 or BRCA2 mutation carriers

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Introduction: Up to 20 percent of women with a family history of breast cancer have a mutation in a major gene, most often BRCA gene. There is still no reliable enough screening programs for ovarian cancer, so prophylactic bilateral salpingo-oophorectomy (PBSO) is used as an option to minimize risk for BRCA mutation carriers.

Aim of the study: To evaluate effectiveness of PBSO for BRCA1 or BRCA2 mutation carriers.

Material and methods: Patients with family history of ovarian or breast cancer or were previously diagnosed with breast cancer and were BRCA1/2 mutation carriers and underwent PBSO in Vilnius University Hospital Santariskiu Klinikos between January 2009 and October 2014 were included in our prospective study. Patients age, complications, BRCA gene mutation type, histological findings using Sectioning and Extensively Examining of the Fimbriated end protocol (SEE-FIM protocol) were included in our study. Patients after surgery were observed until November 2014.

Results: 65 female BRCA1 and BRCA2 mutation carriers were included in the study. Patients average age at the time of surgery was 49,09. Serious tubal in situ carcinoma (STIC) was diagnosed to 5 (7,69%) patients and ovarian cancer to 4 (6,15%) patients. BRCA1 mutation was identified for 43 (66,15%) patients, BRCA2 for 5 (7,69%) patients and for 17 patients (26,15%) BRCA mutation type was not specified. Average follow up time for patients being diagnosed with ovarian cancer or STIC was 2,81 years. No cancer recurrence occurred during this period.

Conclusions: Histological analysis, using SEE-FIM protocol, presented the rate of pathological findings in BRCA1/2 mutation carriers after PBSO being sufficiently high. Therefore, without reliable ovarian cancer screening, PBSO is a well-grounded method for ovarian cancer as a prophylactic procedure.

[182]

Psychosocial adaptation state in women of reproductive age with chronic recurrent chlamydia and herpetic infections of the reproductive system

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Introduction: The intensification of stress load on the person in present day conditions plays an important role in the development of chronic inflammatory diseases of the female reproductive organs. In women of reproductive age, chlamydia and herpetic infections occupy a leading place in the structure of inflammatory diseases of the reproductive system.

Aim of the study: Was as to evaluate the state of psychosocial adaptation of women of reproductive age with chronic recurrent chlamydia and herpetic infections of the genitals in order to develop and implement the best preventive measures.

Material and methods: The study included 94 women of 18 to 46 years, out of which 74 were the patients with inflammatory diseases in genitals of chlamydia-herpes aetiology, who (according to protocol) met the inclusion criteria. The control group included 20 women without gynaecological and somatic disorders. The criterion for selection of patients was the laboratory confirmation of the infection lasting from 1 to 5 years and with the frequency of relapses at least 2 times a year. For the analysis of neuropsychological state of these women we used the classic M. Luscher test in its adapted version.

Results: Comparison of test results basing on the colour technique in Luscher test showed that 50% of women of the main group had low index of psychosocial adaptation, indicating increased levels of anxiety. While in the control group no patients with low resistance to stress was found. 29,7% of the main group and 10% in the control group reached the threshold level. The high level of adaptation was observed in 20,3% of patients with mixed infection; while in the control group it reached 90%.

We also found the dependence between psychosocial adaptation and the duration of disease. Specifically, in women with the persistence of infection of up to 1 year the higher level of adaptation was identified in 16.2% of patients, threshold in 6,75%, low in 4,05%. In case of disease duration up to 3 years, high level of adaptation was revealed in 9,45% of cases, threshold in 8,1%, and low in 10,8%. In patients with mixed infection lasting more than 5 years, high level of adaptation found only in 5,4% of cases, threshold in 12,1%, and low in 27,0%.

Conclusions: The results displayed a decrease in psychosocial adaptation of women of reproductive age with chronic recurrent chlamydia and herpetic infection of the genital system. The deterioration of the adaptation process took place in parallel with increasing disease duration.

[183]

Usefulness of hysterosalpingography in evaluation of female infertility

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Introduction: Hysterosalpingography (HSG) is the radiographic procedure that evaluates the uterine cavity and fallopian tube patency. HSG is commonly used in the evaluation of female infertility.

Aim of the study: Assessing the usefulness of hysterosalpingography in evaluation of primary and secondary infertility.

Material and methods: One year retrospective study included 359 consecutive patients referred to a tertiary centre for HSG evaluation of infertility between January 2016 and December 2016.

Results: 266 (74.09%) women had primary infertility, while 93 (25.91%) women had secondary infertility. Mean age of women with primary infertility was 32 years and for secondary infertility was 34 years. Bilateral intraperitoneal spill of contrast was seen in 290 (80.78%) patients. Unilateral tubal blockage was detected in 45 (12.64%) cases whereas bilateral tubal blockage in 7 (2.00%) patients. Hydrosalpinx was noted in 3 (0.84%) cases. Uterine congenital anomalies were confirmed in 6 (1.69%) patients: 2 (0.56%) – bicornuate uterus, 2 (0.56%) – unicornuate uterus, 1 (0.28%) – uterine didelphys, 1 (0.28%) – uterine septum. Abnormalities related to the uterus or fallopian tubes in patients with secondary infertility – 27 (29.03%) were present more often than in patients with primary infertility – 39 (14.66%) which is statistically significant ($p=0.002$).

Conclusions: Hysterosalpingography is a useful screening test for the evaluation of female infertility. Anomalies of the uterus or fallopian tubes are found to be significantly associated with secondary infertility.

[184]

Cicatrice cervical deformity during pregnancy: surgical correction

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Introduction: Scar deformity of the cervix in particular anatomical and functional changes leads to progression inflammatory and pre-malignant condition, infecundity, habitual miscarriage, premature birth. Scar deformity of the cervix occurs in 15,3-54,9%, but women of childbearing age can reaches 70 %.

Aim of the study: The aim of the study was to investigate of act of delivery and postnatal period in women with scar deformity of the uterine cervix after surgical correction.

Material and methods: The study involved 74 multiparous women with scar deformity of the uterine cervix got onto and examined. They were divided into 2 groups: Group 1- 50 multiparous women with severe scar deformity of the cervix (damage to circular fibers) after C-section and 6 women with slight scar deformity of the cervix (unleisoned circular fibers) after vaginal birth. All women had 2 stepped operations, i.e. surgical correction in fourth stage of labor. Group 2 had 18 women with scar deformity of the cervix after cesarean without surgical correction. All women had speculum examination before discharge. They all need to a gynecologist after 6 and 12 months for speculum examination, cytospread, endocervical scrapping for HPV by PCR method, colposcopy and sampling (for indication).

Results: On speculum examination in Group 1 all maternity patient had first intention, wealthy seam on the cervix without swelling and infiltration. In Group 2 all had scar deformity of the cervix (deep rupture of the cervix run to the vaginal vault, patulous external orifice of the uterus). In 6 months 52 women after surgical correction at inspection abnormalities weren't detected, but 3 patients had patulous external cervical os (cervix misses fingertip) at the closed internal orifice of the uterus and unimpaired Papanicolaou smear. In 1 patient with colposcopy cervical ectopia was identified in combination with HPV, 2 women without pathology. In 12 months all women had normal colposcopy and cytological results. Group 2 had cervical ectopia in 13 patients (72,2%), leukoplakia in 1 patients (5,6%), cervicitis in 10 (55,6%), atypical transformation zone - HPV high risk strain in 2 (11,1%). Postoperative and postpartum period were without complication.

Conclusions: So, 94, 6% women with surgical correction at the fourth stage of labor have normal anatomical and functional data due to decrease rate of pre-existing cervical diseases. Besides, two-stepped operation is more cost-efficient.

[185]

Pregnancy complications and early neonatal outcome according to chorionicity in twins

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Introduction: Managing the twin pregnancies is a challenge for the gynaecologist and obstetricians especially considering that the rate of twin pregnancies has been rising worldwide. Twins have higher risk of pregnancy complications and morbidity than singletons.

Aim of the study: The study aims to analyse the pregnancy complications and early neonatal outcome of twin gestations and estimate the influence of chorionicity on the outcome in a cohort of twin pregnancies in tertiary hospital in Warsaw.

Material and methods: We performed a retrospective study on 668 twin deliveries in tertiary referral hospital in Warsaw. Twin pairs were divided into three groups according to chorionicity. Data on pregnancy, labor and early neonatal outcome were analysed according to chorionicity. Chorionicity was assessed basing on the first trimester ultrasound scan. For statistical analysis, chi-squared, Mann-Whitney tests and logistic regression was used.

Results: A total number of analysed twins pregnancies was 668, 527 were dichorionic (DC) (78,9%) and 141 were monochorionic (21,1%). Multiple pregnancy complications were analysed. No differences in the occurrence of the cholestasis of pregnancy (MC=10,63% DC=12,52% $p=0,542$), the gestational diabetes mellitus type 1 (MC 14,89% vs. DC= 17,07% $p=0,536$) and type 2 (MC=2,12% vs. DC=3,41%, $p=0,436$), gestational hypertension (MC=11,34% vs. DC=11,57%; $p=0,94$), postpartum hemorrhage (MC=1,41% vs. DC=2,84%; $p=0,339$), thrombocytopenia (MC= 8,51% vs. DC=10,68%; $p=0,449$) were found. However the significant differences were demonstrated in the incidence of the IGUR of at least one fetus (MC= 26,42% vs. DC=13,71%; $p < 0,001$), also premature births are more frequent in monochorionic pregnancies (MC=67,37% DC= 55,40%; $p=0,011$).

Caesarean section was performed in 80,45% monochorionic, 83,68% dichorionic pregnancies ($p=0,383$). Mean birthweight of both twins was lower in monochorionic pregnancies (first fetus mean birthweight MC= 2132g, DC= 2368g; $p < 0,001$, second fetus mean birthweight MC= 2097g, DC= 2337g, $p < 0,001$). Risk of perinatal mortality of at least one twin was higher in MC pregnancies than in DC pregnancies (OR=2,596; 95% CI: 1.1218 to 6.4421, $p=0,026$).

Conclusions: The results indicate that the complications rate during a twin pregnancy are similar regardless of the chorionicity. However, higher rate of perinatal deaths along with higher incidence of premature births and lower birthweight in twins from monochorionic pregnancies enforce particular caution when dealing with above-mentioned patients.

[186]

Trends, attitude and satisfaction with contraception methods among Polish women

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Introduction: Contraceptives are used by the majority of women in reproductive age worldwide. However, there are large differences across countries. According to the United Nations report, contraceptive prevalence in Poland reaches between 50-70% of women.

Aim of the study: The aim of the study was to assess trends in contraception use among Polish women, their attitude towards this issue and satisfaction with currently used method.

Material and methods: A cross-sectional study was performed with the participation of 7029 Polish women aged 18 to 54, who are current contraceptive users. The self-composed questionnaire consisting of 33 questions regarding demographic data, health issues and the use of contraception was distributed via internet in the period from January to February 2017. The statistical analysis was performed with the use of Statistica 10.0. and Microsoft Excel.

Results: The average age of surveyed women was 27.32 (± 5.14). Internet occurred to be the most popular source of information about contraception among respondents (81.7%; n=5741), followed by the doctor (73%; n=5133), books and magazines (respectively 34.9% n=2450; 39.8%, n=2449). The women were least likely to gain knowledge about contraception in schools (7%) and from their parents (5.3%).

The vast majority (76.5%, n=5377) of women knew which method they wanted before starting contraception and suggested it to the doctor, only 23.5% (n=1653) asked for help with choosing. More than half of oral contraception users (the most popular method among surveyed group) wanted to gain additional positive effect.

The most important factors in the selection of method according to respondents were: efficacy (85.4%, 6000), impact on health (59.3%, n=4169), comfort of use (44%, n=3093), while the least important were: price (12.3%, n=868) and ideological issues (4.4%, n=312).

The study revealed that out of 4629 women using hormonal contraception, 30% (n=1792) were not properly examined before its application. 65% of this group (n=3023) experienced at least one side effect. Moreover, among 2672 two-component pill users, 307 (11.5%) regularly smoke cigarettes and 26 (1%) of them were ≥ 35 years old.

Conclusions: Contraception is extremely widespread, and therefore gynecologists should pay more attention to contraceptive counseling and perform compulsory medical examination before prescribing hormonal contraception. We should focus on well-maintained education at schools and homes so that young women can gain knowledge from additional reliable sources.

[187]

Association between intrahepatic cholestasis in pregnancy and gestational diabetes mellitus

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Introduction: Gestational diabetes mellitus (GDM), with incidence of 3-9%, is the major metabolic cause of maternal and perinatal morbidity. Intrahepatic cholestasis of pregnancy (ICP) is a liver-specific disorder affecting approximately 1% of pregnant women. As both of the conditions are connected with metabolic disorders it was suspected that the occurrence of them might be correlated.

Aim of the study: The aim of the study was to evaluate the association between ICP and GDM.

Material and methods: A retrospective study included 3826 pregnant women managed at 1st Department of Obstetrics and Gynecology Warsaw Medical University between January 2015 and December 2016. 71 of them were complicated by ICP (1.86%) and 327 by GDM (8.55%). The group complicated by ICP was divided into two subgroups: ICP without GDM (Group I, 54 patients) and ICP with GDM (Group II n=17). Demographic and clinical

outcome data (including maternal age, BMI, infant weight and gender) and ICP and GDM biochemical markers were collected.

Results: The incidence of GDM in ICP was 23.94% (17/71, OR= 3.19 CI 1.75-5.76). Mean maternal age was similar in both groups (Group I: 31.36 vs Group II: 32.59). Pre-gravid BMI was significantly higher in group II (23.84 vs 26.42), while gestational weight gain significantly lower (12.02 vs 9.72 kg) The gestational age at birth in Group I was comparable to Group II (251.5 vs 250.5 days). Women in group II had higher platelets count (241.19 vs 193 tys/ μ l), serum total bilirubin concentration (0.65 vs 0.44 mg/dl), liver function tests: ALT (197.6 vs 191.18 U/l), AST (109.87 vs 102.59 U/l) but lower bile acids concentration (33.53 vs 38.18 mmol/l). Newborns' in Group II were born with lower weight (2743 vs 2656 g) and lower Apgar score (9.71 vs 9.66). No significant difference in occurrence of stillbirth was observed.

Conclusions: These data support the hypothesis that the incidence of ICP is higher in women developing GDM.

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[188]

Interventional radiology in the treatment of metastatic liver cancer

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Introduction: In the late twentieth and early twenty-first century, there have been fundamental changes of the diagnostic and treatment algorithms of most surgical diseases, including metastatic liver cancer. However, by the time of disease diagnosis radical removal of metastases is possible only in 20-30% of patients. Nowadays, systemic chemotherapy became the standard treatment for the inoperable patients.

Aim of the study: Evaluate of the effectiveness of methods of chemotherapy and chemoembolization in the treatment of metastatic liver cancer.

Material and methods: In our study we completed the analysis of intra-arterial treatment of 219 patients aged 17 to 82 years, who were treated for metastatic cancer of the liver of different etiology for the period from 2004 to 2017 at the State Institution "Zaytsev V.T. Institute of General and Urgent Surgery of National Academy of Medical Sciences of Ukraine". The isolated lesion of the right lobe of the liver were in 125 patients (57.1%); left liver lobe - in 17 (7.8%); both lobes of the liver - in 77 patients (35.1%). All intra-arterial interventions were performed with the help of X-ray machine and angiography equipment. All patients underwent an average of 2 to 5 courses of intra-arterial chemoembolization depending on the nature of liver injury.

Results: The technical success of the target vessel catheterization was 93.5% (without the use of microcatheters - 87%, with the use of microcatheters - 100%). Clinical success (by RECIST) of intra-arterial treatment was 86.1% (tumor on CT or MRI is not defined - 10.4%; reduction in tumor size - 29.6%; process stabilization - 46.1%; progression of the process - 13.9% of patients). Progression of the disease after intra-arterial treatment, according to our information was associated with the development of collateral blood supply to the tumor site from the so-called parasitic arteries. Repeated embolization of the arteries has been identified as the treatment for these patients. Median survival depending on the number of treatment courses (Kaplan-Mayer estimator) was as follows: 1st year - 11 months, 2nd year - 18 months, 3rd year - 25 months. Average life expectancy - 23,4 ± 2,6 months.

Conclusions: Factors that influence the effectiveness of intravascular palliative treatment of the patients with metastatic cancer of the liver is the size and type of tumor vascularization, the size of emboli; the number of intra-arterial chemoembolization procedures; development of collateral and parasitic to the tumor site arteries.

[189]

Posttransplant lymphoproliferative disorder in liver and kidney transplant recipients - a single-centre experience

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Introduction: Posttransplant lymphoproliferative disorder is a heterogeneous group of lymphoid malignancies arising after solid organ transplantation or hematopoietic stem cell transplantation. The current World Health Organization classification identified four basic histological types of PTLD: early lesions, polymorphic variant, monomorphic variant and classical Hodgkin lymphoma type.

Aim of the study: The aim was to analyse cases of PTLD in patients after kidney transplantation or liver transplantation and determine the impact of immunosuppressive therapy on occurrence this complication in organ recipients.

Material and methods: Data of 12 PTLD cases was retrospectively analysed in terms of the transplanted organs, time to diagnosis of PTLD, type of immunosuppressive treatment having regard to the induction treatment and acute transplant rejection and long-time survival.

Results: The most of analysed cases of PTLD occurred in man (N=8, 67%), 10 (83%) of patients were renal transplant recipients, 2 (17%) – kidney transplant recipients. The one kidney recipient (8%) received the induction of anti-thymocyte globulin (ATG), 2 (17%) - daclizumab, none of the renal transplant recipients did not receive

basiliximab. In the case of liver transplant recipients did not receive the induction immunosuppression. An episode of acute rejection occurred in 6 (50%) patients, in one of them it occurred twice; the all of them were treated with pulses of methylprednisolone. In the maintenance immunosuppressive therapy, 12 (100%) recipients received triple immunosuppressive regimen. Histopathological examination revealed polymorphic form of PTLD in 5 (42%) patients and classical Hodgkin lymphoma (HD) in 3 (25%) cases. Diffuse large B-cell lymphoma (DLBCL) was diagnosed in 3 (25%) cases and DLBCL rich in T lymphocytes and histiocytes in one (8%) patient. In one (8%) recipient ALK4- anaplastic lymphoma was diagnosed. 4 (25%) patients died due to progression of PTLD (including all 3 patients with CNS involvement), 8 were alived with stable graft function.

Conclusions: PTLD is a heterogeneous group of lymphoproliferative disorders, occurring in organ recipients. The unusual location changes (especially central nervous system or intestine) can impede the proper diagnosis. It requires exclusion of other causes of the symptoms reported by the patient, including diseases of infectious etiology.

[190]

Clinicopathological characteristics of patients with HER2 - positive breast cancer

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Introduction: Breast cancer is the most common type of cancer among women. Recently, HER2 expression on neoplastic cell surface has been suggested to be one of the most important risk factors for aggressiveness and metastatic spread. The amplified HER2 gene has been introduced as a major therapeutic target in breast cancer.

Aim of the study: The main aim of the study was to examine the relationship between the expression of HER2 and other features of neoplastic cells. The patients have been divided into a few smaller groups depending on their age, type of breast cancer (IDC or other) and HER2

Material and methods: The material consisted of histological preparations obtained from patients treated for invasive breast cancer – 164 studies reported HER2+ cancer. The resulting sections were stained using different methods for diagnosis. Preparations stained with H&E were used to identify tumor type and its histological grading. HER2 expression was determined using HerceptTest™ DAKO test. To examine statistical significance we used Mann-Whitney U Test.

Results: Globally, HER2 positive (3+) expression rate was 63.4% and equivocal (2+) 33.5% in IHC. The most common type of cancer was HER2+/ER-/PR-/ (47.2%). Tumor sizes of T2 in IDC (48.2%) and T1 in other cancer (52.6%) made up the largest percentage in each case. In 54.2% of studied cases there was no involvement of lymph nodes. As far as grading is concerned we noticed almost equal ratio between G2 and G3 tumors, while G0/G1 were not observed. IDC ER-/PR-/ (n=55) reached G3 in 57.4%, whereas IDC ER+/PR+/ (n=52) reached G3 in 38.5%. This difference has proven to be statistically significant. Patients >50 years old had G2 tumors in 55.3% and patients <50 – in 37.9%. The p - value in statistic test was 0.06 so we assumed a conclusion that if the group of analyzed samples had been bigger, the difference might have been significant.

Conclusions: Our analysis revealed that HER2+/ER-/PR-/ was the most common type of cancer and furthermore, statistically significant difference in the distribution of tumor stages between IDC ER-/PR-/ and ER+/PR+/ indicated that the first one is more aggressive. The close-to-significant difference in dispersion of G2 tumors between two age groups suggests that patients >50 may be diagnosed in earlier stages of breast cancer due to mammography screening program.

[191]

Factors influencing health-related quality-of-life in Polish colorectal cancer patients without liver metastases

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Introduction: Colorectal cancer (CRC) is the most common cancer in men and women, and the second most common cause of cancer death in western countries. With a growing number of long-term CRC survivors and the increased life expectancy of the western population, the impact of the disease and its treatment on well-being and quality-of-life have become an important issue.

Aim of the study: The aim of this study was to identify factors that influence health-related quality-of-life (HRQoL) in Polish CRC patients without liver metastases.

Material and methods: Enrolled patients were recruited in three centers in Krakow, Poland. Patients eligible for inclusion had histopathologically confirmed CRC and were 18 years of age or older. The EORTC QLQ-C30 is a questionnaire developed to assess the quality of life of cancer patients, while the QLQ-CR29 is the CRC specific module. Patients were interviewed between June 2014 and September 2016 and completed the Polish version of the EORTC QLQ-C30, the EORTC QLQ-CR29, and a demographic data questionnaire. The recruited patients were subsequently classified into groups based on gender, age, marital status, education, working status, current stoma status, tumor location, and treatment aim.

Results: The main factors influencing HRQoL in Polish CRC patients were impotence/dyspareunia, flatulence, anxiety, stool urgency, embarrassment by defecation pattern and stoma use, weight problems, and trouble with taste. Psychological problems appeared to be uncommon. Groups reporting higher symptoms and lower functioning scores included old, unmarried, unemployed patients with stoma. Females reported higher symptom scores and higher functioning scores than men, patients with a university degree had higher symptom scores on defecation problems, and embarrassment by defecation and stoma use scales, fecal incontinence/stoma leakage and defecation problems were more common in patients with a tumor located in the rectum.

Conclusions: We recommend physicians to use the EORTC QLQ-C30 and QLQ-CR29 tools to monitor their patient's condition and adjust treatment accordingly.

[192]

Palliative treatment of intestinal obstruction in patients with advanced gynecologic cancer

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Introduction: Palliative care is an integral aspect of oncological treatment. Increasing the quality of life, soothing pain and reducing symptoms of advanced disease is crucial from both medical and ethical perspective. Selection of appropriate treatment should be based on careful and individual assessment of advantages and disadvantages of available methods. One of common symptoms in patients with advanced gynecologic tumors located in pelvis is intestinal obstruction. It can be caused by mass effect, diffuse infiltration by cancer cells, post-operative adhesions, chemotherapy or radiotherapy side effects, and other. In some cases conservative treatment is superior to surgery.

Aim of the study: The aim of the study was to analyze characteristics and management of patients with advanced gynecologic cancer suffering from intestinal obstruction.

Material and methods: It was a retrospective study. 20 patients with symptomatic bowel obstruction as a result of advanced ovarian or uterine cancer were enrolled in the study. Patients' characteristics including age, BMI, past medical history, comorbidities, type of applied oncological treatment, histology result, stage, grade, location

of primary tumor and metastases, presence of ascites, number of obstruction episodes and type of obstruction management were analyzed.

Results: Out of 20 patients with bowel obstruction 16 patients had ovarian cancer, 2 had tubal cancer and 2 had uterine cancer. Mean age of patients during the diagnosis was 64 years old. Mean observation time lasted 28 months. Most of patients suffered from poorly differentiated G3 tumors. Only one patient had stage I cancer, the rest of patients had IIIa-IVb cancers. Number of applied different chemotherapy lines varied between 1 and 10. Because of advanced disease 3 patients were managed without radical oncological surgery. 1 patient underwent post-operative radiotherapy. 2 patients required surgery due to intestinal obstruction, both of them without previously performed radical surgery. The rest of patients was successfully treated with fluid therapy, dexamethasone, buscolysin, mebeverine, simethicone, omeprazole and semi-liquid diet.

Conclusions: Bowel obstruction in patients with advanced ovarian, tubal or uterine cancer in most cases can be successfully managed without invasive treatment.

[193]

Evaluation of cancer symptom alertness card

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Introduction: Cancer is a major burden of disease worldwide. The incidence of cancer in Latvia has increased by 2,51% during the last fifteen years (2000-2015). It has been estimated that one third of cancers may be preventable and another third – treatable for early diagnosis and sufficient resources. In Latvia more than one third of cases are detected at an advanced stages.

Aim of the study: To evaluate the usefulness of Cancer Symptom Alertness Card (CSAC) in the day-to-day practice of physicians of various specialties. Oncologic risk factors assessment using CSAC.

Material and methods: This was a cross-sectional study that encompassed all together 87 patients, 50-80 years old without known present oncological illness. Patients were interviewed according to CSAC (19 questions) at Riga Eastern University Hospital and Pauls Stradins University Hospital from October 2016 to February 2017. The data were collected by questioning the patients and filling CSAC. Thereafter data were analyzed by Microsoft Office Excel and SPSS programmes. Qualitative assessment was performed by Pearson's chi-squared test ($\alpha < 0.05$).

Results: The study involved 87 patients, 41.4% male, 58.8% female with the average age of 67,5 SD 9,8 years were questioned. 36 out of 87 patients did have positive family history (41.4%) – 72.2% among first line relatives and 27.8% – among second line relatives. The most common cancer diagnoses among relatives were gastrointestinal tumors 43.3% respiratory tumors 13.2% gynecological tumors 11.3% and unknown tumors 13.2%. Altogether 38 patients out of 87 (44.0%) were subjects to harmful environment factors including chemical 20.7%, physical 11.5% biological 8% and psychosocial 3.4%. Non-smokers were 57 out of 87 patients (65.5%), active smokers – 14.9% and previous smokers – 19.5%. There was no statistical correlation between smoking and cough ($p=0.847$) or hoarseness ($p=0.345$) and sunbathing habits and skin changes ($p=0.428$). 53 (61.1%) out of 87 patients corresponded to cancer screening population and only 21 (39.6%) out of them did received invitation letter to provide certain screening test. Out of those patients ($n=21$) who have received invitation letter 19 (90.5%) performed the screening test.

Conclusions: CSAC is an easy-performed instrument to get information about various risk factors. Our study showed that patients have a high risk of inheritance (44%) and environmental risk factors (44%). It shows also that about 40% of screening target population did not receive invitation letters, but those who receive had a high response rate (90,5%).

[194]

Utility of clinical assessment of nutritional state for predicting post-surgery complications. Is the Nutritional Risk Screening needed in oncology?

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Introduction: A malnutrition is a condition which often accompanies cancers, especially those of the gastrointestinal tract. In case of an operation, malnutrition makes the risk of post-surgery complications much higher. In Poland, every hospital is obliged to assess the nutritional condition of its patients. One of the scales enabling an easy assessment is the Nutritional Risk Screening (NRS 2002).

Aim of the study: The purpose of this research is to analyse the utility of the NRS 2002 scale in the assessment of the risk of complications after surgery performed during the treatment of the gastrointestinal (GI) tract cancers. The background purposes are to find out if

Material and methods: 226 patients who underwent surgery in 2015 because of cancer occurring in the upper (95 patients) and the lower (131 patients) gastrointestinal tract were subjected to the thorough assessment. The risk of the complications was analysed depending on NRS 2002, pre-surgery albumin level and serum total proteins level. The assessment of fulfilling the NRS scale frequency was made during the next two years among the patients who underwent the surgery because of the breast and gastrointestinal tract cancer in The Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology in Warsaw.

Results: The result of the assessment of NRS 2002 ≥ 3 was a predictor of developing complications for both the upper GI cancers ($p < 0.001$) and for cancers of the colon ($p < 0.001$). For the upper GI cancer group, a higher percentage of complications with decreased level of serum albumin ($p = 0.018$) and total protein ($p = 0.025$) was also confirmed.

Conclusions: The analysis confirms that the NRS 2002 is an appropriate tool in predicting the risk of post-surgery complications during upper and lower gastrointestinal tract cancers treatment.

[195]

What are the prognostic factors, symptoms and after-effects related with dyselectrolytemia in stomach cancer patients?

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Introduction: Dyselectrolytemia is a frequent problem in patients with terminal stomach cancer. It decreases the quality of life and increases the amount of complications. The predictors, symptoms and consequences of dyselectrolytemia in terminal stomach cancer patients need further exploration.

Aim of the study: The goal of our study was to determine factors connected with dyselectrolytemia in patients with stomach cancer.

Material and methods: 110 terminal stomach cancer patients admitted to Palliative Care Unit were retrospectively analyzed. Detailed physical examination, medical history including history taken from family and care givers was taken upon admission. Laboratory parameters including morphology, sodium, potassium, total and ionized calcium, LDH were taken on admission. We used univariate and multivariate logistic regression analysis to determine possible predictors, symptoms and consequences of dyselectrolytemia.

Results: On admission 71,81% of patients had dyselectrolytemia. They more frequently admitted to hospital from Emergency Department (OR=Odds Ratio=2,779, CI95%=Confidence Interval 95%=:1,159-6,667; p =probability value=0,022), more often opioids therapy (OR=2,339, CI95%=:1,003-5,452; p =0,0492), had higher PS scale note (OR=1,889, CI95%=:1,195-2,986; p =0,0064), lower albumin concentration (OR=0,901, CI95%=:0,828-0,98; p =0,0151), lower hemoglobin concentration (OR=0,769, CI95%=:0,603-0,981, p =0,0342), shorter duration of

treatment (OR=0,961, CI95%=0,929-0,995, p=0,0238), because of higher risk of death (OR=0,0204, CI95%=1,17-6,526, p=0,0204). They were treated more often by iv fluids (OR=6,08, CI95%:1,415-26,121; p=0,0152). Multivariate logistic regression analysis after adjustment for possible confounders revealed that occurrence of dehydration (OR=6,596, CI95%=1,347-32,292; p=0,02), higher glucose concentration (OR=1,996, CI95%=1,145-3,377; p=0,014), glucocorticosteroids administration (OR=10,76, CI95%:1,996-57,999, p=0,006), occurrence of cachexia (OR=10,76, CI95%:1,996-57,999; p=0,006) and haloperidol administration (OR=10,34, CI95%=1,338-79,897; p=0,025) remained independently associated with cachexia.

Conclusions: Occurrence of dehydration, higher glucose concentration, occurrence of cachexia, glucocorticosteroids and haloperidol administration are factors associated with dyselectrolytemia.

[196]

History of blood donation facilitates later mobilization of hematopoietic stem cells with G-CSF

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Introduction: Many of the volunteer blood donors register as unrelated hematopoietic stem cell donors. Blood donor's hematopoiesis regularly has to compensate for blood losses caused by blood donation- regeneration happens due to increased frequency of hematopoietic stem cells' (HSC) mitosis. There is no data on the influence of such repeated stimulation on efficiency of later hematopoietic stem cell mobilization by G-CSF.

Aim of the study: We aimed to analyze outcome of HSC mobilization in unrelated donors who had history of blood donations.

Material and methods: We conducted prospective study on 213 consecutive donors admitted to the Department of Hematology since 01.2016. The donors had to fill study questionnaire during the final qualification for donation. The final analysis included 101 donors who agreed to take part in the study and had undergone stem cell mobilization with G-CSF. Median age of the donors was 28 years (range 18-50). 63 (62.4%) were male and 38 (37.6%) were female. Median BMI was 24.38 (range 17.02-36.25). 34 (33.7%) used to donate blood in the past.

Results: 36/79 (45.57%) blood donors in our cohort were qualified for HSC mobilization, as compared to 70/134 (52.23%) of non-blood donors (p= 0,3954). HSC mobilization efficiency (number of CD34+ cells/kg of recipient's body mass) was correlated with donor's BMI (p=0.0002), sex (p=0.0003) and history of prior blood donation (p=0.0217). Median number of CD34+ cells/kg of recipient's body mass for blood donors was 8.325 (range 3-43.94), for the rest of our cohort 6.15 (range 1.14-25.86). 88% of all donors needed one apheresis for collection HSC. Number of infections with fever/year correlated positively with the need of second leukaphereses (p=0.0136).

Conclusions: Donors sex and weight are known factors facilitating mobilization of stem cells. We report here two new factors influencing the stem cell harvests: history of blood donations which improves results of HSC mobilization and history of common infections which correlates with poorer stem cell harvests.

[197]

Superior stem cells collections in unrelated donors using novel collection protocol

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Introduction: Hematopoietic stem cells are routinely obtained from unrelated donors by leukaphereses after the G-CSF stimulation. There are two collection protocols – working with intermittent (MNC) and continuous flow collection (cMNC). There are situations where problems with collection of optimal number of stem cells are

expected: disproportion of weight between the donor and recipient and low number of circulating stem cells after the G-CSF stimulation. cMNC is novel protocol with limited experience in unrelated donors.

Aim of the study: The study aimed at comparison of efficiency of this two protocols for CD34+ cells collection in clinical scenarios where lower collection yields are expected.

Material and methods: In this retrospective single-center study we collected data from 216 consecutive healthy non related donors that underwent cMNC (68 donors) and MNC (148) apheresis procedures.

Results: The cMNC protocol showed a higher CD34+ cells concentration in product (0,89% vs 0,76%, $p<0,05$) and higher number of collected CD34+ cells ($7,9 \times 10^6$ CD34+ / kg vs $6,8 \times 10^6$ CD34+ / kg, $p=0,07$). Pre- and post-procedure laboratory values (WBC, HGB and platelet count) did not differ significantly between two analyzed groups. Only one apheresis was needed for collection of requested cell number in 90% of cMNC group as compare do 88% in MNC group. In both groups of donors pre-apheresis peripheral CD34+ cell count and disproportion in weight between donor and recipient were the major factors influencing the need for second apheresis.

In donors with CD34+ cell count lower than average (112 cells per ul) cMNC showed higher CD34+ cell concentration in product (0,74% vs. 0,57%, $p<0,05$) and higher total number of collected CD34+ cells per donor weight ($6,25 \times 10^6$ CD34+ / kg vs. $5,21 \times 10^6$ CD34+ / kg, $p<0,05$). In this group of donors one apheresis was sufficient in 86% of cases with cMNC protocol and 77% of cases MNC ($p<0,05$).

In the group of donors whose body weight was lower than recipient's cMNC protocol lead to higher CD34% concentration in product (0,83% vs. 0,72%, $p<0,05$). Again cMNC protocol was more effective as only one apheresis was needed in 88% of donors compared to 80% of donors collected with MNC ($p<0,05$).

Conclusions: cMNC protocol is significantly more efficient in donors with low pre-apheresis peripheral CD34+ cell count and in cases of disproportion in weight between donor and recipient. The use of cMNC in all donors could further improve results of the center.

[198]

Assessment outcomes and Quality of life in patient with lip cancer after radical treatment

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Introduction: lip cancer is the most frequent malignant neoplasm of the oral cavity. It has wide impact on the quality of life for patient and their families. In oncology, assessing quality of life is being used as a primary outcome measure to study the effectiveness of treatment therapy for cancer patient.

Aim of the study: The aim of this study is to assess and compare quality of life (QOL) in patient with lip cancer, after surgery or radiation therapy.

Material and methods: This study included total of 108 patient affected by lip cancer (stage I-IV) who underwent treatment [surgery and radiation therapy] from 2010-2016 at Lviv Regional Oncological Centre, Department of Head and Neck Oncology, Lviv city. Quality of life (QOL) was assessed by using EORTC QLQ C30 V.30 questionnaires and head and neck cancer specific modules EORTC QLQ-H&N35. All patients were divided into two groups, in which group-I consist of 35 patients after radical surgery. And in group-II consist of 73 patients after radical radiation therapy. The QOL was assessed during 1 day before and 1 week after treatment of lip cancer.

Results: Patient's demographic data, medical history and quality of life were collected and analysed. Average age in group-I was 71 ± 2.3 years and in group-II was 69.8 ± 1.4 years, with sex distribution of 74% in men and 26% in women (in both groups). In group-I (radical surgery therapy) 49% of patient had locally advanced disease with local metastasis to neck lymph nodes in 35% of cases. In this group G3 histological differentiation was strongly correlated with advance disease ($r=0.89$, $P<0.05$) and poor prognosis ($r=0.72$, $P<0.05$). In group-II (radical radiation therapy) 88% of patient had mostly local disease (stages I-II). EORTC QLQ C30 and H&N35 score were better in group-II (radical radiation therapy) before treatment ($P<0.05$), than in group-I (radical surgery therapy). But one week after treatment group-I (radical surgery therapy) ($P<0.05$) has better EORTC score. Kaplan-Meier curve also show better survival rate in group-I (radical surgery therapy) ($P<0.05$) patients.

Conclusions: Health-related quality-of-life issues are paramount in head and neck cancers. The treatment of lip cancer is governed by the stage of disease and the choice of local treatment is based on the expected functional

and cosmetic outcome. Our results suggest that patient's quality of life is better when treated with radical surgery therapy and it also improve survival rate as compared with radical radiation therapy.

[199]

Portal vein D-dimers concentration as a prognostic factor of overall survival time in the pancreatic adenocarcinoma: a single center prospective study

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Introduction: Pancreatic ductal adenocarcinoma (PDAC) is a highly lethal disease with a 5-year survival rate around 5%. As pancreatic cancer is not diagnosed until it reaches an advanced stage, major part of the patients are disqualified from potentially curative resection. Recently performed studies have proved that D-dimer level (DD) is a strong prognostic factor of patients' survival.

Aim of the study: The aim of the present study was to investigate the possible associations between DD level in the portal vein and survival time in patients with PDAC.

Material and methods: We performed a single centre prospective study. We enrolled 62 patients operated on due to pancreatic cancer. We collected blood samples from portal vein and peripheral blood intraoperatively and measured the levels of standard biomarkers: Ca125, Ca19-9, Ca15-3 and D-dimers. The statistical analysis was performed using Kaplan-Meier survival model and Cox regression model.

Results: The study group consisted of 62 patients (mean age: 63 +/- 7; Male: 37 Female: 24). Their median time of survival (OS) was 7mo 25d.

The analysis of survival in the Kaplan-Meier model showed that portal DD ≥ 2700 ng/microL was a significant prognostic factor (DD portal < 2700 median OS- 5mo 11d vs. DD portal ≥ 2700 - 13mo 26d $p=0,05$). CA19-9 ≥ 200 IU/mL, Ca125 ≥ 20 IU/mL and Ca15-3 ≥ 24 IU/mL had a statistically significant impact on the patients' prognosis: (CA19-9 < 200 median OS- 10mo 10d vs. CA19-9 ≥ 200 - 5mo 8d $p=0,009$), (Ca125 < 20 median OS- 8mo 17d vs. Ca125 ≥ 20 - 4mo 17d $p=0,022$) and (Ca15-3 < 24 median OS- 8mo 12d vs. Ca15-3 ≥ 24 - 5mo 8d $p=0,038$).

The multivariate analysis in the Cox regression model showed that portal DD ≥ 2700 ng/microL (HR: 0,359 95%CI 0,182-0,708 $p=0,003$) and Ca15-3 ≥ 24 IU/mL (HR: 2,33 95%CI 1,23- 4,42 $p=0,009$) remained the significant prognostic factors of the survival time.

Conclusions: Our study indicates that pre-treatment portal vein DD level is associated with the overall survival time. In the future it may be used as a significant prognostic factor among patients with PDAC.

Orthopedics

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[200]

Predictive value of preoperative lymphocyte level in patients with coxarthrosis

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Introduction: Coxarthrosis is widely spread disease, especially in population over 50 years old. The main treatment option is total hip replacement, although resurfacing procedures are also in use. Those surgeries are associated with wide range of postoperative complications. Avoiding of them may make the surgery even more efficient.

Aim of the study: The aim of our study was to assess whether the leukocytosis can be treated as a predictive factor for any of long term complications.

Material and methods: We analysed 193 patients, past medical history, including preoperative and postoperative blood tests, and X Rays. Physical examination was performed and medical history was collected on follow up visit.

Results: We observed higher ratio of infectious complications, dislocations and nerve damage in patients with preoperative leukocytosis. In the group of patients without higher level of leukocytes we observed significantly lower risk of aseptic loosening, what was statistically significant ($p < 0.05$).

Conclusions: Our work indicates that level of white blood cells may have an impact on result of operative treatment of coxarthrosis. We observed that preoperative leukocytosis may be connected with implant infection which was earlier mentioned in literature. The level of white blood cells also seems to have anti-loosening effect. That could be associated with immune-derived periprosthetic bone remodelling. Further researches are needed to prove our research.

[201]

Prevalence of sceleototopical variation of the vertebral artery on the posterior arch of atlas among lithuanians: analysis of dried specimens

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Introduction: Vertebral arteries (VA) are the only arteries in human body that have such a strong skeletal environment. That surround of vertebral artery is significant from the evolutionary perspective because vertebral artery plays important role in the supply of the brain. Bony socket on the posterior arch of atlas provides passage to the VA as it courses toward the brain through the foramen magnum. In some cases this socket of VA is converted into a groove or foramen (Kimmerle's anomaly) by anomalous ossification known as Ponticulus Posticus (PP).

Aim of the study: To investigate the prevalence of bony socket variations of the vertebral artery on the posterior arch of atlas among lithuanians of various age and both genders analysing dried specimens.

Material and methods: Our study comprised of 533 dried macerated atlas vertebrae of XIV–XVII cent. Only specimens which were of exceptionally good quality and had good visualization of the superior surface of the atlas posterior arch were chosen for the investigation. The vertebrae were observed with naked eye by two researchers. According to the degree of depth of the bony socket, we categorized bony specimens into four variations: sulcus, open groove, semi-open groove and bony ring. Age group was categorized into two ranges: ≤ 20 and > 20 years.

Results: The overall prevalence of PP was 21% (112 cases). Although we examined 533 specimens, in some analyses double number of cases (1066) due to examination of left and right sides was used. As suspected, analysis of the results revealed predominance of sulcus (79.2%) of bony socket variations. Some degree of ossification was present in 150 cases (14.1%) and it involved open groove in 8.1%, semi-open groove in 2.0% and bony ring in 4.0% cases. The analysis of age groups revealed PP was significantly more common in age group of > 20 years ($p = 0.003$). There was significant difference in the prevalence between men and women ($p = 0.004$). The

difference in frequency between right and left sides was not statistically significant ($p=0.109$). 6.8% specimens due to not optimal quality were excluded.

Conclusions: We estimated predominance of sulcus of bony socket variations (79.2%). Partial form was found to be more prevalent as compared to complete form of PP (10.1% and 4.0%, respectively). PP is relatively common anomaly in lithuanians. Variations of bony socket including groove and bony ring develop in adolescence when ossification is most active. Further research including more bone specimens is required.

[202]

Prevalence of hypertension in ABPM in patients scheduled for total joint alloplasty - CRASH-JOINT subanalysis

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Introduction: One of the most frequently types of orthopaedic surgeries are joint (hip or knee) replacement surgeries. Risk assessment is of particular importance in patients undergoing these procedures, because they are major procedure associated with high perioperative risk.

Aim of the study: The aim of this study was to establish the prevalence of arterial hypertension diagnosed using ambulatory blood pressure monitoring (ABPM) and to describe classical and non-classical cardiovascular risk factors in patients undergoing total hip or knee rep

Material and methods: The CRASH-JOINT (Cardiovascular Risk Assessment Scheme in JOINT alloplasty) was a prospective, epidemiological study performed in consecutive patients scheduled for total joint (hip or knee) replacement surgery. All consecutive patients enrolled into the study had ABPM performed and were screened for cardiovascular risk factors.

Results: Current observation included 98 patients qualified for operation in 2015-2016 in a single Orthopedic Department. Sixty-five patients had a hip joint replacement, and 25 had knee joint replacement, while 8 were disqualified from the procedure. The mean age of the study population was 63.7 ± 12.2 years, and majority of patients were female 62.2%. 50 (55.6%) patients had previously diagnosed arterial hypertension, 10 (11.1%) patients had diabetes mellitus, 2 (2.2%) had a history of myocardial infarction, and family history of cardiovascular disease was present in 24 (26.7%) cases. In the ABPM, the mean 24-hour blood pressure values were 123.2 ± 12.5 and 71.6 ± 7.7 for systolic and diastolic blood pressure respectively and 33 (33.3%) of patients could be categorized as non-dippers. Based on the ABPM results, arterial hypertension was diagnosed in 48 (48.5%) of patients. Patients with hypertension tend to be more often male and obese. There were no other differences in the population with and without arterial hypertension.

Conclusions: The study showed high prevalence of arterial hypertension in patients scheduled for an elective total hip or knee replacement. Nevertheless, in most cases blood pressure values are well-controlled. Abnormal blood pressure values during the night are responsible for high prevalence of non-dippers in this population.

[203]

An Anatomic and Radiologic Study on the Communications between the Achilles Tendon and Retrocalcaneal Bursa

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Introduction: The retrocalcaneal bursa (RB) is a fluid-filled space located between the antero-inferior wall of the Achilles tendon (AT) and the postero-superior surface of the calcaneal bone. Retrocalcaneal bursa (RB)

inflammation is a common clinical problem faced particularly among professional athletes. The most effective treatment for RB inflammation is the usage of corticosteroid injections. However, corticosteroid injections into the RB has been reported to increase the risk of Achilles tendon rupture after corticosteroid injection into the RB.

Aim of the study: The purpose of this cadaveric investigation was to describe the anatomical connections of the RB, and determine whether it is possible for fluid to move from RB into AT tissue, simulating the diffusion of corticosteroids.

Material and methods: Twenty fresh-frozen AT specimens were utilized. Obtained specimens consisted of a posterior-half portion of a calcaneal bone with an attached AT and part of the triceps surae complex. India Ink was injected into the RB of 10 specimens. The remaining 10 specimens were divided into 2 groups to be injected with radiologic dye into the RB either (1) with USG guidance, or (2) without USG guidance, relying on anatomical landmarks. An x-ray detector was used to visualize the fluid migration within the tendon.

Results: In the ink-injected specimens, diffusion outside of the RB was observed, with staining seen on the anterior portion of the AT. In 8 of the dye injected tendon specimens (5 USG; 3 non-USG), a similar diffusion pattern (regular) was observed, with the dye diffusing predominantly in the superior and anterior directions. In 2 of the dye injected specimens (both non-USG), the diffusion pattern was noted to be more extended and irregular.

Conclusions: This study proved the presence of connections between the RB and the AT, especially prominent in the antero-inferior portion of the tendon, which should be considered as a weak area for substances injected into the RB. We further hypothesize that this portion of the AT might be most vulnerable to rupture following corticosteroid injections.

[204]

Prospective results of medial patellofemoral ligament reconstruction using autologus gracilis tendon without patellar screws fixation

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Introduction: Lateral patella dislocation is quite a common problem among skeletal immature athletes. During such injury, medial patello-femoral ligament is almost always injured at its femoral attachment. Failure of nonoperative treatment is an indication for surgical reconstruction of medial patellofemoral ligament (MPFL), which is a preferred option for stabilization of the patella against lateral displacement.

Aim of the study: The aim of this study was to evaluate the results of medial patellofemoral ligament reconstruction for patellar instability and to introduce the novel surgical technique adjusted for adolescent patients.

Material and methods: We have prospectively evaluated 22 patients (14 females and 8 males with an average age of 14,95 in the time of surgery, range: 13-16, and/or at least 2 lateral patella dislocation, mean: 4,18, range 2-10, 11 left and 11 right knees, trochlear dysplasia 11 A, 10B, 1 A/B type). All patients were qualified, treated and controlled by the same surgeon at 2, 6, 12, 24 and 48 weeks postoperatively and rehabilitated in different centers at their home places. Kujala scoring questionnaires were filled during qualification for surgery and postoperatively during March 2016 (mean follow up: 2,65 years, range: 1,3-3,83). All of patients underwent MPFL reconstruction using autologous gracilis tendon graft, transmitted through 3mm drills in the patella on its medial side in the native patellar attachment of the MPFL with oblique tunnels tangent to them, what allowed to fix the graft in the patella without screws with typical femoral fixation with Millagro Advance Interference screw.

Results: While mean Kujala score before surgery was: 70 (+-10,1), such MPFL reconstruction let Kujala score to rise to 94,3 (+-4,4), $p < 0,001$. Results of this surgery such as patello-femoral joint stabilization with no cases of recurrent dislocation, restoration of full knee range of motion, muscle strength and its reactivity sum up to very satisfying for patient final outcome.

Conclusions: This study indicates that MPFL reconstruction with autologous gracilis graft, fixed in the patella through 3mm drills in the native attachment with tangent to them oblique tunnels with no screws should be considered a valuable alternative to other MPFL reconstruction methods.

[205]

How does the Body Mass Index affect the early postoperative results?

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Introduction: There are many factors that have an impact on osteoarthritis in hip joint. One of the most important is body mass. As described in literature so far, it affects overall outcomes of operative treatment in long term follow up. Only a few studies are describing early complications.

Aim of the study: As it is well known that Body Mass Index (BMI) have an impact on overall outcomes after hip replacement, we decided to find out if there are any correlations between BMI and peri-operative complications.

Material and methods: We analysed a sample of 100 patients including 67 with BMI over 25 and control group of 33 patients with BMI lower than 25. We looked for blood transfusion, hip fractures, pulmonary embolism, wound infection and a length of a stay in hospital

Results: Our statistic analysis showed strong correlations between BMI and blood transfusion, what indicates that higher BMI patients needed less frequently blood transfusion. We also observed that BMI may affect the length of a stay in hospital. Both results were statistically significant ($p < 0.05$).

Conclusions: Our findings show that patients with higher BMI are less prone to perioperative blood loss and that they have a faster improvement in early postoperative time. Even though these results were unexpected for us, some researches support our study. We suggest performing a study on a bigger group with more strict criteria to evaluate the exact BMI impact.

[206]

The risk of iatrogenic injury to the infrapatellar branch of the saphenous nerve during hamstring tendon harvesting

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Introduction: The infrapatellar branch of the saphenous nerve (IPBSN) emerges from the main saphenous nerve at the level of the knee joint, courses around the posterior border of the sartorius muscle, pierces the fascia lata, and travels straight to supply the skin over the medial side and front of the knee and the patellar ligament. Arthroscopically-assisted anterior cruciate ligament (ACL) reconstruction is a common surgical intervention used to repair the ligamentous stability of the knee. The autologous grafts are frequently harvested from the semitendinosus and gracilis muscles. Different surgical incisions have been correlated with varying risks of iatrogenic injury to the IPBSN during hamstring tendon harvesting for ACL reconstruction. Thus, the knowledge about the incision technique with the lowest risk of this injury is essential.

Aim of the study: The aim of this study was to determine the risk of IPBSN injury following hamstring tendon graft harvesting in regards to the incision technique over the pes anserinus region through a comprehensive evidence-based approach.

Material and methods: A comprehensive study search of the major electronic databases (PubMed, EMBASE, ScienceDirect, Scielo, BIOSIS, and Web of Science) was conducted. All studies reporting iatrogenic injury to the nerve during hamstring tendon graft harvesting over the pes anserinus in relation to the type of incision were included in the meta-analysis.

Results: Of 680 articles initially identified, eleven studies ($n=1050$ patients) reported the relevant data and were included in the analysis. The highest frequency of iatrogenic injury to the IPBSN was associated with a vertical incision during hamstring tendon harvesting at the pes anserinus with a pooled rate of 51.4% (95%CI:34.6-67.2%), followed by oblique and horizontal incisions with pooled rates of 26.0% (95%CI:1.3-61.3%), and 22.4% (95%CI:5.4-45.5%), respectively.

Conclusions: We highly recommend the use of the shortest possible oblique incision during hamstring tendon harvesting over the pes anserinus to minimize the risk of IPBSN iatrogenic injury.

[207]

Comparison of clinical outcomes after different surgical methods for the treatment of neurogenic heterotopic ossification

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Introduction: Neurogenic heterotopic ossification is the process of mature, lamellar bone formation in soft tissues surrounding paralyzed joints. This pathological condition can be triggered by CNS damage such as stroke, direct injury or induced inflammation. Clinically significant HO develops in 1:5 cases and occurs only below the level of the CNS lesion, typically the hip joint. In most severe cases it involves joint ankylosis. Once when the temporary dysfunction of the CNS pass away, heterogenic ossification begin to be important limitation of joint mobility and chronic severe pain.

Aim of the study: There are only a few methods of prevention and limited surgery methods of treating the disease. Study was conducted to compare the clinical effectiveness of two surgical methods: arthrodesis and total hip replacement as an innovative method of treatment.

Material and methods: This study was carried out by collecting data in two time points. Immediately prior to surgery and during the follow-up visit. In both time points full physical examination, X-ray and orthopedic scores evaluation were conducted. The Harris Hip Score (HHS) was used in first and second time point. The Self-Administered Patient Satisfaction Scale for Primary Hip and Knee Arthroplasty (HKASS), Visual Analog Scale (VAS), The Western Ontario and McMaster Universities Arthritis Index (WOMAC) and 36-Item Short Form Survey (SF-36) were used during follow-up visit. Orthopedic scores were compared between patients who were operated by total hip replacement and arthrodesis.

Results: When using total hip replacement as a treatment of neurogenic heterotopic ossification vs arthrodesis we observed: better overall results in WOMAC scale (2.7) and SF-36 scale (1.5). However, HHS overall score was better when using arthrodesis (1.7) with the highest influence of pain reduction level (3.4). Also VAS scale (25% vs 0%) indicates lower level of pain, but it has to be mentioned that other pain treatment was administered in both cases. Results in HKASS did not differ significantly.

Conclusions: There are only limited surgery methods of treating the disease. Total hip replacement as an innovative method of treatment seems to be clinically effective. Especially the results of subjective sense of well-being scales shows good outcomes. Because of that THR is a promising method for the treatment of neurogenic heterotopic ossification of the hip joint as compared to other therapeutic options.

[208]

Effect of anterior glenoid augmentation with a coracoid bone block for chronic shoulder dislocation

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Introduction: Different surgical procedures have been described for treating recurrent anterior shoulder dislocation. Michel Latarjet in 1954 developed a coracoid bone block technique to prevent anterior dislocation. This procedure to this day is a viable surgical options for recurrent traumatic anterior instability of the shoulder joint. We provide you with short-term outcomes after Latarjet surgery in Republican Vilnius university hospital.

Aim of the study: To evaluate patients shoulder functionality after Latarjet surgery, using Simple Shoulder Test (SST) and Constant scale and also to assess development or progression of postoperative arthritis.

Material and methods: Between January 2012 and November 2014, seventeen patients with traumatic anterior shoulder instability who underwent modified Latarjet operation were enrolled in this retrospective study. Time

between trauma and surgery, SST, Constant scale, range of motion, Visual Analogue Scale (VAS) and diagnostic imaging findings were evaluated in Republican Vilnius university hospital.

Results: Patients mean age was 56,4. Out of 17 patients, 12 (70,6%) of them were male, 5 (29,4%) – female. No patients had reported a dislocation since their surgery. The mean Constant scale score was 58,68, SST mean score was 67,12. All patients experienced less pain after surgery, but only 23,5% managed to perform the same physical activity as before surgery. Mean VAS score was 1,059. All patients had postoperative arthritis, 4 patients (23,5%) had pseudoarthrosis, 8 (47%) were diagnosed with subluxation and 7 patients (41%) – with erosion of humeral head.

Conclusions: Latarjet procedure is an effective surgery, no patients had reported a dislocation after surgery. Although, only 23,5% patients had the same physical functionality as before operation.

[209]

Open versus arthroscopic rotator cuff repair: a comparison of clinical outcomes and patient satisfaction

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Introduction: The rotator cuff (RC) is the most commonly torn structure in the shoulder joint. RC tears usually produce symptoms of weakness, pain and reduced range of motion, therefore many daily activities, like dressing, may become limited. Open and arthroscopic repair are the most commonly used surgical techniques, however there is no consensus which method is superior.

Aim of the study: Aim of study was to compare the outcome and satisfaction of patients who underwent rotator cuff repair using arthroscopic or open repair techniques.

Material and methods: Study design is retrospectively-prospective. Medical documentation of 260 patients with RC reattachment in Hospital of Traumatology and Orthopaedics, Latvia during year 2015 was evaluated and 88 patients were enrolled according to study criteria. Patient satisfaction and quality of life was assessed by using Western Ontario Rotator Cuff (WORC) index. Patients were divided in 2 groups: patients who underwent open surgical repair- Group 1, patients who underwent arthroscopic tear repair- Group 2. Data were summarised and analysed using IBM SPSS v22.

Results: Mean age of the patients was 57.6 ± 9.6 years and 55.7% were male. Majority of patients (83.0%) had isolated m.supraspinatus tendon tear and 17% had combined m.supraspinatus and m.infraspinatus tendon tears. Sixty five (73,9%) patients underwent open repair. The mean WORC index for Group 1 was 84.9% and for Group 2 91.3% with statistically significant difference ($p=0.023$, Mann-Whitney U Test). The average postoperative time period for returning to high level activities of daily living was 6.7 months for Group 1 and 4,7 months for Group 2 with statistically significant difference ($p=0,009$, Mann-Whitney U Test). Furthermore statistically significant correlation ($p<0,001$, Spearman's rho Test) was found between the average postoperative time period for returning to high level activities and WORC index.

Conclusions: Patients who underwent arthroscopic repair have better postoperative outcomes and quality of life. Furthermore, statistically significant correlation between the average postoperative time period for returning to high level activities and WORC index suggests that early high level activities improve the RC repair results.

Pediatric Case Report

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Date:

Sunday, May 14th, 2017

Location:

Room 124, Library - CBI

Case Report:

Daria Smyrnova
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[210]

Differentiation diagnosis complications of Lowe syndrome and mitochondrial disorder combined with congenital CMV infection

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Background: Lowe Syndrome is a rare mutation in a gene OCRL1 that causes defect in PIP2-5-phosphatase enzyme. Mitochondrial dysfunction caused by mutation of genes encoded by either nuclear DNA or mitochondrial DNA (mtDNA). Both diseases are clinically heterogeneous.

Case: Full-term newborn (39 weeks), pregnancy complicated by prolonged mother's sterility, threatened abortion, polyhydramnios, cord entanglement – perinatal hypoxia. During neonatal period were detected: congenital cataract, generalized hypotonia (central origin – MRI, EMG) and IUGR. Diagnosis of CMV infection and Hypoxic-ischemic encephalopathy includes clinical manifestations, newborn TORCH testing (+IgG) and MRI. By that time that explained all complains. Target treatment with anti-CMV IgG gave weak recovery process.

Further management revealed: lasting lactate acidosis (by 9 month), LMW proteinuria, optic atrophy, delay development and absent tendon reflexes. Mitochondrial disorder suspected. Marker test was positive but physician regarded result as questionable. 2d year monitoring showed liver failure (raise AST, Ultrasound), renal tubular dysfunction (bicarbonate- and phosphaturia) and exocrine pancreatic defects. Target analysis revealed abnormality in respiratory chain enzymes. That verifies respiratory chain disorder. Genetic test is necessary to confirm established diagnosis (mother refused).

Due to pregnancy management, newborn anamnesis (optic and neurological violations), Fanconi type tubular injury appeared in 12 months, small cysts on MRI, intellectual disability and systemic osteoporosis it is reasonable to differentiate diagnose with rare Lowe syndrome based on enzyme and DNA analysis (mother refused).

Conclusions: Complexity of similar clinical signs, prolonged symptoms detection (for 2 years), genetic renouncement made precise diagnosis challenging.

Two genetic disorders combination may explain polymorphisms of clinical symptoms and formalize adverse life prognosis.

[211]

The VACTERL association: the interdisciplinary challenge and the example of progress in pediatric care

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Background: The VACTERL association is defined as the non-random co-occurrence of at least three of the following congenital defects: vertebral defects, anal atresia, cardiovascular anomalies, tracheoesophageal fistula, esophageal atresia, renal anomalies or limb defects. All of these structures derive from the embryonic mesoderm. It is called an association rather than a syndrome, because the abnormalities are not pathologically related, but they occur together more frequently than expected by chance. The VACTERL association is most likely caused by multiple factors. No specific genetic or chromosome problem has been identified.

Case: The patient is a 8-month-old boy with multiple congenital defects. He is a second twin, born premature (33 HBD) by caesarean section after a complicated pregnancy (disproportionate blood supply, intrauterine hypotrophy). The boy has presented with coarctation of the aorta, esophageal atresia, tracheoesophageal fistula, bilateral inguinal hernia, limb defects and anomalies of the urinary tract. He has already come through following medical procedures (chronologically): esophageal atresia repair, ligation of patent ductus arteriosus, implantation of coronary stent to the aortic isthmus, dilation of esophageal stricture, aortic arch reconstruction with simultaneous removal of the aortic stent and closure of patent foramen ovale, anti-reflux surgery with gastrostomy placement (complicated by acute respiratory failure). In the intensive care unit he has been ventilated mechanically, fed with percutaneous endoscopic gastrostomy and treated with peritoneal dialysis. Due to cardiac and renal anomalies, the patient has developed heart failure and infection of urinary tract (cured). The other problems are interstitial lung disease, malnutrition, paralysis of the left vocal fold, premature

hypothyroidism and retinopathy, anaemia, umbilical hernia. No specific genetic problems has been found. The orthopaedists have started the treatment.

Conclusions: The presented case shows the difficulty in interdisciplinary care of children with VACTERL or other congenital associations. On the other hand, it is a perfect example of progress in medical care. The treatment begins soon after the birth, so the prenatal diagnosis is highly important. It provides information needed to schedule following procedures by the rate of urgency. The palliative cardiovascular interventions are crucial for the prognosis, so - as shown in the case report - they are performed as soon as possible.

[212]

„A rare case of tuberculous pericarditis in 19-month old female“

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Trustee of the paper: Monika Wanke-Rytt PhD

Background: Tuberculosis is an infectious disease caused by the *Mycobacterium tuberculosis* complex. The most common localization of the disease is respiratory tract. Extrapulmonary changes typically involve the pleura, lymph nodes, the genitourinary tract, bones and joints. Cardiovascular tuberculosis is one of the rarest manifestation of the infection. In 2002-2010 in the pediatric population, there were only 3 cases of tuberculous pericarditis, which accounted for 0.4% of cases of extrapulmonary tuberculosis in people of this age. The risk factors of tuberculous pericarditis in pediatric population include: contact with infected person, age under 5 years old, HIV infection and chronic malnutrition. The first symptoms of the disease are nonspecific (high temperature, weight loss, night sweats, cough and shortness of breath) and appear in 39-76% cases.

Case: 19-month-old girl was admitted to the hospital because of fever (> 40 degrees) persisting for 2 days. The child was in an average general state, with no signs of gastrointestinal or respiratory tract infection, meningeal signs were absent. The only thing that caught attention were high inflammatory parameters in laboratory studies. Due to the constantly persisting high temperature antibiotics were implemented. After treatment the girl's condition improved, fever passed off after 4 days. However, in control studies, there was observed increase of inflammatory markers. Diagnostics was extended. To exclude the Kawasaki Syndrome echocardiogram was performed. It revealed the presence of structures around the heart, which could be interpreted as an abscess. During thoracotomy there was revealed thickened pericardial sac and vaguely demarcated, bloodshot epicardium. The change was purified from defaulting masses that resembled caseous changes. The bacterioscopy of them showed the presence of *Mycobacteria tuberculosis* complex.

Conclusions: The case shows how lack of clinical experience makes tuberculous pericarditis difficult to recognize. It points to the heterogeneity of symptoms and the need to take account of *Mycobacterium tuberculosis* infection in the differential diagnosis of long-term fever in children. The diagnosis of tuberculosis pericarditis in children must be based on thorough interview, physical examination and bacteriological confirmation. In tuberculous pericarditis prognosis depends on early diagnosis and initiation of treatment.

[213]

Late diagnosis of Guillain-Barré syndrome with predominant sensoric symptoms – a case report

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Background: Guillain-Barré Syndrome (GBS) is an immune mediated acute inflammatory polyneuropathy which demyelinate the nerves, mainly motor. In most cases, neurological symptoms in children occur after 1-2 weeks having been preceded by a relatively acute respiratory or gastrointestinal illness with complaints of advancing, ascending, symmetrical flaccid paresis of limbs, pain, and gait disturbances. We report diagnostic difficulties of GBS with predominant sensory complaints.

Case: A 5-year old girl was admitted to the hospital due to surface and deep leg pains primarily localized around her knees as well as anxiety, agitation, and sleep disturbances. Two weeks prior to admission, she had pneumonia. Neurological examination revealed absence of meningitis signs, normal muscle strength and tone, and severe leg pain during examination of deep knee reflexes. While walking, she slightly elevated her heels and took small steps. In the laboratory tests, no inflammatory markers were present as well she had normal cerebrospinal fluid findings. During hospitalization, she complained of pain in the thoraco-lumbar region, pain when opening her mouth, increased body aching, muscular weakness, difficulty walking and pain when holding the patient under her armpits. Diagnosis was extended for further imaging tests and consultations, including a psychiatric consultation. Magnetic resonance imaging scans of the head, the thoracic spine, and the lumbar spine revealed normal findings. Electroneurography examination showed heavy-demyelinating damage to the motor fibers and inflammatory polyneuropathy was confirmed.

Conclusions: In rare cases pain and paresthesias can be the main features of pediatric GBS presentation. Despite the difficulties in performing electroneurography on young children, this test is important for the diagnosis. The adequate treatment with intravenous immunoglobulin and physiotherapy leads to a quick and full recovery.

[214]

Clinical presentation of Behçet disease in Caucasian adolescent

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Background: Behçet disease (BD) is a multisystem inflammatory disease characterised by the triple symptom complex of oral aphtosis, genital ulcers, and uveitis. Vasculitis is the main underlying pathology, which affects vessels of all sizes, especially venous. The frequency of occurrence is strongly determined geographically and linked to the old Silk Road. The occurrence of vasculitis in Europe is rare. BD affects mostly patients in their 40s. We present a case report of Behçet disease in a Caucasian adolescent.

Case: A 17-year-old Caucasian boy was admitted to hospital after being diagnosed with left transverse sinus thrombosis to undergo other diagnostic tests. The patient systems review showed a history of recurrent painful deep whitish oral ulcers that had been occurring about 5 times a year, especially after dental therapy. These ulcers started since he was 9 years old. Moreover, there was a history of recurrent knees, elbows, and wrists arthralgia occurring for a few months. Eye examination was normal. Skin examination revealed pseudofolliculitis of thorax. Pathergic test was positive. Genital examination showed no ulceration. HLA-B51 was negative. Since the patient at that time, did not comply with the International Criteria of Behçet disease, diagnosis was only suspected. There treatment with full-dose low molecular-weight heparin and local skin and oral cavity treatment was implemented. Six months later, the patient developed deep venous thrombosis in his right leg. A month later, he developed scrotal ulcers. Based on the presence of oral and genital ulcers, pseudofolliculitis, and vascular involvement, the patient was diagnosed with BD. He was then treated with prednisolone (10 mg/day), colchicine (1.5 mg/day) and azathioprine (150 mg/day), as well as anticoagulation with heparin. A year follow up the boy reported 2 episodes of scrotal ulceration and arthralgies.

Conclusions: The case stresses the importance of maintaining a high degree of suspicion for Behçet's disease in all cases of venous thrombosis. This case demonstrated that Behçet's disease can affect young Caucasian adolescents.

[215]

Pacemaker implantation in a 12-year-old patient with an epilepsy-like malignant vasovagal syndrome

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Background: Vasovagal syncope (VVS) is the most common type of fainting. In the majority of cases, disorder is benign. However, also malignant form with repeated episodes, prolonged bradycardia or asystole has been reported. In extremely rare cases, patients develop severe fits with convulsion mimicking epileptic seizure, therefore can be misdiagnosed with epilepsy.

Case: A 12-year-old male patient was referred to the cardiology department in The Children's Memorial Health Institute for evaluation of recurrent episodes of syncope followed by seizures. The episodes had occurred since the age of 2, about one episode per year, preceded by prodromal syndromes. When patient was 5, he was diagnosed with epilepsy despite only minimum changes in EEG test and no abnormalities in MRI test. The fainting episodes occurred in stressful situations and prolonged standing so differential diagnosis of vasovagal syncope was suggested.

On admission patient was in a good condition, with HR 70 beats per minute. Laboratory tests, chest X-ray and echocardiography were within normal limits. Holter monitoring showed transient abnormalities in ventricular conduction. At the very beginning of the exercise test patient lost consciousness and developed seizures. He had an asystolic pause that lasted over one minute. During the tilt test dizziness and nausea were noted. The test was ended.

On the basis of these results malignant vasovagal syncope was diagnosed. Rate-drop responsive one-chamber pacemaker was implanted. Pacemaker interrogation on a one-year follow-up demonstrated 4% ventricular stimulation. Patient has remained symptom-free since pacemaker implantation.

Conclusions: Patients with seizure-like episodes during syncope might be difficult to differentiate from patients with epilepsy. However, a proper diagnosis is crucial in view of distinct treatment in these disorders. Every patient with questionable diagnosis of epilepsy or treatment-resistant epilepsy should undergo a cardiological evaluation to confirm an alternative diagnosis of malignant vasovagal syndrome. Although pacing therapy is not regarded as a first-line treatment in VVS, it might be necessary in patients with malignant variant of this disorder.

[216]

Testicular necrosis as a rare complication of incarcerated hernia in boys

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Background: Inguinal hernia is one of the most common congenital anomaly in children. It occurs due to unclosed vaginal process that is why 98-99% inguinal hernias in children are indirect. Also, the IH is 8-10 more common in boys than girls because of descent of testes during embryonic development. The most serious complication of IH is intestinal incarceration which predominantly occurs in children younger than 1 year (70% of cases), especially in first six months of life. Intestinal necrosis requiring resection happens in about 0-1.4% cases. Incarcerated bowel loop constricting the blood vessels can lead to testicular atrophy (2.6-5%) or even necrosis (1%).

Case: In 2016 four boys in age of 3, 4, 5 and 10 weeks were diagnosed with incarcerated hernia qualified for urgent surgery. Ultrasound revealed bowel loops in the inguinal canal. Moreover in two cases echogenicity changes and enlargement of the testicle were recognized. All patients were diagnosed intraoperatively with testicular necrosis. As the attempts of revascularization of testes by warming and lidocaine injection were ineffective, orchiectomy was performed in all cases. Histopathological examination of each specimen revealed haemorrhagic infarct of the testis. Time between first signs of incarcerated IH and beginning of the procedure ranged from 4 to 6 hours. There were no post operational complications and patients were discharged 3 to 6 days after surgery.

Conclusions: Testicular necrosis is rare but important complication of incarcerated IH. There are some changes in ultrasound examination of groin, but they are not pathognomonic for the necrosis. Every case of incarcerated hernia in boys requires rapid diagnosis and proper intervention.

[217]

Shingles complicated by bacteremia in pediatric oncology patients – two case reports

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Background: Shingles (herpes zoster) is caused by reactivation of the varicella zoster virus. Typically, it is characterized by a localized vesicular rash. Although herpes zoster in childhood is believed to be rare and milder than in the adults, oncology patients are an exception. Immunocompromised patients are more likely to develop shingles and to suffer from severe complications such as disseminated disease, pneumonia, encephalitis and secondary bacterial infection. Therefore, intravenous therapy with acyclovir is recommended in these patients.

The aim of this paper was to describe two case reports of shingles in pediatric oncology patients initially treated with orally administered acyclovir and complicated by bacteremia.

Case:

Case 1:

A 7-year old girl treated for stage IV neuroblastoma was admitted to the hospital due to progression of herpes zoster rash localized in lumbar region. Before referral to the hospital, the patient was ineffectively treated with orally administered acyclovir for 3 days. The laboratory results showed elevated C-reactive protein level, decreased hemoglobin level, leukocytopenia and thrombocytopenia. In order to correct anemia, transfusion of red cell concentrate was required. Intravenous acyclovir therapy was started. On the 2nd day of hospitalization the patient developed pyrexia. Blood culture revealed *Bacillus* spp bacteriaemia, which was managed with ceftazidime and antipyretics. The general and local condition of the patient improved and she was transferred to the Oncological Surgery Unit on day 6.

Case 2:

A 10-year-old boy with acute lymphoblastic leukemia was admitted to the hospital on the 4th day of oral antiviral therapy for shingles localized in right lower limb and anogenital region. Despite the acyclovir treatment, the patient developed pyrexia and exacerbation of local lesions. In consequence, bacterial superinfection occurred and patient was diagnosed with bacteriologically confirmed methicillin-sensitive *S. epidermidis* septicemia. A rising C-reactive protein, mild elevation of procalcitonin, leukopenia, granulocytopenia and thrombocytopenia were observed. The patient responded well to the intravenous therapy with ceftazidim and acyclovir and was discharged on day 8 and referred to the Oncology Unit for further treatment.

Conclusions: In the case of immunocompromised pediatric patients with shingles, it is crucial to begin intravenous antiviral therapy as soon as possible in order to prevent severe complications. Oral treatment may be ineffective.

[218]

Making short story long – when acute kidney injury turns into chronic kidney disease

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Background: The definition of acute kidney injury (AKI) in children comprises pediatric RIFLE criteria, defining subsequent stages of renal insufficiency (Risk, Injury, Failure, Loss, End stage kidney disease). The spectrum of anomalies spreads from slight decrease in the value of glomerular filtration rate until the requirement of renal replacement therapy. The time factor is essential for this assessment – once the features of kidney injury persist over 3 months, the criteria of chronic kidney disease are fulfilled.

Case: A 6-year old girl has suffered from four incidents of acute kidney injury caused by dehydration. The primary anomaly, responsible for all episodes of AKI, was the uncontrollable abundant vomiting, inadequate to the

volume of taken fluids. Medical past history revealed that this anomaly was present in the patient since the third month of life. The gastroenterological examination in infancy gave no explanation – no anatomical or functional abnormalities, except for peptic ulcer, were diagnosed. The psychic cause of vomiting was also eliminated. Finally, after another episode of projectile vomiting, the complex anomaly of the gastrointestinal tract (narrowing of the duodenum, intussusception of the small intestine and intestinal malrotation) was diagnosed and operated. The patient's condition improved after surgery and vomiting has never recurred. Unfortunately, the recurrent episodes of dehydration and renal function impairment have resulted in chronic kidney disease.

Conclusions: Repetitive injury may cause persistent damage to the renal parenchyma and irreversible loss of kidney function. Recurrent episodes of acute kidney injury, triggered by the same factor, should urge detailed and holistic diagnostics.

[219]

13-year old girl with delayed diagnosis of Prader-Willi syndrome and abnormal puberty

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Background: Prader-Willi syndrome (PWS) is a congenital genetic condition resulted from the lacking expression of genes on the parentally inherited chromosome 15 at the specific locus q.11-q.13. Although features of PWS patients vary depending on a genetic subtype and age, there are some characteristics typical of the syndrome such as neonatal hypotonia, developmental delays and abnormal behavior. In early childhood PWS patients develop hyperphagia which leads to rapid weight gain and obesity. Hypogonadism is a prominent feature of PWS. Dysfunction of the hypothalamic-pituitary-gonadal axis and gonadal dysgenesis is the reason for primary amenorrhea in more than 50% of girls with PWS.

Case: We present a case of 13-year old girl with Prader-Willi syndrome. She was born at 38/39 week of pregnancy by caesarean section due to breech position. The birth weight was 2350g. She was hypotonic, has a weak pulse and a sluggish sucking reflex. At infancy she poorly gained weight and needed supplementary feeding. When she turned one year, she started gaining weight and finally became obese. Her psychomotor development was retarded and she first walked at age 2. Her behavior became problematic with bursts of anger, skin picking and nail biting, and her mental development was disabled. Her feet and hands grew normally at first but then their growth slowed down and ceased. The patient's problems were attributed to perinatal hypoxia and the genetic test was not conducted until 2016. The test revealed a defect of 15 chromosome and the patient was diagnosed with Prader-Willi syndrome. In December 2016 she was admitted to a hospital for further evaluation. Her height was 138,5cm and she weighed 76,5kg, her BMI was almost 40 kg/m². OGGT showed impaired glucose tolerance and ALT level was increased. Unlike in the majority of PWS female patients, the puberty was evident (M3 P3 A3 in Tanner's scale). The bone age was 16 years. Blood analysis revealed that the hypothalamic-pituitary-gonadal axis was dysfunctional with FSH and LH almost undetectable, whereas estradiol and DHEA-S hormones were normal. AFP and B-HCG levels were very low.

Conclusions: Further investigations are necessary to explain the reason for the abnormal puberty in the patient. There is a need for early genetic tests in children born with hypotonia of unknown etiology. If the disease had been diagnosed promptly, the patient could have benefited from the growth hormone replacement treatment.

[220]

Pregnant woman after suicide jump, fetus showed no external injury: case report

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Background: Cases of major traumas among pregnant women occur uncommonly, therefore each of them is a valuable and credible source of information about the protective role of uterus during the pregnancy. Presented case may be helpful in preparation for managing such accidents and provide some concept about expected

injuries of the fetus. Information about internal damage concluded in this case can be used in accurate diagnosis and efficient treatment.

Case: 34-year old woman at 26th week of pregnancy was a subject of an autopsy after a suicide jump out of ninth floor of a resident building. Examination revealed extensive damage in all of the spinous processes of the cervical spine, comminuted fractures in the tibia and fibula of both lower limbs, in the pleural cavities presence of 900ml of blood and thrombus, pericardial sac ruptured over a length of 8cm, comminuted fracture of the sacral and pubic bones with rupture of the pubic symphysis. Presence of partial placental abruption of 4cm width. The fetus showed no external injuries although internally fracture of the occipital bone on the right side, blood under the dura mater, hemorrhages in the wall of the superior vena cava, damage of the spleen and liver were found during the examination. In addition post mortem computer tomography was performed.

Conclusions: The protective properties of the uterus are the cause of a significant difference in the extent of damage to the fetus and mother. Uterus significantly protects fetus against external injury. Only damage present in the skeleton was in the skull, organs inside chest were unspoiled and the only parenchymal organs impacted by accident were abdominal. The main problem in major traumas is placental abruption leading to hypooxygenation of the fetus.

[221]

Prune belly syndrome – a rare reason for remittent infections of the urinary system

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Background: Prune belly syndrome is a condition which mostly appear in male patients, so the pattern of X-linked autosomal recessive inheritance is suggested. Its specific name derives from the wrinkled appearance of the abdominal skin caused by either partial or complete lack of muscles. The clinical picture involves the enlargement of bladder, deformation of ureters, cryptorchidism and underdevelopment of the respiratory system. Multiorgan abnormalities typical for the prune belly syndrome may result in remittent infections of the urinary system.

Case: A 38-week gestational male patient born from the first pregnancy with Cesarean section received 9 points in an Apgar scale. The prenatal ultrasonography revealed bilateral extension of the pelvicalyceal system and advanced hydronephrosis. In the first USG examination after birth: right kidney – 65 mm (pelvis – 50x34 mm), left kidney – 71 mm (pelvis – 60x40 mm), both ureters extended up to 23 mm, with tortuosity. Contrast medium applied while performing voiding cystourethrogram filled irregularly-shaped bladder. On physical examination, the patient demonstrated limp, wrinkled abdominal skin and bilateral cryptorchidism. Clinical picture together with prenatal findings allowed to diagnose prune belly syndrome. In the second day of the patient's life he was operated on so as to create an ureterostomy, which was immediately followed by urinary infection (*Klebsiella pneumoniae*). Kidney scintigraphy performed three weeks later indicated the impairment of functioning with the retention of urine in both kidneys. The maximum value of creatinine totalled 1,47 mg% and urine nitrogen 27 mg%. At the age of two months the child was admitted to hospital due to pyelonephritis. The infectious disease of the urinary system happened again five months later. Laboratory findings were as follows: urea 16 mg%, creatinine 0,4 mg%, K 6,1 mmol, GOT 97 U/L, GTP 120 U/L. However, the parameters of inflammatory processes as well as kidney functioning remained within normal limits. Swabs and cultures from both stomata allowed to determine the causing agent to be *Klebsiella pneumoniae*. 16-week therapy with the use of carbapenem successfully eliminated the infection.

Conclusions: This example shows that remittent infections are the inseparable part of the prune belly syndrome. Not only do patients require the appropriate antibacterial prophylaxis but may also need surgical interventions in order to minimize the systemic consequences of this rare genetic condition.

[222]

"Stabbed" in the kidney - rare cause of hematuria in 13-year-old boy

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Background: Although hematuria in children is usually of benign nature the occurrence of this condition is a worrisome clinical manifestation concerning parents and prompting to visit a pediatrician. Gross or microhematuria must be differentiated from pigmenturia caused by hemoglobinuria, myoglobinuria, drug-induced, food and many others. In children with microhematuria, the presence or absence of clinical symptoms may help localize the source of problem in the urinary tract. Also patient's and family medical history can be helpful while diagnosing.

Case: 13-year-old male was admitted to the Department of Pediatrics and Nephrology of Medical University of Białystok with suspected nephrolithiasis. 4 months prior the hospitalization the patient experienced an episode of acute, nocturnal, left-lumbar-area-located pain radiating to the left inguinal area accompanied by vomiting and subsequent hematuria. Patient had positive family medical history of nephrolithiasis. Physical examination and laboratory tests including complete blood count, renal and electrolyte panel and urinalysis were unremarkable. 3-time 24-h urine collection for urinary electrolyte excretion remained within the normal range excluding elevated Ca/creat ratio twice. Ultrasound imaging revealed single hyperechogenic postinflammatory foci in both kidneys. Additional excretory urography in lateral and oblique KUB projections was performed revealing two metallic spiky objects (sewing needles?) in the area corresponding with lower pole of left kidney. Second-time ultrasound conducted after the urography also did not reveal objects found in X-ray. The diagnosis was confirmed by non-contrast abdominal CT scan specifying metallic foreign bodies partially located in the left kidney and sticking between latissimus dorsi and external oblique muscles. The patient was transferred to pediatric surgery department and underwent the foreign body removal procedure and with satisfying effects was discharged home.

Conclusions: Despite typical symptoms we should always consider traumatic or congenital etiology of diseases in differential diagnosis, especially in children. Although the ultrasound has many advantages as method of radiological imaging (easy, cheap, safe, easily available, the least invasive) it still remains the most equipment- and performer-dependent one.

[223]

Role of glucose-fructose syrup in development of metabolic syndrome and NAFLD in 12-year-old patient - case report

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Background: Obesity has become one of the biggest public health issues in child and youth populations. Approximately one fifth of children and adolescents are overweight or obese in Poland today. For many years metabolic syndrome (MS) has been considered a disease primarily found in adults. In 2007 The International Diabetes Federation (IDF) issued a unifying definition of MS in children and adolescents.

Recent studies suggest that glucose-fructose syrup ingestion, primarily in the form of soft-drinks, is linked to weight gain and the rise in obesity in children and adolescents and plays an important role in the pathogenesis of non alcoholic steatohepatitis.

Case: We present the case of a 12-year-old girl who was admitted to the Pediatric Endocrinology, Diabetes and Obesity Unit with a history of dyslipidemia, obesity, insulin resistance. Additional workup revealed diabetes insipidus and advanced steatohepatitis. An MRI scan revealed agenesis of the posterior pituitary lobe.

Due to polydipsia the patient consumed several liters of juice containing glucose-fructose syrup which led to the development of metabolic syndrome. One glass (250-300 ml) of juice contains the daily recommended intake of simple sugars. The patient's excessive consumption of glucose-fructose syrup is also thought to have induced non alcoholic fatty liver disease.

Conclusions: The concept that excessive consumption of fructose may promote progression of NAFLD is biologically plausible given experimental evidence that glucose-fructose increases ER stress, promotes activation of the stress-related kinase, Jun N-terminal Kinase, induces mitochondrial dysfunction, and increases apoptotic activity in liver cells. However, large prospective studies that evaluated the relationship between fructose and NAFLD were not yet performed.

Obesity rates for children remain a growing concern. Whether it is fructose, glucose, sucrose or glucose-fructose syrup, the average person consumes sugar at least once a day, which was not the case 50 years ago. This is an important issue for parents to read the labels, be aware of the products that might contain glucose-fructose syrup, and avoid them in their family diet.

[224]

‘Not necessarily rota’

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Background: The symptoms like abdominal pain, fever and diarrhoea are frequent reasons for a paediatric visit. Both abdominal pain and fever are non-specific symptoms occurring during infections. One of the most common pathogens causing diarrhoea in paediatric patients are viruses, generally rotaviruses. Diagnosis should be substantiated by taking into account the totality of the patient's condition.

Case: A four-month old formerly healthy boy was admitted to the hospital with fever, abdominal pain, flatulence, stools mixed with mucus, and anorexia. The laboratory tests showed no abnormalities, except for mild lymphopenia in the blood smear. The symptomatic treatment, including replacement of milk for casein hydrolysate was performed. The patient's condition improved and gastrointestinal symptoms were gradually disappearing after implemented treatment.

Two weeks later the boy was readmitted to the hospital in a worsened condition. On admission the patient suffered from acute diarrhoea, hectic fever, nystagmus and anxiety. The markers of inflammation (ESR) were not raised. Due to the patient's worsening condition, a neurological, ophthalmological and metabolic consultations were conducted. An MRI scan and metabolic tests were performed. The patient's condition was deteriorating. He was transferred to the ICU because of respiratory failure. He was diagnosed with CMV infection of the CNS, lungs and retina. The patient was treated with ganciclovir. Eventually, after analysing the medical data and laboratory tests, he was diagnosed with SCID (severe combined immunodeficiency).

Conclusions: Consequently, all of patient's symptoms should be taken into consideration in diagnosis process. A more detailed diagnostic procedure, especially the one for rare diseases, should be performed for patients with atypical course of illness and non-specific symptoms. Even a healthy child with average weight gain and no frequent infections can be suffering from a complex genetic disorder, such as SCID.

[225]

Abdominal ailment as an early symptom of hemolytic-uremic syndrome

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Background: Hemolytic-uremic syndrome (HUS) is a rare condition characterized by a triad of microangiopathic anemia, acute renal failure and thrombocytopenia. Its principal causes include bacterial toxins, drugs, systemic disorders or complement disturbances. The atypical form of HUS has its genetic basis and involves the overactivation of complement though complement proteins are clearly involved in all types of the syndrome. Decreased number of erythrocytes together with increased LDH and present schistocytes remain characteristic in the clinical picture. Its diagnosis may last for a long time as HUS often occurs secondary to other diseases and the symptoms may overlap each other.

Case: A two-year-old male patient was admitted to hospital due to persistent diarrhea lasting for eight days. He relieved his bowels eight times, all stools containing blood. He left the hospital after 3 days with the diagnosis of

gastritis. At the day of his discharge the patient's parents noticed the enhancement of jaundice with no abnormalities pertaining to stools. The day after, the child vomited twice, voided small volumes of dark urine, refused to eat and drink as well as had his eyelids swollen. Taken back to hospital, he had blood and urine tests performed. The results were as follows: WBC $9,3 \times 10^9/L$, hemoglobin $8,3 \text{ g/dL}$, platelets $66 \times 10^9/L$, urea 52 mg/dL , LDH 743 U/L , TBIL $3,2 \text{ mg/dL}$. Urine tests revealed erythrocyturia (25-30 erythrocytes in the field of vision) and proteinuria (75mg%). The child did not have fever but repeatedly complained about a stomach ache. The family history of infectious diseases accompanied by abdominal disturbance was negative.

On examination, the patient's current medical state was good. RR 106/80mmHg. The child presented slightly yellowish skin, swollen eyelids as well as lower limbs, discreetly enlarged cervical and inguinal lymph nodes. Cardiac, pulmonary and abdominal examinations were correct. Due to anemia, the child had packed red blood cells successfully transfused. Within the next days of hospitalization renal and blood parameters returned to normal. In the meantime he developed hypertension and chest infection, both treated before the patient was discharged.

Conclusions: The condition affects predominantly children and most cases are preceded by an episode of infectious diarrhea. Thus, it is of extreme importance to remember that seemingly harmless abdominal discomfort may be a manifestation of serious multiorgan failure.

[226]

Heart failure as the result of a severe dilated cardiomyopathy caused by metabolic disorder – case report

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Background: Dilated cardiomyopathy is the most common type of cardiomyopathy in children who usually present the features of a heart failure. Myocarditis is the most frequent cause of the dilated cardiomyopathy, but it may also be triggered by congenital metabolic disorder, which then has to be taken into consideration – even if an infection is present in the recent patient's history.

Case: A 10-months-old girl was admitted to the hospital with symptoms of heart failure. She was referred by a pediatrician who consulted her in the 7th month of life when she presented signs of a dyspnea and a cough. The patient received antibiotics that didn't improve her condition. The chest X-ray revealed a significant enlargement of the heart. On admission a general condition of the patient was severe accompanied by dyspnea and tachypnoe. Auscultation revealed coarse crackles and crepitations and diminished breath sounds. The heart rhythm was regular about 130/min with considerably low and dull heart sounds. The liver and the spleen were enlarged. The echocardiography showed significantly enlarged left ventricle with deeply disturbed systolic function. Ejection fraction was 14,5% with the minimal value of the range of norm 55%. The diagnosis of severe dilated cardiomyopathy was made.

Because of kinship of parents the further diagnosis was conducted. Incorrect result of Tandem Mass Spectrometry screening test was noticed and the girl was diagnosed toward metabolic disorders that showed 3-methylcrotonyl-CoA carboxylase (3-MCC) deficiency. A broad pharmacotherapy was applied. After a gradual improvement, the patient's medical condition relapsed again accompanied by increased relevants of an infection. The antibiotics were applied. In the beginning many trials of excluding catecholamines from the therapy were made with no success. During clinical course slight improvement in general condition was achieved. The oral pharmacological treatment was established. Systematically performed control echocardiography revealed stable heart parameters and slightly improved systolic heart function. Patient was discharged from the hospital in moderate, stable general condition in NYHA III functional class.

Conclusions: In making diagnosis of dilated cardiomyopathy metabolic disturbances should be taken into consideration particularly if kinship of parents is confirmed.

In dilated cardiomyopathy congenital metabolic disturbances need to be evaluated even if infection in the recent patient's history is evident.

[227]

VARICELLA COMPLICATIONS: IS VARICELLA REALLY SO BENIGN CHILDHOOD DISEASE?

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Background: Mostly Varicella is a common and benign childhood disease and those uncomplicated cases overshadow the severe complications and morbidity associated with Varicella. In our society there are significant risk groups for Varicella complications but nevertheless, severe complications may also occur in previously totally healthy individuals.

Case: 3 patients with diagnosis Varicella that were admitted in Children`s Clinical University Hospital (CCUH) were observed.

Case number 1. 4 years old boy was admitted to Emergency department with complaints of gait disturbance, balance impairment. Previously child was healthy and had history of Chickenpox for 10 days. Next day after admission patient had more progressive neurological symptoms and general weakness. No acute neurological changes were found in CT, but lumbar puncture showed the signs of serous meningitis. The diagnosis of Varicella cerebellitis (incidence 1 to 500`000) and meningitis was made. Child received intravenous treatment and had improvement in general condition but at the day of discharge still had unstable and clumsy gait.

Case number 2. 17 days old neonate was transported to CCUH from regional hospital with high temperature and Varicella elements on skin. On the 4th day of illness respiratory distress joined, on the 6th day artificial lung ventilation was started and diagnosis of bilateral pneumonia was made. Artificial lung ventilation was done for 4 days and all together patient spent 19 days in hospital.

Case number 3. 7 months old infant was admitted to CCUH with complaints of severe intoxication due to Varicella. Child`s general condition deteriorated and repeated laboratory tests showed CRP levels >300 mg/dL (at admission CRP was 6 mg/dL). In X-ray lung effusion and after cardiac ultrasound pericardial effusion was found. The diagnosis of acute pericarditis was made and the child was treated in ICU.

Conclusions: This case series report highlights that Varicella is common and benign childhood disease but it can cause severe complications with long lasting consequences. No one of those patients were vaccinated against Varicella and it could be the reason for so severe complications.

[228]

LCHAD deficiency in siblings- case report

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Background: LCHADD (long-chain 3-hydroxyacyl-CoA dehydrogenase deficiency) is a rare illness which occurs once in 118 336 births. It is an autosomal recessive congenital metabolic disease, usually diagnosed in infants and young children. Patients who have LCHAD deficiency can not produce ATP from long-chains fatty acids. This disorder may lead to metabolic decompensation and sudden infant death. Mainly during some infections and other states with increased demand for glucose.

Case: The following case presents siblings who were diagnosed with LCHAD deficiency. A female patient from first pregnancy with low birth weight- 2800g. During first 24 hours after birth she had marked dyspnea, hypoglycemia and was vomiting. In age of 3,5 months she was admitted to hospital due to apathy, weakness and paleness. Physical examination revealed: hepatomegaly, hypotony, hypoglycemia. Laboratory test showed increased transaminases and bilirubin levels and decreased total protein level. After one day she was transferred to the local university hospital due to hydropericardium drainage which was needed. Due to coexisting symptoms, selective screening test was made. It showed LCHAD deficiency. Afterwards the diagnosis was confirmed by molecular test which revealed mutation- c.1528 G>C homozygote. Proper dietary management was introduced.

Male Infant from the second pregnancy was born with also low birth weight- 2240g. During newborn period laboratory tests revealed low platelets count. The screening test was made on account of illness of older sister.

Test showed LCHAD deficiency. Appropriate treatment was given. In age of 2 months, patient was hospitalized because of stools with mucus and blood and diagnosed with milk protein allergy. Subsequently in infantile period he had several hospitalizations in local hospital due to infections without metabolic decompensations.

Conclusions: LCHAD deficiency should be taken under consideration during process of diagnosis. Especially in case of infants and young children with symptoms which may suggest some metabolic disorders such as hypoglycemia, low body weight, diarrhea, vomiting and other. It should be remembered that in this disorder high mortality is observed. In many cases, patients die during first episode, without early diagnosis and dietary management. It is overwhelmingly important to diagnose these patients as soon as possible.

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Dilated Cardiomyopathy in a Case of Hemolytic Uremic Syndrome, Clinical Course and Therapeutic Approach

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Background: Hemolytic Uremic Syndrome (HUS) is characterized by triad of hemolytic anemia, thrombocytopenia and renal failure. Extra renal organ involvement is uncommon. Acute myocardial ischemia, dilated cardiomyopathy (DCM), myocarditis and pericardial effusion with tamponade are reported as cardiac manifestations of HUS which are most probably resulted from presence of microvascular occlusive platelet thrombi. Dilated cardiomyopathy is a rare condition which may occur in the setting of HUS.

Case: A previously healthy 8 year-old boy with diagnosis of HUS, developed respiratory distress, pulmonary hemorrhage and dilated cardiomyopathy confirmed by echocardiography. In first hospital admission, the patient became stable with supportive care, mechanical ventilation, regular hemodialysis and fresh frozen plasma (FFP) transfusion. The patient got discharged with angiotensin converting enzyme inhibitor, calcium channel blocker and furosemide. Three months later, the patient got admitted in ICU due to deterioration of heart failure (Ejection fraction (EF)=18%). IV and oral inotropic agents were initiated. Autologous stem cell injection through angiographic catheterization was done without any clinical and echocardiographic improvement. Finally glucagon was administered (1mg daily). The patient respond significantly to glucagon in a one month course of drug administration. His EF increased to 32% in the last echocardiography and he got discharged due to clinical improvement. In follow-up the doses of inotropic agents were lowered.

Conclusions: Conclusion: DCM is a relatively rare but life-threatening condition associated with HUS which requires special consideration. Hence, echocardiography is recommended in all cases of HUS. In addition to supportive care and current medication such as inotropic agents, glucagon should be kept in mind as a therapeutic choice in cases of refractory heart failure in the setting of DCM. However, cardio protective effects of glucagon is controversial. Further studies are required to confirm its efficacy and safety and protective dose.

[230]

Cavernous sinus thrombosis due to squeezing acne spots located in danger triangle of the face

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Background: Cavernous sinus thrombosis (CST) is an unusual condition that can result in high mortality and morbidity rates if not treated immediately. CST may be aseptic or septic. This is the most common complication after infections located in area called danger triangle of the face.

Case: A sixteen-year old male patient was admitted to the ward from another with suspected meningitis. He presented with a four-day history of rhinitis and a forehead headache. The day before admission he complained of having fever, vomiting and lower lip swelling. On admission, besides an increased inflammatory marker levels, the blood tests revealed leucocytosis with neutrophilia, a high CRP. The CSF showed cytosis with a high protein level. However, no pathogens were detected. The physical examination revealed nuchal rigidity, rhinitis, erosion of lower lip as well as enlarged tonsils. A diagnosis of purulent meningitis was made which subsequently was conservatively treated. After 4 days of an appropriate treatment for meningitis the patient did not obtain improvement. He started having fever, photophobia, excessive sweating, nuchal rigidity and seizures. Horner's syndrome was found. The CT scan with contrast showed an enhancement of cavernous sinuses, gas bubbles in

the body and left side of the sphenoid bone, as well as in the anterior cranial fossa. The soft tissues of nasopharynx were thickened. A diagnosis of septic CST was made, followed by a laryngological surgery and treatment with heparin. The patient confirmed squeezing of acne spots which led to an infection and inflammation.

Conclusions: The key in making any diagnosis is to find the origin of inflammation. The medical care the patient had received led to a successful management with a wide spectrum intravenous antibiotics which further prevented some serious complications. This case is also a reminder of the immense importance of history taking.

Pediatrics

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Date:

Friday, May 12th, 2017

Location:

Room 139/140, Didactics Center

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[231]

Hypertransaminasemia in paediatric patients with newly diagnosed celiac disease

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Introduction: Celiac disease (CD) is a chronic systemic disorder triggered by ingestion of gluten in generally susceptible individuals and characterized by small intestinal enteropathy. Apart from typical gastrointestinal manifestation, there are extra-intestinal symptoms. One of them is hypertransaminasemia – well-defined in adults, but with a limited number of studies from children population.

Aim of the study: The aim of our study was to assess the prevalence of abnormal liver enzymes values in children with CD.

Material and methods: The study was conducted in Department of Pediatric Gastroenterology and Nutrition, Warsaw, Poland. We retrospectively analyzed children with newly diagnosed CD. The diagnosis of CD was detected by serologic testing of coeliac-specific antibodies and confirmed by duodenal mucosal biopsies. The blood parameters of alanine aminotransferase (ALT) were collected on CD patients when available at the time of diagnosis.

Results: In total, we involved 168 children to the study. ALT was assessed in 81.6% of them. Prevalence of elevated ALT, defined as >30 U/L, was 30.7% (42/137). We found no significant associations between increased transaminase levels and age, gender, clinical presentation of CD. When we consider value of >40 U/L as a definition of elevated ALT, we found prevalence 10,9% (15/137). Children with hypertransaminasemia were younger ($p=0.01$) and more commonly presented gastrointestinal symptoms ($p=0.03$).

Conclusions: Results of our study confirm that elevated ALT is a common finding in paediatric patients with CD. However, this is in opposition to the falling prevalence of transaminasemia in developed countries. Further prospective studies are needed to establish the real prevalence and clinical implications of elevated ALT among paediatric patients with CD.

[232]

Children born with calcium deficiency: results of prospective studies

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Introduction: Increase in the prevalence of bone diseases in older children has encouraged finding ways of early diagnostics and prevention of calcium-phosphorus metabolism disorders in newborns and preschool children.

Aim of the study: The aim of the study was to investigate bone metabolism in children within first six years of their life and improve diagnostic approach on the basis of the data obtained.

Material and methods: The study involved medical examination of 65 children aged 1 month, 6 months and 6 years. All newborns were divided into 2 groups. Group 1 ($n=30$) consisted of neonates born with normal calcium level (>2.05 mmol/L). Group 2 ($n=35$) involved neonates born with low calcium level (< 2.05 mmol/L). At the age of 6 months, the infants had physical examination with a particular focus on their psychomotor and physical development, clinical rickets symptoms. Physical examination, plantography, quantitative ultrasound (QUS), orthopedic and dentistry consultation were given.

Results: At the age of 6 months, Group 2 had lower anthropomorphic data ($p < 0, 05$). Medium positive correlation between serum calcium level in newborns and body weight at 6 months old ($r_s = 0, 55$, $p < 0, 01$) and serum calcium level in newborns and body length ($r_s = 0, 57$, $p < 0, 01$) were revealed. Clinical features of musculoskeletal disorders were found three times higher in Group 2. 25% children had an enlargement of frontal and occipital tubers and 94, 3% had delayed primary tooth eruption. At the age of 6 years, 62, 8% children with low calcium level at birth had transverse and longitudinal flatfoot, 50% - dental caries and 45,4% children were diagnosed with bad posture. Children with flatfoot had decreased ionized calcium levels in 81.8% cases. Based on quantitative ultrasound, low bone mineral density was found in all cases ($p < 0, 0001$) from -0, 5 to -2, 0.

Conclusions: Infants at the age of 6 months with low bone calcium at birth have higher risks of autonomous nervous dysfunction as well as musculoskeletal disorders. These children aged 6 years form a group of dentistry and orthopedic patients because of their low bone mineral density.

[233]

Correlation between incidence of orthopedic diseases and children's gender

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Introduction: Nowadays pediatricians are greatly worried about high incidence of locomotor disorders in children. The prevalence has achieved a size of epidemic and must be urgently managed.

Aim of the study: The aim of the study was to investigate the state of bone tissue in children with orthopedic pathology depending on their gender.

Material and methods: The study involved 118 children treated at the Orthopedic Department in 2014-2015 have been analyzed. The patients were divided into two groups – 57 boys and 61 girls. We examined the patients and assessed the state of their physical development and bone strength. All children had densitometry by means of the device «Omnisense 7000S» (Israel).

Results: In 42, 3% boys there was a flat foot of the 2nd degree as a primary diagnosis accompanied by bad posture. On the other hand the scoliosis prevailed in (44,4%), compared with 3,8% for boys.

These diagnoses were made for the 1st time in 5, 6% boys and 8, 5% girls. But 34% boys and 31, 7% girls were hospitalized for the first time. 66, 7% boys and 56,4% girls had decreased muscle tone. Besides so many boys had flat foot, they more often complained on gait disturbance than girls (29, 1% and 12, 1%, respectively.).

According to the densitometry, for certain ($p < 0,05$), the boys had decrease in bone strength. Osteopenia was in 6, 3% boys and in 19, 7% girls. Osteoporosis was identified in 5, 5% boys and 3, 3% girls. The abnormalities can both reduce rehabilitation potentials and become high risks of new orthopedic diseases and trauma.

Conclusions: Hospitalization in time, outpatient observation, proper orthopedic regimen and complete rehabilitation are necessary for every child with orthopedic pathology. Calcium supplements both as curative and preventive agents can be recommended. When we consider methods of treatment and rehabilitation, we should take into consideration not only patients' age but also gender. Children's parents should be aware of risks of orthopedic diseases.

[234]

Prepared for a big comeback? A study on measles outbreak among children from two refugee centers

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Introduction: Measles is a viral infectious disease occurring mainly in childhood. Due to a widespread vaccination program started in Poland in 1975, measles' morbidity significantly decreased. However, in 2016 there were 132 cases of measles reported, which was the highest prevalence rate in the last decade.

Aim of the study: The aim of the study was to analyze and describe clinical course of measles in pediatric patients. Additionally, we compared uncomplicated and complicated cases.

Material and methods: The study involved 16 children, aged from 7 months to 16.5 years diagnosed with serologically confirmed measles, treated in Department of Children's Infectious Diseases in Warsaw in 2016. All cases were reported between June and October (during 3.5 months). 10 (62.50%) of the patients were male, mean age was 6 years. All patients were Chechens from 2 Mazovian refugee centers. None of them had a documented MMR vaccination. We divided patients into two groups: I - those who developed post-measles complications (5/16, 31.25%) and II - complications-free (11/16, 68.75%).

Results: The most common signs and symptoms included: rash (16/16, 100%), cough (16/16, 100%), fever (15/16, 93.75%), lymphadenopathy (15/16, 93.75%), conjunctivitis (12/16, 75%), Koplik's spots (9/16, 56.25%). Noticeably, Koplik's spots were still observed during rash progression. Signs atypical for measles were also observed, such as hepatomegaly (5/16, 31.25%), diarrhea (8/16, 50%), nausea and vomiting (7/16, 43.75%).

In laboratory results following abnormalities were determined: limfopenia (7/16, 43.75%), elevation of neutrophil band cells level (6/15, 37.50%), increased aspartate transferase (6/15, 37.50%), elevated C-reactive protein (5/16, 31.25%).

5/16 (31.25%) of patients developed complications. All complications concerned respiratory tract: there were 3/16 (18.75%) cases of pneumonia, 2 (12.5%) bronchitis (1 case of bronchopneumonia) and 1 croup. Complications occurred more often in younger (3.89 y vs. 7y), male (4/5, 80% vs. 6/11, 54.55%) patients.

Symptomatic treatment was introduced in all cases. 18.75% of the cases required systemic antibiotic therapy, all of which were complicated cases (60% of I group).

Conclusions: An outbreak of measles may occur in undervaccinated communities. Despite mostly typical measles' course, severe complications are likely to be developed, especially in young children. As the anti-vaccination movement and increased migrations in Europe are noticeable, it is crucial to underline the importance of vaccination against measles.

[235]

Does chronic kidney disease respect the principle of age or gender parity?

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Introduction: Chronic kidney disease (CKD) is an irreversible condition caused by anatomic or functional abnormalities in renal structure, leading to end-stage kidney disease.

Aim of the study: The aim of the study was to analyze the etiology and clinical course of CKD in children, regarding their age, gender and treatment methods.

Material and methods: The retrospective analysis concerned the data from 951 medical records of 163 children (66 girls, 97 boys) aged 0-18 years, hospitalized in the Department of Pediatric Nephrology of Wrocław Medical University between June 2011 and June 2016.

Results: The most common cause of CKD were urinary tract anomalies (56.4%), regardless of the child's age. Male gender dominated in this group (63%). The further causes of CKD were hereditary renal disorders (13.5%), glomerulopathies (11%), acute kidney injury (8%), unknown (6.8%) and tumours (4.3%). Among younger children (0-12 y; 108 children) the second common cause were genetic diseases (15.7%), while in teenagers (13-18 y; 55 children) – glomerulopathies (12.7%). Hereditary renal disorders and glomerular diseases affected more boys, whereas tumours were more common in girls and in teenagers. Out of 163 children, only 30 were chronically dialyzed. 14 of them (mean age 5.2 y; 78.5% - boys), were on peritoneal dialysis. 16 children (mean age 10.7 y; 56.3% - girls) were on hemodialysis.

Conclusions: Urinary tract anomalies, hereditary renal disorders and glomerulopathies were seen more often in boys and so was the CKD itself. Younger children comprised the two thirds of the CKD population. Several causes of CKD have also shown the propensity towards age (hereditary renal disorders more common in younger children, glomerulopathies and tumours – in teenagers). The choice of dialysis method was age-dependent too - peritoneal dialysis dominated among younger patients.

[236]

Rare types of diabetes among children and adolescents

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Introduction: According to World Health Organization (WHO) we distinguish type 1 (T1D), type 2 (T2D), gestational and other types of diabetes. The presence of autoantibodies: glutamic acid decarboxylase 65 autoantibodies (GAD), tyrosine phosphatase-like insulinoma antigen 2 (IA2), insulin autoantibodies (IAA), and β -cell-specific zinc transporter 8 autoantibodies (ZnT8) confirms diagnosis of T1D - over 90% of paediatric diabetes. In most cases it takes few weeks to get autoantibodies results. Therefore, in clinical practice, hyperglycemia in children is almost always initially treated with insulin. The differentiation between T1D and other forms of diabetes has important implications for treatment (i.e. diet, oral hypoglycemic agents) and possibly allows to avoid insulin injections. Necessity of insulin therapy is associated with fear of the needles and has huge metabolic consequences in children. Additionally, long term prognosis of the complications is different in specific diabetes types.

Aim of the study: The aim of our retrospective study was to estimate the incidence of other than autoimmune types of diabetes among children and adolescent in our clinic.

Material and methods: The research includes 1477 children aged 0-17 with recognized diabetes, being at the control in Department of Paediatrics of Warsaw Medical University. We defined other types of diabetes, according to ISPAD (International Society for Pediatric and Adolescent Diabetes) Guidelines, as negative for autoimmune antibodies – exclusion of T1D.

Results: In our population 37 patients were diagnosed with other types of diabetes, which accounts for 2,51% (95%CI: 1,77-3,44%). MODY3 (maturity-onset diabetes of the young), PNDM (permanent neonatal diabetes mellitus), DM (diabetes mellitus) in a course of Prader-Willi and Kearns-Sayre syndrome were represented by one patient-0,07% (95%CI:0-0,38%). The incidence rates of DM associated with Down and Wolfram syndrome are equal – 0,14% (95%CI:0,02-0,49%). There were 5 children-0,34% (95%CI:0,11-0,79%) diagnosed with T2D. The same percentage of patients: 0,41% (95%CI:0,15-0,88%) suffers from MODY2 and cystic fibrosis-related DM. There are 12 children with undiagnosed type of DM-0,81% (95%CI: 0,42-1,41%).

Conclusions: Type of diabetes implicates the treatment method. Even if “other types” of diabetes are rare and the genetic tests are time and costs consuming, it is extremely important to diagnose them carefully.

[237]

Are children with neurogenic bladder after myelomeningocele at risk of cardiovascular diseases?

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Introduction: Myelomeningocele (MMC) is the most severe form of spina bifida often accompanied by hydrocephalus, impaired motor function due to the paralysis of lower limbs, neurogenic bladder and slow colonic transit. These factors may be the background of nutritional disorders and cardiovascular diseases in the future. hsCRP is a positive marker of unstable atherosclerotic plaques commonly used in diagnostics and treatment of cardiovascular diseases. Adiponectin has opposite, anti-inflammatory function. Decreased adiponectin level is reported to correlate with higher risk of metabolic syndrome, cardiovascular diseases, atherosclerosis, diabetes mellitus type 2 and infarction.

Aim of the study: The aim of the study was to assess the risk of cardiovascular diseases in the group of MMC children and control group basing on the serum levels of adiponectin, hsCRP and lipid profile.

Material and methods: A prospective clinical estimation based on 87 children (67 MMC, 20 control group) was conducted. Data collected from medical history included: sex, age, blood pressure, antropometric parameters (height, weight, BMI), level of spinal lesion and activity according to Hoffer's scale. Lipid profile values (cholesterol, HDL, LDL, triglycerides) and Natrium serum levels were assessed using laboratory blood sample tests. hsCRP and adiponectin were measured using ELISA kit.

Results: There were no somatometric, sex and age differences between MMC and control groups. Comparison of adiponectin and hsCRP serum levels revealed no difference between boys and girls. However it was statistically significant between MMC and control groups. Negative correlations between somatometric values, systolic blood pressure and adiponectin levels in MMC group were found. We also noticed negative correlation between hsCRP and spinal lesion level in MMC children.

Conclusions:

1. Increased hsCRP and decreased adiponectin levels may be considered as risk factors of cardiovascular diseases in MMC children.
2. MMC children have disturbed lipid profile and increased blood pressure.
3. The risk of cardiovascular diseases in MMC children correlates with the level of spinal lesion.

[238]

Analysis of occurrence of potential contact allergens in cosmetics intended to use in newborns and infants

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Introduction: Newborns' and infants' skin is considered as physiologically fragile with lower resistance to aggressions. Maturation process after birth lasts at least throughout the first year of life. To avoid skin irritation efforts should be made to provide appropriate temperature, moisturization and protection from harmful substances such as harsh surfactants and contact allergens. In the recent years prevalence of allergic contact dermatitis even in the youngest children is growing.

Aim of the study: Assessment whether cosmetics for newborns and infants may potentially contribute to development of allergic contact dermatitis due to allergenic ingredients in products' composition.

Material and methods: Pediatric cosmetics were searched in 5 biggest cosmetics retailers in Poland and photographed. Products intended to use in newborns and children younger than one year were included. Ingredients, types of cosmetics and brand names were recorded. To identify contact allergens, ingredients of the cosmetics were compared with allergens listed in the European baseline series (EBS).

Results: Inclusion criteria were met by 212 cosmetics among which 60 (28,3%) contained at least one allergen from EBS, whereas 152 (71,7%) were allergen-free. The most frequent allergen was Lanolin which was found in 17 (8%) of products followed by Formaldehyde in 14 (6,6%), Fragrance mix I in 14 (6,6%), Methylisothiazolinone/ Methylchlorisothiazolinone in 14 (6,6%), Fragrance mix II in 14 (6,6%) and Parabens in 12 (5,6%). Additionally, 160 (75,5%) cosmetics contained fragrances not listed in EBS. According to cosmetics form, most allergenic were emulsions of which 60% contained allergens followed by creams for diaper area (54,5%). Surprisingly the least allergenic products were wet wipes (15,1%).

Conclusions: Current analysis revealed that majority of cosmetics for newborns and infants is allergen-free however, there is still a significant number of products which may contribute to development of contact sensitization. Health care professionals should be aware of this possibility and advise parents to carefully choose cosmetics for babies to avoid skin adverse effects.

[239]

Myocarditis in children - clinical presentation and diagnostic power of selected tests

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Introduction: Myocarditis (MC) is a common disease in paediatric patients. The signs and symptoms typical of MC e.g. chest pain, weakness, fatigue and tachycardia are also commonly seen in common cold or respiratory tract infections. Due to this fact it may be misdiagnosed if there is a lack of diagnostic tools in the outpatient

clinic and/or emergency departments. Out of the diagnostic methods used in myocarditis, cardiac MRI is the most useful but it is a costly method and it is still not readily available in many hospitals.

Aim of the study: The aim of this study was to assess the clinical presentation of myocarditis in children and the diagnostic power of chosen tests used in the diagnosis of MC.

Material and methods: We performed a review of paediatric patients admitted to the hospital in the year 2015 with a diagnosis of myocarditis confirmed by MRI. We reviewed their ECG, echocardiography, cardiac troponin, CKMB and CRP results as well as the clinical presentation on the day of admission to the hospital. In the ECG heart rate, ST-T changes and heart rhythm disturbances were analysed.

Results: The data of 22 patients were analysed. The age distribution was non-normal with a peak at 14-18 years of age (55%). All of the patients presented with chest pain, 4 (18%) with dyspnoea, 9 (41%) had fever. 10 (45%) children reported an upper respiratory tract infection prior to hospital admission. In 2 (9%) children of the study group pneumonia and in another 2 gastrointestinal tract infection were diagnosed.

In the ECG ST-T changes were observed in 21 patients, tachycardia was observed in 3 and arrhythmia in 4. The sensitivities of the ECG changes were 95,45%, 13,63% and 18,88% respectively. The cardiac troponin test was positive in 20 cases (90,48% sensitivity), CKMB in 18 (81,88% sensitivity) and CRP in 2 (9,09% sensitivity). The EF, SF and Left ventricular diameter measurements in Echocardiography were within normal ranges for all patients.

Conclusions: Myocarditis may easily be confused with respiratory tract infections such as pneumonia. However, troponin tests and ECG are highly sensitive tests and offer satisfactory diagnostic power for myocarditis diagnosis.

[240]

Retrospective analysis of acute spontaneous urticaria in children aged 7-8

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Introduction: In recent years there has been growth in the number of young children who have episodes of acute spontaneous urticaria (ASU); however, epidemiology of the disease is still unclear.

Aim of the study: The aim of the study was to assess the prevalence of ASU in children aged 7-8 as well as manifestations, atopy, their feeding in the first year of life and disease triggers.

Material and methods: A questionnaire for parents with questions reflecting epidemiological features of ASU was designed by our research team. We distributed 400 questionnaires and were given back 378 questionnaires for (94.5%) further analysis.

Results: The average age of children was 7.7 ± 0.2 y. It was found out that 82 of 378 (21, 7%) had at least one episode of urticaria throughout their life. At the same time ASU was diagnosed in 59 children (15.6%), chronic spontaneous urticaria in 1 (0.26%), cold urticaria in 19 children (5.03%) and 3 children had cholinergic urticaria (0.79%). Manifestations of ASU were observed in 20.3% children aged up to 1 year, in 25.4% children aged 1 - 3 and in 16.9% children over 5 year of age. Most of the children had several episodes of ASU. A single episode of ASU was noted in 23.7% patients, whereas 2 - 5 episodes of urticaria were registered in 44.1% children, 5 and more episodes in 25.4% cases. The most common triggers of ASU were food products (30.5%), drugs (20.3%), insect bites (8.5%), and infections (5.1%). Besides, parents stated some other triggers, such as vaccination. Heredity was complicated with atopy in 66.1% children. Full-term deliveries were recorder in 83.1% children. Only 30.5% children with ASU had breastfeeding up to 6 months.

Conclusions: ASU occurs in 15.6% children aged 7-8 and in 44.1% of them can have 2 - 5 episodes of urticaria. Evident manifestations of ASU in every fourth child occur at the age 1 - 3, at least in children under one year of age. Family history for atopy is registered in 2/3 of children with ASU. The main triggers of ASU are food products and medicines.

[241]

Procalcitonin as a serum biomarker for distinguishing bacterial and viral meningitis in children

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Introduction: Bacterial meningitis (BM) in children is a severe, life-threatening disease that requires rapid diagnosis and treatment to decrease the mortality rate and potential neurological complications. Clinically, it is often difficult to differentiate between bacterial and viral etiologies of meningitis. Recently, procalcitonin (PCT) has emerged as a potential new serum biomarker to replace traditional markers of bacterial infection such as C-reactive protein (CRP). Interestingly, the PCT serum levels do not show similar rise in the course of viral infections.

Aim of the study: The aim of this study was to determine the true diagnostic accuracy and power of PCT in distinguishing between bacterial and viral meningitis in children, and its potential clinical use, through a comprehensive evidence-based approach.

Material and methods: Comprehensive study search of all major electronic databases (PubMed, EMBASE, Science Direct, Scopus, Web of Science, and Cochrane Library) was conducted. All studies reporting data on diagnostic accuracy of PCT in pediatric population were assessed for eligibility for inclusion in this meta-analysis. MetaDiSc 1.4 was utilized in statistical analysis to calculate pooled sensitivities, specificities, positive likelihood ratio (LR+), negative likelihood ratio (LR-), diagnostic odds ratios (DOR) and area under the curve (AUC).

Results: After the eligibility assessment of 2379 initially identified articles, a total of 8 studies (n=616 patients), 6 prospective and 2 retrospective were included in this study. The analysis showed that pooled sensitivity and specificity of PCT test equaled 0.96 (95% CI = 0.92-0.98) and 0.89 (95% CI = 0.86-0.92), respectively. The pooled LR+, LR-, DOR, and AUC for PCT were 7.5 (95% CI = 5.6-10.1), 0.08 (95% CI = 0.04-0.14), 142.3 (95% CI = 59.5-340.4), and 0.97 (SE = 0.01), respectively. Six studies (n=541 patients) compared the diagnostic accuracy of CRP with PCT and showed that pooled sensitivity for CRP was only 0.70 (95% CI = 0.64-0.76).

Conclusions: This study demonstrates that PCT is very highly accurate and powerful serum diagnostic test to differentiate bacterial and viral meningitis in children. PCT was found to be significantly more sensitive marker of bacterial meningitis in children as compared to CRP. We recommend its regular use by physicians in the emergency setting for quickly ruling out bacterial meningitis and providing a more accurate diagnosis.

[242]

DEHYDRATION TREATMENT OF PEDIATRIC ACUTE GASTROENTERITIS IN CHILDREN'S CLINICAL UNIVERSITY HOSPITAL IN LATVIA: PARENTAL KNOWLEDGE AND ATTITUDE

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Introduction: Pediatric acute gastroenteritis is considered a benign disease but according to WHO data it remains a major cause of morbidity and mortality in children younger than 5 years. Most cases of dehydration can be simply treated with adequate fluid replacement and to achieve successful outpatient treatment of pediatric acute gastroenteritis the parents should be provided with necessary information.

Aim of the study: The aim of the study was to evaluate parental knowledge and attitude of dehydration treatment in the case of pediatric acute gastroenteritis and to find out if on guideline based rehydration treatment is used in emergency settings in Children's Clinical U

Material and methods: A questionnaire was completed by child's parent in the Emergency department in CCUH and another questionnaire was fulfilled by the attending physician, data were also compared with objective signs and information in medical charts. Results were calculated using IBM SPSS statistics 22.

Results: 60 questionnaires were collected. From all children only 3% (2/60) had severe dehydration, 23% (14/60) had moderate and 74% (44/60) had mild dehydration. Majority of parents (90%) answered that child should drink

more fluid in the case of acute gastroenteritis but surprisingly 10% of the parents answered that child should not drink more fluids as usual. Two thirds of parents (67%) answered that the most effective way how to replace the fluid loss is with intravenous rehydration when only 33% were sure that oral rehydration is the most effective way. Only 13% (8/60) parents answered correctly how much their child should drink fluids according to their age. 81% (49/60) answered that they would not agree to use nasogastric tube for fluid replacement for their child. The second part of the study was to find out if on guideline based rehydration therapy is used in emergency settings in CCUH. While there were 74% children with mild dehydration only 36% (22/60) received oral rehydration and nobody received rehydration through nasogastric tube. Mostly, children in CCUH received intravenous rehydration (63% all together).

Conclusions:

1. Study proved that parental knowledge about rehydration treatment of pediatric acute gastroenteritis is far from being satisfactory and further parent education should follow.
2. More targeted and on guidelines based rehydration therapy should be used in CCUH emergency settings and also the role of rehydration through nasogastric tube should be considered more often.

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Instytut
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GAZETA
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Date:

Saturday, May 13th, 2017

Location:

Room 125, Library - CBI

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[243]

Antioxidants in aerial parts of *Centaurea cyanus* L. extracts

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Introduction: *Centaurea cyanus* L. is one of the species of Asteraceae family that has not been the subject of many investigations. It is an annual plant, growing as a weed in the fields. It is also used as ornamental plant because of its intense blue flowers. Aerial parts of cornflower are an incontestable source of many phenolic compounds and polysaccharides. Pharmacological studies pointed out strong gastroprotective effect of the *Cyani herba* selective extracts.

Aim of the study: The aim of this study was to assess the efficacies of polyphenols and polysaccharides extracts of aerial part of *Centaurea cyanus* L. for their potential antioxidant and anti-inflammatory activity.

Material and methods: In vitro antioxidant activity of extracts was assayed by DPPH, ABTS, FRAP and ferrozine tests. In vivo anti-inflammatory activity was studied using histamine induced rat paw edema.

Results: In all assays, the polyphenols extract of *Cyani herba* showed high values of antioxidant activity (DPPH – $IC_{50}=54.14\pm0.42$ µg/ml; ABTS – 0.54 ± 0.02 µM TE/g dried weight; FRAP – 52.43 ± 0.06 µM TE/g dried weight). The results revealed that polysaccharides extract had a significantly ($P<0.05$) higher Iron chelating activity ($95.66\pm1.99\%$) than polyphenolic extracts ($3.88\pm0.6\%$). Both extracts demonstrated anti-inflammatory activity. The effect was found to be more pronounced in case of polyphenol extract ($38.36\pm5.93\%$). This bioactivity compared favourably with diclofenac sodium ($42.47\pm6.09\%$), which was used as positive control, thus showing its usefulness for the treatment of inflammation.

Conclusions: Based on the present study, it can be concluded that *Centaurea cyanus* L. aerial part polyphenol extract has potent antioxidant and anti-inflammatory activity. Polysaccharides extract has a strong capacity on chelating free iron. So, a combined extract is more preferable than that of having one of these activities.

[244]

The synthesis and biological activity of the 7-hydroxycoumarin-derived Schiff bases and their copper (II) complexes

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Introduction: Coumarins, widely distributed in the plant kingdom as well as their synthetic analogues, show antifungal, antibacterial and anticancer properties. Schiff bases are known of their biological activity. Copper (II) complexes have anticancer properties due to their ability to inhibit proteasomes and I and II topoisomerases, they intercalate with the DNA, cut the dsDNA and form reactive oxygen species.

Coumarins, having two functional groups: the phenolic group at C-7 and -C=N- (imine) substituent, are good ligands to form copper (II) complexes. The complex compounds and their ligands show cytotoxic activity in vitro, according to research, carried out during last two years in the Department of Organic Chemistry WUM.

Aim of the study: Optimising and rescaling preparation of Schiff bases from 8-acetyl-7-hydroxy-4-methylcoumarin (1) and p-aminophenol or p-anisidine. Obtaining a series of novel, symmetric and asymmetric copper (II) complexes, using 7-hydroxycoumarin-derived Schiff bases a

Material and methods: 1 was synthesized via Pechmann condensation from 2,6-dihydroxyacetophenone and ethyl acetoacetate, then reacted with p-aminophenol and p-anisidine to yield Schiff bases. Copper (II) complexes were formed by refluxing the solution of appropriate ligands and copper (II) acetate in methanol, under TLC control. Structures of all compounds were established by spectral means.

The assay in vitro antimicrobial and antiprotozoal activity (against *Trypanosoma cruzi* and *Leishmania* spp.) is in progress. We are hoping to find the most active structures and increase the scope of our research – to design and synthesize new analogues with desired biological activity.

Results: Synthesis of a series of Schiff bases and novel copper (II) complexes is reported as well as their cytotoxic activity against HeLa, CFPAC-1 and B16F10 cancer cell lines.

Conclusions: Coumarin-derived Schiff bases and their copper (II) complexes may be potential anticancer, possibly antimicrobial and antiprotozoal agents.

[245]

In situ extraction approach for enhancement of secondary metabolites production in *Rindera graeca* hairy root cultures

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Trustee of the paper: Sykłowska-Baranek K.

Introduction: Successful application of in situ extraction, as a strategy of improving yield in production of pharmaceuticals by methods of plant in vitro culture, strongly depends on proper in situ extractant choice. Considering the unique properties of liquid perfluorochemicals, their nontoxicity for cells, immiscibility with aqueous media and applicability as a liquid gas carriers, it is highly justified to investigate effects of these compounds on plant biomass growth and secondary metabolites production.

Aim of the study: The aims of the study were to investigate the effect of perfluorodecalin (PFD) degassed and aerated on root biomass growth and production of compound P (2-methoxy-5-O, 6-(isohex-1-ene-1,2-diyl)naphthazarin), total content of phenolic compounds as well as an

Material and methods: Four root lines of *Rindera graeca* (Greece endemic plant of Boraginaceae family) were investigated: anatomical roots (RgKN), roots regenerated from callus (RgKZNOA) and two lines of transformed roots (RgKT7 and RgKT17). After 28 days of cultivation in hormone-free liquid DCR medium, PFD degassed or aerated were added to the cultures. On day 35 and 42, roots were harvested, lyophilized and extracted as well as aqueous and PFD phases. In the resulted extracts the content of compound P, a newly identified naphthoquinone compound, was analyzed using HPLC-UV-DAD technique. Moreover the total amount of phenolics and antioxidant activity of the extracts were determined using Folin-Ciocalteu's and DPPH free radical scavenging methods.

Results: The response of roots to the culture conditions differed according to their origin. Higher biomass accumulation in presence of PFD, compared to the control, was observed in RgKT17 and RgKZNOA root cultures, 2.35-fold and 1.56-fold respectively. Addition of degassed PFD caused also an increase in total production of compound P in cultures of RgKN and RgKT17 root lines (1.1-fold and 1.5-fold respectively). Use of PFD, especially aerated variant, was beneficial for the yield of total phenolic compounds and resulted in the highest their content in RgKN root line cultures (1.682 mg GA/g DW). Similar tendency was observed for antioxidant activities of analyzed extracts.

Conclusions: The application of PFD for in situ extraction enhanced the production of secondary metabolites in *Rindera graeca* hairy root cultures and PFD phases proved to be the main place of their accumulation.

[246]

Identification, configuration analysis of saccharides and spectroscopic characteristics of new flavonoid glycosides isolated from *Corispermum marschallii* Steven

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Introduction: *Corispermum marschallii* Steven is an herbaceous annual plant material belonging to the Amaranthaceae family. In Poland this plant is a domesticated species occurring in open, gravelly or sand habitats.

In the literature there are no studies considering the polyphenolic composition of the aerial parts of any *Corispermum* species. Available research shows, that plant materials belonging to this genus contain ecdysteroids and some isoquinoline alkaloids including salsoline and salsolidine.

Aim of the study: The aim was to isolate and characterise new flavonoid glycoside with use of NMR spectra analysis and dedicated analytical method for determining saccharides configuration.

Material and methods: The plant material was collected on Vistula river banks in September 2014 and was authenticated by S. Granica and C. Zidorn. The dried aerial parts were extracted with acetone-MeOH-H₂O, evaporated and fractionated by liquid-liquid extraction with CHCl₃, Et₂O, AcOEt and n-BuOH. Then, in order to isolate polyphenol-rich fractions, two chromatographic separations of n-BuOH fraction were performed. Final purification of compound was achieved by preparative HPLC.

Subsequent part of determining the structure consisted of hydrolysis of compound, derivatisation of monosaccharides standards and the hydrolysed sample. It was conducted on the basis of procedures previously described in literature. The method for UHPLC-DAD-MS analysis of derivatives was established.

Results: In the preliminary analysis of chromatogram of the raw extract and literature research few flavonoid glycosides were partially identified. Among them was the isolated compound, classified as spinacetin dihexoside. In the process of featured isolation, fraction of high purity compound was obtained. Hexoses in the isolated compound were established as D-glucose and D-galactose. Further analysis of NMR spectra confirmed previous hypothesis about aglycone structure and enabled assignation of exact diglycoside structure: spinacetin 3-O-β-D-galactopyranoside-7-O-β-D-glucopyranoside.

Conclusions: In the present study the polyphenolic composition of aerial parts of *C. marshallii* was investigated for the first time. One of spinacetin derivatives was isolated and series of analyses conducted resulting in identification of new natural product. It may be suspected, that apart from characterised compound, plant material contains hyperoside and other rare spinacetin and patuletin glycosides. The isolation and identification of them is a subject of further studies.

[247]

Determination of cytotoxic activity of novel histone deacetylase inhibitors

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Introduction: Alcohol addiction represents a serious health, social and economic problem for which discovery of new effective therapies is a pressing necessity. The disease can be defined by a compulsive use and a loss of control in limiting intake and the emergence of a negative emotional state when access to alcohol is prevented.

Recent studies have shown that neuroadaptations that are set up in the addiction include epigenetic changes such as a balance of acetylation / deacetylation of histones (HAT/HDAC). Currently available compounds used as HDAC inhibitors are not selective and cause a lot of side effects. In cooperation with the scientific group in the University in Reims (France), we synthesized and characterized new compounds that are selective histone deacetylase inhibitors (HDAC inhibitors).

Aim of the study: The aim of the study is to determine cytotoxicity of novel histone deacetylase inhibitors that can be used as a potential drugs.

Material and methods: The experiments were performed on following cell lines: V79-4 (hamster's fibroblasts) and HaCaT (immortal keratinocyte cell line from adult human skin). The cells were incubated with different concentrations of 8 compounds (HDAC inhibitors) for 24, 48 and 72h. After this time the level of cell death was measured by LDH test (cellular membrane integrity assessment). The MTT assay (reduction of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) was used for assessing cell viability. The assays were performed in triple from three different independent experiments.

Results: Compounds with congruent structure show similar cytotoxicity. We designated IC₅₀ for all compounds and indicated that it was lower for compounds with adamantyl group than for these with an aromatic amino group. We observed that the cell death of most compounds is probably caused by apoptosis, not necrosis. HaCaT cell lines were more sensitive than V79-4.

Conclusions: The results suggest that all the compounds are promising for potential future applications.

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ANTIOXIDANT ACTIVITY OF ARONIA MELANOCARPA FRUITS AND VIBURNUM OPULUS FRUITS IN TINCTURES

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Introduction: Extensive and beneficial use of polyphenol compounds determines a scientific search of new low-cost and available sources of raw material. In this aspect *Aronia melanocarpa*, *Viburnum opulus* are quite promising.

Aim of the study: The aim of the study was to determine optimal concentration of ethyl alcohol, providing the highest antioxidant activity of tinctures *Aronia melanocarpa* fruits, *Viburnum opulus* fruits and their combination.

Material and methods: Tinctures were made 1:5 with percolation. Alcohol (40%, 70%, 95%) was used as an extracting agent; medicinal plant material - *Aronia melanocarpa* fruits, *Viburnum opulus* fruits. Investigation of AOA was carried with test systems and method of EPR spectroscopy.

Results: The method of EPR spectroscopy demonstrated antioxidant activity (mg/ml): *Aroniae melanocarpae* + *Viburni opuli* 40% – $57,76 \pm 0,08455$; *Aroniae melanocarpae* + *Viburni opuli* 70% – $71,39 \pm 0,3164$; *Aroniae melanocarpae* + *Viburni opuli* 95% – $24,55 \pm 0,07154$; *Aroniae melanocarpae* 40% – $44,63 \pm 0,08618$; *Aroniae melanocarpae* 70% – $13,86 \pm 0,06992$; *Aroniae melanocarpae* 95% – $18,09 \pm 0,02548$; *Viburni opuli* 40% – $162,97 \pm 0,0322$; *Viburni opuli* 70% – $158,06 \pm 0,0186$; *Viburni opuli* 95% – $37,06 \pm 0,08178$.

Conclusions: The tincture *Viburnum opulus* fruits 40% demonstrated the highest antioxidant effect. Thus, the optimal concentration of ethyl alcohol providing the highest antioxidant activity is 40%.

[249]

Microwave synthesis and biological evaluation of a new series of 5-[3- (4-aryl- 1-piperazinyl)propoxy]coumarins as potential ligands of 5-HT receptors

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Introduction: A variety of 7-hydroxycoumarin derivatives have been synthesized and intensively biologically screened but derivatives of 5-hydroxycoumarin were definitely rarely tested. 5-Hydroxycoumarin is a similar system and it's also a promising target as a scaffold for new therapeutic agents.

Aim of the study: The goal of this study was to validate 5-HT 1A and 5-HT 2A affinity profile approach to antipsychotic agents (in the cooperation with the Department of Pharmacobiology, Faculty of Pharmacy, Jagiellonian University Collegium Medicum, Kraków) and to achieve an optimum interaction with serotonin receptors. At the beginning the selection and the synthesis of a new series N-arylpiperazine derivatives attached to 5-hydroxy- 4,7-dimethylcoumarin via a propyloxy chain were essential.

Material and methods: The series of 5-hydroxycoumarin derivatives was synthesized with support of the microwave radiation. Purified samples with established structures were tested towards their affinities to serotonin receptors. Radioligand binding assays were performed to confirm the affinity of obtained compounds to 5-HT 1A and 5-HT 2A receptors. That trial was executed using membranes from Chinese hamster ovary cells stably transfected with the human 5-HT 1A and 5-HT 2A receptors. Serotonin and mianserin were used to define nonspecific binding.

Results: The majority of studied derivatives represented very high affinities in the nanomolar range towards 5-HT 1A receptors and less significant affinities towards 5-HT 2A receptors. Moreover results indicate positive influence of the acetyl group at C-6 position of the coumarin ring on affinities for 5-HT 1A receptors. It was also proven that compounds bearing (2-fluorophenyl)piperazinyl, (3-methoxyphenyl)piperazinyl, (2,3-dichlorophenyl) piperazinyl and (2-cyanophenyl)piperazinyl demonstrate the highest affinities for 5-HT 1A receptors.

Conclusions: As expected, 5-[3- (4-aryl- 1-piperazinyl)propoxy]coumarins demonstrated an affinity for serotonin 5-HT 1A and 5-HT 2A receptors. Having picked the most potent derivatives, we are planning to extend the range of biological testing methods for them and synthesize similar compounds to be assessed.

[250]

Monitoring community awareness on HIV prevention in the development of mobile applications

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Introduction: HIV is a retrovirus infecting cells of the immune system, destructing or weakening their function. Community awareness on HIV infection, ways of transmission, protection, prevention and general epidemiology must be efficiently increased.

Aim of the study: The aim of the study was to monitor awareness of the population on HIV infection and opportunities to prevent and assess different information resources to spread the information.

Material and methods: The study involved 200 people (46.5% males, 53.5% - females) aged 23, $8 \pm 0,93$ and was conducted in 2016 with Internet-service <http://www.surveymonkey.com/ru/> and included interviewing and real time. A questionnaire with social and demographic data was developed concerning the use of mobile services, conditions of possibility of combining the mobile services and the section about HIV information in mobile devices.

Results: Participants of the study were comparable by age and social status without any differences in male and female groups ($p > 0,05$). It was found that 99% respondents use the smartphones with Internet and mobile services. Mobile service "Sport style" was used by 36% the total number of respondents, "women's calendar" - 56.5% of the 107 on the female sample.

Correlation between the information source and the social status of the respondents a weak and positive, $r = 0,2$ ($p < 0,05$). Differences were not found in the male and female sample. So people independently of social status perceive information and are ready to accept information about HIV epidemic.

As a result of the study on the most convenient way to informing about HIV, 35.5% of the respondents confirmed that it is the mobile applications and they are ready to use them. The most comfortable methods are called: an informative section (item) of 49.5%, a reference to the information portal of 38.5%, 33.5% the test, a reference to the short videos 26%, and 10% of the pop-up window. More than half of the respondents are ready to participate in interviews about HIV when they open the mobile application.

Conclusions: Now people are actively using smartphones and mobile applications daily life. We examined an opportunity to add information on HIV in the most visited mobile applications, such as: "women's calendar" and "Sport style". It will give to us a great potential for people to learn what HIV, opening an informative section is, pass on the official sites and videos about HIV, pass interviews, as well as find information about HIV free of charge testing.

[251]

Synthesis of molecularly imprinted polymers and analysis of adamantane's derivative adsorption

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Introduction: Molecular Imprinted Polymers (MIPs) are highly-advanced materials, which are being possible to moderate under certain conditions resulting in forming three dimensional cavities, which in size and shape resemble the template molecules. This material is created by either non-covalent or covalent interactions between molecular template and functional monomer - the pre-polymerisation complex, then it is cross-linked in the polymerisation process. Eventually, the template is removed from the polymer, forming the active structure of the molecular imprinted polymer capable of the selective rebinding of the template and its structural analogues.

This study is focused on the selective adsorption of the template molecules such as amantadine and its salt amantadine hydrochloride. Amantadine is used in the treatment of the influenza A viral infection and the symptoms of the Parkinson disease in the combination therapy. MIPs can allow to monitor the drug concentration in the blood preventing from further adverse reactions.

Aim of the study: The objective of this study was to synthesise, analyse, determine the new molecularly imprinted polymers with the highest value of Imprinting Factor (IF) in relation to the non-covalent binding affinity between the considered polymers and the analytes-amantadine, amantadine hydrochloride.

Material and methods: Firstly, we combined molecular templates, eight various functional monomers and cross linking monomer-ethylene glycol dimethacrylate in the 1:4:20 ratio followed by the polymerisation of the reagents. There was used bulk polymerisation method with the heating initiation. In order to remove the templates, the Soxhlet extraction was used. Simultaneously, there were synthesised the non-imprinted polymers, as controlling factors in terms of binding capability. Finally, we verified the adsorption properties of the polymers using LC - MS chromatography.

Results: The acquired results are the evidence to carry on further research on the molecular imprinted polymers dependency on extractions' methods and selection of the appropriate monomers. The all achieved data can be provided in molecular imprinting technology using Soxhlet extraction.

Conclusions: The experiment determines strong correlation between properties of the employed monomers and their selectivity towards analytes. Ultimately, it might be applied in medical sciences improving patients' safety.

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[252]

The concentration of selected adipokines in patients before and after kidney transplantation in the six-month observation

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Introduction: Adiponectin (ADPN) is a biologically-active cytokine produced by adipose tissue. ADPN plays a protective role against the metabolic disorders, or diseases related to atherosclerosis. In the kidneys ADPN has been shown to have anti-inflammatory, antifibrotic and antioxidant effects. It is considered as a potential biomarker in the progression of chronic kidney disease. Human resistin is secreted primarily by macrophages and monocytes. The exact physiological and pathophysiological role of resistin in humans is unclear. High levels of resistin are associated with inflammation, metabolic and vascular abnormalities and may play a pathogenic role in the development of chronic kidney disease.

Aim of the study: The aim of this study was to compare ADPN and resistin concentrations before and after a kidney transplantation over a six-month of monitoring.

Material and methods: Serum ADPN and resistin levels were measured using ELISA kits in 51 healthy volunteers and 39 renal transplant recipients right before kidney transplantation and 4 times in the six-month observation (5-7 days, 1 month, 3 and 6 months after a transplantation).

Results: The concentration of resistin and ADPN were significantly higher in patients before and in all time points after kidney transplantation as compared to the control group ($p < 0.001$). Mean ADPN concentration dropped significantly right after a transplantation and it was decreasing over a six-month. Resistin levels were the highest before kidney transplantation, then it was decreasing within a month after the transplantation, and then increased again, but did not reach the level from the time before transplantation.

Conclusions: Kidneys are involved in biodegradation and elimination of adiponectin. Elevated levels of resistin in patients before kidney transplantation may result from the impaired elimination of the adipokines by the kidney or to be a result of inflammation. ADPN and resistin levels are associated with renal function, however its metabolism in patients after renal transplantation is complex and its usefulness needs more studies.

This work was supported by the Polish National Science Centre, Grant No. DEC 2013/09/N/NZ4/02312

[253]

MicroRNA-dependent regulation of the tumor suppressor, SLC5A8, in papillary thyroid carcinoma

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Introduction: SLC5A8 gene encodes for a monocarboxylate transporter, which is expressed at the highest levels in the thyroid gland and was proposed as a candidate apical iodide transporter. SLC5A8 is downregulated in papillary thyroid carcinoma (PTC), possibly contributing to progression of cancer, due to the loss of its tumor-suppressive function. The mechanisms underlying SLC5A8 downregulation in PTC are largely unknown and we hypothesized that the culpable mechanisms include the action of microRNAs.

Aim of the study: To investigate a role of microRNA in regulation of SLC5A8.

Material and methods: To test our hypothesis, we used in silico approach to identify miRNAs upregulated in PTC and putatively targeting SLC5A8. Subsequently, we analyzed the expression of SLC5A8 and miRNAs of interest in a set of 52 PTC/normal tissue pairs. Luciferase assays were performed to confirm direct binding between the 3'UTR of SLC5A8 and selected miRNAs. Subsequently, we analyzed the impact of miRNAs on endogenous SLC5A8 in a HEK-293 cell line. Finally, we investigated if chosen miRNAs affect radioactive iodide accumulation in full-length hNIS-expressing HEK-293 cells.

Results: SLC5A8 expression in tumors was decreased by 9.57-fold ($p=9*10^{-8}$). In silico analysis revealed miR-29a-3p, miR-92b-3p, miR-181a-5p, miR-182-5p and miR-494-3p as potentially regulating the expression of SLC5A8. Luciferase assay confirmed direct binding between the 3'UTR of SLC5A8 and miR-181a-5p, miR-182-5p and miR-494-3p, which led to reduction in luciferase activity by 20% ($p=0.02$), 18% ($p=0.05$), and 15% ($p=0.01$). MiR-181a-5p and miR-182-5p were upregulated in PTC by 1.25 ($p=0.0007$), and 1.35-fold ($p=0.002$), respectively. In HEK-293 cell lines, transfection with mir-181a, mir-182 and mir-494 decreased SLC5A8 mRNA by 31% ($p=0.0009$), 19% ($p=0.008$) and 33% ($p=0.028$), respectively. Mir-182 increased radioactive iodide accumulation in HEK-293-hNIS cells by 20% ($p=0.005$).

Conclusions: This study shows microRNA-dependent regulation of SLC5A8 expression and a possible role of mir-182 in modulation of radioiodine accumulation. Accordingly, miRNAs may serve as emerging targets to halt the progression of thyroid cancer and to enhance the efficacy of radioiodine therapy.

[254]

Indoxyl sulfate accelerates thrombotic response after laser-induced injury in mesenteric venules of mice using confocal and widefield intravital microscopy

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Introduction: Patients suffering from chronic kidney disease (CKD) display a broad spectrum of hemostatic disorders leading on the one hand to increased bleeding tendencies, and to thrombosis on the other. Generally, CKD is connected with increased risk for thrombotic events including incidence of cerebrovascular disease, myocardial infarction, and pulmonary embolism, as well as postangioplasty or stent thrombosis. Indoxyl sulfate (IS) is one of the most potent uremic toxin that exerts aggressive and multi-directional impact on the body. Despite IS is considered as novel risk factor for cardiovascular disease, its impact on thrombotic events still remains not fully understood.

Aim of the study: The aim of the study was to evaluate the impact of IS on thrombus formation in mice model and aggregation in vitro.

Material and methods: We assessed effect of three IS doses: 10, 30 and 100 mg/kg b.w. i.v. on thrombus formation after argon-ion laser-induced endothelial injury in the mesenteric venules of mice using confocal and widefield intravital microscopy. Moreover, we evaluated impact of IS on in vitro platelet aggregation in whole blood stimulated by collagen and in platelet-rich plasma (PRP) induced by ADP and ADP with serotonin. Additionally, we assessed plasma IS concentrations by high-performance liquid chromatography.

Results: IS doses 30 and 100 mg/kg b.w. increased platelets accumulation in the area of endothelium laser injury and augmented total thrombus area ($p<0.01$). Furthermore, two highest IS doses increased dynamics of thrombus formation that was reflected by changes in fluorescence intensity. Collagen-induced platelet aggregation in whole blood was exacerbated by IS. We noticed increase in amplitude ($p<0.05$), slope ($p<0.05$) and AUC ($p<0.001$), and drop in lag time of aggregation ($p<0.05$; $p<0.001$). None of the measured parameters in optical PRP aggregation (% of aggregation, slope, lag time of aggregation, and AUC) stimulated by ADP or ADP with serotonin were affected by IS.

Conclusions: Obtained data indicate that IS accelerates thrombotic response to vascular injury. On the basis of the results, we hypothesize that indoxyl sulfate is one of the crucial uremic factors promoting thrombosis in patients suffering from CKD.

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microRNA regulation of the expression of the sodium iodide symporter and its implication in thyroid tumorigenesis

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Introduction: The sodium/iodide symporter (NIS) is a thyroid iodine transporter. Apart from the importance in thyroid hormone synthesis, this function of NIS allows the use of radioactive iodine to target residual and metastatic thyroid cancer cells after thyroidectomy. However, 20-30% of thyroid tumors exhibit lowered expression of NIS, resulting in decreased uptake of radioiodine (RAIU) and inefficient post-surgical therapy. Mechanisms leading to downregulation of NIS are unknown and we hypothesized that microRNAs could underlie this phenomenon.

Aim of the study: To investigate the role of microRNAs in regulation of NIS

Material and methods: We used in silico analysis to identify microRNAs targeting the 3'UTR of NIS. The expression of NIS and miRs was analyzed in Q-PCR in PTC and control tissue. Binding between the 3'UTR of NIS and selected miRNAs was confirmed in luciferase assay. MCF7 cell line was transfected with microRNA inhibitors to analyse the impact on NIS mRNA and radioactive iodine uptake.

Results: In silico analysis identified microRNAs that bind the 3'UTR of NIS. The list included miR-146a, a known polymorphic miR implicated in thyroid carcinogenesis. Significant reduction of luciferase activity confirmed direct binding between miRs and NIS, leading to the decrease in luminescence for miR-146b-3p (34%, $p=0.028$), miR-146b-5p (25%, $p=0.006$), miR-339-5p (21%, $p=0.006$), miR-129-2-3p (29%, $p=0.004$) and polymorphic miR-146a: miR-146a-5p-3p^C (22%, $p=0.0001$), miR-146a-5p-3p^G (17%, $p=0.0004$). Gene expression measurement in the thyroid cancer tissue showed a 9-fold decrease of NIS ($p=8 \times 10^{-7}$) together with a 15.7-fold increase of miR-146b-3p ($p=3.3 \times 10^{-8}$) and 15.6-fold increase of miR-146b-5p ($p=2.1 \times 10^{-8}$). NIS levels were negatively correlated with levels of miR-146b-3p ($r=-0.40$, $p=0.01$) and miR-146-5p ($r=-0.47$, $p=0.002$).

The use of microRNA inhibitors resulted in a significant increase of NIS mRNA levels: for miR-129-2-3p (1.45x, $p=0.001$), miR-146b-3p (1.76x, $p=0.02$), miR-146b-5p (1.77x, $p=0.0009$), miR-146b (3x; $p=0.003$) and miR-146a-5p-3p^C-3p^G (2.86x, $p=0.0001$). Moreover, the use of microRNA inhibitors resulted in increased radioiodine uptake by the cells by 1.22 ($p=0.026$) for miR-146b and 1.24 ($p=0.006$) for miR-146a.

Conclusions: This study shows the microRNA-dependent regulation of NIS expression and the role of microRNA inhibition in restoration of proper NIS expression. This effect might serve as a basis for elaboration of a novel adjuvant therapy for thyroid cancer.

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Associations between lysophosphatidic acid concentrations in plasma and the demographic, antropometric and biochemical parameters in healthy volunteers

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Introduction: Lysophosphatidic acid (LPA) is a bioactive lysophospholipid acting through specific LPA receptors. The effect of LPA receptors stimulation is enhanced proliferation, migration and invasiveness of the cells. LPA is a promising potential diagnostic marker for ovarian cancer.

Aim of the study: The aim of the study was to detect factors associated with the plasma LPA concentrations in healthy people.

Material and methods: Study group consisted of 100 healthy volunteers, 53 women and 47 men, in the mean (\pm SD) age of 40 ± 14 years, median 34 years. From all of the volunteers the blood samples were collected. In the plasma samples (EDTA) LPA concentrations were measured using immunoenzymatic assay (LPA Assay Kit II from

Echelon Biosciences). The concentrations of biochemical parameters were measured in serum samples using the Biomaxima reagents kits.

Results: LPA plasma concentrations in healthy people ranged from 0,05 μ M to 3,46 μ M, mean (\pm SD) 0,89 \pm 0,60 μ M, median 0,74 μ M and were significantly higher in women than in men ($p=0,03$). Age doesn't affect LPA concentrations. In the studied group, there were positive correlations between LPA and BMI (Spearman's $R=0,22$, $p=0,03$), total cholesterol ($R=0,32$, $p=0,001$) and TAG ($R=0,21$, $p=0,03$) and negative correlation between LPA and albumin ($R=-0,24$, $p=0,02$). In the women subgroup there were positive correlation between LPA and weight ($R=0,29$, $p=0,04$) and TAG ($R=0,29$, $p=0,04$). In the men subgroup LPA is positively correlated with BMI ($R=0,31$, $p=0,04$), total cholesterol ($R=0,33$, $p=0,03$) and uric acid ($R=0,37$, $p=0,01$) and negatively correlated with albumin ($R=-0,30$, $p=0,04$).

Conclusions: High LPA concentrations are associated with the female gender and high BMI and this parameters should be taken into consideration during interpretations of LPA concentrations in blood. Concentrations of LPA are related to basic biochemical parameters, but the mechanism of this relationships remains to be clarified.

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[257]

The pivotal role of CCL2 and CCL5 in neuropathic pain development – behavioral and biochemical studies

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Introduction: Chemokines are small cytokines responsible for leukocytes recruitment to injured tissues. Latest studies suggest chemokines as a significant modulators not only in inflammation, but also in pain processing. It seems that complex neuroimmunological spinal interactions mediated by chemokines such as CCL2 and CCL5 are responsible for neuropathy maintenance and lack of its optimally efficient treatment.

Aim of the study: The first aim was to investigate the role of CCL2 and CCL5 in pain-related behavior development in naive mice. The second aim was to examine how the blockade of its receptors, CCR2 and CCR5, influence the neuropathic pain development and opioid effectiveness

Material and methods: Swiss albino mice received single intrathecal (i.t.) injection of CCL2 or CCL5, and then behavioral tests in time course were performed. Wistar rats were implanted with intrathecal catheters for repeated drug administration and then CCI was performed. RS504393 (RS; CCR2 antagonist) and maraviroc (MVC; CCR5 antagonist) were administered i.t. preemptively and then once a day for 7 days. Selected rats previously chronically injected with respective antagonists, in 7th day of experiment received also a single dose of morphine/buprenorphine. To assess pain-related behavior we used von Frey and cold plate test. Biochemical analysis was performed using Western Blot.

Results: We provide evidence that both CCL2 and CCL5 induced strong pain-related behavior in naive mice. Additionally, chronically administered RS and MVC not only attenuated neuropathic pain symptoms but also enhanced analgesic effects of opioids in CCI-exposed rats. Simultaneously, we observed enhanced spinal protein level of both Iba-1 and GFAP-positive cells 7 days post-CCI. MVC significantly prevented enhanced upregulation of both Iba-1 and GFAP, when RS significantly reduced only spinal Iba-1.

Conclusions: Our results suggest the crucial role of CCL2 and CCL5 in neuropathic pain development and indicate pharmacological modulation of its receptors as a potential new therapeutic target for neuropathic pain treatment.

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[258]

The relationship between plasma adropin concentration and impaired, transplanted and healthy kidney function

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Introduction: Adropin is a peptide hormone, discovered in 2008. This protein consists of 76 amino acids and is encoded by the Enho gene (ang. Energy Homeostasis Associated Gene), which is expressed primarily in the liver and the central nervous system. Previous studies suggest that this protein is involved in energy homeostasis and in the control of glucose and fatty acid metabolism. Adropin is associated with carbohydrate-lipid metabolism, metabolic diseases, endothelial function and cardiovascular diseases. However the exact physiological and pathophysiological role of adropin in humans to be clarified. To investigate the influence of kidney function on adropin concentration we compared adropin concentrations between healthy people and renal transplant recipients before and after kidney transplantation.

Aim of the study: The aim of this study was to analyze the concentrations of plasma adropin before and after kidney transplantation during the 3-months observation, compared to the control group.

Material and methods: Plasma adropin concentrations were measured using ELISA kits in 51 healthy volunteers and 39 renal transplant recipients right before and at 3 time points after kidney transplantation (5-7 days, 1 and 3 months after a transplantation).

Results: The patients before and after kidney transplantation have significantly higher adropin levels than the control group ($p < 0.05$). The 3 month follow-up of renal transplant recipients did not show statistically significant differences in the adropin concentration.

Conclusions: Adropin concentration shows association with renal dysfunction. The high concentrations in patients could be caused by impaired kidney filtration or biodegradation. Moreover renal transplant recipients in the first days after transplantation do not show stable metabolism and kidney function and they are under influence of high doses of many immunosuppressive, diuretic, antihypertensive drugs, which may affect the concentration of this protein.

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[259]

The association between PTH and bone strength in growing rats with experimental chronic kidney disease

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Introduction: Chronic kidney disease-mineral and bone disorder (CKD-MBD) is a skeletal disorder characterized by compromised bone strength which is associated with increased mortality and predispose to an increased risk of fracture. Parathyroid hormone (PTH) is the polypeptide hormone produced by the parathyroid glands and plays multiple roles in calcium homeostasis and in bone remodeling. In clinical practice, PTH is commonly used to monitor bone turnover in CKD and to distinguish low-turnover lesions from osteitis fibrosa. Additionally, PTH is a key factor in orchestrating bone activity and mineral imbalance and thus the development of renal osteodystrophy (ROD).

Aim of the study: To determine the association between PTH and biomechanical properties of bone in the experimental model of the mild CKD.

Material and methods: Forty-four, 4 weeks old Wistar male rats were divided into two groups: with chronic kidney disease induced by surgical 5/6 subtotal nephrectomy (CKD, n=22), and sham-operated (CON, n=22). One (CON-1; CKD-1) and three months (CON-3; CKD-3, n = 11 per each group; respectively) after surgery, serum

samples were obtained for the determination of biochemical parameters and PTH concentration; femurs were collected for bone biomechanical properties.

Results: Subtotal nephrectomized rats presented higher serum concentrations of creatinine, urea nitrogen, calcium, and parathyroid hormone. At the level of femoral diaphysis PTH correlated positively with stiffness, ultimate load (Fu), displacement at the yield point [dl(Fy)], yield load (Fy) and negatively with displacement at ultimate load [dl(Fu)], whereas at the level of femoral neck negatively with work to fracture [W(Fu)].

Conclusions: This study showed that impaired renal function results in the increased concentrations of PTH in serum of growing rats with mild CKD, which influences the strength of bones in these rats. This relationship seems to have beneficial effect on cortical bone strength at the level of femoral diaphysis and unfavorable on cortico-trabecular bone compartment at the level of femoral neck.

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Role of Il-17A in aneurysmal formation

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Introduction: Pathogenesis of aortic aneurysms (AA) seems complex and has not been fully elucidated. However deregulation of immune system is one of the most important features. Recently it was proved that level of interleukine-17A (Il-17A) is elevated in aneurysmal tissue, however there is no data concerning its role in pathogenesis of the disease. Also there is no information about Il-17A level in serum of AA patients.

Aim of the study: The aim of this study was to establish the possible difference in level of Il-17A in serum of AA patients compared to the healthy ones and explain the mechanism in which Il-17A participate in pathogenesis of aortic aneurysms on molecular level.

Material and methods: Serum samples were collected from 40 patients with AA and 40 healthy controls. Level of Il-17A was established using Luminex Immunoassay technology. In vitro part of the study was conducted using human endothelial cell cultures stimulated with Il-17A. Using bioinformatic tools and literature search we selected adhesion and apoptosis pathways putatively regulated by cytokine. Results were assessed on transcriptional level using RT-qPCR method and on functional level using flow cytometry.

Results: Level of circulated Il-17A was elevated in serum of AA patients compared to the controls. Regression model revealed association between level of Il-17A and diameter of the aneurysm and level of circulating lymphocytes. In vitro part of the study indicated that expression of VCAM-1 and ICAM-1 increased significantly after stimulation. Level of early apoptotic endothelial cells also was higher due to the Il-17A.

Conclusions: Endothelial dysfunction is one of the characteristic features associated with aortic aneurysm, however up to date the molecular mechanism responsible for this phenomenon is not fully elucidated. Our results indicated that among patients with AA level of Il-17A is increased, which could cause increased apoptosis and activation of adhesion pathways. Both of them cause increased chemotaxis of leucocytes, which is also observed in aneurysmal disease.

[261]

Xanthine oxidoreductase activity in platelet poor plasma, of patients before and after kidney transplantation - a preliminary report

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Introduction: Xanthine oxidoreductase (XOR) is hydroxylase molybdate, whose task is to catalyze the oxidation of hypoxanthine to xanthine and xanthine to uric acid. It comes in two mutually transforming itself, isoforms: xanthine dehydrogenase (XD) (antioxidant) and xanthine oxidase (XO) (prooxidant).

Aim of the study: The aim of the study is to determine the activity of XOR, and its isoforms in patients before and after kidney transplantation, in platelet poor plasma (PPP), as compared to the control group.

Material and methods: The study group consisted of 30 patients (14 women and 16 men), with the Department of Nephrology, Transplantology and Internal Medicine PUM before (TE) and after kidney transplantation (TE A) - an average of 4 days. The control group consisted of 30 healthy volunteers (NK) (14 women, 16 men). Activity of isoforms of XOR (XO, XDO, XD) and xanthine oxidoreductase in plasma were determined by kinetic spectrophotometry.

Results: Showed statistically significant difference between the activity of XOR, before and after kidney transplantation, and the control group ($p < 0.001$). The enzyme activity was highest in the group of NK and the lowest among transplant patients. It was also found a significant difference between the activities of the various isoforms of XOR ($p < 0.001$). It has been demonstrated the highest activity XO isoform (prooxidative), and the lowest XDO isoform (temporary) in all groups. After kidney transplantation, there is a decrease in activity of all isoforms.

Conclusions: Both patients before and after kidney transplantation, accompanied by severe oxidative stress, as evidenced by average values of XOR activity, differing

from the value obtained in the control group. Patients before kidney transplantation associates, probably higher oxidative stress, caused by the accumulation of uremic toxins and dialysis treatments, which may indicate decreased activity XD isoform (antioxidant) and decreased activity XO isoform (prooxidative) after organ transplantation. This may also indicate the inability of the organism to compensate for oxidative stress. It is necessary to continue observation of patients after kidney transplantation.

[262]

IMPACT OF L-ARGININE, IMMOBILIZED AT SURGICAL SUTURE MATERIAL, ON REPARATIVE PROCESSES IN THE TISSUES OF OPERATED SMALL INTESTINE

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Introduction: Amino acid complexes that are recommended for preoperative preparation and treatment of postoperative complications, injuries, burns, inflammatory and destructive diseases, include L-arginine as an essential component. The latter is the dibasic cation-active amino acid, the precursor of ornithine, citrulline, glutamate, glutamine, glutathione, γ -aminobutyric acid, nitric oxide (NO), creatine, polyamines and other compounds.

Certain prospects for topical use of this compound as a means of regulating metabolism and reparative processes in paravulnar tissues have been opened due to the development of experimental samples of biologically active synthetic suture material based on polyglycolic acid with L-arginine introduction in the polymer composition ("Biopolymer", Poltava, Ukraine).

Aim of the study: The aim of the research is to assess the impact of L-arginine under the conditions of systemic and topical administration (as part of new synthetic resorbable suture material) on the performance of reparative processes in the tissues of the small intestine

Material and methods: The experiments were performed on 80 white rats weighing 180-240 g with the use of experimental biochemical, histological and morphometric methods for studying the small intestine.

Results: It has been shown that administering L-arginine (both systemic daily for 3 days of postoperative period in the dose of 100 mg / kg and topical with polyglycolide surgical thread in the concentration of 4.5 mg per 1 m of thread) limits oxidative stress processes, increases the content of macroergic compounds as well as the energy potential in paravulnar tissues of the small intestine (after enterotomy).

It has been shown that the application of polyglycolide surgical thread modified with L-arginine accelerates the transition of wound inflammation in the paravulnar tissues of the small intestine into macrophage-monocyte stage (on the 3rd day after enterotomy) and fibroblastic stage (on the 3rd day of postoperative period).

Conclusions: Thus, administering L-arginine as part of polyglycolide thread enables to obtain a positive result in much lower doses than in systemic administration, thereby reducing the risk of side effects of the medication.

[263]

Influence of renal transplantation on plasma lysophosphatidic acid concentration and serum lipid parameters

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Introduction: Lysophosphatidic acid (LPA) is bioactive lysophospholipid acting via specific receptors present on the surface of numerous cell types. LPA is probably involved in the pathogenesis of renal fibrosis, which is important element of chronic kidney disease progression. LPA stimulates renal mesangial cell proliferation and constriction, and increases secretion of profibrotic cytokines by renal proximal tubular cells. On the other hands, in vivo studies showed, that LPA protects from renal ischemia-reperfusion injury, which is important problem associated with renal transplantation.

Aim of the study: The aim of the study was to investigate the impact of renal transplantation on plasma lysophosphatidic acid concentrations and basic serum lipid parameters.

Material and methods: The studied group consisted of 20 renal transplant recipients of Clinic of Nephrology, Transplantology and Internal Diseases in Pomeranian Medical University in Szczecin. From all of the patients blood was taken before and 3-14 days after the transplantation. LPA concentrations in plasma were measured using immunoenzymatic assay (LPA Assay Kit II from Echelon Biosciences). Serum lipid parameters were measured using the Biomaxima reagents kits.

Results: After transplantation plasma LPA concentrations are significantly higher than before the procedure ($p=0,001$). Patients after renal transplantation have significantly higher serum triacylglycerol (TAG) concentrations ($p=0,01$). The total cholesterol ($p=0,60$), and cholesterol of LDL ($p=0,58$) and HDL ($p=0,06$) fractions do not change significantly after transplantation.

Conclusions: LPA plasma concentration increases after renal transplantation which may be associated with the process of wound healing. Transplantation causes significant increase in serum TAG concentration.

The study was supported by a grant awarded by the Polish National Science Center (DEC 2013/09/N/NZ4/02312).

[264]

Regenerative potential of platelets in patients with chronic kidney disease based on the concentration of selected, platelet growth factors - a preliminary report

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Introduction: Chronic kidney disease (CKD) is a progressive disease that leads in stages to irreversible loss of kidney function. Concentrates plate show, inter alia, the regeneration effect. In patients with chronic kidney disease, platelet function is changed. This is due, above all, the operation of many of uremic toxins and severe oxidative stress.

Aim of the study: Determine influence of renal replacement therapy applied to concentrations of selected, platelet growth factor, in patients with CKD.

Material and methods: The study group included 125 people, divided according to the type used renal replacement therapy for: treated conservatively - PNN (n = 31), hemodialysis (n = 30) before (HD A) and after treatment (HD B), peritoneal dialysis, - (DO); n = 21 and patients before (TE), and after kidney transplant (TE A) - (n = 22). The control group - NK (n = 21) consisted of healthy volunteers, matched randomly. Both, test group and control group the concentrations of platelet growth factors i.e. PDGF BB (platelet-derived growth factor), TGF- β (transforming growth factor) and IGF-1 (insulin-like growth factor), by ELISA.

Results: Demonstrated mean, lowest concentration: Factor PDGF BB in the group of NK factor TGF- β in the group before transplantation before hemodialysis, IGF-1 in the group before the hemodialysis and after the transplant, respectively, the highest concentrations of PDGF BB and TGF- β in the group DO and IGF-1 in TE group. Demonstrated the effect of renal replacement therapy on the concentration of PDGF BB (p = 0.024), TGF - β (p = 0.019) and IGF-1 (p = 0.013).

Conclusions: The highest concentration of PDGF-BB and TGF - β in DO group, can provide a strong stimulation to regenerate damaged tissue in this group of patients. Low concentrations of IGF-1 in hemodialysis patients before and after kidney transplantation, is a poor marker, which may indicate the highest mortality rates of the patients, however, in the case of organ transplantation, it is necessary to long-term following the concentration of this factor. There is a relationship between the concentration of platelets growth factors and the type of renal replacement therapy.

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Adsorption of the stable nitroxide radical TEMPO on hydroxyapatite - an EPR and UV-Vis study

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Introduction: Apatites, as mineral constituents of mammalian hard tissues, are used to produce bone substituting materials. These materials can then be doped with small molecules and ions, which gives them additional properties. The reference compound in this group is the stoichiometric hydroxyapatite.

As opposed to the majority of free radicals, nitroxide radicals are stable. Additionally, they have been shown to exhibit antioxidative and anticarcinogenic properties. Due to their ability to form hydrogen and coordinate bonds, these radicals are used to study the surface of compounds they are attached to.

Taking the abovementioned into consideration, we attempted to adsorb the nitroxide radical TEMPO on the surface of a stoichiometric hydroxyapatite, which could lead to obtaining novel bone substituting composites in the future.

Aim of the study: The aim of this work was to determine the mechanism of TEMPO adsorption on hydroxyapatite and to see whether it would be possible to study its surface using the radical mentioned.

Material and methods: The TEMPO radical was adsorbed on the BABI-HAP-SP hydroxyapatite with the specific surface area of 5,32m²/g (HA5). A series of TEMPO solutions was prepared, with the concentration ranging from 0,5 to 10,0 mmol/L. HA5 samples were then shaken for 3 hours in RT with the obtained TEMPO solutions. The absorbance of TEMPO solutions before and after adsorption was measured using UV-Vis spectroscopy. Next, adsorption isotherms were plotted. The adsorption was carried out from 3 solvents of varying polarities: cyclohexane, 1-chlorobutane and water. After adsorption, HA5 samples were dried in RT and subjected to EPR measurements.

Results: For each solvent used, the adsorption process could be described with multi-step isotherms, with each step being a Langmuir isotherm. Isotherm constants were different for each step, which indicated different adsorbent affinity. The higher the solvent polarity, the bigger the maximum adsorption capacity was. The EPR signals became distorted and broadened with the increase of TEMPO concentration, supposedly due to the aggregation of TEMPO molecules.

Conclusions: The adsorption of TEMPO on HA5 is possible and depends highly on the solvent polarity. The plausible mechanism entails several steps, involving radical-apatite and radical-radical interactions. Studying apatite surface using TEMPO seems to be impossible due to strong radical-radical interactions. Further studies are needed to improve the adsorption method.

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Influence of the circadian rhythm on the plasma concentrations of lysophosphatidic acid in healthy volunteers

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Introduction: Lysophosphatidic acid (LPA) is a simple bioactive lysophospholipid acting as a intercellular messenger. LPA receptors are present in many types of the cells and the effect of their stimulation is enhanced proliferation, migration and invasiveness of the cells and inhibition of apoptosis. Increased LPA plasma concentrations are observed in the plasma of ovarian cancer patients, even in the early stages of the disease. Therefore LPA is a potential diagnostic marker for this disease.

Aim of the study: The aim of the study was to investigate the changes of plasma LPA concentrations in the circadian rhythm.

Material and methods: The study group consisted of 40 healthy volunteers, 18 women and 22 men, in the mean age (\pm SD) of 32 \pm 9 years, median 30 years. From all of the volunteers the blood samples were taken (using EDTA as an anticoagulant) four times in the day: at 7a.m. (on the empty stomach), at 2 p.m., at 8 p.m. and at 2 a.m. next morning. LPA levels in plasma were measured using immunoenzymatic assay (LPA Assay Kit II from Echelon Biosciences).

Results: The mean \pm SD LPA concentrations were 0,75 \pm 0,47 μ M (median 0,64 μ M) at 7 a.m., 0,79 \pm 0,50 μ M (0,64 μ M) at 14 p.m., 0,77 \pm 0,48 μ M (0,64 μ M) at 20 p.m. and 0,69 \pm 0,41 μ M (0,60 μ M) at 2 a.m. LPA concentrations differed slightly depending on the time of the day ($p=0,09$). At 2 a.m. LPA concentrations were significantly lower than at 14 p.m. ($p=0,04$). There were no significant differences between the samples from 7 a.m. and any other time of the day.

Conclusions: Circadian rhythm probably has a slight influence on the LPA concentrations in plasma. Therefore blood samples for determining LPA concentrations should be taken at the same time of the day. There is no need to be on the empty stomach during blood donation.

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[267]

POSSIBILITIES OF DENTAL AGE ESTIMATION TECHNIQUES ADAPTATION DUE TO LESIONS OF HARD DENTAL STRUCTURE AND PULP CHANGES

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Introduction: According to the previous testing results of dental morphological and radiographic age estimation methods, algorithms proposed by Kvaal S.I., Koltveit K.M., Thompson I.O. and Solheim T. were found to be the most adapted for clinical research opportunities and objective evaluation. But due to prevalence of major dental diseases, the parameters of correlation and standard deviations are remains questions of further researches and discussions in forensic odontology.

Aim of the study: To evaluate the possible levels of correlation between results of dental age estimation and structural changes of hard tissues and pulp due to existing dental pathology, such as caries, non-carious hard tissues lesions, and after prosthetic treatment and

Material and methods: On randomized set sample of 187 dental panoramic X-ray photos were approbated next radiographic methods of dental age estimation: method of Kvaal S.I. (1995) (based on estimation of proportion of pulp volume and biometric parameters of tooth with further use of outcome results in specific formulas proposed by author) and method of Cameriere (2006) (based on grading levels of apexogenesis with further use of linear formula and pulp/tooth area ratio). On randomized set of 68 patients due to their agreement were approbated next morphological methods of dental age estimation: method of Gustafson G. (1950), method of Bang and Ramm (1970), method of Johanson G. (1971), method of Solheim T. (1993), method of Staaf V., Mornstad H., Welander U. (1991).

Results: Correlation of hard tissue loss because of caries and results of age estimation using method of Solheim T. was found ($71,42 \pm 0,46\%$). Also, correlation of hard tissue loss and pulp changes because of lesions of prosthetic treatment and results of age estimation using method of Kvaal S.I. was found ($86,14 \pm 0,56\%$). Levels of relative mistakes after use of other age estimation techniques were more than $56,72 \pm 1,09\%$ and level of correlation were unreliable.

Conclusions: Due to results of this study, improvement of Kvaal S.I. dental age estimation technique is possible with it's further use in practice of forensic dentistry among patients with dental structure lesions and after prosthetic treatment. Further regression analysis and formation of needed formulas help to reduce the level of relative mistakes of age estimation during pathological attrition due to unadequate prosthetic treatment to the range of 29,6-37,8%.

[268]

Xanthine oxidoreductase activity, of patients with CKD, depending on the type of renal replacement therapy

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Introduction: Xanthine oxidoreductase (XOR) is hydroxylase molybdate, whose task is to catalyze the oxidation of hypoxanthine to xanthine and xanthine to uric acid. It comes in two mutually transforming itself, isoforms: xanthine dehydrogenase (XD) (antioxidant) and xanthine oxidase (XO) (prooxidant).

Aim of the study: Determine influence of the type of renal replacement therapy on the activity of xanthine oxidoreductase and its isoforms (XD, XDO, XO), in platelet poor plasma (PPP) in patients with chronic renal disease.

Material and methods: Study group consisted of 115 patients. The study group was divided into hemodialysis patients - 51 people before (HD A) and after (HD B) hemodialysis, peritoneal dialysis (DO) 30 people treated

conservatively (PNN) - 34 patients. The control group consisted of 52 healthy volunteers. XOR activity and its various isoforms were determined kinetic spectrophotometric method.

Results: It has been shown the lowest average value of XOR activity in patients at DO and the highest average values in patients before hemodialysis. It has been shown to influence the type of renal replacement therapy, the activity of the XD isoform ($p = 0.019$), and XO XDO ($p < 0.001$). The highest average activity value XO isoform (prooxidative) were achieved in patients with group HD A, while the highest average value isoform antioxidant - XD was achieved in the group of HD B.

Conclusions: There is a relationship between the type of renal replacement therapy, and the activity of specific isoforms of xanthine oxidoreductase, in platelet poor plasma.

The patients before hemodialysis are probably subjected to very strong oxidative stress, induced primary disease and accumulated uraemic toxins. It testifies the highest XOR activity and isoform prooxidative XO, as well as the highest antioxidant activity of isoform XD. Most exposed to oxidative stress are peritoneal dialysis patients, which can provide significantly different from the average, the XOR activity in a group of NK.

PhD Clinical Science

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[269]

Practising laparoscopy outside the operating theater – it is possible!

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Introduction: With popularisation of non-invasive techniques in urology, more and more departments of urology in Poland perform surgical procedures with laparoscopic approach. One of the most important and worth mentioning topic are possibilities of self development for young adepts of this technique.

Aim of the study: Presentation of self-constructed laparoscopic endotrainer and basic excercises available for everyone

Material and methods: Step by step overview of the endotrainer construction and tools indispensable for individual training. Demonstration of exercises based on European laparoscopic training programme E-BLUS.

Results: Total cost of self-constructed endotrainer is uncomparably lower in comparison with laparoscopic trainers made by professional companies. However the technique of performed exercises remains the same.

After many repetitions much better eye-hand coordination was observed. The time of performed techniques has shortened few times. The only key that led to perfection was systematic and intensive training.

Conclusions: Practicing laparoscopic techniques at home is a great introduction before first assists at the operating theater. It gives much better understanding of the first operator needs, as well as gives opportunity to develop advanced techniques such as laparoscopic suturing. Not much complicated construction of the endotrainer and wide spectrum of exercises should deeply inspire every young adept of urology who wants to develop his or her skills in laparoscopy. It could be an interesting beginning for some newly invented exercises as well as for improvement of the endotrainer construction.

[270]

Psoriasis is associated with increased risk of allergic reaction during percutaneous interventional cardiology procedures. Data from the Polish National PCI Registry

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Introduction: Little is known on the impact of psoriasis on the outcome of percutaneous cardiovascular procedures.

Aim of the study: The aim of this analysis was to identify the incidence of active psoriasis, baseline characteristic, and periprocedural to in-hospital outcomes in this subgroup of patients.

Material and methods: The Polish National PCI database (ORPKI) is a mandatory registry for all percutaneous cardiology procedures performed in Poland since 2004. All consecutive patients who had coronary angiography or coronary angiography with immediate PCI in 155 interventional cardiology centers in Poland in 2014 for either stable angina or acute coronary syndrome were included. Patients with active psoriasis on admission were identified. Allergic origin of the periprocedural complication was defined if a typical reaction from rash to anaphylaxis was diagnosed.

Results: There were 206 335 patients with complete records in the database. Active psoriasis was diagnosed in 830 of them (0.4%). Patients with psoriasis were younger (63.1 ± 10.6 vs 66.2 ± 10.9 , $p < 0.01$), significantly more often with diabetes mellitus, arterial hypertension and chronic kidney disease. The periprocedural mortality for patients with psoriasis (0.77%) was similar to those without (0.55% $p = 0.6$). Interestingly, allergic reaction occurrence during angiography was 0.77% in patients with psoriasis vs 0.07% in patients without psoriasis ($p < 0.001$). In multivariate regression analysis, the diagnosis of active psoriasis was an independent predictor of the occurrence of an allergic reaction during coronary angiography/PCI with OR 8.3 and 95%CI 1.98-34.93 ($p = 0.004$).

Conclusions: Psoriasis is associated with a different patient baseline profile and an increased risk for allergic reaction occurrence during the procedure. Best to our knowledge, this is the first report of such relationship and requires further study

[271]

Prognosis of acute left ventricular failure in patients with acute myocardial infarction and type 2 diabetes mellitus considering tenascin C content

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Introduction: The tenascin C may be regarded as a predictor of heart failure development and an indicator of unfavorable acute myocardial infarction (AMI) prognosis.

Aim of the study: The aim is to study of content of tenascin C for the prediction of acute left ventricular failure in patients with AMI and type 2 diabetes.

Material and methods: The study involved examination of 60 patients with AMI and concomitant type 2 diabetes mellitus (DM). Tenascin C content was determined by immunoenzyme method using a reagent set "Human Tenascin-C Large (FNIII-C)" (Immuno-Biological Laboratories Co. Ltd. (IBL), Takasaki-Shi, Japan). Statistical computer processing of the results was performed by software Microsoft Office Excel and Statistica 6.0. The purpose of elaborating the model was to predict the development of ALVF in patients with AMI and type 2 DM mellitus.

Results: The content of tenascin C in 1-2 days in patients with AMI and type 2 DM was 19.3 ± 1.3 ng/ml compared to the level of tenascin C in 10-14 day – to 15.9 ± 0.7 ng/ml ($p < 0.05$). The formula for calculation of ALVF prognosis in patients with AMI and type 2 DM is as follows: $R = 1 / (1 + \exp(0.066 \times \Delta TN-C - 1.685 \times FRM + 30.4))$, where R (Risk) is Killip >1 probability; $\Delta TN-C$ is the difference between tenascin C concentration on the 10th-14th day and on the 1st-2nd day; FRM is the frequency of respiratory movements. The model has high sensitivity (84%) and specificity (83%), allowing its use for the prediction of ALVF in patients with AMI and type 2 DM.

Conclusions: Thus, tenascin C dynamics showed predictive value of tenascin C concerning ALVF in patients with AMI and concomitant type 2 DM.

[272]

The role of the system of complement in enlargement of Henoch-Schönlein purpura in children

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Introduction: Annually Henoch-Schönlein purpura (HSP) affects 10 to 20 children per 100,000 population. It is the most common vasculitis of childhood. It is proved the immunocomplex nature of HSP, so studying of content of the complement system, C3 and C4, is important.

Aim of the study: Studying the role of the complement system C3 and C4 in enlargement and progressing of HSP in children.

Material and methods: The research was conducted in Kharkiv Municipal Clinical Children's Hospital №16. We analyzed case histories and laboratory data of 44 children with HSP aged 2 to 18 years old with skin, skin-joint, abdominal and mixed forms of I, II, III degrees of activity. The definition of the components of complement C3 and C4 ELISA was performed using standard sets «ELISA C3 and C4».

Results: In the acute phase of HSP the decrease values fractions were registered - C3 1.20 (1.04; 1.35) and C4 0.39 (0.33; 0.43) in serum in all forms of HSP in comparing with the control group, $p < 0.05$. The similar situation was registered in remission of HSP: C3 1.15 (0.92; 1.38) and C4 0.34 (0.27; 0.37), $p > 0.05$. For skin and skin-joint forms of HSP was reducing of the levels of C3 and C4 fractions complement was more pronounced and significant C3 1.24 (1.12; 1.36), C4 0.39 (0.33; 0.43) and C3 1.09 (1.03; 1.19), C4 0.39 (0.35; 0.43), respectively, at

$p > 0.05$ than in mixed and with renal syndrome forms C3 1.34 (1.15; 1.42), C4 0.40 (0.37; 0.44) and C3 1.35 (1.17; 1.44) respectively, $p > 0.05$, are clinically manifested more seriously and actively with poorer prognosis. Analysis of C3 fraction of complement, depending on the level of activity showed a marked decrease in C3 1.09 (1.03; 1.19) in the first and second levels of activity than in the 3d level of activity of C3 1.29 (1, 23; 1.38), and the level of C 4 fractions complement the contrary, at lower (C4 0.35 (0.32, 0.39) and 0.29 (0.27, 0.35), respectively), values at and II degree of activity in the third degree of activity in the acute phase of the disease exceeded C4 0.95 (0.84; 0.97) standard rates almost 2 times ($p > 0.05$). In remission values of C 4 fractions had a clear tendency to normalize, while at the lower boundary of normative values and rates of C3 fraction of complement remained below normative values.

Conclusions: Activation of the complement system has a great impact on the formation of the vast majority of clinical and laboratory manifestations of HSP in children. In the acute phase the decrease in the values of fractions C3 and C4 in serum was registered in all forms.

[273]

ROLE OF SALIVA BIOMARKERS DURING DIAGNOSTICS OF ORAL ONCOPATHOLOGIES

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Introduction: Saliva is a multicomponent biological substance, diagnostic capacity of which determined by qualitative and quantitative composition components. Such biomaterial is ease to storage and preparation of saliva involves only centrifugation and addition of protease inhibitors to prevent the decomposition process of specific proteins.

Aim of the study: The aim of study was to explore the possibility of verification the most common salivary biomarkers among various oral cancer patients; identify the most sensitive and specific proteins and their changes in saliva for early diagnostics of tumors of the or

Material and methods: During the study we analyzed 206 scientific publications within PubMed, BIOSIS Previews via ISI Web of Science and ISI Citation databases to determine the most common biomarkers for oral oncological lesions. Given the needed basic stages of laboratory analysis and possibilities of their realization among laboratories at Uzhgorod (Transcarpathian region, Ukraine), we select the most adapted possible method of research that can be realized in terms of the common regional center within 12 patients with oncogical lesions of oral cavity.

Results: During the study we identified the most common biomarkers in saliva that can be found during neoplasms of the salivary gland, cancer of the mucous membranes of the oral cavity and tongue, including: cytokeratins, vimentin, S-100 protein, alpha-1-antitrypsin, actin and myosin, kalponin, Ki-67, EGF, VEGF, chemokines (SHSL8, CXCL10, CCCL2, CXCL4, CCCL14, CCL18), interleukins (IL-1, IL-6, IL-8), SXC4, adiponectin, the remains of a matrix RNA, p-53 protein, telomerase, profilin-1. Given the sensitivity and economic feasibility leptin, S100-protein and vimentin were set as key biomarkers because in terms of these components we can not only identify the presence of tumor, but also the degree of differentiation. During salivary gland adenomas leptin levels increased to 673 ng / ml, during adenolymphomas up to 679 ng / ml, during carcinomas of the salivary glands up to 880 ng / ml, during cysts of salivary glands and sialadenitis leptin level does not exceed 179 ng / ml.

Conclusions: During this study we verified the most specific biomarkers for early diagnosis of neoplasm lesions of the mucous membrane of the mouth, tongue and salivary glands. Proposed algorithm includes analysis of leptin, vimentin and S100-protein levels to determine the degree of tumor differentiation.

[274]

Altered aggrecan expression in bullous keratopathy- interesting comparison with the expression of ECM in brain tumours

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Introduction: Bullous keratopathy is caused by damage and cell loss of corneal endothelium. The decreased endothelial cell number results in corneal decompensation. The disease is characterised by stromal oedema and epithelial or subepithelial bullae due to increased permeability. The corneal oedema disbands extracellular matrix structure with altered proteoglycan synthesis, which results in loss of corneal transparency.

Aggrecan is one of the major sulphated proteoglycans of the sclera (besides decorin and biglycan). Aggrecan contains 3 globular domains (G1, G2 and G3) and it is covalently linked to more than 100 chondroitin sulphate side chains. Aggrecan is a poorly investigated molecule. There is a corneal disease, sclerocornea, where aggrecan has been shown to be pathologically relevant. We were curious about aggrecan expression in other corneal diseases, mainly in disorders, which are indications for keratoplasty.

Aim of the study: The aim of our investigation was to immunolocalise the aggrecan molecule in bullous keratopathy and compare their expression and distribution with healthy corneas and scleras.

Material and methods: We used bullous keratopathy corneas and normal specimens. Sections were labelled with monoclonal antibody against aggrecan and visualised by DAB ((3,3'-diaminobenzidine). Semi-quantitative scoring system (0-3) was used for the evaluation.

Results: The bullous keratopathy cases showed either unaltered or increased immunoreactivity in the epithelium. In the Bowman's membrane 38.89% of the specimens showed immunopositivity. The stroma showed mild to moderately increased immunopositivity. The Descemet membrane was consistently negative whereas the endothelium positive in controls and bullous keratopathy cases.

Conclusions: The alterations in aggrecan expression in the extracellular matrix and epithelium suggest that it plays a role in the pathogenesis of bullous keratopathy.

There is an ongoing study investigating the expression pattern of aggrecan in brain tumours and the correlation between corneal disorders and CNS cancers.

[275]

BIOPHYSICAL PERFORMANCE CRITERIA OF HEPATOTROPIC THERAPY IN PATIENTS WITH CHRONIC DIFFUSE LIVER DISEASES

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Introduction: The most common forms of chronic diffuse liver disease (CDLD) are characterized by a wide prevalence; particularly among persons of true contradict age, often progressive course, lack of treatment efficiency and high mortality. In recent years, the role of disorders of cell membranes free radical lipid peroxidation in the development of hepatocellular damage is proved.

Aim of the study: The aim of the study was to evaluate the efficiency of tykveol in patients with chronic diffuse liver diseases, using indicators of prooxidant-antioxidant status.

Material and methods: The study included 80 people age 30-65 years, 20 of them CDLD patients (12 patients with chronic hepatitis, 8 with liver cirrhosis) and 60 practically healthy persons-donors. Physical examination and biochemical blood indicators to identify biochemical markers of liver injury, and instrumental methods of examination (abdominal US, abdominal computed tomography, GI endoscopy, chest X-ray were applied). Indicators of prooxidant-antioxidant status (lipid hydroperoxides (GPL) in % to the norm and total antioxidant activity (AOA) in % to the norm) were determined by iron-induced chemiluminescence. The norm accepted in the parameters of prooxidant-antioxidant status in donors. Treatment of patients was carried out using hepatoprotector tykveol (oil solution of 2 tsp×2 per day or capsules of 2 caps.×3 per day) for 14 days.

Results: Parameters of cytolysis, indicating damage to the hepatocytes exceeded the norm 3-4 times before treatment. Initially, in patients with CDLD elevation of GPL level (121.51 ± 10.63 % N) and total antioxidant activity (122.69 ± 10.41 % N), coefficient of prooxidant-antioxidant imbalance K (the ratio of GPL in % N to AOA % N) was 0.99 (normal=1) was detected. After treatment on the background of positive dynamics (lack of pain or dyspeptic symptoms, asthenic-autonomic manifestations) there was a trend to the reduction of GPL (Δ - 14.93; $p > 0.05$) and total antioxidant activity (Δ - 8.78; $p > 0.05$). Coefficient K was 0.94, which was accompanied by a tendency to reduce the cytolysis indicators— ALT.

Conclusions: In CDLD patients prooxidant-antioxidant status is not significantly changed after tykveol use; however, hydroperoxides lipids depression (aggressive factor) while reducing the initially high rate of cytolysis was detected. A short-term course of tykveol application is not sufficient to correct the imbalance of prooxidant system and the antioxidant defense system

[276]

Myocardial dysfunction in cardiosurgery patients with coronary heart disease

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Introduction: The coronary heart disease (CHD) is the socially important disease in the Republic of Kazakhstan having high rates of an invalidization and death rate among able-bodied population. Detection of the latent dysfunction is one of priorities for early detection of such disease as coronary heart disease

Aim of the study: We will study the structural - functional characteristics and clinical significance of RV in cardiosurgery patients with CHD

Material and methods: Was analyzed using pulse method of tissue velocity imaging in 139 patients with CHD, the mean age of the patients was 54.5 ± 5.9 years

Results: The analysis of results of transthoracic echocardiography showed the reduced systolic function in 38 (27 %) patients CHD, the mean value of left ventricular ejection fraction was 48.2 ± 5.4 %. It was discovered that there was a moderate positive relation of peak systolic velocity of the tricuspidal annulus at the level of lateral RV wall to the basal diameter of RV ($r = 0.51$, $p < 0.04$) and a weak negative relation to the thickness of interventricular septum in the middle third ($r = -0.11$, $p < 0.01$), while the peak velocity of the early compliance of the heart at the level of the base of lateral wall correlated to the thickness of the free wall of the RV ($r = 0.56$, $p < 0.03$). The peak systolic velocity of the middle third of the interventricular septum has a moderate positive correlation to the age of patients ($r = 0.32$, $p < 0.01$), a weak negative correlation to thickness of interventricular septum at the level of the middle third ($r = -0.26$, $p < 0.05$). The late diastolic contraction at the level of the base of interventricular septum has a direct relation to linear dimensions of the interventricular septum and left ventricular myocardial mass.

Conclusions: Thus, the results of analysis showed that in the absence of cardiac failure and reduced systolic function of myocardium, the patients with coronary heart disease have signs of the right heart remodeling caused by the presence of correlation dependence between the state of the interventricular septum, the sizes of the heart cavities, blood flow and contractility of certain areas of right ventricle identified by the tissue velocity imaging method.

[277]

Hyperglycemia in the first trimester of pregnancy and the risk of gestational diabetes

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Introduction: Gestational diabetes mellitus (GDM) affects 8-20% pregnant women. The WHO recommends standardizing identification of GDM globally with 75 g three test approach. However, this oral glucose tolerance test (OGTT) is used at 24-28 weeks of pregnancy, and early diagnostic criteria of GDM are not still clear. There is an opinion that the glucose level in the first trimester (except for diabetes in the past history) doesn't significantly

influence on prediction of GDM as well as maternal and neonatal consequences. Well-designed studies on glycated hemoglobin (HbA1) in diagnostics of GDM have not been conducted yet and data on early screening and management practices are scanty.

Aim of the study: The aim of the study was to identify a correlation between indicators of carbohydrate metabolism in the 1st trimester and results of a 75 g OGTT at 24-28 weeks of pregnancy.

Material and methods: Prospective study of 342 pregnant women with singleton pregnancy without diabetes in the past history was performed. Fasting serum glucose level and HbA1 were tested at 11-13 weeks of gestation. At 24-28 weeks a 75 g OGTT was done.

Results: The findings demonstrated reduction in of the level of glycemia throughout gestation: 4.6 ± 0.6 mmol/l - at 11–13 weeks, 4.1 ± 0.7 mmol/l - in 24–26 weeks ($p=0.00$). There was week correlation between fasting plasma glucose in the 1 and 2 trimesters ($r=0.17$, $p=0.001$). 57 (16.6%) patients had abnormal resultants of OGTT, classified as GDM. The fasting plasma glucose in the 1 trimester was similar in both groups: 4.6 ± 0.6 (GDM group) and 4.5 ± 0.7 mmol/l (non GDM group) ($p>0.05$). No statistic differences of patients with hyperglycemia (≥ 5.1 mmol/l) in the 1 trimester found in diabetic and non-diabetic pregnant women: 11 (19.2%) and 49 (17.2%), ($p>0.05$). Level of HbA1c in 11-13 weeks of pregnancy was $5.1 \pm 0.8\%$. It was found no correlation of HbA1c and fasting and postprandial plasma glucose any time.

Conclusions: Results of the pilot study have not revealed convincing data on diagnostic value of glycaemia level (5.1 mmol/l) and HbA1c $\geq 5.7\%$ in the first trimester of pregnancy as a criterion of gestational diabetes. Further investigation is required to clarify the type of relation between metabolic processes in first half of gestation and pregnancy outcomes.

[278]

Changes in anticoagulant usage in patients with persistent atrial fibrillation undergoing electrical cardioversion in Latvian Cardiology Center

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Introduction: Atrial fibrillation (AF) is the most common type of arrhythmia which may be connected with a lot of dangerous complications like cerebrovascular insults and systemic embolism. Oral anticoagulants are used to prevent these complications. Thromboprophylaxis can be obtained with vitamin K antagonists (VKA, eg, warfarin) or a non-VKA oral anticoagulant (NOAC). Both VKA and NOAC are effective in stroke and systemic embolism prevention. The international normalized ratio should be tightly controlled for patients receiving VKAs while usage of NOAC does not require laboratory control.

Aim of the study: To determine differences in VKA and non-VKA usage in patients with persistent AF undergoing electrical cardioversion (ECV) before and one month after procedure in 2016 and compare to the usage of oral anticoagulants in 2013.

Material and methods: The study enrolled 150 patients in 2016 and 110 patients in 2013 with persistent AF undergoing ECV in Latvian Cardiology Center. Anamnestic data were based on interview and medical records. 45 woman and 105 man were enrolled. Average age in man group was 64 years (min.-33, max.-83), in woman – 67 years (min.-37, max.-84).

Results: Before ECV in 2016 43 (28.5%) patients used warfarin, 43 (28.5%) dabigatran, 61 (40.4%) rivaroxaban, 4 (2.7%) patients did not use anticoagulants. One month after ECV 43 patients received warfarin (28.5%), 37 (24.5%) dabigatran, 55 (36.4%) rivaroxaban, 4 (2.6%) patients did not use any anticoagulants and antiaggregants, 12 (7.9%) patients used antiaggregants (aspirin or clopidogrel). In 2013 year anticoagulants were used before ECV as following: 41 patients used warfarin (37.3%), dabigatran 46 (41.8%), rivaroxaban 7 (6.4%), 3 (2.7%) patients did not use any anticoagulants and antiaggregants, 13 (10.9%) patients used only aspirin. One month after ECV 53 (48.2%) patients received warfarin, 38 (34.5%) dabigatran, rivaroxaban used only 8 patients (7.3%), 9 (8.2%) patients used antiaggregants (aspirin or clopidogrel), 2 (1.8%) patients was without any thromboprophylaxis.

Conclusions: Usage of VCA and NOAC were changed in last three years. In 2016 more patients were taking NOAC instead of VCA than it was in 2013. The most used NOAC in 2013 was dabigatran, in 2016 – rivaroxaban. Approximately the same number of patients did not use any anticoagulants one month after ECV in 20013 and 2016 (7,0% vs 7,5%).

[279]

Gender-related differences in clinical outcomes and quality of life after transcatheter aortic valve implantation for severe aortic stenosis

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Introduction: There are inconsistent data on the gender-related differences in clinical outcomes and quality of life (QoL) after transcatheter aortic valve implantation (TAVI).

Aim of the study: We sought to investigate sex-related differences in procedural, clinical and QoL outcomes of TAVI.

Material and methods: A total of 101 consecutive patients undergoing TAVI were enrolled. Patients were stratified by gender. Baseline characteristics, procedural and long-term clinical outcomes as well as frailty and QoL indices (EQ-5D-3L questionnaire) were compared between women and men.

Results: Women represented 60.4% of the study population. A periprocedural risk measured with Logistic Euroscore and STS scale was similar for women and men. There were no differences in 30-day and 12-month all-cause mortality between groups (women vs. men: 9.8% vs. 12.5%; age adjusted OR (95%CI): 1.38 (0.39-4.94); 13.1% vs. 25.0%; age adjusted OR (95%CI): 2.51 (0.87-7.25)). Men were at higher risk of new onset atrial fibrillation at follow-up (1.6% vs. 17.5%; age adjusted OR (95%CI): 14.61 (1.68-127.37)). In multivariable Cox regression analysis, a history of stroke/TIA (HR (95%CI): 3.93 (1.39-11.07)) and blood transfusion (HR (95%CI): 2.84 (1.06-7.63)) were identified as independent factors affecting 12-month mortality. No differences in QoL parameters were noted.

Conclusions: TAVI can be considered as an effective and safe treatment in high-risk patients with severe aortic stenosis, regardless of the gender.

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In search of the hemostatic factors contributing to the cardiovascular disease among the pre-dialysis patients with chronic kidney disease

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Introduction: Chronic kidney disease (CKD) is an established risk factor for the occurrence of the cardiovascular disease (CVD) incidents and the estimated risk of CVD among uremic patients is elevated up to 20-fold compared to controls. Despite many studies, the relevant reasons behind this are still unclear. Many hypotheses indicate the hemostasis as a potential point of clinical concerns.

Aim of the study: We examined the concentrations of the compounds of the coagulation cascade, fibrinolytic system, and the molecular adhesion in pre-dialysis patients with CKD.

Material and methods: Studies have been conducted on a group of 25 pre-dialysis patients with CKD experiencing CVD and 26 uremic patients free of the CVD events. ELISA-immuno-enzymatic kits were used for the determination of parameters of the hemostasis and adhesion factors. The markers of inflammation, oxidative stress, and immunology status were also assayed using ELISA kits. The hematological and biochemical parameters were assessed using standard laboratory methods. The comprehensive computations were performed using Graph Pad Prism 6 software.

Results: Parameters of fibrinolysis: soluble urokinase-type plasminogen activator receptor (suPAR), tissue plasminogen activator (tPA), and plasmin-antiplasmin complex (PAP) in an uremic group with CVD were significantly higher than in a group without CVD events ($p < 0.05$; $p < 0.01$). The markers of an endothelial

dysfunction and augmented molecular adhesion: von Willebrand factor (vWF), thrombomodulin (TM), and intercellular adhesion molecule-1 (ICAM-1) were also statistically increased in the group suffering from CVD ($p<0.01$). Interestingly, we found no changes in the levels of markers of the inflammation (interleukin-6 and C-reactive protein), oxidative stress (superoxide dismutase), immunological alteration (neopterin), and renal clearance indicator (estimated glomerular filtration rate) between the analyzed groups. The concentrations of vWF, ICAM-1, and suPAR were independently associated with CVD occurrence in the CKD with ($p<0.01$).

Conclusions: The results showed that the alteration of the fibrinolysis and endothelial-related factors may be involved in a higher frequency of CVD events in CKD. It provides an idea that proper control of above-mentioned factors may lead to a reduction in mortality from CVD in the CKD patients.

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Immunohistochemical prognostic markers in meningiomas

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Introduction: Meningiomas are one of the most frequent intracranial tumours, with 13 histological types and three grades according to the 2016 WHO Classification of Tumours of the Central Nervous System. Although tumour recurrence is an important and not infrequent event in meningiomas, predictive immunohistochemical markers that could support the routine pathologic work-up have not been identified yet. p53, as one of the most potent tumour suppressor proteins, plays a role in nearly 50% of human tumours. Ki-67 is a proliferative marker reflecting the mitotic rate and correlating with the progression of neoplasm. Increased Progesterone receptor expression is a well-known and frequently associated with meningiomas.

Aim of the study: The aim of this study was to address a prognostic immunohistochemical panel by systematic retrospective analysis of surgically completely resected meningiomas with and without recurrence, including tumour samples from patients who underwent repeat surgery

Material and methods: 114 surgical specimens of 70 meningioma patients (16 male and 54 female) in a 16 years interval have been studied. On Mib1, PR and p53 immunostained sections, the percentage of labelled tumour cells, the staining intensity and the multiplied values of these parameters (the histoscore) was calculated. Results were investigated by Kruskal-Wallis H-test, Mann-Whitney U-test and Wilcoxon signed ranks tests.

Results: Our results confirmed previous findings that the WHO grade is directly proportional to Mib1 and p53 and is inversely proportional to the PR immunostain. We have demonstrated that Mib1 and p53 have a significant correlation with and predictive value of relapse/recurrence irrespective of the histological subtype of the same WHO grade. Mib1 showed a significant correlation with the rate of progression (based on the propagation of WHO grades).

Conclusions: The immunohistochemical panel of PR, p53, Mib1 in parallel with applying standard diagnostic criteria based on Haematoxylin & Eosin stained sections is sufficient and reliable to predict meningioma recurrence in surgically completely resected tumours.

[282]

Impact of diabetes mellitus on clinical outcomes and quality of life after transcatheter aortic valve implantation for severe aortic stenosis

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Introduction: Diabetes mellitus (DM) has been considered as a marker of poor prognosis after cardiac surgery.

Aim of the study: We sought to investigate the impact of DM on clinical outcomes and quality of life (QoL) after transcatheter aortic valve implantation (TAVI).

Material and methods: A total of 148 consecutive patients with symptomatic, severe aortic stenosis who underwent TAVI were included. Baseline characteristics, procedural and long-term clinical outcomes as well as the results of frailty and QoL assessment with EQ-5D-3L questionnaire were compared between patients with and without DM.

Results: Diabetes mellitus was present in 48 of 148 (32.4%) patients. No differences in periprocedural risk (Logistic Euroscore and STS) between groups were observed. There were no differences in 30-day and 12-month all-cause mortality between groups [DM(-) vs. DM(+): 7 (7.0%) vs. 5 (10.4%); $P = 0.53$ and 12 (12.0%) vs. 10 (20.8%); $P = 0.16$, respectively]. No influence of DM presence on the risk of death was confirmed after adjustment for age and gender (for 30-day mortality age/gender adjusted OR 1.55, 95%CI 0.47-5.17; for 12-month mortality age/gender adjusted OR 2.05, 95%CI 0.79-5.32). Similarly, at the longest available follow-up mortality did not differ between groups [14 (29.2%) vs. 19 (19.0%); $P = 0.16$; age/gender adjusted OR 1.81, 95%CI 0.80-4.08]. Similar rates of other complications after TAVI were noted. Frailty measured with 5-meter walking test was more frequently reported in patients with DM [11 (22.9%) vs. 10 (10.0%); $P = 0.035$]. No differences in QoL parameters at baseline and 12 months were noted.

Conclusions: Patients with DM undergoing TAVI demonstrated similar mortality, complications rate and QoL outcomes as compared to patients without DM.

[283]

Safety of antiarrhythmic drugs usage in patients with persistent atrial fibrillation undergoing electrical cardioversion

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Introduction: Electrical cardioversion (ECV) is effective and widely used treatment method for the restoration of sinus rhythm in patients with persistent atrial fibrillation (AF). Literature data has shown that only 23% of patients remain in sinus rhythm one year after ECV. To reduce recurrence of arrhythmia treatment with antiarrhythmic drug (AAD) can be used. AAD using is related with changes in electrocardiogram (ECG) and increasing risk of life-threatening arrhythmias.

Aim of the study: To determine usage of different antiarrhythmic drugs before ECV in patients with persistent atrial fibrillation undergoing ECV and clarify AAD treatment safety using ECG analysis.

Material and methods: We have enrolled 150 patients with persistent AF undergoing ECV. Anamnestic data were based on interview and medical records. ECG data were analyzed before and after ECV. Considering sexual differences in ECG males and females data were analyzed separately. Statistical analysis was conducted using SPSS 20.0 software.

Results: 101 (66.9%) patients used amiodarone, 11 (7.3%) ethacyzini, 6 (4.0%) propapafenoni, (4.0%) sotaloli. 26 patients did not use any AAD. In women group ($n=45$) minimal heart rate (HR) was 59 beats per minute (bpm), maximal - 137 bpm (mean 91 bpm, SD 19). After ECV minimal HR was 36 bpm, maximal 106 bpm (mean 61 bpm, SD 10). QRS complex before ECV was in ranges from 76 to 197 msek (mean 106,9 msek, SD 28) after ECV from 80 to 170 msek (mean 105,6 msek, SD 23). QT interval before ECV varies from 233 msek to 477 msek (mean 372,8 msek, SD 55), after ECV from 324 msek to 549 msek (mean 442,3 msek, SD 48). QTc varies from 331 msek to 522

msek (mean 445,5, SD 37). In man group (n=105) maximal HR before ECV was 51 bpm, minimal 141 bpm (mean 83, SD 18), after ECV it was from 44 to 125 bpm (mean 61 bpm, SD 11). QRS width before ECV varies from 84 msek to 222 msek (mean 116 msek, SD 28), after ECV from 78 msek to 209 msek (mean 117 msek, SD 27). QT interval before ECV was from 290 msek to 535 msek (mean 393 msek, SD 46), after ECV from 360 msek to 557 msek (mean 450 msek, SD 39). QTc varies from 324 msek till 515 msek (mean 450 msek, SD 390)

Conclusions: Any significant changes were not founded in ECG using different AAD before and after ECV. Only some patients had prolonged QT and QTc interval.

[284]

Genomic signature of PARP1 in glioblastoma molecular subtypes

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Introduction: Glioblastoma (GBM) is an aggressive and frequent primary brain tumour in adults. Overexpression of PARP1 has been reported in various cancers, including GBM. Although PARP1 inhibition is a promising therapeutic target, no comprehensive analysis has addressed PARP1's expression regarding molecular heterogeneity in GBM.

Aim of the study: The main objective of our study was to evaluate PARP1's associations with GBM lineage specific markers, and its transcriptomic subtypes.

Material and methods: PARP1's somatic mutations, copy number alterations (CNAs), and mRNA expression, as well as survival data were collected from the 'Glioblastoma Multiforme' TCGA dataset. A bioinformatic analysis was conducted to evaluate PARP1's genetic signature, and prognostic role in GBM.

Results: Our study revealed that PARP1 CNA gain and high mRNA expression level is a characteristic of Proneural (PN) and Classical (CL) GBM subtypes. Increased PARP1 levels exhibited an inverse correlation with patient survival ($p < 0.005$) in the CL subgroup. ATRX ($p = 0.006$), and TP53 ($p = 0.015$) mutations were associated with increased PARP1 mRNA expression.

Conclusions: Our study supports the therapeutic role of PARP inhibitors in GBM with the caveat that molecular heterogeneity needs to be taken into account.

[285]

Dynamics of parameters of prooxidant-antioxidant status in chronic pyelonephritis

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Introduction: Chronic kidney disease is a serious health problem due to the steady growth of patients with chronic renal failure. It is chronic pyelonephritis, often having a latent course, that is one of the main causes of progressive growth in the incidence of chronic renal failure and nephrogenic hypertension.

Aim of the study: The aim was to study the dynamics of prooxidant-antioxidant system parameters in CP to improve efficiency of therapy.

Material and methods: The study involved 210 individuals: 30 patients with CP were 20 – 60 years of age and 180 healthy donors of the similar age to get data on prooxidant-antioxidant system. Patients were examined according to the protocol of nephrological patient. Therapy included antibacterial agents (amoxicillin, ciprofloxacin, and cephalexin). Parameters of prooxidant-antioxidant systems include levels of lipid hydroperoxide (LHP), total antioxidant activity (AOA) and indicators of generation of reactive oxygen species (ROS). Blood was conducted assessed with chemiluminescence, and luminol-induced iron-dependent. To determine the severity of the imbalance prooxidant-antioxidant systems K coefficient (mid-range ratio LHP in % of the norm to the average values of the total AOA as % of normal). Was used in imbalance the coefficient K is equal to 1.

Results: Patients with CP demonstrated an increase in the LHP ($113,3 \pm 5,92\%$ to normal, $p < 0,05$) and decreased total serum AOA ($83,1 \pm 8,4\%$ to the norm, $p < 0,05$). The level of imbalance in prooxidant-antioxidant systems was 1.36. This renal bacterial inflammation accompanied by imbalance of prooxidant-antioxidant systems mainly due to the inhibition of the total anti-oxidative potential. After conventional antibacterial treatment the level of LHP tended to increase ($119,8 \pm 6,5\%$ to normal, $p > 0,05$) and the total AOA- decreased ($43,3 \pm 6,23\%$ to normal, $p < 0,05$), further increasing the existing imbalance prooxidant-antioxidant systems. Accordingly, the coefficient K is CP patients index generation ROS leukocytes whole blood before treatment was higher than normal and $145,5 \pm 18,17\%$ to the normal ($p < 0,01$).

Conclusions: Patients with CP have an imbalance in oxidative metabolism, mainly due to the decrease in total antioxidant activity. Drug therapy doesn't eliminate the imbalances in the systems of free-radical lipid peroxidation and antioxidant protection. It is important to search for methods to control the imbalance of oxidative metabolism to improve the efficiency of treatment of patients with CP.

[286]

ASSESSMENT OF THE SERUM ANTIOXIDANT SYSTEM ACTIVITY IN PATIENTS WITH COPD WITH MODERATE COURSE IN THE ACUTE PHASE

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Introduction: The aim of the study was to assess the activity of serum antioxidant system ceruloplasmin-transferrin in patients with COPD moderate severity in the acute phase.

Aim of the study: The aim of the study was to assess the activity of serum antioxidant system ceruloplasmin-transferrin in patients with COPD moderate severity in the acute phase.

Material and methods: 49 patients with COPD moderate severity in the acute phase and 45 healthy donors as a control group were investigated. Extracellular antioxidant system of blood serum was researched by EPR spectroscopy (determination of ceruloplasmin (CP), transferrin (TR) level and activity of antioxidant system ceruloplasmin-transferrin (AOS CP/TR)).

Results: It was found that in patients with COPD of moderate severity reliable response of AOS CP/TR was observed – considerable CP level increase in comparison with normal values (65.97 ± 2.20 , $p < 0.001$), indicating that the intense activation of this component of AOS in these patients and a trend to a significant decrease of the TR level (50.64 ± 3.11 , $p < 0.05$), which was determined valid, compared to the control group, increase of AOS CP/TR activity (1.38 ± 0.09 , $p < 0.001$).

Conclusions: Thus, in patients with COPD of moderate severity oxidative stress causes a pronounced response: AOS CP/TP activation due to the increase of CP antioxidant capacity and increased TR consumption (compensation of extracellular antioxidant protection deficiency by appropriate increase in antioxidant capacity of TR).

PhD Health Science

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[287]

Clinical characteristic by age of the breast cancer among women in Poland

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Introduction: Breast cancer is a malignant tumor of mammary gland. It can develop from epithelial structure and connective tissue. The cancer, which descended from epithelial structure, dominates. There are two main types of breast cancer: non-invasive and invasive. Considering the molecular characteristics of breast cancer and treatment process, presence of progesterone – PgR and estrogen - ER receptors contributes to more effective and successful treatment. On the other hand, presence of the HER2 receptors decreases effectiveness of hormonal therapy. From the clinical point of view the worst prognosis has triple negative breast cancer – with no PgR, ER and HER2 receptors - the disease recurs rapidly despite chemotherapy.

Aim of the study: Comparison of the breast cancer's clinical features such as presence of hormonal and HER2 receptors among women in the age groups 27-44 years old and 45 years old and more.

Material and methods: The material constituted anonymized clinical breast cancer data from women hospitalized at the Military Medical Institute in Warsaw in years 2009-2011. Data were divided into two age groups: 27-44 and 45+ years old, embracing 107 (9.6%) and 1011 (90.4%) women, respectively. Following characteristics of breast cancer were analyzed: presence of PgR, ER and HER2 receptors in age groups.

Results: In the age group 27-44 years, 15 (14%) women had triple negative breast cancer, meanwhile triple positive 6 (5.6%) of them. The number of women who had cancer with PgR and ER receptors (with no HER2 receptors) was 31 (29%). Additionally 10 women (9.3%) had HER2+ breast cancer.

In the age group 45+ years, 98 (9.7%) women had triple negative breast cancer, meanwhile 385 (38.1%) had triple positive. The number of women who had cancer with PgR and ER receptors (with no HER2 receptors) was 426 (42.1%). 51 of women in this age group had (5%) HER2+ breast cancer.

Conclusions: Substantial number of women in both age groups had cancer with expression of hormonal receptors (PgR and ER) with no HER2 expression – 31 (29%) and 426 (42.1%). This type of breast cancer has the best prognosis for cure. At the same time over 38% of breast cancers at older age has receptors profile that compromises treatment. As we still don't know enough about the origin of breast cancer and for some groups of women treatment options are limited, primary prevention and mammography in breast cancer remain to be effective tool in reducing mortality.

[288]

Analysis of the knowledge and opinion about suicide among youth in age between 16 and 19 years old in WarsawAleksandra Kielan MA^{1,4}, Marlena Stradomska MA^{2,4}, Marta Soczewka MA^{3,4}, Joanna Skonieczna MA¹, Karolina Jabłkowska-Górecka PhD¹, Dominik Olejniczak PhD¹

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Introduction: Suicide is a difficult interdisciplinary problem. Nowadays suicidological knowledge still requires a periodic updates. Determinants which have an influence on people's health behaviours are changing with time (including suicide behaviours). Assessment of the knowledge and opinion of high school's teenagers about suicide could afford to create prevention program which will be adjusted to the necessities of young people.

Aim of the study: The aim of the study was to recognize state of the knowledge and opinion of youth in age between 16-19 years old, who were attending to Warsaw's public high schools about suicide, in term of epidemiology of this phenomenon. Furthermore authors want to find

Material and methods: Studied population covered teenagers who in year 2015 were in age between 16-19 years old (M = 17,29 SD = 0,94). They were attending to eight Warsaw's public high schools from eight different

districts of the city. In the research participated 1439 respondents – 821 girls (57,1%) and 592 boys (41,1%). Research was conducted using PAPI method. Questionnaire was containing 34 questions divided into three blocks - about suicide epidemiology, determinants and prevention.

Results: Regardless of gender, most of respondents (69,1%) indicated that number of committed suicide is increasing in the Poland. The largest group of respondents claimed that suicide are committed the most frequently by Muslims. Teenagers from the most Warsaw's high schools pointed out that mainly Muslims are committing suicide. Girls were thinking that suicidal behaviours constitute the form of calling help (35,1% while boys were supposing that the main aim of such behaviours is to defuse internal tensions of person who have crisis (21,3%). Respondents whose high schools were in Wawer (25,7%), Wilanów (29,1%), Ursus (31,3%), Targówek (38,5%) and Żoliborz (24,7%) districts were thinking that most of people who want to kill themselves are calling for help.

Conclusions:

1. In Poland, there is necessity to elaborate and implement suicide prevention program which will be adjusted to the needs of teenagers.
2. Young people have shallow knowledge about facts on phenomenon of suicide.
3. Discrepancies between sexes in their opinion about effects which want to achieve people who are attempting suicide constitute the confirmation of scientific researches in this respect.

[289]

Internet use among young people in Warsaw

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Introduction: Problematic Internet Use (PIU) can have a negative impact on the adolescent wellbeing. Young people are the most numerous and the most active group of the Internet users. Spending too much time on the Internet could lead to health problems like physical health problems due to lack of physical activity; psychological problems such as depression, anxiety or low self-esteem; declining school results; and abandoned hobbies.

Aim of the study: The aim of the study is to assess the characteristics of Internet Use, and the prevalence of Problematic Internet Use among middle school students in Warsaw, Poland.

Material and methods: The survey was conducted among 1078 students from 9 randomly selected middle schools in Warsaw, Poland. Exclusion criteria: special secondary schools, middle schools for adults, incorrect filling in the questionnaire.

Data were collected using a self-administered questionnaire. The questionnaire was filled in within a 10-20 min session in the classroom in the presence of the teachers to minimize any potential information bias. Study participants were requested to complete the questionnaire anonymously. The questionnaire consisted of 5 components: (1) demographic information; (2) Internet use characteristics; (3) Internet Using Test (IUT), Dr Ryszard Poprawa, Psychology of Quality of Life 1 (11), 57-82; (4) The Sense of Coherence Questionnaire: SOCM-11. All statistical analysis was performed using IBM SPSS version 23.

Results: About 86% of studied adolescents gain access to the Internet via mobile phone; 52% via their own laptops. Most of them use the Internet at home, in their own room (82%). About 40% of the respondents independently decide how much time spends on the Internet. They also declare a lack of their parents interest in the security in the Internet. Approximately 77% of respondents declare using the social networking sites at least several times per day. Analyses showed that 0.7% of respondents has a very high, and 10.9% has high degree of Problematic Internet Use. The degree of satisfaction with family relationships is significantly associated with the PIU.

Conclusions: Internet and social networking sites play an important role in the everyday life of young people. Adolescence usually decide themselves how much time they spend on the Internet and what kind of action they take there. The role of parents and schools in the prevention of the Problematic Internet Use is crucial.

[290]

The relationship between body composition and function of the cardiorespiratory system in people with normal values of the Body Mass Index

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Introduction: Obesity can be described as the "New World Syndrome". The rapid and ongoing rise in obesity and overweight throughout the world is a great challenge to public health. Therefore, the governments of all countries provide numerous programs to prevent the increase in obesity. These programs are focused not only on people with overweight, but also on people with normal values of the Body Mass Index (BMI).

Aim of the study: The purpose of this study is to examine a connection between body composition and function of the cardiorespiratory system in people with normal values of the BMI.

Material and methods: The subjects of this study were 30 students (17 female and 13 male). Each student underwent a full physical examination. First, the weight, BMI and body composition were measured by digital scales (Tanita BC-601). Second, the function of the cardiorespiratory system was measured by a digital spiograph (#01-73) and a tetrapolar thoracic rheography device ("Variocard"). The data was analyzed by statistical software (Minitab 17).

Results: It was found that students with higher muscle mass (48-54 kg) had greater vital and inspiratory capacity than students with lower muscle mass (less than 45 kg) ($p < 0.022$). In addition, the study revealed that the heart used more energy to pump blood in students with higher percentage of adipose tissue (24-27 % in females and 16-18% in males) than in students with lower percentage ($p < 0.001$).

Conclusions: The findings of this study suggest a possible dependence between some elements of body composition and the proper function of the cardiorespiratory system. Therefore, monitoring and modification of the body composition may be important for preventing overweight and obesity.

[291]

ANALYSIS OF MEDICAL STAFF'S AND PATIENT'S OPINION CONCERNING NEW REGULATIONS OF PHYSIOTHERAPY PROFESSION IN POLAND

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Introduction: Since late 80's physiotherapists (PT) in Poland fought for the occupational regulations. Currently PTs represents a third largest medical profession in Poland. In September 2015 Polish President signed an Act of physiotherapy profession (APP), introduced as a civic project. Poland therefore became the second country in Europe, having the National Chamber of Physiotherapy

Aim of the study: was to present the main guidelines of the Act, with an analysis of the opinion of both the medical community (including PT), and patients.

Material and methods: Survey links were sent to randomly selected E-mail addresses, divided into 3 groups. The group of physiotherapists (F), from the database of two associations: Polish Company of Physiotherapy (PTF) and Physiotherapy Association Poland (SFP). The group of patients (P) and the group of other health professionals (IZM), who had agreed to provide email addresses from a database of Koszalin Hospital as well as from private clinic in Gdańsk. The survey contained 20 questions on key issues from the APP relating to physiotherapy self-government, physiotherapist independence and responsibilities.

Results: An amount of 177 surveys were sent back (F 67, P 70, IZM 40). 69% of respondents housed in the group of 20-40 years. The most common professions among IZM group were: GP ($n = 7$; 17.5%), orthopedic ($n = 5$; 12.5%), medical rehabilitation (MR) ($n = 4$; 10%) and nurse ($n = 4$; 10%). More than half of all respondents (54%) attendant during last 5 years to PT in private sector comparing to 8% who benefited from MR private and 17% of public service. Most of F respondents (88%) supported PT self-government, comparing to IZM group, who were (37,5%) opposed. 35% of F group were not sure of the validity of direct access to PT service, while 63% of IZM group and 68% of P fully support the idea.

Conclusions: Analysis showed contradictions in the views about independence of PT service. Although majority of respondents attended to PT service in private sector, the lack of knowledge about medical rehabilitation system occurred. They were rather against self-government but prone to direct access. It indicates the need for further social education toward understanding medical rehabilitation service.

[292]

Breast cancer mortality trends in Europe among women in perimenopausal and postmenopausal age (45+)

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Introduction: Breast cancer is the most common malignant cancer among women in the European countries. Many factors, such as: age, late first full-time pregnancy, obesity, alcohol consumption, can contribute to breast cancer. While breast cancer incidence is still increasing, mortality falls or stopped increasing.

Aim of the study: The purpose of the study was to identify and analyze trends and tendencies in women's mortality from breast cancer in Europe (age group 45+) based on epidemiological data.

Material and methods: The material constituted epidemiological data on breast cancer (for all available periods) in the countries of the European Union countries (28) and Russia (control group). Mortality data come from World Health Organization, population data comes from the UN data sets, age-standardized mortality rates were calculated with the use of standard world population weights. Mortality trends were analyzed and illustrated using Joinpoint Trend Analysis Software provided by National Cancer Institute in United States and Microsoft Excel.

Results: In most analyzed countries breast cancer mortality rates among women in peri and postmenopausal age were increasing until 1990s. Since then the rates began to fall down in different pace. The decrease has been the most pronounced in the western countries of the EU (e.g. Denmark, Spain, Austria). On the other hand, in eastern EU countries (e.g. Poland, Estonia, Latvia) a decrease in the mortality rates is not so rapid and visible.

Conclusions: National screening programs are effective and able to decrease significantly mortality rates among women in peri and postmenopausal age. There is still no complete certainty about the causes of the breast cancer and many factors lead to demographic processes which are characterized by increasingly longer life span. It can be assumed that breast cancer incidence among women at the age of 45 years old and above, will continue to increase. Moreover, overdiagnosis of the breast cancer related to screening may contribute to this trend. Therefore, current actions of the healthcare systems should be focused on a steady decline of the mortality rate in breast cancer, identification of high risk groups and constant search for factors causing breast cancer.

[293]

Nurse prescribing in Poland. Attitudes of polish nursing and midwifery students. Cross-sectional study

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Introduction: In Poland, since 1 January 2016 nurses and midwives (N&M) who graduated from the master studies or hold a title of a specialist may ordain and prescribe specific medicines ("independent nurse prescribing" – INP). Nurses or midwives, who completed bachelor studies or hold a title of a specialist are allowed to prescribe medicines ordered by a physician ("supplementary nurse prescribing" – SNP).

Aim of the study: The aim of this study was to analyze the attitudes of the Polish N&M students to the new professional competences of nurses and midwives regarding prescribing.

Material and methods: 2538 students including 2020 nursing and 515 midwifery students. 2360 women and 178 men. 1056 respondents studied at State Vocational College (SVC), when 1493 at University (UV).

Own, validated questionnaire. Attitudes with answers based on the Likert scale (1-5) assessed by the U Mann Whitney test. Statistical differences between SVC and UV students have been checked.

Results: Students think, that nurse prescribing will facilitate patient care (SVC – 3,9/5; UV – 4,1/5; $p=0,00$); improve patients' wellbeing (SVC – 3,9/5; UV – 4,0/5; $p=0,01$) and access to health advice (SVC – 4,0/5; UV – 4,1/5; $p=0,00$). Students also claim, that N&M should have a right to INP (SVC – 3,8/5; UV – 4,1/5; $p=0,00$) and SNP (SVC – 3,9/5; UV – 4,1/5; $p=0,00$). Respondents are not convinced, that N&M are prepared to INP (SVC – 3,1/5; UV – 3,1/5; $p=0,25$) and SNP (SVC – 3,1/5; UV – 3,1/5; $p=0,19$).

Conclusions: Students attitudes to nurse prescribing are generally positive. Concernes are expressed regarding N&M preparation to new competences. More educational efforts shall be hold in this area. UV students are generally more enthusiastic regarding nurse prescribing than SVC students. Further research in this area shall be performed.

[294]

Subjective assessment of summer internships of Public Health students of the Medical University of Warsaw - a pilot study

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Introduction: Student summer internships help evaluate knowledge, skills, and social competence acquired in the course of study as well as allow students to use them in practice. Public Health students of the Medical University of Warsaw are obliged to take summer internships after the first and second years of the first-cycle programme (160 hours after the first and the second years of study) and after the first year of the second-cycle programme (160 hours).

Aim of the study: The study aimed to identify the views of students with regard to their summer internships and their assessment of placements.

Material and methods: The study enrolled a total of 45 students of Public Health at the Faculty of Health Science, Warsaw Medical University, 41 women (91%) and 4 men (9%). Mean age was 21.6 years (SD: 1.42, median: 21, min. 19, max. 24). Second-year Master's degree students constituted the largest subgroup ($n=16$, 35.56% of all study participants). The respondents filled in an original on-line questionnaire, available at <https://goo.gl/forms/7gakXnm9rbXLYRka2>. The questionnaire comprised 11 questions: 9 closed-ended and 2 open-ended questions. The following aspects were assessed using the Likert scale: assigned position, use of knowledge acquired in the course of study in practice, and development or acquisition of new competencies.

Results: Over half of the students (54%) assessed their placement as good or very good. Nearly 30% of the respondents strongly agreed with statements that tasks assigned to them were important and had an impact on the daily work of the institution. The respondents assessed that, while on internships, they had not used the knowledge acquired during most of the courses conducted as part of the study programme (50%). The ability to "search for information and gain knowledge necessary for completing tasks assigned" was reported as the one used most often while on internships (29%). The respondents said that their attitude towards work and sense of responsibility for the tasks assigned had improved during internships (22%). Most students had not received remuneration (91%), had not obtained references after completing the internship (73%), and had not been offered a job or apprenticeship (89%).

Conclusions: Due to the fact that summer internships are one of the few practical elements of Public Health programme, particular attention should be paid to their quality. Expectations of employers towards knowledge and skills of interns, i.e. future Public Health graduates, need to be analysed.

Psychiatry & Clinical Psychology

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Saturday, May 13th, 2017

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[295]

Predisposing factors and after-effects related with neuropsychiatric symptoms at admission in terminal cancer patients

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Introduction: Neuropsychiatric symptoms are serious problems in patients with terminal cancer. It decreases the quality of life and increases the amount of complications. The predictors, symptoms and consequences of neuropsychiatric symptoms in terminal cancer patients need further exploration.

Aim of the study: The aim of our study was to determine factors connected with neuropsychiatric symptoms at admission in patients with terminal cancer.

Material and methods: 242 terminal cancer patients admitted to Palliative Care Unit were retrospectively analyzed. Detailed physical examination, medical history including history taken from family and care givers was taken upon admission. Laboratory parameters including morphology, sodium, potassium, total and ionized calcium, LDH were taken on admission. We used univariate and multivariate logistic regression analysis to determine possible predictors, symptoms and consequences of neuropsychiatric symptoms at admission.

Results: On admission 14,05% of patients had neuropsychiatric symptoms on admission. They had higher results in PS scale (OR=Odds Ratio=1,813, CI95%=Confidence Interval 95%=:1,17-2,981; p=probability value=0,0077) than patients without such symptoms. The patients also were treated with haloperidol more often (OR=3,902, CI95%=1,81-8,414; p=0,0005). Multivariate logistic regression analysis after adjustment for possible confounders revealed that older age of patient (OR=1,19, CI95%=1,061-1,334; p=0,003), oxygen therapy (OR=59,716, CI95%:1,623-2197,85; p=0,026), anxiety at admission (OR=29,711, CI95%=1,906-463,118.72; p=0,016), opioid therapy (OR=37,155, CI95%=1,9-726,557; p=0,0017), lower albumin concentration (OR=0,747, CI95%=0,591-0,945; p=0,015), rarer active cancer treatment (OR=0,019, CI95%=0,001, CI95%=0,000001-0,287, p=0,019), more often metastases to Central Nervous System (OR=110,002, CI95%=2,123-4709,463, p=0,04) and shorter duration of treatment, because of higher risk of death (OR=0,92, CI95%=0,849-0,996, p=0,04) remained independently associated with neuropsychiatric symptoms at admission.

Conclusions: Older age of patient, oxygen therapy, anxiety at admission, opioid therapy, lower albumin concentration, rarer active cancer treatment, more often metastases to CNS and shorter duration of treatment, because of higher risk of death are factors for neuropsychiatric symptoms at admission.

[296]

Association between depression and hemodialysis in patients with chronic kidney disease

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Introduction: Depression is the most common and serious psychiatric disorder that affects patients with chronic kidney disease and end-stage renal disease, and has a significant impact on their quality of life.

Aim of the study: The aim of this study was to investigate and compare prevalence rates of depression among hemodialyzed patients, and non-dialyzed patients with a glomerular filtration rate < 30 ml/min/1.73m² receiving conservative treatment or following kidney transplanta

Material and methods: A total of 50 hemodialyzed and 50 non-dialyzed patients with stage 4/5 of CKD was assessed using the following questionnaires: Hamilton Anxiety Rating Scale (HAM-A), Hamilton Depression Rating Scale (HAM-D), The Satisfaction with Life Scale (SWLS), The Acceptance of Illness Scale (AIS), and The Life Orientation Test-Revised (LOT-R). The use of steroid drugs was taken into consideration.

Results: Symptoms of depression and anxiety were present in both groups, however the proportion of persons with mild or severe depression was higher among dialyzed patients. The AIS, LOT-R and SWLS scores were very similar in both the groups. The patients using steroid drugs were more prone to develop mild or severe depression according to the HAM-D scores.

Conclusions: The results indicated a high prevalence of depression and anxiety among patients with CKD. Furthermore, the fraction of patients with depression is greater among hemodialyzed patients. This indicates the importance of monitoring the mental state of the patients as well as the necessity of providing timely psychological care for patients with CKD.

[297]

Dietary supplements and herbal remedies intake among psychiatric patients of outpatient clinic: a survey of use and patient-doctor communication

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Introduction: Recent decades have shown increased interest in the psychopharmacology of natural remedies and dietary supplements. Patients often prefer to take herbal remedies and often take them on their own, without consulting it with a psychiatric doctor. Clinicians should be aware of all the dietary supplements that their patients consume, and help their patients make aware decisions appropriate to their medical care.

Aim of the study: The aim of the study was to evaluate herbal remedies and dietary supplements intake among psychiatric patients and patient-doctor communication.

Material and methods: The study involved a group of 258 patients, 163 (63%) women and 95 (37%) men treated for psychiatric disorders in an psychiatric outpatient clinic in Warsaw. Information about using the pharmacotherapy, supplementation and communication with psychiatrists was elicited from the survey.

Results: More than half (53%) of respondents were currently taking at least one herbal product or dietary supplement. Vitamin D, vitamin C, magnesium preparations, B-complex vitamins and multivitamin preparations were the most frequently cited substances used by survey participants. Some patients are taking supplements (herbal and dietary) which can be potentially harmful when used together with conventional medicines (e.g. panax ginseng, tibetan tea, ginko biloba, fiber preparation, unknown mixed herbs composition). 58% respondents declared that they are always reading the supplements prescription. Approximately half of patients (48%) didn't informed their doctor about supplementation usage. Every second patient admitted that their doctor didn't asked them about supplementation usage. The main source of information for 74% patients about supplements have non-medical origin.

Conclusions: Most of the supplements using by patients appears to not be relatively safe. However, the study shows a group of patients using supplement which may be potentially harmful. The fact that only every fourth patient find health professionals as a good source of information seems to be alarming. The results indicate the need for better communication between patients and doctors. More research are needed to examine the supplements (herbal and dietary) intake among psychiatric patients.

[298]

The perception of interpersonal relationships by young adults - differences between sexes

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Introduction: The role and form of interpersonal and sexual relationships between young people has changed significantly over the past decades. This evolution could be perceived as caused by progressing feminization, globalization and the development of new technologies – Internet, hook-up apps. Also, approaches to relationships depend on various factors such as education, age, sexual orientation and are differently perceived by men and women.

Aim of the study: The aim of the study was to assess differences between sexes regarding the perception of expectations from sexual relationships. The intention was also to compare previous experience in that field of life and to create a definition of a sexual relationship.

Material and methods: An anonymous questionnaire was conducted in electronic form and shared via social media with people 18-30 years old. The questionnaire except for basic demographic data contained 6 questions with specified answers, 6 with open spaces to be filled with numbers and 21 concerning the perception of a relationship in a 0-4 scale of importance.

Results: The questionnaire was completed by 5532 people (4394 female, 1138 male) which resulted in a representative group of answers. Almost every question showed a statistically significant difference between sexes except the definition of so called Friends with Benefits. The answers used to define the sexual relationship vary between sexes and also previous experience with partners showed statistically significant differences. Women should be perceived as more eager to be thinking about the relationship as an important part of their life than men. They have less problems with the emotional aspect of a relationship and they are more likely to sacrifice themselves for partners. On the other hand males' answers show more attachment to the vision of a relationship as an idyll without problems.

Conclusions: According to the obtained answers it should be stated that women and men define sexual relationship differently. These differences could lead to many misunderstandings between partners. Surprisingly, the obtained answers are compatible with stereotypical differences between sexes, despite the evolution of today's society.

[299]

The evaluation of suicide done through self-mutilation

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Introduction: Suicide is a case of daily routine in terms of forensic medicine workers. Hanging and drug overdose are the most common ways of committing suicide and are relatively painless. However, there are also more sophisticated methods of causing death. In this study these are considered: stabbing, cutting with a knife, ingestion of sharp foreign body, self-shooting, self-arson, crushing.

Aim of the study: The aim of the study was to evaluate the methods of suicide done with the method of self-injury.

Material and methods: There were 65 recorded cases (M=56, F=9, mean age 49,96 +/- 15,78 years) of self-mutilation as a death cause in archives of the Department of Forensic Medicine of Jagiellonian University Medical College in Cracow in years 2011-2016. All of them were analysed in terms of the method, area of injury, trial wounds (their number, area, type), prior psychiatric treatment, prior suicide attempts. They were later compared with the general suicide material from the Department. All calculations were done with the usage of Statistica software.

Results: The percentage of males committing those suicides was 86,15%. The most common methods of suicide were self-shooting (38,46 %), cutting with a knife (26,15 %) and stabbing with a knife (16,92 %). There was 1 case of foreign body ingestion and 1 of head crushing in a blacksmith machine. There were 6 cases of self-arson, where 4 of the patients had previously documented psychiatric treatment. Trial wounds were observed in 29,23 % of cases, all of them were recorded in people who died because either stabbing or cutting with a knife. The highest number of trial wounds was 16 (average: 6,21). 46,14% of them were made on the area of upper limb, 30,7% thorax, 15,4% neck, 7,7% abdomen. The places of mortal wounds were distributed as follow: 43,4% head, 20,8% thorax, 18,9% upper limb, 9,4% neck, 3,8% lower limb, 1,9% abdomen and 1,9% digestive tract. 72,3% of patients had no documented mental treatment.

Conclusions: People in their fifties commit suicide with self-injury. It happens most often with either a gun or a knife. Females commit suicides through self-mutilation more rarely than males. The percentage of women is much lower and of men is higher than in overall statistics of suicides. Unlike in overall statistics from the Department, the fraction of mentally treated patients was low.

[300]

Misperception of male body expectations as a potential reason for excessive physical activity in a group of Polish students

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Introduction: For many young men an enhancement of attractiveness perceived by opposite sex could be a potential reason for beginning physical activity. This motivation is widely spread especially among singles could lead to as many pros as cons. Some of them – injuries, overtraining or inaccessibility of perfection are thought to be harmful to young athletes.

Aim of the study: The aim of the study was to assess how women perceive male muscularity and how it could affect social relations between sexes. The intention was also to compare this assessment with male vision of the issue.

Material and methods: An anonymous questionnaire was conducted in electronic form and shared via social media to Polish students (current and previous) studying on Polish Universities. The questionnaire except basic data contained 5 questions about male muscularity – the last one was composed of the assessment of each muscle group in a 0-4 scale.

Results: The questionnaire was completed by 5200 students (4043 women, 1147 men) what resulted in a representative group of answers. Both women and men preferred balanced development of muscularity but apart from this similarity some differences were detected. Male vision of muscularity was statistically different from female perception. Women preferred a less muscular body than men according to comparison of muscularity type assessment. All parts of muscularity were also assessed higher by men except buttocks. The social role of muscularity such as the desire to create new relationships was exaggerated by men.

Conclusions: Male vision of their muscularity is not coherent with female perception. This difference could lead to unfavorable effects such as overtraining, self-dissatisfaction or injuries. These consequences are a considerable issue for Public Health and that is why, our results should be considered as an important part of prevention. The awareness of proven incoherence could significantly change an approach towards sport by young athletes.

[301]

COMPARATIVE CHARACTERISTICS OF TEMPERAMENTAL FEATURES OF THE "RIGHT HANDERS" AND THE "LEFT-HANDERS"

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Introduction: According to the existing representations, people are divided into right-handers, left-handers and ambidexters depending on the manifestation of the hemispheric asymmetry. Left-handers constitute from 10% to 17% of the world population. It is about 15-18 million people in Russia, and their percentage in the total number of births is increasing. Functional brain asymmetry causes the uniqueness of mental processes, adaptation reactions and may be one of the most important reasons of the individual differences between people.

Aim of the study: The aim of the study was to detect the temperamental characteristics of left-handers and right-handers in the adolescent age.

Material and methods: The object of study was the temperament properties of left-handers and right-handers, the subject - the differences on the test scales "extraversion-introversion", "neuroticism". The 39 people, including 22 boys and 17 girls, aged between 14 and 17 years have participated in a study. All of the subjects were the students of the "Lyceum them. Cyril and Methodius". EPI temperament test (self-diagnosis by Eysenck) was used as the method of investigation.

Results: The significant differences in the ratio of temperaments types in the groups of right-handers and left-handers were not revealed by the diagnostics. The data received during the research, allow to speak about the

predominance of persons with average values of introversion-extraversion in both groups and about a lower frequency of introversion among right-handers, compared to left-handers. Persons with extreme values in terms of "neuroticism", both high and low predominated among the left-handers; the average level of neuroticism dominated in the group of the right-handers. Persons who showed truthful result, i.e. minimum values on the scale of "sincerity" constituted 89% among the left-handers. In the group of right-handers the number of truthful answers in the test was much lower - 55%.

Conclusions: The study demonstrates that there are some differences in temperamental characteristics of "right-handers" and "left-handers". The phenomenon of "polarity" of left-handers on the scale of "neuroticism" requires further investigation. The relevance of highly truthful answers of left-handers in comparison with right-handers requires a separate verification and explanation.

[302]

Whom would you tell about your psychiatrist? – influence of various factors on fear of psychiatric stigmatisation

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Introduction: Over 6 million Poles suffer from at least one mental disorder which they would be diagnosed with permanent or temporary if they visit a psychiatrist. Only 25% of people with symptoms of mental illness decide to receive specialistic medical care. Reasons of this trend remain still unknown, it should be assumed that one of them could be: limited access to medical care or stigmatisation of mental disorder in society.

Aim of the study: Main aim of the study is getting new knowledge about influence of factors (like: sex, age, earlier contacts with psychiatrist or therapist, interpersonal relations) on fear of stigmatisation related with appointment with psychiatrist.

Material and methods: Anonymous survey was performed in group of participants of open psychological - psychiatric workshops, which were dedicated to Warsaw inhabitants. Responders answered who they would tell about hypothetical appointment with psychiatrist. Various members of family, friends and therapist were included on the list. There were also questions about earlier psychiatric treatment and psychotherapy. Information was obtained from 614 responders – (82,74% - women, 17,26% - men) in age 17-75 (average: 44,06; median: 42).

Results: The study shows that only 1,69% responders wouldn't tell anybody if they visited psychiatrist. Women (63%) would inform people from different social circles more frequent than men (55%). The therapist would be the most often chosen person by women (90%) and partner by men (95%). Father and colleagues would be the least often chosen in both groups (women and men) of answerers. Young adults definitely more often would tell their mothers (90%) than fathers (56%), but nobody of them would decide to tell colleagues. The group of the oldest responders (61-75) is the only one which would inform their siblings more often than friends.

Conclusions: Most of the people declare they would tell at least one person if they had an appointment with psychiatrist, but most of them would tell only close family and friends. They often would decide to tell more than one person – it doesn't depends on age group. However, every age group would choose people in different order. The fear of stigmatisation by friends and colleagues is the most pronounced in the group of the young adults. Mother is seen as more tolerant and understanding than father especially in this age group. The study shows the stigmatisation remain meaningful problem and is needed to be explored.

[303]

Assessment of suicide risk in patients with schizophrenia and depression

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Introduction: Suicide is a major cause of death among patients with schizophrenia, and depression is present in at least 50 percent of all suicides. Research indicates that at least 5–13% of schizophrenic patients die by suicide, but lifetime risk of suicide among patients with untreated depression ranges from 2.2% to 15%. Hopelessness, social isolation, hospitalization, deteriorating health after a high level of premorbid functioning, recent loss, limited external support are risk factors for suicide in patients. Protective factors play an important role in assessing suicide risk and should also be evaluated.

Aim of the study: The aim of the study was to identify and to determine the relationship between the severity of symptoms of depression and schizophrenia, evaluate suicide risks and protective factors that are described in the literature in patients.

Material and methods: A prospective case-control study, stationary patients at the age 18–75 years: 61 patient with schizophrenia (F20.-) and 62 patients with depression (F32.-; F33.-). In both target groups the following parameters were evaluated: socio-demographic variables; the symptoms of depression evaluated by the PHQ-9 and The Calgary Depression Scale for Schizophrenia for patients with schizophrenia; The Mini-International Neuropsychiatric Interview (M.I.N.I.) - C. Suicidality module – for patients with depression; the patient interview.

Results: In total 123 patients were included in data analysis. Based on the MINI interview results, 12.4% (95% CI 11.82-12.18 %) patients were identified with a suicide risk: 4 patients (1-8 points) – low risk; 4 patients (9-16 points) – moderate risk; 4 patients (≥17 points) - high risk; all of them were women patients. Based on the PHQ-9 and Calgary Depression Scale 29 patients (47.5%) were thinking or trying to attempt suicide. Suicidal thoughts observed more frequently among women than among men, 37.9% and 62.1%, respectively. Risk factors such as: single, family stress or instability, social isolation, unemployment, numerous hospitalizations, recent stress – present in 55 patients with schizophrenia (90.2%) and in 19 patients with depression (30.6%) and correlate with higher suicide risk. Protective factors, for instance, close family relationships, religion and employment, decrease suicide risk in both patient' groups.

Conclusions: The clinical implications of this review are that prevention is likely to result from active treatment of symptoms and maintaining special vigilance in patients with risk factors.

[304]

Psychological characteristics of female patients with malignant tumors of the reproductive system

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Introduction: Prevalence of malignant tumors of the reproductive system is really high all over the world and causes a high anxiety and emotional stress in female patients and their families. Prevention, diagnostics, management as well as psychological and social support are of great importance.

Aim of the study: The aim of the study was to assess psychological features of the image "I" and the internal picture of the diseases in women suffering from malignant tumors of the reproductive system.

Material and methods: The study involved a multifactor questionnaire for personality research a questionnaire on self-esteem; a test of the self rating of Dembo-Rubinstein; the technique "type of attitude to the disease", a questionnaire to assess subjective perception of the degree of influence of somatic diseases on the lifestyle of the patient. 75 women aged 40-55 took part in our study. The control group consisted of 25 female patients. Group 1 included 25 patients with breast cancer. Group 2 had 25 patients with malignant tumors: 8 cervical cancer patients, 7 patients with uterine cancer and 10 ovary cancer patients.

Results: Social and demographic characteristics of the patents showed that in both experimental groups single women or widows were twice common (44% and 40%) than in the control group (20%). Lack of children was noted only in experimental groups (16% and 36%) than in the control one (0%). Female patents with breast

cancer in Group 1 demonstrated an increased level of anxiety (grade point average on a scale Pt-63.2 \pm 1.28) and psychasthenics in Group 2. Investigation of self-esteem showed that the respondents had realistic and adequate self-esteem (50 up to 72.8 points) and relatively high or overvalued level of claims (80 up - 93.4 points) on "health" scales (92.2), "happiness" (92.8) and "self-confidence" (93.4). Patients with breast cancer had expectation in advance in a negative attitude on the part of others. Group 2 had a low level of self-esteem. Women suffering from malignant tumors demonstrated emotional response to the disease in 60% cases and it did not influence their social adaptation. The rest 40% of cancer patients were characterized by intrapsychic orientation (anxious-hypochondriacal and anxious-hypochondriacal -melancholic reactions) or interpsychic personal response to the disease.

Conclusions: Psychological aspects in cancer female patients are of great significance because it contributes to their recovery, exerts beneficial effects on collaboration of a doctor and patient and supports curative results.

[305]

The stigma of psychiatric treatment in outpatient clinic population

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Introduction: In ages, psychiatric patients regularly experience stigmatization. The stigma often results in perceiving people with mental disorders as less valuable than the rest of population. Fear of negative attitude and convictions could possibly make people reluctant to reveal that they attend psychiatric treatment.

Aim of the study: The aim of this study is to investigate the tendency to inform family, friends and others about the appointments among psychiatric patients, to compare its frequency in various age ranges and to determine whether there are any differences between men and

Material and methods: We conducted an anonymous self-made survey on 1000 adult patients before their first visit at outpatient psychiatric clinic in Warsaw. Respondents replied whether they told, intend to tell or decided not to tell about their psychiatric appointment regarding the list of family members, friends and colleagues included in the survey.

Results: Age of the patients was from 18 to 98 years. The average age was 36,3 years, the median was 34 years. The survey included 625 women (62,5%) and 375 men (37,5%). The research reveals that regardless of age and sex, 89,4% of respondents told at least one person about their appointment and 10,6% did not tell anyone. Most frequently (83% of all respondents) informed person chosen from the list included in survey was partner both in men (84%) and women (82%). Secondly patients decided to tell mother (almost 60%) and she was more frequently informed than father (42,2%). In opposite the least often informed persons from the list were colleagues (18%). Women more often (51%) than men (40%) reported to tell their friends. Moreover, almost twice more respondents (13,1%) who had first appointment with psychiatrist ever decided not to tell anyone in comparison with those who attended psychiatrist or psychologist appointments in the past (7,0%). Furthermore, with increasing age patients informed more often their partners and children than respondents in younger age ranges. On the other hand, they less frequently decided to inform their friends and colleagues.

Conclusions: Although most of people decide to inform about attending a psychiatrist it seems that psychiatric treatment is still related with stigmatization because a significant percentage of patients concealed the fact of psychiatric appointment even from their closest family and friends.

[306]

Burnout Syndrome among medical students: one - year prospective study

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Introduction: Burnout syndrome is a state of mental and physical exhaustion, which occurs in the process of being engaged in a long, exploiting activity. It occurs among 5% of overall population and it is often regarded as a condition affecting professional life. However, literature presents data that burnout syndrome characteristics have been recorded among 25% of medical students and up to 75% of post-gradual residents. Therefore it is argued by many that burnout syndrome originates as early as the medical studies and continues to grow throughout the later medical career. Those changes have negative outcomes on a professional performance.

Aim of the study: The aim of the research is to assess progression of burnout in a homogenous group of medical students during a time of one year.

Material and methods: Same group of medical students were tested twice with Maslach Burnout Inventory (MBI) in 2014 and again in 2015, i.e. during the fourth and the fifth year of a 6-year programme.

Results: Students' burnout significantly increased after one year, from 27% up to 31% in a group achieving > 27 points in the emotional exhaustion subscale of MBI. Balancing that effect, an upward trend in students' satisfaction from scholar achievements was observed.

Conclusions: Burnout syndrome is a condition growing proportionally to the length of studying. Although it increases fast over the studying years, the most dramatic effects of burnout are spotted much later, in a professional life. The main conclusion is to start prophylaxis as early as possible, i.e. when students are still in the medical university.

Public & Global Health

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Assessment of the level of knowledge about Zika virus infection among medical students in Poland: a cross-sectional survey

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Introduction: Last year the World Health Organization (WHO) declared Zika a Public Health Emergency of International Concern (PHEIC) in relation to the then suspected association between Zika virus infection and microcephaly. The epidemic has been primarily focused in Brazil. However, widespread international travel and the potential for Zika virus transmission through sexual contact, means that Zika virus is a matter of global concern.

Aim of the study: The aim of this study was to assess the level of knowledge about Zika virus infection among medical students in Poland.

Material and methods: Between January 1 and February 18, 2017 we conducted an online survey of medical students in Poland. The survey consisted of 6 questions focused on demographics and 14 designed to measure respondents' knowledge of Zika virus in four domains covering the following aspects of Zika: epidemiology, diagnosis, complications, transmission. In addition, survey responses were given a score of 0 to 14 based on the number of correct answers. The statistical calculations were performed using Statistica v12.

Results: A total of 410 surveys were included in the analysis. Overall, the median participants' score was 7 (max score 14), mean was 6,81 with a standard deviation of 2,95. Among the participants 34,5% have declared taking an exam in infectious diseases (ID) already. Internet and television were indicated as main sources of information about Zika by 75,8% of all respondents. Those who declared taking an exam in ID and gaining knowledge from university lectures reached statistically significant better scores with mean 8,07 (T-student test, $p < 0.001$) and 8,31 (T-student test, $p < 0.001$), respectively compared to those who have not taken the exam and gained knowledge from other sources 6,14 (T-student test, $p < 0.001$) and 6,65 (T-student test, $p < 0.001$), respectively. Worryingly, only 3 % of respondents correctly identified all regions of active Zika transmission and only 15% knew the newest recommendations on conception after traveling to an area with Zika.

Conclusions: Our assessment demonstrates that there is an inadequate level of knowledge about Zika virus among medical students in Poland. There is a need to introduce Zika as a part of university curriculum as students gaining knowledge from this source demonstrated significantly greater knowledge in the topic. Our study identified strategic areas to improve knowledge of medical students to respond effectively to the possible Zika epidemic in our country.

[308]

Awareness of the impact of lack of binocularity on specialization choices among medical students

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Introduction: Vision standards exist in any occupation to protect the individuals and others in their work and to ensure that one can perform all the tasks needed for the job in any circumstances. Nowadays a surgeon is often required to perform visually demanding tasks, incl. microsurgery and advanced endoscopic procedures. Thus depth perception - the ability to perform 3D procedures is crucial and may be altered by monocular visual impairments.

Aim of the study: The main purpose of this research is to check the med students' awareness of binocularity, its importance during choice of ones specialty, esp. surgical ones, and ophthalmological contraindications in chosen specialty. Additionally - to check the stereoacu

Material and methods: 30 volunteers from MUL (18 M; age 23 ± 2 yo) were included in the study. The first step was an 11 points questionnaire, covering lifechoise of the future specialization, awareness of ophthalmological contraindications for chosen specialty and of student's own visual acuity and binocular status. After that all the

participants underwent ophthalmic examination which included: best corrected visual acuity, refractometry, cover-test, TNO and Randot tests. The data was gathered and analyzed statistically.

Results: Among all the students 53% declared the choice of surgical specialty in the future. Most of them (87%) were aware of their visual acuity and 38% were familiar with the term “binocularity” and its importance in performing surgical procedures. However only 31%, who declared surgical specialty as the future choice, were aware of the contraindications related to low visual acuity and binocularity. In the whole group 30% were orthophoric. On Randot stereotest the mean result was 28.75 ± 59.4 sec of arc. On TNO test the mean stereoacuity was 90 ± 100 sec of arc. 13% had stereopsis level out of the normal range.

Conclusions: In general, the awareness of own binocular status among medical students is low. There is a strong need for knowledge improvement of the ophthalmic contraindications among those whose future specialty choice is connected to surgery. Stereoacuity levels in medical students is close to the reported among the general population.

[309]

Long-term evaluation of Health Related Quality of Life (HRQoL) pre- and post liver transplantation in patients with Primary Sclerosing Cholangitis

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Introduction: Primary sclerosing cholangitis (PSC) is a rare, chronic inflammatory cholangiopathy that results in fibrotic strictures and dilatations of intra- and extrahepatic bile ducts. The pathogenesis of PSC is autoimmune, but not fully elucidated. There is no medical treatment of proven benefit on survival; once patients developed end-stage liver disease, the only treatment option is liver transplantation (LTx). However, the course of PSC is variable, and patients may present non-specific symptoms, such as fatigue, itching and cognitive dysfunction, resulting in the impairment of the health-related quality of life (HRQoL).

Aim of the study: The aim of this study was the evaluation of HRQoL of patients with PSC before and after LTx in respect to time after the surgery.

Material and methods: 64 (20 F, 44 M) consecutive PSC patients aged 18-61 years (median 32; range 18-61) were included into the study. HRQoL was evaluated 6, 12, 24 and over 25 months post LTx using cholestatic-disease specific PBC-40 and generic SF-36 questionnaires. PBC-40 tool consists of 40 questions in 5 domains, specific for cholestatic disease, marked with a five-point scale with higher scores denoting greater symptoms impact and poorer HRQoL. SF-36 measure consists of 36 items, grouped in 8 domains, in the area of physical and mental health. Each domain is scored between 0 to 100 points, with higher scores indicating better HRQoL.

Results: i/ PBC-40 scores before vs after LTx were significantly different for the following parameters: Fatigue ($p=0.0046$), Itch ($p=0.00001$), Cognitive ($p=0.00079$), and Social domain ($p=0.00052$), pointed to improvement of these aspects of HRQoL. ii/ SF-36 There were statistically significant differences before vs after LTx in majority of both physical and mental domains of this questionnaire, as well as in physical component (PCS) and mental component summaries (MCS), $p=0.0029$ and $p=0.000025$, respectively. iii/ The most statistically relevant improvement of HRQoL was observed between 6-12 months post LTx, when analyzed HRQoL as a function of time.

Conclusions: The results of this study showed a significant improvement in physical, mental and cholestasis-specific symptoms in PSC patient after liver transplantation. The greatest differences in fatigue, itching and cognitive skills were observed between 6-12 months post LTx. However, there was no further statistically relevant enhancement in HRQoL over 12 months post LTx, and the reason of the lack of further long-term improvement in quality of life is yet to be determined.

[310]

Risk factors of morbidity and mortality of children under 5 years in the Russian Federation, Poland, Germany, Latvia, Lithuania and Belarus

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Introduction: Most European countries have negative demographic trends. This is due not only to the low birth rate, but also the deterioration of the health of children under 5 years of age and mortality. Under-five mortality rate in European region is 12.2, in the Russian Federation - 10.1, Poland - 5.9, Germany - 3.9, Latvia - 8.4, Lithuania - 4.9, Belarus - 4.9. Reducing the impact of risk factors, the rational organization of the health care system will reduce morbidity and mortality and improve the demographic situation.

Aim of the study: The aim of the study was to carry out a comparative assessment of certain risk factors that are associated with increased mortality and morbidity of children under 5 years of age in Russia, Poland, Germany, Latvia, Lithuania and Belarus.

Material and methods: Parallel analysis of mortality, morbidity and indicators for certain risk factors that are associated with increased. We used data from World Health Statistics, 2015 and World Development Indicators (WDI), February 2017. Average data of the European region were analyzed.

Results: Preventable risk factors include: unsafe water and lack of sanitation; poor infant-feeding practices; childhood poor nutrition and overweighting; anemia in women; diabetes; hypertension; obesity; harmful consumption of alcohol; use of tobacco; and unsafe sex. Health service coverage indicators reflect the extent to which people in need actually receive important health interventions. We studied the following indicators: antenatal care coverage; births assisted by skilled health personnel; measles immunization coverage among 1-year-olds; children aged < 5 years sleeping under insecticide-treated nets; antiretroviral therapy coverage among people living with HIV; case detection rate for all forms of tuberculosis; and treatment-success rate for new tuberculosis cases. Data are also presented on births by caesarean section; 1-year-olds immunized; children aged < 5 years with acute respiratory infection symptoms.

Conclusions: Preventable risk factors include: diabetes; hypertension; obesity; harmful consumption of alcohol; use of tobacco. Rational use of resources available in the countries' health systems will reduce the impact of risk factors for morbidity and mortality.

[311]

Providing patient-oriented information as a key to the efficient gynaecologist-patient communication

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Introduction: Many physicians are not aware of the fact that medical information is not always obvious to people. Doctors should recognize patients' expectations, knowledge and needs, and provide relevant details. Failures in gynaecologist - patient communication may lead to difficulties in prevention, diagnosis and treatment of many common diseases.

Aim of the study: The aim of the study was to assess the patients' expectations toward the gynaecological care and information received from their doctors during ambulatory gynaecological visits.

Material and methods: It was a cross-sectional study. Women were asked to fill in a self-reported, anonymous questionnaire covering their previous experience and expectations related to topics of obstetrics and gynaecology. Questionnaires were handed out during registration, to every patient in the outpatient clinic.

Results: 410 patients (54,6% pregnant), aged between 15 and 77, have filled in the questionnaire. 98,5% of patients mentioned that being informed in detail about their health condition and a course of treatment is important or very important to them. However, as much as 32,4% claimed that they never or rarely receive satisfying details. Many of the respondents have not obtained enough information about periodic health examinations - mammography (49%), Pap test (16,1%) and breast ultrasound (39,5%). The subjects reported as

the most significant were prevention of breast (57,4%) and cervical (60,8%) cancers. Among the pregnant women, dietary and supplement recommendations were found essential. The majority of patients would agree to receive educational materials covering the chosen topics – in paper (69,6%), via e-mail (46,1%) or in text messages (17,4%). Although the focus on gynaecological issues is crucial, 56,8% of the respondents also hoped for paying attention to their state of health in general.

Conclusions: A kind of expected information depends mostly on patient's condition. However, due to their clinical significance, a few topics like breast and cervical cancer prevention, should be provided to both pregnant and non-pregnant women of all ages. Concerning the fact that almost all of the respondents found being well-informed on these topics as very important for them, doctors should pay more attention to improve patients' knowledge of aforementioned issues. Use of additional informative methods in the daily practice is also recommended.

[312]

Lithuanian adolescent girls' fears before first appointment with gynaecologist

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Introduction: Adolescence is a period of enormous physical and psychological change for young girls. Possible embarrassment about discussing intimate questions and fear to see gynaecologist may lead to delayed detection of gynaecological problems and cause later complications.

Aim of the study: To analyse Lithuanian adolescent girls' current knowledge and the biggest concerns about first appointment at gynaecologist.

Material and methods: 380 14-18 year-old adolescent girls filled in a questionnaire of 16 questions which included a table of concerns about their first appointment with gynaecologist (AG). They had to mark concerns about AG in a scale from 1 to 5 (5- the biggest worry). Statistical analysis was performed with SPSS 22.0.

Results: Survey consisted of 42 (11.05%) 14 year-old girls, 113 (29.74%) 15 y, 113 (29.74%) 16 y, 74 (19.47%) 17y, 38 (10%) 18 year-old girls. 68 (17,89%) had their AG and 312 (82,11 %) had not. Most of the girls went to gynaecologist with their mother 62 (91.18%), 1 (1.47%) with someone else. Only 5 (7.35%) went to see gynaecologist alone and their fears were no different from others. 209 (55%) girls had discussion about AG with someone (mom, friend or others) while 171 (45%) had not. Teenagers who have not had any conversations about first visit were more scared about being asked to get undressed during an appointment ($p=0.002$). Among all adolescents the biggest fear was having a male doctor (average: 4,023 points), fear of being asked to get undressed (average: 3,645), fear of an examination (average: 3,566). The least worrying issue was friends finding out about their visit and laughing from them (average:1,655). Girls who did not know how to make an appointment with gynaecologist had more concerns about AG ($p<0.05$). 12 (3.2%) girls were previously threatened by their parents to be taken to see a gynaecologist if they were not following appropriate hygiene practises. Additionally, these girls were significantly more concerned before AG that doctor will find out if they had sexual relationships ($p=0,000$), personal information will be revealed to their parents ($p=0,005$), a doctor will not understand their problems ($p=0,013$), friends will find out that she went to a gynaecologist and is sexually active, has a disease or is pregnant ($p=0,035$).

Conclusions: Adolescent girls should be informed about what is going to happen during AG in sexual education classes at school to decrease their concerns about it. Information how to make an appointment with gynaecologist from professional should be provided.

[313]

Non-consumable alcohol poisoning in the material of the Forensic Medicine Department in Cracow in 2007-2016

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Introduction: Non-consumable alcohols – ethylene glycol, methanol, isopropanol and acetone – are the products of everyday use, though cases of lethal poisoning are not very frequent. They may be found in mixture with comestible ethanol.

Aim of the study: To analyse cases, find correlation and compare results with other Departments in the future.

Material and methods: The subject of the study was 50 lethal cases (8 women), which had been caused by direct or indirect poisoning connected with consumption substances in the period 2007-2016 in the material of the Department of Forensic Medicine in Cracow.

Results: The mean of cases for study period is 5,1 cases/year, with the notable rise of incidents in 2012 (16). Methanol poisonings were reported in 23 cases (46%), with the prevalence of men (78,3%). The blood concentration in both sexes ranged from 0,45 mg/l to 5340 mg/l. In period 24.10.2012 – 07.01.2013 the highest frequency of methanol poisoning was observed. It is linked to 2012 Czech methanol poisoning scandal, and influence of this event on Polish alcohol market. Ethylene glycol poisonings are reported in 9 cases (1 woman). The concentrations of alcohol in blood of males varied from 8 mg/l to 5710 mg/l; in female was 96,7 mg/l. The average age of victims was 45,6 years. Isopropanol and acetone poisonings were observed in 17 cases. The concentration of isopropanol ranged from 160 to 5589 mg/l. It is worth noticing, that acetone may partially be a product of metabolic transformation of isopropanol. The average age of victims is 45,6 years.

Conclusions: The vast majority of lethal non-consumable alcohol poisonings of victims were adult men with chronic overconsumption of alcohol. Nevertheless, some mean blood alcohol concentrations in women are comparable to those in men. There is an obvious time correlation between lethal alcohol poisonings and information about non-consumable alcohol appearance on the market.

[314]

Awareness of global health challenges among students and young medical professionals

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Introduction: Global health becomes one of the leading medical fields. Improving healthcare quality on a global scale, applying new technologies in medicine, facing together recent challenges and rising awareness about need of international cooperation are relevant to enhancing the quality of medical care locally.

Aim of the study: The aim of the study was to assess awareness about global health topics among medical students and young medical professionals.

Material and methods: It was a cross-sectional study performed by means of a questionnaire. The survey was distributed via social media channels and post-event newsletters aimed at medical students and young medical professionals. The study group included 123 subjects from 28 countries – 85 women and 38 men. Apart from rating knowledge, the survey included subjective assessment of importance and urgency of global health issues – both from global and local perspective.

Results: 65% of respondents stated that they were familiar with global health topic. Most of them knew the topic from the Internet (45%), university (44%) or medical journals (19%). Only 27% answered that global health topics are included in obligatory courses at their universities. However, 78% agreed that such classes should be included in the programme as 91% would like to improve the quality of global healthcare.

58% of respondents heard about or were familiar with the Millennium Development Goals, 36% with Development Goals, the 2030 Agenda for Sustainable Development, and 45% with Health 2020 Strategy.

Most important global health challenges chosen by respondents were fighting antimicrobial resistance and non-communicable diseases. Problems chosen as least important were climate change, gender inequality and travel accidents. Topics rated equally urgent on a global and local scale were: climate change, health workforce shortage, development of digital health, managing mental disorders and travel accidents. 18 other challenges were assessed as more important globally than locally ($p < 0.05$).

Conclusions: There are definite disproportions in assessment of healthcare challenges urgency on a local and global scale, which shows the need of cooperation in order to improve quality of global medical care. On the other hand, rating certain topics e.g. antimicrobial resistance as less urgent locally may indicate poor level of awareness of the topic. Education about global health is both needed and awaited by young medics.

[315]

Sexually Transmitted Infections – related knowledge, risk behavior pattern and social attitudes among men having sex with men in Poland: a cross-sectional study

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Introduction: Men who have sex with men (MSM) have become the largest population of people newly diagnosed with HIV in Poland in the last few years. This group is at higher risk for HIV. Some risk factors as social life profile, risky behaviors, and knowledge about sexually transmitted diseases (STD), have not been described properly yet.

Aim of the study: The aim of the study was to collect data on the Polish MSM society and create the social life profile, risky behaviors profile and to check knowledge about STD's.

Material and methods: A cross-sectional survey of sexual behavior among a group of MSM was conducted using the online anonymous form sent via dating website for MSM. The survey consisted of 30 questions focusing on issues mentioned in the aim of the study.

Results: Among the 1820 participants, 80,4 % were under 35 years old and 45,8 % lived in cities with more than 100 000 inhabitants. A significant majority (73,1%) of respondents identified themselves as homosexual, 21,2% as bisexual and 5,7 % as heterosexual. Only 28,2 % of participants stayed in a relationship with another man. Almost a half of respondents (45,2%) declared the consistent use of condoms, while 4 % denied of using it anytime. A small but significant fraction (13,6%) declared to be a drug user. The most common STD's were: pediculosis pubis (74), genital wart (59), scabies (52), HIV infection (49), gonorrhea (48). A comparative analysis of data was performed according to the age and provinces.

Conclusions: In this national-wide survey, the MSM profile was described. Respondents demonstrated rather poor knowledge about STD's. A significant part of the population has not been tested for HIV yet. Results suggest that long-term relationship, as well as higher education degree, are in greater proportion associated with awareness of one's HIV status. Educational programs should target mainly the eastern regions of Poland, especially people from smaller cities and villages. There is a need to educate MSM group on the significance of condom use always while having sexual intercourse.

[316]

Pneumococcal Vaccine & Asthma in Adults

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Introduction: In Poland, approximately 4 million people suffer from asthma, which is about 5-7% of the general population. Asthma is a chronic inflammatory disease of the bronchial tubes of the lungs. When triggered by an irritant, the muscles around the bronchial tubes tighten, causing them to swell. Triggers include allergens, tobacco smoke, and viral or bacterial infections. Respiratory tract infections, such as *Streptococcus pneumoniae*, are one of the foremost reasons for asthma exacerbations. Officially, incidence of *S. pneumoniae* is low in Poland, where there were about 729 reported infections recorded between 2007 and 2009 with a fatality ratio of 38%. Incidence of this infection is more common among asthmatics than in the general population, making asthma a clear indication for the pneumococcal vaccine. However, in Poland the vaccine protecting against *S. pneumoniae* is recommended but not mandatory.

Aim of the study: The aim of this study was to establish the prevalence of asthmatics that complied with pneumococcal vaccine recommendations. Also, it investigated the knowledge of patients in regards to the benefits of vaccines, specifically in relation to asthma and the

Material and methods: The study was conducted among patients at specialist and general outpatient clinics in the form of an anonymous survey that contained questions about asthma, vaccines and known irritants.

Results: A total of 214 patients were interviewed. 140 were females and 74 were males. 57% of patients were at least 50 years old. 63% of patients reported at least one incident of exacerbation within the last two years. A staggering 93% of surveyed patients did not receive the pneumococcal vaccine and only 39% of patients were aware of the need for this vaccine. Out of the 52 patients who were aware of the vaccine, only 19% actually received the vaccine. Most often, the reasons listed for not receiving the vaccine were due to lack of information.

Conclusions: The awareness of pneumococcal vaccine recommendation is low in patients with asthma, mostly due to lack of information from any sources. Thus, the compliance of patients is very low. Additional reasons listed by patients were lack of faith in efficacy of the vaccine and side effects. It is worthwhile to educate patients on the benefits of receiving the pneumococcal vaccine, especially in relation to their asthma.

[317]

Basic knowledge of fertility and selected gynaecological issues

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Introduction: The knowledge of physiology of menstrual cycle establishes a background for women's reproduction health and conscious choice of contraception. Awareness of physiology has also significant meaning in detecting abnormalities, which may be early symptoms of serious conditions.

Aim of the study: To assess the women's knowledge as to menstrual cycle and several selected issues, pertaining infertility, contraception and cervical cancer prevention.

Material and methods: The conducted survey on 20 019 women comprise of two parts: (1) questions about physiology of menstrual cycle, definition of infertility, cervical cancer risk factors, recommended cytology frequency and (2) sociometric status.

Results: Most of responders were at reproductive age (mean 27.7, SD=5.2). 4.9% of them answered correctly to all questions pertaining menstrual cycle. Observed values of correct answers ranged from 94.1 % to 10.4%, depending on question. The most ambiguous issues were length of physiological menstruation and loss of blood (47.4%), cycle phase with temperature growth (10.4%) and location of conception (61.8%). Surprisingly, factors identified previously as the risk of insufficient health information: lower educational level or inhabitancy in small locality were statistically insignificant ($p=0.096$ and $p=0.150$ respectively), as well as frequency of OB/GYN consultations ($p=0.819$), previous use of contraception ($p=0.06$). 8.9% of women considered natural family planning as adequately effective. That group demonstrated better, although still insufficient, cycle physiology

understanding (33.6 % vs. 16.8%, $p<0.001$). Of all responders 73,6% claimed knowing of infertility's definition, although nearly one third in this group pointed wrong answer (33.1%, $p<0.001$). Most (82.3%) didn't know proper frequency of performing cytology, but fortunately most of them found shorter period than recommended as appropriate. Solely HPV infection is well known as cervical cancer risk factor (92.8%), a knowledge of other factors as smoking, early sexual initiation, high number of sexual partners, pregnancy in early age is low, additionally only 662 of 20019 (3.3%) recognize all cervical cancer risk factors.

Conclusions: The lack of knowledge is observed in all the surveyed areas concerning the reproduction health. There is a strong need to improve reproductive health education among women. OB/GYN specialists should focus on explanations of issues pertaining menstrual cycle, conscious contraception and cancer prevention.

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Factors affecting vaccination rates of adults with asthma against influenza in Warsaw, Poland

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Introduction: Asthma is considered one of the most common non-communicable diseases worldwide, with an incidence of 5.4% in the Polish, adult population. Symptoms of disease can be triggered or worsened by a variety of factors including viral infection such as influenza, affirming the necessity for prophylactic vaccination. However, there is concern amongst the general population of the possibility of anaphylactic response to vaccination, which can deter patients with allergic asthma for fear of triggering exacerbation of their condition.

Aim of the study: The aim of this study was to determine the extent to which patients with asthma adhere the recommendation for yearly vaccination against influenza as well as deterring and motivating factors for vaccination, and sources of information on the topic.

Material and methods: 214 patients were recruited from specialist outpatient clinics in Warsaw. An anonymous and voluntary questionnaire created for the purpose of this study. Questions addressed the patients' awareness, opinions, and actions pertaining to vaccinations as well as demographic information.

Results: Results were obtained from 214 patients, of which 70% were female. 51% reported allergic asthma, and top triggers of exacerbation were allergens (17%), infections (27%), exercise (19%), weather (12%), and air pollution (12%). 82% stated having at least one respiratory infection in the last year. 72% of patients were aware of the recommendation for yearly vaccination. 41.4% reported receiving the flu vaccine at least once, and about 20% reported yearly vaccination. Patients >55 years old were more likely to be aware of the recommendation for yearly flu vaccination (82%) than patients <55 years old (62%), and twice as likely to vaccinate yearly, 26.5% and 13.8%, respectively. The most common sources of information about the importance of yearly flu vaccination were from doctors (47%) and the media (26%). Also, 38% of patients reported never vaccinating against the flu, with the most common reasons being lack of faith of effectiveness (29%), lack of information of requirement (16%), fear of adverse effects (18%), and fear of asthmatic reaction (10%).

Conclusions: Relatively few asthmatic patients in Warsaw get yearly flu vaccinations despite the recommendations. These results were mainly sourced due to uncorrected fears, and a lack of information about the importance of prophylaxis in asthma. It is essential to create effective strategies to inform patients with asthma of the importance of yearly vaccinations.

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Consequences of the Syrian Civil War on Communicable Diseases

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Introduction: Onset of the Syrian Civil War deteriorated the health infrastructure of the country and hindered immunization programs, leaving millions of citizens vulnerable to vaccine-preventable diseases. An estimated 11 million Syrians have fled their homes since the outbreak of the civil war. Communicable diseases are associated primarily with poverty which arises in communities affected by war.

Aim of the study: This research aims to assess the effects of the Syrian Civil War on communicable diseases in Syrian Arab Republic and neighbouring countries.

Material and methods: Data of the communicable diseases spread in Syrian Arab Republic, Egypt, Jordan, Lebanon, Iraq, and Turkey are obtained, as well as immunization coverages in the corresponding countries. A total of 12 infectious diseases have been studied comprising of polio, pertussis, tuberculosis, hepatitis, leishmaniasis, malaria, diphtheria, rubella, cholera, mumps, measles, and tetanus. Final data are presented with disease maps, bar charts, and infographics.

Results: Respectively, 35 and 2 polio cases were reported in Syrian Arab Republic and Iraq, after 14 years of eradication. In Jordan, measles, pertussis, mumps and malaria cases increased. In Lebanon, measles, leishmaniasis, mumps, rubella, malaria, pertussis and hepatitis A, tuberculosis and diphtheria cases increased. In Egypt, measles, leishmaniasis, mumps, malaria, and tetanus cases increased. In Turkey, measles, pertussis, diphtheria and rubella cases increased.

Conclusions: The immediate end of war is essential to save innocent lives and control the threat of communicable diseases. Advancement of immunization, sanitation, hygiene, and health education would help to improve the present situation.

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Parental attitudes towards vaccines in Poland

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Introduction: The vaccination coverage level of children in Poland is high, but the number of unvaccinated children has been rising by 15-20% per year since 2009.

Aim of the study: The aim of the study was the examination of parents' attitudes toward the vaccination of children, parents' opinions on the safety of vaccination, the reasons for taking compulsory and recommended vaccinations and the sources of information about vaccines. Furthermore, we undertook an attempt to identify factors which could affect parents' decision-making process regarding the realization of vaccination.

Material and methods: The study was conducted by the in-depth interview at community health center during the vaccination visit. The study involved 53 parents at the age of 23 to 48, mostly (75%) living in a village with higher or secondary education. These parents the most often had two children at the age of 1 week to 5 years old.

Results: The study has several limitations. First, this is a qualitative study, concerning the specific group of parents from rural-urban area, because in Poland rural areas are inhabited by almost 40% of population. The study is unrepresentative, because it refers to parents, who came to vaccinate their children.

Parents mostly have positive opinions about vaccines, as well as negative ones.

Parents have higher trust to compulsory vaccines compared to recommended ones.

Most parents consider vaccines to be safe.

Parents believe that if vaccination is not mandatory, it is unnecessary and they decide to avoid additional costs and the risk of recommended vaccines.

Parents are above all afraid of the risk of adverse reactions. The Internet is the main source of information about vaccines both reliable as well as unconfirmed.

Conclusions: Despite the decision about vaccines, parents are full of concerns, doubts and common beliefs. Therefore, doctors, nurses and pharmacists should listen to parents' concerns and answer them. Every doubt about vaccination should be dispelled during each vaccination visit. There is a need for parents' education about recommended vaccines. There is a need to encourage health care providers to solicit questions about vaccines, to establish a trusting relationship, and to provide appropriate education to parents.

[321]

Students' perception of school toilets with differentiation between rural and urban areas and proposed solutions for inadequate sanitary standards

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Introduction: Students' bad perception of school toilets is often associated with dysfunctional elimination syndrome, a common medical problem among paediatrician population.

Aim of the study: The aim of this study was to determine students' perception of school toilets, with comparison between students from urban and rural areas, and to find possible solutions for improving sanitary conditions at schools.

Material and methods: Research was a questionnaire study conducted on 816 children aged 6-12 years and 1000 mothers of children aged 6-12 years in Poland. Electronic surveys using GfK Access Panel were performed on 23-29 June 2014.

Results: The thirty-one percent of interviewed children assessed their school toilets negatively. A significant difference in the perception of toilets between pupils from rural and urban areas was observed. Children from rural areas (n=298) assessed their school bathrooms positively more often (76% vs. 66%, p=0,0014) than children from urban areas (n=517).

Furthermore 72% of children stated that school bathrooms were not always clean, 53% that there was bad odour, 48% that the toilets were not always flushed, 51% that there was no toilet paper, 43% that there was no soap and 52% that there were no paper towels. We want to highlight that only 62% of children used toilets whenever they needed with significant difference between pupils from rural (n=298) and urban areas (n=517) (71% vs. 56,3%, p=0,0000). Out of suggestions for improvements in school's bathrooms children most often chose scented soaps (71% of children), air-fresheners (70%) and colourful bathroom tiles (57%).

Conclusions: Many students perceive their school toilets as dirty and/or do not use school toilets whenever they need which may lead to serious health consequences. What is more there is statistically important difference in school toilets' perception between children from rural and urban areas. Children from urban areas more often assess their school toilets negatively and they less frequently use them whenever they need. Furthermore children propositions for school toilets' improvements are mostly low-cost and/or easy-to-introduce and should be considered by school administration or addressed in national/European guidelines.

[322]

Physical activity during pregnancy. What do women know and what should they know?

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Introduction: Regular exercise has been proven to result in marked benefits for the mother and the fetus. Maternal advantages include improved cardiovascular function, reduced incidence of gestational hypertension

and gestational diabetes mellitus. Regular physical activity has also a positive effect on the delivery and the postpartum period – exercise is associated with shorter labour and decreased incidence of operative delivery.

Aim of the study: To assess women's knowledge concerning chosen aspects of physical activity during pregnancy and to identify the most common sources of information and motivation regarding that subject.

Material and methods: A cross-sectional study has been conducted on 290 Polish women. The questionnaire based on Recommendations of ACOG consisted of general questions, estimated optimal frequency and duration of exercise during normal pregnancy as well as indicated and contraindicated forms of physical activity. The last section (exclusively for women who were pregnant at least once $n=211$) was meant to assess the sources of information concerning physical activity during pregnancy and who motivates and demotivates them to undertake exercise.

Results: 92.4% of surveyed women admitted that regular physical activity during normal pregnancy brings more benefits. 44.8% of respondents chose 2-3 times weekly as the optimal frequency and 59.3% chose 20-30 min as the optimal duration of single exercise. 64.9% of women claimed that duration and intensity of physical activity should decrease with the duration of normal pregnancy.

82.5% and 80.5% respectively are familiar with the fact, that regular physical activity decreases the risk of gestational hypertension and gestational diabetes. The surveyed women (pregnant at least once $n=211$) were most likely to get information about physical activity during pregnancy from the Internet (52.9%), books about pregnancy (46.6%) and written press (26.5%). Most often they were motivated by their partners (20.6%) and doctors (15.6%), and demotivated by family members other than partners (24.1%) and doctors (10.3%).

Conclusions: The vast majority of women understands the importance of physical activity during pregnancy. However they are not unanimous concerning chosen aspects of exercise.

While the surveyed women were most likely to gather information about pregnancy from written sources (esp. the Internet), partners and doctors remain undeniably the main source of motivation.

[323]

Patients' education and its impact on complications in diabetes mellitus

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Introduction: Diabetes mellitus (DM) is an important risk factor of many serious conditions. According to WHO, 50% of diabetic patients die of cardiovascular diseases.

Aim of the study: To assess the influence of: 1)educating patients by the medical staff; 2)patients' knowledge; 3)patients' compliance with doctors' recommendations; and to verify their correlation with reference to the health status in DM patients.

Material and methods: Cross-sectional, face-to-face survey investigating 21 adults with DM admitted to the ward with cardiovascular comorbidities. The questionnaire consists of: (1)assessment of patient-doctor relation; (2)patient's knowledge about DM; (3)patient's lifestyle; and was compared with the laboratory tests. The results are promising; thus, the database will be expanded to at least 50 patients.

Results: Diabetologists(48%) and leaflets(43%) are the most often used sources of information. 9,5% of the patients receive information via e-mail, 9,5% attended a workshop on diabetic education. 19% do not recall being informed about the complications of DM, 9,5% were informed unintelligibly. 73% of the patients who control glycaemia daily go to the doctor twice a year or when needing prescriptions. 50% controlling glycaemia less often than daily consult the doctor once a month, 100% who do not measure glycaemia do not visit doctor's office at all. Patients with more complications tend to have better knowledge($p=0,019$). Better informed patients are more prone to controlling their fasting glycaemia($p=0,007$). 77% who own a blood sugar diary have fasting euglycaemia, whereas 1/3 without the diary experiences hyperglycaemia and 1/3 does not measure their glycaemia.

Conclusions: Doctors are an important source of information. However, according to the Polish Diabetic Society, a patient should be guaranteed access to diverse sources of information, which are not fully exploited. Encouraging the patients to start a blood glucose diary might be helpful in motivating them to measure glycaemia regularly. The knowledge about the DM complications is important in controlling glycaemia, yet the patients acquire this type of knowledge only after they have developed the complications. Well educated patients have better abilities of self-management and do not consult the doctor as frequently as less educated ones. In

conclusion, the effort should be aimed at educating patients at an early stage of DM, leading to reducing the prevalence of the complications and decreasing the mortality connected to cardiovascular comorbidities.

[324]

Certain Aspects of Physical Activity of Schoolchildren

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Introduction: Low-mobility is known to evoke cardiovascular and endocrine pathology and is one of the main risk-factors of obesity, diabetes and atherosclerosis.

Aim of the study: Study the level of school students' physical activity in Poland and Ukraine.

Material and methods: 80 high school students of Kharkov (Ukraine) and Lublin (Poland) at the age of 15-16 years were interviewed during this research. An interview of students was conducted via a special questionnaire which included questions about their physical activity. The results of the investigation were processed with standard statistical methods.

Results: The age of the Ukrainian teenagers was $15,4 \pm 0,08$ years and 65% of them were girls. The age of the Polish schoolchildren was $15,8 \pm 0,1$ years, 20% of them were boys. According to the school timetable the sport classes at Kharkov school were 2 times a week, in Lublin – 3 times a week. The Ukrainian schoolchildren attend sport classes only 1-2 times a week. They explain their absence from classes feeling sick, an illness or unwillingness. Unlike the Ukrainian, 70% of the Polish schoolchildren attend sport classes 2-3 times a week, 5% – 1-2 times a week and 25% of respondents are exempted from classes because of medical indications. 55% of students in Kharkov attend different sport clubs 2-3 times a week. The most popular sports are tennis, swimming and fitness. The Polish students attend sports sections more actively, 72,5% of them take part in out-of-school sports activities. They play football and basketball and also do cycling in their free time.

Conclusions: Our data indicate that teenagers in Lublin and Kharkov show some differences in their levels of physical activity. The Polish schoolchildren have bigger quantity of sport classes at school, but a quarter of them don't attend classes because of health problems. Also, the Ukrainian youngsters are less active in out-of-school sporting events. Probably, the Ukrainian schoolchildren are sedentary and prefer to spend their free time in front of TV and computers.

[325]

Iodine deficiency: problems & solutions

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Introduction: Relevance of the study is based on progressive increase in iodine deficiency disorders (IDD) worldwide. Low-level of thyroid hormones in the blood is the principal factor responsible for the series of functional and developmental abnormalities referred to as IDD: mental developmental problems, lowering IQ levels in school-children, mental retardation of the fetus. So, IDD effect is hidden and profoundly affects the quality of human life.

Aim of the study: The aim of the study was to identify the causes of iodine deficiency in iodine deficient regions of the Russian Federation.

Material and methods: The study involved a survey, analysis of law aspects, research and comparison of pricing policy of pharmaceutical companies and laboratory testing of iodized salts.

Results: The survey was performed in 50 patients aged 1 - 17 and revealed that the most common diseases in the group were: nontoxic diffuse goiter (1 degree) - 37%, subclinical hypothyroidism - 8%. Over 55% respondents has iodized salt with food; only 88% of them considered the use of the salt as a good method to prevent iodine deficiency. Pharmaceutical market research demonstrated that the most common drugs for the treatment of thyroid diseases were Iodomarin - 42% and L-thyroxine - 32%, the main active ingredient of which were

potassium iodide or sodium levothyroxine. Survey conducted in students aged 17-23 in 4 cities in Russia: Smolensk, Moscow, St. Petersburg and Novosibirsk showed that the prevalence of the disorders in this age group and in the regions was rather low (only at 4.9% had a disease associated with dysfunction of the thyroid gland). More than 57% patients consumed iodized salt, while 65.6% considered it as an effective method to prevent iodine deficiency. More than 65% students were examined by an endocrinologist at least once a year, in Novosibirsk this figure reaching 84%. Pricing policy, drug manufacturers and pharmaceutical companies producing drugs for prevention of iodine deficiency were analyzed. Laboratory test of the salts produced in time different periods showed the iodine content of salt, regardless of the date of manufacture, did not meet officially declared amounts.

Conclusions: Russian is a country with high iodine deficiency. The system of prevention and treatment of iodine deficiency plays an important part in improvement the quality of life. The most effective way to compensate iodine deficiency is the use of iodized salt in iodine nutrition and promotion medical drugs that can prevent IDD.

[326]

Hygienic assessment of drinking water quality in centralized water supply system of the Smolensk region, Russia

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Introduction: Quality drinking water is currently the one of the most acute problems in the Russian Federation. Smolensk region is also the region where there is the problem of providing the population with safe drinking water. Our study was aimed at hygienic assessment of drinking water quality.

Aim of the study: The aim of the study was integral quality assessment of drinking water in the centralized systems of the drinking water supply in different areas of the Smolensk region.

Material and methods: Physical and chemical quality indices of the water from the network of the centralized systems of the drinking water supply in the region. The study used the results of the socio-hygienic monitoring of drinking water quality in the network of the centralized systems of the drinking water supply in 2005-2015. Over the period studied 24.263 selected samples of drinking water made 136.929 studies of water quality. Study of drinking water quality was carried out in accredited laboratories with up-to-date analytical methods.

Results: The study demonstrated that the quality of drinking water did not meet hygienic requirements in a number of parameters. Increased amounts of Fe, Sr, Mr, total hardness, color of water and turbidity were identified in the water. Correlation between the quality of drinking water and human health risk factors were assessed. Risks of reflex-olfactory effects, non-carcinogenic and carcinogenic risks to the health of the population of the region due to the oral drinking water consumption were analyzed on the basis of the application of risk assessment techniques.

Conclusions: Integral evaluation of drinking water quality demonstrates that indicators of centralized water supply systems (in 22 districts of Smolensk region) exceed required parameters. Low quality of the water can result in risks of reflex-olfactory effects as well as non-carcinogenic risk. The obtained results have become a basis for developing practical activities to control and improve drinking water quality in the Smolensk region.

[327]

Knowledge and practices regarding tick-borne encephalitis and other tick-borne diseases among primary care patients in endemic region

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Introduction: Tick-borne encephalitis (TBE) is a serious central nervous system disease caused by TBE virus, which is spread mainly through tick bites. North-eastern part of Poland is an endemic area for TBE. Approximately half of all reported TBE cases in the country occurs in Podlaskie voivodeship. Currently, there is no specific antiviral treatment for TBE. Only symptomatic treatment is available. Prevention of this disease may be non-specific (regular tick checks, using repellents, protective clothing), however specific prophylaxis in form of a TBE vaccine is the only truly effective method of averting the infection and severe outcomes.

Aim of the study: The aim of this study was to evaluate knowledge, exposure to tick bites, preventive behaviors and demographic factors among primary care patients from endemic region for TBE in Poland.

Material and methods: A questionnaire consisting of 34 questions was distributed among primary care patients in Białystok. A total of 160 valid questionnaires were included in analysis. Responders were between 18 and 82 years old. The group consisted of 90 female and 70 male patients.

Results: Most of the responders (73.1%) were aware that Podlaskie voivodeship is an endemic region for TBE and 84.4% of them have heard about TBE vaccine. Most common source of information about availability of vaccination for TBE was local television. Half of responders (50%) have admitted that during tick season they spend great amount of time outdoors in risk areas for tick bites (forests, meadows, parks and gardens) and 53.1% reported being bitten by a tick at least once in their life. The most common preventive behaviors toward tick bites were performing tick checks (65%) and using repellents (49%). Only 3.8% of the patients were vaccinated against TBE. Majority of patients (76.5%) could not correctly identify etiological factor of TBE and 89.3% of them were not aware that currently there is no specific treatment for TBE. Some of the patients (31.2%) were also convinced that neuroborreliosis and TBE is the same disease.

Conclusions: Knowledge about TBE among responders in our study is not satisfactory. Although majority of the responders use non-specific methods of tick-borne diseases prevention, TBE vaccination coverage is extremely low. Raising awareness and knowledge about tick-borne encephalitis and other tick-borne diseases is necessary.

[328]

VACCINE PREVENTABLE DISEASES IN PEDIATRIC POPULATION OF LATVIA

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Introduction: The National Immunization Program (NIP) is very successful example of effective preventive care for children. The NIP helps to reduce morbidity and mortality of vaccine preventable diseases (VPD) but despite that immunization still remains an emotional issue for many parents and more often they choose to skip or partly skip the vaccination.

Aim of the study: The aim of the study is to collect statistics of VPD in the Children's Clinical University hospital (CCUH) in Riga, Latvia from 2005 to 2016 year and to prove that VPD still often emerge among children in CCUH and is a pressure to health care's budget in

Material and methods: The retrospective study took place in the CCUH. The statistical data were collected in CCUH about the period from 2005 to 2016 year. Medical histories of pediatric patients and questionnaire to the parents of unvaccinated patients were used to collect all data needed.

Results: Despite the national immunization program 883 cases of VPD conformed to selection criteria in CCUH in the time period from 2005 to 2016. During this time period there was no one case of tetanus or poliomyelitis and more detailed information was collected of patients with diphtheria and pertussis. All together 64 patients with diphtheria and 80 patients with pertussis were hospitalized at CCUH. From all the patients 39.64% were girls, while 60.36% were boys. The mean age of patients was 65.72 ± 65.01 months, with an interval from 1 to

215 months. Confidence interval (CI 95%) of age mean value is from 52.75 to 78.68 months. 10% patients with diphtheria and 8.2% patients with pertussis received treatment in ICU. Looking at each individual disease it shows that diphtheria is observed on mean for older children, and this difference is statistically significant. For all vaccine preventable diseases average length of treatment in hospital was 12.45 ± 7.10 days, with an interval from 2 to 31 days. The study also included questionnaire that was sent to those parents whose child was hospitalized in CCUH in 2014 with VPD and 52% answered that child was not vaccinated according to vaccination calendar.

Conclusions:

1. VPD are still important issue to deal with in Latvia because during 12 year period 883 patients received medical treatment in CCUH with the mean length for 12.45 ± 7.10 days.
2. Every hospitalization with VPD is painful for little patients, e.g., full blood count was taken in 90% (108/120 patients).
3. In 2014th 52% (12) out of 22 of patients with VPD were not vaccinated according to vaccination calendar.

[329]

Maltreatment Child Syndrome

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Introduction: Maltreatment Child Syndrome is a big gravity problem. Maltreatment can be divided into few types: physical abuse, sexual abuse as well as neglecting and unsuitable care over the child.

Aim of the study: Data presentation concerning maltreatment children.

Material and methods: Cases of children with suspicion of maltreatment child syndrome from Provincial Specialistic Childrens' Hospital in Olsztyn between January 2009 – July 2016 were taken as a material. Retrospective analysis was used as a method paying special attention to sex, age, place of residence (city/village) and type of maltreatment.

Results: Between January 2009 – July 2016 in Provincial Specialistic Childrens' Hospital in Olsztyn 247 cases of children with suspicion of Maltreatment Child Syndrome were declared. 61% were composed of males and 39% of females. 56% of the cases were related to infants, 33% of the cases were composed of children in age between 1 – 15 and 11% turned out to be children older than 15. The most common type of maltreatment was neglecting and unsuitable care – 74%. This type of abuse contains inappropriate feeding, not giving medications, refusing the education, or common minor illnesses. 17% were composed by physical abuse. Bruises and scratches made in different time were the most common signs of maltreatment, but old and new bone fractures and head injuries were also common. 7% were composed of sexual abuse and 1% by Shaken Baby Syndrome. 55% of the patients were from cities and 45% from villages.

Conclusions: The most common group of maltreatment children are male infants. Over half of the patients were from big cities. Big amount of maltreatment were unsuitable care and neglecting. This kind of abuse is hard to diagnose and is subjective, what creates a lot of disputes. Physical and sexual abuse are more obvious and are more rarely misdiagnosed. However, it still stands as a serious problem. Pediatric physicians should be aware of gravity of the Maltreatment Child Syndrome.

[330]

Nutrition in pregnancy awareness among women in reproductive age

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Introduction: Based on extensive long-term research scientists have developed the concept of nutritional programming. The main postulate states that the quality of maternal nutrition in pregnancy has crucial influence on the functioning of the child's metabolism. It's development begins at the time of conception and continues for the next 1000 days.

Aim of the study: To evaluate the knowledge of woman in reproductive age of nutrition during pregnancy and nutritional support by health care professionals.

Material and methods: A group of 302 Polish women in reproductive age up to one year after delivery (single pregnancy) of 304 who completed an online questionnaire.

Results: The percentage of women with proper pre-pregnancy BMI (18.5-24.9 kg/m²) was 67.5% and with proper weight gain during pregnancy was 38.7%. Folic acid and other dietary supplements during pregnancy declared 98% and 81.7% participants respectively. More than 80% of women changed eating habits during pregnancy (9.8% of them due to the worsening health condition). Almost 71% of women began to pay more attention to nutrition in pregnancy, but only 3.6% sought the advice of a dietician. Over 65% of women did not receive any information on nutrition in pregnancy from their gynaecologists and just in 2.6% of cases doctors recommended them to consult a dietician. Almost 72% of women did not receive any information on nutrition from their midwives and only 2% of them were referred to a nutritionist. The most popular principles of healthy nutrition during pregnancy among patients were: the exclusion of alcohol (90%), avoiding products made from unpasteurized milk and raw eggs (75%), avoiding raw fish and seafood (74%). As many as 60% of pregnant women would like to get guidance on healthy gestational nutrition from a doctor or midwife and an additional 24.5% believe that education in healthy eating should be carried out in cooperation with a nutritionist.

Conclusions: The awareness about nutrition significance among many pregnant women is still insufficient. Lack of information implies a situation in which the Internet and people from the immediate surroundings are more likely chosen as a source of information rather than physicians and midwives. Therefore the guidelines of experts in gestational nutrition consensus should be known to healthcare professionals and conveyed to pregnant women in order to prevent harmful effects of inappropriate diet to both mother and child metabolism.

[331]

Are anti-allergenic pillows and duvets truly safe for people with allergic diseases? Analysis of products available on polish market

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Introduction: House dust mite (HDM) allergy is common phenomenon. Contact with the HDM allergens can trigger or exaggerate symptoms of many allergic diseases, ie. bronchial asthma or allergic rhinitis therefore efforts should be made to avoid the allergens. Since pillows and duvets can be significant source of HDM allergens there is a need to produce products in which a variety of anti-HDM solutions are implemented. On the polish market many products advertised as "hypoallergenic", "anti-allergenic", "allergy-friendly" are available.

Aim of the study: The aim of the study was to determine percentage of products which can be recognized, according to up-to-date scientific research, as anti-allergenic and safe for the patient with allergy.

Material and methods: With a use of shopping comparison website that gathers data of estimated 11 million products from over 3100 websites a database comprising of pillows and duvets was created. The following characteristics of products were collected: name, information whether the product is anti-allergenic, filling content, anti-allergenic encasing, encasing fabric, price, website where the product is available, medical product

description. According to recent scientific data, products were recognized as truly anti-allergenic if their filling was down or feather or in the description there was information about HDM-barrier encasing.

Results: Database containing data about total 280 products has been created. Among them 179 have been described as anti-allergenic (63,39%), 42 contained down or feather filling (15%), 19 had HDM-barrier encasing (6,79%), 17 were described as medical purposes products (6,07%). 48 products (17,15%) were acknowledged as genuine anti-allergenic products according to the research criteria.

Conclusions: Products advertised as anti-allergenic represent a significant part of pillows and duvets available on the polish market. Many of them, according to present scientific data, do not have such capabilities. Creation of transparent technologic criteria, which fulfillment would license the product with a certificate that could ensure the customer about its antiallergenic efficacy, should be considered.

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[332]

Looking for perfect hepatic approach - sonographic study

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Introduction: In some patients right heart catheterization is impossible to perform classically through femoral venous access due to occlusions of inferior vena cava and its tributaries. Percutaneous transhepatic access is an alternative method allowing to reach right chambers of heart. However, it is not a widely used approach because of its technical difficulty and risk of complications.

Aim of the study: The aim of the study was to determine what are the best locations for accessing hepatic veins using ultrasonographic imaging.

Material and methods: We used LOGIQ F8 GE ultrasound with 3Sc transducer (1-3MHz) to examine 24 healthy volunteers aged 20-43 with no history of major abdominal surgery or any surgical procedure on liver, gallbladder or bile ducts. Anatomical variants of hepatic veins were described. We checked if hepatic veins run perfectly longitudinally on sonographic image acquired in 4 access sites described in literature: (1) 7th intercostal space, anterior axillary line, angle = 90 degrees; (2) 8th intercostal space, anterior axillary line, angle = 45 degrees superiorly; (3) below costal arch, half of distance between xyphoid process and middle axillary line pointing transducer towards right atrium; (4) below costal arch, anterior axillary line, pointing transducer towards left shoulder joint. We defined which hepatic vein was visible and measured distance from body surface to the vessel.

Results: We confirmed access (1) in 6 cases - 2 to middle hepatic vein (MHV) and 4 to right hepatic vein (RHV), at depth from 3,5 to 5,5 cm (mean = 4,4 cm); access (2) in 17 cases - 9 to MHV and 8 to RHV, at depth from 4 to 8,5 cm (mean = 6,08 cm), access (3) in 3 cases, all to MHV, at depth from 4 to 6 cm (mean = 5,17 cm), access (4) in 13 cases - 3 to MHV, 9 to RHV and 1 to accessory RHV, at depth from 5 to 8 cm (mean = 6,48 cm). In 10 cases 1 access was confirmed, in 10 cases 2 accesses, in 3 cases 3 accesses. In one case no access was confirmed and no one had 4 accesses.

Conclusions: Access (2) was the most repeatable and access (3) the least reliable. There was no ideal puncture site for transhepatic approach. Sonography helps to validate possible puncture sites and choose an optimal for the particular patient.

[333]

The value of magnetic resonance imaging for the assessment of the residual breast tumor after neoadjuvant chemotherapy

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Introduction: Breast cancer is the second most common women oncologic disease in Lithuania, leading to most deaths due to oncological diseases. Treatment of locally advanced breast cancer usually is started with neoadjuvant chemotherapy. Further self-determination for the surgical treatment strongly depends on the breast imaging, especially magnetic resonance.

Aim of the study: To evaluate magnetic resonance imaging accuracy for residual breast tumor size assessment after neoadjuvant chemotherapy treatment.

Material and methods: A retrospective study of breast cancer patients with locally advanced disease treated in 2013-2016 in Hospital of LUHS Kauno Klinikos was carried out. Magnetic resonance imaging (MRI) findings after neoadjuvant chemotherapy were compared to the results of histopathological analysis. Non-operated patients were excluded from the study. Information about the patient's age, MRI, core biopsy and final pathological examinations results were collected. For the statistical analysis statistical software packages Excel for Windows 2007 and 20.00 SPSS were used. Descriptive statistics with absolute and the percentage frequency distribution was used to evaluate the serial distribution of the selected sample. Differences between the groups based on the chi-square test and Spearman's correlation coefficient were calculated. The relationship between the variables are considered to be statistically significant when $p < 0.05$.

Results: 76 patients with locally advanced breast cancer underwent MRI examination after neoadjuvant chemotherapy. Patients average was age 57.3 ± 17.4 y (ranged from 28 to 81 y). The residual breast tumor on MRI was found in 63 (82.9 percent.) cases. There were 3 (3.9 percent.) patients with false-positive and 10 (13.2 percent.) cases with false-negative evaluation. MRI sensitivity was 84.1 percent. and specificity - 76.9 percent. There was a moderate correlation between MRI and pathological evaluation of residual tumor size - 0.69 ($p = 0.001$). The influence of breast density, tumor radiological (morphological manifestation, contrast enhancement, edema et al.) or pathological (differentiation, hormone receptor status) features to the correlation of radiological and pathological evaluation of residual tumor size was not significant. However, there was a tendency of higher diagnostic discrepancies in the presence of pathological breast vascularity and edema.

Conclusions: Magnetic resonance imaging had moderate sensitivity and specificity in the evaluation of residual breast tumor size after neoadjuvant chemotherapy treatment. There was moderate and statistically significant correlation between MRI and pathological results, which may be lower in the presence of pathological breast vascularity and edema.

[334]

Treatment of intracranial aneurysms over the course of last decade in the Interventional Radiology Department of University Hospital in Cracow

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Introduction: Interventional Neuroradiology is a fast-developing branch of Radiology, which enables minimally-invasive and safe management of intracranial aneurysms.

Aim of the study: The aim of the study was the overview of treatment methods of intracranial aneurysms with use of endovascular techniques over last 10 years.

Material and methods: We retrospectively analysed 746 embolizations of intracranial aneurysms performed in the Department of Angiography and Interventional Radiology in University Hospital in Cracow between August 2006 and December 2016. Among patients were 509 females and 237 males with mean age of 53.9 ± 13.2 years (range 13-92). The statistical calculations were performed using χ^2 test and Student's t-test.

Results: Almost three quarters (74%) of embolizations were performed in last 5 years. There was statistically significant difference ($p=0.008$) between the mean age of women (54.8 ± 12.8 years) and men (52.1 ± 14.0 years) undergoing endovascular treatment. Three most common localisations of treated aneurysms were: internal carotid artery (51,6%), basilar artery (16,4%) and anterior communicating artery (15,2%). In most cases, aneurysms were treated by endovascular coiling (55,9%), stent-assisted coiling (17,0%), balloon-assisted coiling (12,6%) and flow diverter (7,5%). Patients treated with balloon-assisted coiling were significantly older than treated by other methods (57.1 ± 13.0 vs. 53.5 ± 13.2 years; $p=0.013$). Flow diverters were placed in younger patients compared to the other types of aneurysm management (50.6 ± 15.8 vs. 54.2 ± 13.0 years; $p=0.047$). Coiling and balloon-assisted coiling were mainly first-line therapy ($p=0.002$; OR=0,473 and $p=0.007$; OR=0,325), while stent-assisted coiling and flow diverters were substantially more often used in re-embolizations ($p=0.002$; OR=2,06 and $p<0.001$; OR=3,316).

Conclusions: Interventional Neuroradiology was used the most frequently for embolization of internal carotid artery aneurysms. Endovascular coiling and balloon-assisted coiling were techniques of first-line therapy of intracranial aneurysms. Flow diverters were placed rather in younger patients with recanalization of the aneurysm.

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Mediastinal lymph nodes- should we measure them in EBUS or not?

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Trustee of the paper: Marta Dąbrowska MD, PhD; Prof. Rafał Krenke**Introduction:** Endobronchial ultrasound (EBUS) is commonly used to visualize and evaluate the mediastinal lymphadenopathy caused by various medical conditions.**Aim of the study:** To determine a relationship between mediastinal lymph nodes size measured by computed tomography (CT) imaging and by EBUS.**Material and methods:** Sizes of mediastinal lymph nodes were compared in 212 patients who were diagnosed because of mediastinal lymphadenopathy and underwent both chest CT and EBUS. Diameters of lymph nodes were measured and noted during EBUS. Then, the same lymph nodes were measured by two independent observers in chest CT scans (two dimensions were taken for each lymph node: short axis and axis that reflected an EBUS imaging). The results were compared using Bland- Altman plot calculating the mean difference (MD) and standard deviation (SD). Spearman coefficient was calculated for dimensions of lymph nodules measured by EBUS and CT.**Results:** The results from 212 patients were analyzed. Subcarinal nodes (measured in 168 patients), right lower paratracheal nodes (in 46 patients) and left lower paratracheal nodes (in 17 subjects) were the most frequently measured. In CT scans, the median short axis of subcarinal nodes was 14 mm, for right and left lower paratracheal nodes – 16 mm. MD between EBUS and CT dimensions of subcarinal lymph nodes was 5.5 mm (95%CI 4.4- 6.6) and SD 7.3 for short axis and 8.4 mm (95%CI 7.0- 9.9), SD 9.5 for the “EBUS axis”. MD between dimensions of the right lower paratracheal nodes was 2.1 mm (95%CI 0.5-3.8), SD 5.6 for the short axis and 3.2 mm (95%CI 1.6-4.9), SD 5.5 for “EBUS axis”. MD between dimensions of the left lower paratracheal nodes MD was 1.8 mm (95%CI (-3.0)- 6.7), SD 9.5 for the short axis and MD 4.5 mm (95%CI (-0.7) -9.7), SD 10.1 for “EBUS axis”. Spearman coefficients for EBUS and CT dimensions (short and “EBUS axis”) were 0.59 and 0.43 for subcarinal lymph nodes, 0.42 and 0.45 for right lower paratracheal nodes and 0.23 and 0.55 for left lower paratracheal nodes, respectively.**Conclusions:** The differences in measurements of mediastinal lymph nodes between EBUS and CT are significant.

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Computational fluid dynamic simulation of middle cerebral artery bifurcation based on computed tomography angiography and Doppler sonography image data

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Trustee of the paper: Wojciech Kaspara MD, PhD**Introduction:** Blood flow patterns and local hemodynamic parameters have been widely associated with the onset and progression of various vascular diseases. Assessment of these parameters can be performed noninvasively using computational numerical methods.**Aim of the study:** The aim of this study was computational fluid dynamics (CFD) analysis of blood flow in the middle cerebral artery (MCA) bifurcation region.**Material and methods:** The study included 25 different MCA bifurcations from patients who did not present any head pathologies during a computed tomography angiography (CTA) examination. The CTA data obtained from each patient were recorded as a DICOM file and transferred to a workstation equipped with the Mimics Innovation Suite platform (Materialise, Belgium). Mimics v.16 was used to create a three-dimensional (3D) MCA models. Numerical modelling was performed using a commercially available computational fluid dynamics package (ANSYS Fluent, ANSYS Inc., Canonsburg, PA, USA). Vessel walls were assumed to be rigid, and no slip boundary conditions were applied at the walls. Blood was assumed to be an incompressible non-newtonian fluid with its density of 1060 kg/m³ and viscosity modeled according to the Carreau model. Inlet boundary conditions of flow were based on the MCA blood-flow waveforms measured from each patient by Doppler sonography. The following hemodynamic parameters were calculated on each MCA bifurcation: 1) the time-averaged wall shear

stress (WSS) magnitude, 2) the time-averaged pressure (P), 3) oscillatory shear index (OSI) that measures the directional change of WSS during the cardiac cycle, and 4) WSS gradient (WSSG) - calculated by taking the spatial derivative of WSS.

Results: The median value of the time-averaged WSS in our group was 79,46 Pa (interquartile range [IQR]: 74.2 – 112.9). The median of the pressure averaged over the cardiac cycle was 911,7 Pa (IQR: 526.5 – 1200.6). The median value of the OSI measured in the point of maximal WSSG was 0.17 and its IQR was 0.07 – 0.21. WSSG median value was 30.6 Pa/m and IQR was 20.6 – 52.5.

Conclusions: Our results confirm that image-based CFD techniques can be applied to the modeling of hemodynamics in intracranial arteries. These capabilities may be used prospectively to address specific questions about the etiopathogenesis of vascular disease for example intracranial aneurysms.

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Spleen – the correlation of linear measurements and coefficients with the volume

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Introduction: Spleen is involved in a wide spectrum of abnormal conditions, which might lead to an increase in organ size. Splenic enlargement on CT is diagnosed basing on rather subjective criteria. The product of the length, estimated height and thickness of the spleen (“splenic index”, cut-off ≥ 480) has also been proposed as an indicator for evaluating splenic size on CT.

Aim of the study: The aim of the study was to find which linear measurements, field and volume coefficients correlate best with the real volume of the spleen and can be further used for determination of splenomegaly.

Material and methods: Abdominal CT examinations of 153 patients’ (77 females, 76 males) were retrospectively analysed in terms of maximal length, thickness, hilum thickness (axial plane), height (longest measurement in coronal plane), 90° height (maximum vertical height at coronal section), estimated height (number of axial scans where spleen was visible multiplied by the thickness of CT scans) (Impax Software) and real spleen volume (Vitrea software). Two-dimensional (field) and three-dimensional (volume) coefficients were acquired through proper mathematical formulas. Splenomegaly cut-off: 314,5 ml. Pearson’s correlation coefficient was calculated for the relationship between single, field, volume measurements and real volume (Statistica software).

Results: There was a statistically significant correlation between all single, field and volume measurements and real volume ($p < 0,05$). For single measurements, the correlation is the strongest for height ($r = 0,813$, sensitivity 65%, specificity 91,7%, PPV 71,4%, NPV 95,6%). For two-dimensional, it is the coefficient calculated from length and 90 degrees height ($r = 0,918$, 85%, 94,7%, 70,8%, 97,7%). For three-dimensional, it is the coefficient calculated from length, 90° height and hilum thickness ($r = 0,919$, 75%, 96,2%, 75%, 96,2%). Cut-off for splenic index from our calculations was ≥ 1148 .

Conclusions: Coefficient from length, 90° height and hilum thickness correlate best with the real volume of the spleen and can be used in daily routine. Splenic index in our study is far from the perfection for clinical practice.

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Relationship between Uterine Artery Doppler Sonography and Hemoglobin Concentration with Pregnancy Outcomes in Preeclamptic Women

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Introduction: Epidemiologic studies have shown a relationship between different levels of maternal hemoglobin and abnormal Doppler sonography with adverse pregnancy related outcomes. In this study we evaluated the relation between Doppler sonography of the uterine artery, hemoglobin levels and pregnancy outcomes in women with preeclampsia and healthy women.

Aim of the study: Diagnose the Relation between Doppler sonography of the uterine artery, hemoglobin levels and pregnancy outcomes in women with preeclampsia and healthy women.

Material and methods: Fifty women with preeclampsia and 50 healthy pregnant women who referred to our medical care center from 2013 to 2014 were included in the study. In both groups Doppler sonography of the uterine artery was done and hemoglobin concentration was measured in the third trimester of pregnancy (28-40 weeks). We also compared women in the case group based on their severity of preeclampsia.

Results: Twenty nine patients (51%) with preeclampsia and 17 patients (34%) from the control group had abnormal Doppler findings. In women with abnormal Doppler findings birth weights were lower compared to the women who had normal sonography findings in the both case and control groups ($p=0/024$ and $p=0/008$, respectively), furthermore the gestational age in birth time was also lower in these patients ($p=0/044$ and $p=0/012$, respectively). The average hemoglobin concentration was not statistically different among groups, furthermore abnormal Dopplerfindings did not have a significant relationship with the mean concentration of hemoglobin in both groups.

Conclusions: Abnormal Doppler of the uterine artery is associated with low birth weights and premature births and the coexistence of preeclampsia is associated with an added adverse outcome.

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The radio-anatomical assessment of the Körner's septum

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Introduction: Körner's septum (or petrosquamosal lamina, KS) is a developmental remnant inside a temporal bone and it represents the persistence of petrosquamosal suture line. During mastoid surgery it could be taken as a false medial wall of the antrum so that the deeper cells might not be explored. On the other hand more extensive drilling may lead to an unintended exposure and a damage of the facial nerve.

Aim of the study: The aim of the study was to assess a Körner's septum prevalence and to analyze its topography.

Material and methods: The study was performed on 90 Cone-Beam Computed Tomography (CBCT) images of temporal bones (50 female, 40 male). In the first step images with any ear pathology were excluded. The second step was to identify Körner's septum and to measure its thickness on axial sections in two points: at the level of head of malleus and at the level of lateral semicircular canal. Appropriate data were obtained.

Results: The Körner's septum was encountered in 62 out of 90 CBCT images (68.9%). Mean thickness was 1.46 ± 0.28 mm in the anterior point of measurements at the level of head of malleus and 0.87 ± 0.22 mm in the posterior point of measurements at the level of lateral semicircular canal. The presence of KS was more frequent in males than females (72% vs 66%) and it was more commonly found on both sides (59%).

Conclusions: Petrosquamosal lamina is a common structure in the temporal bone air cells complex. CBCT provides an adequate visualization for preoperative assessment. The study revealed the Körner's septum is thicker in its anterior segment. These data are helpful during otosurgical procedures.

Surgery

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Saturday, May 13th, 2017

Location:

Room 233/234, Didactics Center

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The comparison of preoperative and postoperative diet patients with morbid obesity undergoing bariatric surgery

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Introduction: Laparoscopic bariatric surgery is considered an effective method for treatment of morbid obesity. It is associated with significant changes in eating habits of patients. Detailed observation of changes in eating habits can improve the quality of postoperative care and long-term treatment effect.

Aim of the study: The aim of study is comparison of pre- and postoperative dietary habits of patients with morbid obesity undergoing laparoscopic sleeve gastrectomy and laparoscopic Roux-en-Y gastric bypass.

Material and methods: Patients operated for morbid obesity from November 2015 to June 2016, were prospectively analysed. Study enrolled 48 patients (22 women, 26 men, 44 years on average) meeting the inclusion criteria, who underwent laparoscopic bariatric surgery (39 LSG, 9 LRYGB). In study group, before surgery based on FFQ questionnaire, frequency of consumption of selected food products groups was assessed. The follow-up surveys were carried on six months after surgery.

Results: In all analyzed group, based on FFQ, we observed decreased frequency of food products consumption, that were contraindicated in diet, such as sugar ($p=0.009$), chocolate ($p<0.001$), cakes and biscuits ($p<0.001$), salty snacks ($p=0.008$), sugared milk drinks ($p<0.001$), oil ($p<0.001$), margarine ($p<0.001$), mayonnaise ($p<0.001$) and sweetened drinks ($p=0.001$). Interestingly we observed decrease in consumption of fruits ($p=0.029$), apples and pears ($p<0.001$), citrus ($p<0.001$), vegetables ($p=0.010$), potatoes ($p<0.001$), carrots and peppers ($p=0.005$), fine-grained and coarse-grained groats ($p<0.001$, $p=0.012$).

In LRYGB group, we observed decreased frequency of food product consumption, such as chocolate ($p=0.036$), cakes and biscuits ($p=0.050$), sugared milk drinks ($p=0.012$), margarine ($p=0.021$). In this group we did not observe significantly difference in consumption products, such as sugar, salty snacks, oil, mayonnaise, sweetened drinks.

In LSG group, we noticed decreased frequency of product consumption, such as sugar ($p=0.040$), chocolate ($p<0.001$), cakes and biscuits ($p<0.001$), salty snacks ($p=0.031$), sugared milk drinks ($p=0.031$), oil ($p<0.001$), margarine ($p<0.001$), mayonnaise ($p=0.004$) and sweetened drinks ($p=0.007$).

Conclusions: Bariatric surgery lead to changes in eating habits of patients with morbid obesity. After surgery patients decrease consumption of food products, which can lead to obesity recurrence. The consumption of potentially healthy products also decreases. In LRYGB group, the consumption contraindicated products in diet did not decrease.

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Reconstructive interventions in thoracic surgery

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Introduction: Lung cancer is one of the most common causes of cancer-related death in both men and women, is responsible for 1.3 million deaths worldwide every year. The mortality of centrally localized Non-Small-Cell lung cancer (NSCLC) is determined by non-effective treatment. In recent years, the only way of treatment was pneumonectomy which is unsuitable for those who have respiratory insufficiency (asthma, COPD etc.) - with FEV1 lower than 0,8L, VO2max <10 mL/kg/min. But today bronchoplastic and vascular reconstructive procedure has been being performed.

Aim of the study: To investigate the expediency and the effectiveness of the tracheobronchoplasty and angioplasty in thoracic surgery.

Material and methods: Retrospective analysis of 411 cases' treatment results in Kyiv and Donetsk.

Results: From 1996 to 2017 has been performed reconstructive thoracic surgeries in 411 patients. Indications: tumors in 289 cases, trauma and stenosis in 122 cases. Bronchoplasty was performed in 312 cases, tracheoplasty – in 92 cases, angioplasty of the pulmonary artery (PA) or vena cava superior (VCS) – 36 cases. Among them: 146 cases – bronchoplastic lobectomy, 92 – resection of the trachea, including 7 cases of tracheolaryngeal resection, 77 – surgery of the traumatic injury of the trachea and bronchus, isolated resection of the bronchus in 56 cases, 36 – bronchoangioplastic lobectomy, 7 cases of pneumonectomy with a resection of the bifurcation. Also, a number of rare operations were performed: pneumonectomy with a resection of the bifurcation and VCS (4 cases), isolated reconstructive resection of the bifurcation with traheopolybronchial anastomosis with formation of trifurcation (1 case), replantation of pulmonary lobe with bronchial and vascular anastomosis in open trauma (1 case), repeated resection of the trachea in tumor relapse (1 case). Revealed postoperative complications: anastomosis inability (4 cases), vocal cord paresis (4 cases), acute pleural empyema (3 cases), PA thromboembolism (2 cases), acute cardiac failure (2 cases), tracheal anastomosis restenosis (2 cases), infarction-pneumonia (2 cases). In general, postop complication were detected in 4,6% of cases, mortality – 2,7%. No fatal outcome during past decade.

Conclusions: Tracheobronchoplastic and angioplastic operations are imprescriptible part in thoracic surgery because of the great opportunity to preserve needed lung parenchyma which helps to increase the survival rate in patients with central NSCLC.

[342]

Population characteristics and results of surgically treated patients with acute Stanford type A aortic dissection in Latvia

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Introduction: Despite low incidence acute Stanford type A aortic dissection (TAAAD) is associated with high mortality, which rapidly increases during first 24-48 hours after onset of symptoms. Urgent surgical repair of dissected aorta is considerable for all patients, admitted in hospital with TAAAD. The annual rate of performed TAAAD surgeries globally has increased and early mortality rate decreased in last decades. Here we present the first study from Latvia describing patients with TAAAD and analyzing results of surgical treatment.

Aim of the study: Aim of study was to describe patient population, dissection process, early and late results of surgically treated patients with TAAAD, and to determine factors, associated with worse outcome.

Material and methods: A total of 48 consecutive patients, who underwent surgery from January 2006 to December 2016 were enrolled in study. Patient data were collected from medical documentation and analyzed using IBM SPSS v22.

Results: Mean age of study population was 55,0±13,9 years and 72,8% were males. Arterial hypertension was previously diagnosed in 81,3% and prior cardiac surgery was noted in 8,3% of study population. In most of the cases (81,2%) replacement of ascending aorta was performed. 6,3% of patients underwent hemiarch replacement and 8,7% total arch replacement. Intraoperative mortality was 12,5% and early mortality – 18,8%. Postoperative complications occurred in 47,9% and about one-half from these patients had postoperative bleeding. Predicting factors of early mortality were comorbidities, which increased risk of surgery ($p<0,01$), organ malperfusion ($p=0,04$), involvement of coronary arteries ($p=0,02$) and a necessity to perform coronary revascularization ($p<0,01$), longer cardiopulmonary bypass (CPB) time ($p<0,01$) and aortic occlusion time ($p=0,02$) and presence of postoperative complications ($p=0,05$). Predicting factors of postoperative complications were longer CPB ($p=0,03$), use of hypothermia ($p=0,04$) and use of circulatory arrest ($p=0,01$).

Conclusions: Population characteristics and results of surgical treatment are comparable with literature data. Severity of patient condition prior surgery and duration of CPB and aortic occlusion more than extent of surgical intervention influence early results of surgically treated patients with TAAAD.

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APPLICATION OF CELL TECHNOLOGIES IN TREATMENT OF CHRONIC WOUNDS

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Introduction: The patients with chronic wounds and soft tissue defects of various etiologies represent a significant contingent of septic surgery departments. The improvement of treatment of significant wounds with delayed healing which is related with a lack of mesenchymal tissue and retarded epithelization is actual problem of a surgery.

Aim of the study: The aim of study was to evaluate the effectiveness of using of dermal equivalent (DE), which consists of a fibrin hydrogel and cultivated allogeneic multipotent mesenchymal stromal cells from adipose tissue (MMSC-AT) in patients with retarded healing.

Material and methods: The results of treatment of 28 patients with retarded healing of wounds during 2015-2016 years has been analyzed. All patients were divided into two groups: basic group (BG) – 10 patients and control group(CG) 18 patients. The criteria of effectiveness were cytological imprints, visual assessment of regeneration and the dynamics of pain.

Results: DE was used by applications to the surface of wounds in the reparative phase of the healing. The rapid growth of granulation was marked on the patient after 4 days of DE application. In cytological imprints were signs of inflammations and regeneration, reduction of macrophages and appearance of tissue elements. Also, patients noted a decrease of pain. The bacterial microflora in the wound was absent. After 8 days pain has completely gone, the wound was covered with granulation, boundary epithelization was observed. The cytological picture was typical for the regenerative type cytogram with presence of fibroblasts.

At 4-th day inflammatory type of cytogram with a significant number of neutrophils and appearance of macrophages was observed in patients of the CG. At 8-th day, neutrophil count was decreased, while the content of macrophages reached 21%, which was corresponded to inflammatory-regenerative type of cytogram. Granulations which covered the surface of the wound were flabby, pale, fine-grained. The microorganisms were presented in the wound.

The plastic closure of wound defects was done in patients of the BG by autodermaplasty. Complications were absent. The complete engraftment of transplants was observed.

Conclusions: The using of dermal equivalent which consists of fibrin gel based on cultivated allogenic multipotent mesenchymal stromal cells from adipose tissue in patients with chronic wounds, revealed its effectiveness compared to traditional methods. It has allowed to prepare a wound for further treatment in a short time.

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Intraoperative anatomical landmarks for identification of recurrent laryngeal nerve during thyroidectomiesBeatrice Sanna¹, Dominik Tattera², Przemysław A. Pękała², Agata Marcinów², Jakub R. Pękała²,Brandon Michael Henry²

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Introduction: The recurrent laryngeal nerve (RLN) is a branch of the vagus nerve and innervates most of the intrinsic muscles of the larynx. The right and left RLN leave the vagus at different points and have highly variable course in the neck, thus posing a higher iatrogenic injury risk. Though the RLN has been intensively studied, iatrogenic injury to this nerve still occurs and is the most feared complication of the thyroidectomy.

Aim of the study: Aim of this study was to analyze several anatomical landmarks that could aid surgeons in identifying RLN intraoperatively and reduce the risk of iatrogenic injury to this nerve. The anatomical relationships between RLN and inferior thyroid artery (ITA), I

Material and methods: Comprehensive study search of all major electronic databases (PubMed, CNKI, ScienceDirect, EMBASE, BIOSIS, SciELO, and Web of Science) was conducted. MetaXL was utilized for statistical analysis and random effects model was used to calculate pooled prevalence rates.

Results: The intraoperative assessment of the relationship between RLN and BL in seven studies (n=1,505 nerves) demonstrated that RLN courses superficially to the BL in 76.0% (95% CI: 34.9-100) of the time, deep to the BL in 17.0% (95%CI: 0-49.4) and piercing the ligament in 7.0% (95%CI: 0-32.3) of cases. Eighteen studies (n=6,176 nerves) on the relation of RLN and ITA showed that RLN most commonly runs posteriorly to the ITA [57.8% (95% CI: 45.3-65.3)], then anteriorly in 26.4% (95% CI: 17.0-34.6), and finally between the ITA branches in 15.9% (95% CI: 8.6-23.2) of cases. Eight studies (n=4,058 nerves) revealed that the RLN was most often [60.1% (95%CI: 49.9-70.0)] found inside the TEG. Of those nerves found outside of the TEG, the RLN was found laterally to the TEG in 54.2%(95%CI: 0-100) and anteriorly to the TEG in 41.7%(95%CI: 0-100) of the cases. Six studies (n=665 ZTs) demonstrated the RLN coursing posterior to a present ZT in 73.6% (95% CI: 22.4-96.3) of cases, followed by an anterior course in 16.0% (95% CI: 0-46.2) of cases.

Conclusions: The most reliable intraoperative landmark for identification of RLN found in this study is BL, followed by ZT if present. The knowledge about the variable relationship between RLN and these anatomical landmarks can help surgeons reduce the time to identify RLN during thyroidectomy and greatly reduce the risk of iatrogenic injury.

[345]

Which risk factors have an impact on postoperative complications of laparoscopic spleen surgery?

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Introduction: Laparoscopic spleen surgery (LSS) has become an established care standard in management of splenic surgical diseases. The main indications for LSS are benign hematologic diseases, such as idiopathic thrombocytopenic purpura. In certain situations performed operations a partial splenectomy. Due to the increasing number of LSS it is necessary to determine risk factors the occurrence of complications.

Aim of the study: This study aimed to evaluate risk factors the occurrence of complications of LSS.

Material and methods: Data of 500 patients, who underwent LSS in 2nd Department of General Surgery Jagiellonian University Medical College (JUMC), were retrospectively analysed. Patients were divided into groups: with postoperative complications (37 patients) and uncomplicated (463 patients). To evaluate risk factors of complications we built logistic regression model.

Results: The main indications were ITP, lymphoma, hereditary spherocytosis, cysts, hemolytic anemia and tumour. Morbidity and mortality were respectively 37 patients (7.4%) and 2 patients (0.4%). Fever (18.9%) and postoperative bleeding (18.9%) were the most common complications. Less frequent complications included abscess, fluid or haematoma in the place of spleen, pneumonia, acute pancreatitis. During the operation, the mean blood loss was (156.9 ± 265.8 ml), max was 1500 ml. According to univariate logistic regression analyses blood transfusion increased prevalence of postoperative complications (OR: 1.54; CI: 1.21-1.9). Interestingly, other risk factors like BMI, age, ultrasonography spleen longitudinal size, duration of surgery were statistically irrelevant.

Conclusions: Intraoperative blood loss requiring blood transfusion is connected with higher odds of perioperative complications. By our analysis, the factors considered to increase the risk of complications at the centres specialising in minimally invasive surgery do not connect with a higher risk of complications.

[346]

Drainage by ultrasound-guided puncture interventions in complex treatment of liquid masses in the abdominal cavity and retroperitoneal space

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Introduction: The topicality of the problem made by the absence of generally accepted treatment of the liquid masses (LM) of the abdominal cavity and retroperitoneal space

Aim of the study: Optimization of the treatment strategy of LM

Material and methods: Drainage by ultrasound-guided puncture interventions as a part of complex treatment used in 76 patients with LM with different genesis and localization. Bacterial flora was detected in 71 (93,4 %) cases. 56 (73,9 %) patients had pancreatogenic LM, 20 (26,1 %) — intraabdominal purulent complications after gastrointestinal tract interventions. Depending on the character of liquid different modifications and diameters of trocars were used.

Results: Using of minimally invasive technologies as independent method helped to eliminate LM of the abdominal cavity and retroperitoneal area in 51 (67,4 %) patients, including 22 (29,03 %) cases with additional drainage with catheter changing. In 25 (32,6 %) cases using of miniinvasive methods were not effective enough because of plural leakages with tissue component (major sequestrums) in cavity. The best way is using of projectional minimal access in those cases, which help to open the LM cavity and perform sequestrectomy if needed. Presence of destructive changes (gangrenous cholecystitis, appendicitis, anastomosis inability etc), which can't be dissolved with puncture and drainage method requires the main disease treatment and foresees diligent revision of the abdominal cavity and retroperitoneal space with a purpose of revealing each possible way of necrosis spreading, providing their adequate drainage.

Conclusions: Drainage by ultrasound-guided puncture interventions in complex treatment of liquid masses of the abdominal cavity and retroperitoneal space with the presence of acoustic window, accurate topographic visualization of LM and its synchopy is effective in 67,4% of cases.

Ultrasound-guided minimally invasive procedures in high operative risk patients might be used as a stage of complex treatment that allows to stabilize a patients' common condition and to perform radical intervention in advance.

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INFLUENCE OF LONG-TERM MEDICATION INTAKE ON THE RISK OF PERFORATION IN PATIENTS WITH COLONIC DIVERTICULAR DISEASE

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Introduction: Diverticular disease is a common condition which incidence increases with age, reaching 30% in population over 60 years old. One of the most severe complication with a high risk of late sequel and mortality is perforation of colonic diverticula. According to the current studies the use of some medication may affect the risk of perforation due to its influence on the intracolonic pressure and mucosal barrier function.

Aim of the study: The aim was to study the effect of drug intake on the frequency of perforation among patients with diverticular colonic disease.

Material and methods: A retrospective review of 165 patients with verified colonic diverticular disease was done. Included patients were admitted to 2nd Department of General Surgery JU MC during 2012-2016. Due to the absence of data concerning drug intake the final analysis included 143 patients (mean age 66,4). Study enrolled 104 (72,7%) women with mean age 70,1 and 39 (27,3%) men with mean age 56,5. Among investigated group 25 (17,5%) patients developed perforation.

The research regarded long-term taken medications including NSAIDs, corticosteroids, calcium-channel blockers, statins, opioids, aspirin, anticoagulants and antiplatelet drugs. In addition, the data concerning comorbidity, laboratory tests' results and the severity of the diverticulitis was collected.

Results: In the analysis the group of patients with perforation and the group with non-perforated diverticular disease were compared. Higher rate of long-term use of NSAIDs (16% vs 5,1%), opioids (8% vs 1,7%) and corticosteroids (16% vs 6,8%) was observed among the patients with perforation. The results revealed an inverse relation concerning the use of statins (8% vs 17,8%). Similar results were found in the review of available literature. Despite the fact that the outcomes show some kind of relation, they should be interpreted carefully due to several limitations of the study.

Conclusions: Long-term taken medications used by patients with colonic diverticular disease affect the incidence of perforation. The administration of NSAIDs, corticosteroids and opioids is related to an increased rate of colonic diverticular perforation. On the basis of the results we can assume that statins may contribute to decreasing the frequency of perforation. We can conclude that it is important to carefully administer drugs to patients with colonic diverticular disease.

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Surgical, Endoscopic, and percutaneous pancreatic pseudocyst drainage – retrospective analysis of 138 patients

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Introduction: A pancreatic pseudocyst is an encapsulated fluid collection that develops as a consequence of pancreatitis minimum 4 weeks after the initial injury. Their natural history is usually spontaneous resolution, with up to 85% of pseudocysts resolving within 4-6weeks. However, for pseudocysts that persist or those that are symptomatic, drainage typically is indicated.

Aim of the study: This study aimed to evaluate patient demographic data, the primary and overall success rates and clinical outcomes after surgical (S), endoscopic (E) and percutaneous procedures with ultrasound (U).

Material and methods: We conducted a single center retrospective study. Between January 2004 and October 2013 (117-month period), 138 patients had an intervention of pancreatic pseudocyst that included surgical (n = 68) endoscopic (n = 44), or percutaneous drainage with ultrasound technique (n = 26). The range of the patients age was from 21 to 84 years. The mean age was 49.37 ± 13.167 .

Results: The primary success was 94,03% for surgery, 75% for endoscopy and 100% for ultrasound (p 0.001). Mortality after surgery was 2,29%, endoscopy 0% and ultrasound 7,7% (p 0.0297). Mean postoperative length of stay at hospital was 13.84 days after surgery, 9.54 days after endoscopy and 21.16 days after ultrasound (p 0.007). Late complications amount 1,52% after surgery, 2,27% after endoscopy and 4,17% after ultrasound (p 0.0249). Time to recurrence was 765 days for surgery, 155 days for endoscopy and 38,5 days for ultrasound (p0.0147).

There were no significant differences (p<0.05) in the mean patient age, gender, early complications, recurrences, reinterventions due to recurrences and overall success of pseudocysts between the treatment procedures.

Conclusions: Although surgery and percutaneous drainage had higher primary success rate than endoscopic internal drainage, all methods provide equally overall success rate (76,92%-83,82%). Despite the fact that percutaneous drainage had the highest primary success rate, mortality, late complications and length of stay at hospital are also the highest. This method characterized as well the shortest time to recurrence. Notable is the fact that endoscopy method has the lowest primary success rate, but it has the lowest mortality and the shortest time of hospitalization. Surgery method stands out the least late complications and the longest time to recurrence.

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The impact of selected risk factors for GERD in patients with morbid obesity after bariatric surgery

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is an effective and widely accepted method of surgical treatment of morbid obesity. One of its most common complications is gastroesophageal reflux disease (GERD). The identification and evaluation of selected prognostic factors, including shape of the gastric sleeve obtained during surgery, can improve the patients' care after surgical treatment for morbid obesity.

Aim of the study: This study aimed to assess the risk of GERD development, depending on the shape of gastric sleeve after LSG.

Material and methods: Study enrolled 47 patients (31 women, 16 men, 45 years on average) meeting the inclusion criteria, who underwent LSG. GerdQ questionnaire assessed symptoms of GERD preoperatively, one and three months after LSG. Shape of the gastric sleeve was assessed in upper gastrointestinal series on first postoperative day. Analysis included selected factors associated with risk for GERD development postoperatively, such as age, sex, BMI, smoking and medication.

Results: Preoperatively 14 patients, based on GerdQ, were diagnosed with symptoms of GERD. Out of 33 patients without preoperative GERD one month after LSG, symptoms of GERD were found in 29 (88%) patients, and after 3 months in 17 (52%) patients. In group with GERD, 13 patients had a symptoms of GERD one month after LSG and 12 patients after three months ($p=0.671$ and $p=0.773$). One-way ANOVA revealed a significant increase in risk of GERD one and 3 months after LSG in all operated patients (respectively $p<0.001$ and $p=0.008$). Based on the radiological assessment, we determined following shapes of gastric sleeve postoperatively: upper pouch in 15 patients (32%), lower pouch in 14 (30%), dumbbell in 10 (21%), tubular in 6 (13%), and pseudodiverticular in 2 (4%). Shape of gastric sleeve did not affected significantly risk of GERD development ($p=0.290$). Univariate logistic regression model showed that preoperatively diagnosed reflux disease (OR: 7.47; CI: 1.38-40.30; $p=0.016$) and female gender (OR: 4.79; CI: 1.27-18.09; $p=0.018$) significantly increased in risk of GERD after LSG.

Conclusions: LSG increases risk for developing GERD. Shape of gastric did not affect the incidence of GERD postoperatively. Preoperatively diagnosed reflux disease and female gender are significantly increasing risk for symptoms of GERD.

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Impact of restaging resection of bladder cancer on potential therapeutic decisions

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Introduction: Restaging resection of bladder cancer (reTURBT) remains essential part of non-muscle-invasive bladder cancer treatment. Data concerning qualification, time and results of reTURBT in Poland are limited. Establishing which patients are at highest risk of residual tumor presence in reTURBT can be helpful in identifying patients who can benefit from the use of additional tools during reTURBT.

Aim of the study: To analyze results of reTURBT in patients hospitalized in our center and to investigate the effect of selected risk factors on residual tumor presence in reTURBT.

Material and methods: Medical records of 149 consecutive patients who underwent reTURBT in the period of 2011-2015 were reviewed retrospectively. Oncological history, indications for reTURBT and pathological data were investigated.

Results: Complete data were obtained in 140 individuals. Median time between initial TURBT and reTURBT was 35 days. In analyzed group 98 patients were treated due to primary tumor, 24 patients due to recurrence, 27 due to progression. 100% patients were diagnosed with urothelial carcinoma. ReTURBT indications were as following: pTaHG - 19 patients (13.6%), pT1LG- 33 (23.6%), pT1HG -56 (35.7%) and no muscle layer in the specimen after initial resection - 44 (31.4%). Minimal residual disease was identified in 56 patients (40%). Muscle invasive tumor was observed in 10 individuals (7.1%). One patient could have more than one indication. There was no

statistically significant difference in histopathological findings between the indication groups. In univariate analysis with logarithmic regression the only significant predictor for tumor presence at reTURBT was high-grade tumor.

Conclusions: ReTURBT allows to achieve oncological radicality, improves staging and enables identification of foci of carcinoma in situ in significant number of patients with high risk non-muscleinvasive bladder cancer. Patients with high-grade tumors are at particular risk of residual tumor presence at reTURBT. In these individuals mapping biopsy and new cystoscopy tools should be considered.

[351]

PREVENTION OF POSTOPERATIVE ADHESIVE PROCESS USING AN "ASA-1" APPARATUS IN THE EXPERIMENT

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Introduction: The postoperative adhesive disease is the most difficult section of abdominal surgery. Development and introduction of additional measures and resources in practice against adhesions is an urgent objective.

Aim of the study: To study the effectiveness of the antiadhesive device "ASA-1" (anti-solder apparatus) in experimental model of adhesive process of an abdominal cavity.

Material and methods: Experiment was performed on rabbits in amount of 34 units, between the age 10-16 months, weigh 5-6 kg, from vivarium scientific research institutes of B. Atchabarov. Intensive observations by "Endomedium" laparoscopic were provided on laboratory animals.

Results: Laboratory animals were divided into two groups of 17 rabbits: I group – the control group, which was used to simulate the adhesive disease; II group – the group with adhesive disease where the use of "ASA-1" apparatus performed in the early postoperative period. Simulation of adhesive disease was made to all laboratory rabbits: including the combined injury of the parietal and visceral peritoneum leaves by thermal desiccation under sterile conditions and followed by applying incisions artificial intestinal ischemia. For the analysis of adhesion process brought animals out of experience for 3, 7, 14 days after surgery. Hence, in control group for 3, 7, 14 days adhesions were formed at 100% of animals. The histological inspection of I group animals for 3, 7, 14 days showed morphological forming of adhesion that corresponded to the term of excretion of animals from experiment: fibrous collagenous connective tissue of neo angiogenesis and cellular composition of inflammatory. In the II group with the use of "ASA-1" device for the 3, 7, 14 days no adhesion formed. The histologic study on 3, 7, 14 days after use of bioelectric stimulation of muscles of a forward abdominal wall not found cases with fibrous collagenous connective tissue with the phenomenon of a neo angiogenesis.

Conclusions: The "ASA-1" apparatus has a mechanical effect on adhesion formation during fibrinous accretion formed within 3 hours after surgery. The device influences by reflex on the abdominal organs, enhancing peristalsis of intestines and prevents the formation of adhesions. Hence, prolonged exposure leads to a physiologically functional advantageous position of intestine.

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Prolonged length of hospital stay and readmissions after sleeve gastrectomy and laparoscopic Roux-en-Y gastric by-pass – evaluation of risk factors

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Introduction: Laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric by-pass (LRYGB) are the most commonly performed surgical procedures for morbid obesity in Poland. Implementing Enhanced Recovery after Surgery (ERAS) protocols in bariatric surgery have reduced the length of stay (LOS) and lowered morbidity. However, this approach does not eliminate readmissions after surgery, but reduces them. Due to the increasing number of bariatric surgeries we want to establish risk factors of prolonged LOS and readmissions after LSG and LRYGB.

Aim of the study: The main aim of this study was to evaluate risk factors for prolonged hospitalization and unplanned readmissions after LSG and LRYGB.

Material and methods: From April 2009 to July 2016 533 patients (330 females, 203 males) had bariatric surgery (331 LSG and 202 LRYGB). Patients were divided into two groups: LOS >3 vs. ≤3 days.

Results: Median LOS was 3 (2-4) days. LOS >3 days occurred in 176 (33.02%) patients, 100 after LSG (30.21%) and 76 after LRYGB (37.62%; p=0.078). Multivariate logistic regression analysis pointed out significantly relevant factors of prolonged, which were BMI on the day of operation (OR: 1.10; CI: 1.03-1.19; p=0.008), intraoperative adverse effects (OR: 12.84; CI: 2.37-69.59; p=0.003), postoperative complications (OR: 10.65; CI: 1.91-59.44; p=0.007), oral decreased fluid intake (OR: 1.28; CI: 1.12-1.45; p<0.001) and distance from habitual residence to bariatric centre (OR: 1.47; CI: 1.18-1.83; p=0.001).

37 (6.98%) patients were readmitted to the hospital, 19 (5.78%) patients after LSG and 18 (8.96%; p=0.163) after LRYGB. Significant risk factors were postoperative complications (OR: 3.40; CI: 1.40-8.22; p=0.007), decreased fluid intake on the day of surgery (OR: 1.18; CI: 1.02-1.37; p=0.028) and prolonged LOS (OR: 2.30; CI: 1.12-4.72; p=0.023).

Conclusions: Potential risk factors for prolonged LOS are higher BMI, intraoperative adverse effects, postoperative complications, decreased oral fluid intake on the day of operation and longer distance from habitual residence to bariatric centre. Risk for hospital readmission after bariatric surgery is most likely increase by postoperative complications, decreased volume of fluid intake on the day of procedure and prolonged LOS.

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Comparison of the results of early excision and grafting between children and adults: a non-randomized clinical trial

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Introduction: Inhere we compared postoperative outcomes after early excision and grafting between pediatric and adult patients with deep burns of less than 40% total body surface area burns (TBSA).

Aim of the study: To find out the results of early excision and grafting between children and adults in a non-randomized clinical trial.

Material and methods: Data was obtained from 106 patients admitted to Ghotbodini Burn Center in Shiraz, Iran from September 2012 to September 2013. All the patients had less than 40% TBSA burn and were between 1 to 65 years old. Patients were divided into two age groups of younger than 14 years old (n=49) and older than 14 years old (n=57). This trial was registered with the Clinical Trials Registry (IRCT2014032713880N3; www.irct.ir).

Results: During a six month follow-up, the two groups did not show a significant difference in graft take, total scar score and itching score (p=0.461, p=0.363 and p=0.637, respectively). Clinically the pediatric group did show less hospital stay, however this was not statistically significant (p=0.091).

Conclusions: Better wound care and rapid surgical interventions introduced in recent years has minimized the effects of age related changes on wound healing and postoperative complications. Pediatric and adult burn patients with less than 40% of TBSA burns do not show differences regarding clinical outcomes after early excision and grafting.

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Spleen Trauma: Borderline Criteria In Conservative Management

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Introduction: In the past, the injuries of the spleen were considered dangerous, making its removal a main preference as the problematic hemorrhage was prevented and no major negative effect have been observed. Today, we bring into the discussion the possibility of preserving the organ, favoring its function and avoiding the complications that commonly occur in a splenectomy.

Aim of the study: The aim of this study is the establishment of a few criteria to be followed when choosing the course of treatment in spleen trauma: splenectomy or conservation of the organ.

Material and methods: Ten patients with the age variation between 2 and 15 that suffered spleen trauma were included in this study. To analyse the severity of the trauma, each patient was monitored following several parameters: complete blood count, biochemistry profile and coagulation profile. As an imagistic examination, ultrasonography and CT scanning were used, diagnosing and measuring the splenic trauma and evaluating associated injuries.

Considering that most of the patients with splenic trauma are in fact polytraumatized, it is important to quantify the severity of other lesions. Thus, a several scales were used, such as Glasgow Coma Scale, Abbreviated Injury Scale, Injury Severity Score and Spleen Injury Scale, to assure the right management in the course of treatment.

Results: In only one of the cases an exploratory laparotomy was needed, the intervention being based on the injuries revealed by imagistic exploration. However, splenectomy was not necessary. The nonoperative management was applied with success in the rest of the cases (90%).

The conservative treatment was established considering the following criteria: the volume of the hemoperitoneum (assessed by CT and ultrasonography), followed by the hemoglobin and hematocrit levels.

Conclusions: The nonoperative management in the splenic trauma was successfully applied in 90% of the cases. Considering the severe complications that can follow a splenic removal, on both short and long term, and regarding the frequency of spleen injuries, it is important to build a specific protocol to save the organ in as many cases as possible. Thus, we unveiled the importance of imagistic methods (both CT and abdominal echography) in selecting and monitoring the patients with splenic injuries. The polytraumatized patients associating splenic injuries must be evaluated through a global trauma scale, since the simple examination of clinical and biological parameters are not sufficient.

Surgical Case Report

Jury:

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Date:

Sunday, May 14th, 2017

Location:

Room 233/234, Didactics Center

Case Report:

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Contact lens associated Fungal Keratitis

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Background: 25 million people (2% of world's population) use contact lenses every day. Complications affect roughly 5% of wearers yearly. The list of potential contact lenses complications is long and varied, ranging from relatively benign protein deposits to sight-threatening microbial keratitis. The aim of this case report is to raise awareness about the importance of proper care of contact lenses.

Case: 23-year old male was urgently admitted to ophthalmology department complaining of severe pain, epiphora, photophobia and decreased vision in the left eye. 4 weeks ago, after returning late from a restaurant, where he worked as a bartender, the patient removed his contact lenses without washing his hands first. In the morning he found his left eye swollen, itchy and red and decided to visit his family doctor, where he was prescribed with dexamethasone eye drops. 3 days later with the condition not improving, the patient paid a visit to an ophthalmologist, who diagnosed keratouveitis and adjusted the treatment by adding acyclovir, levofloxacin, cyclopentolate and dexpanthenol. A few weeks later the patient's condition improved, so, contrary to doctor's orders, he discontinued treatment and returned to work. The next day the symptoms reappeared and were worse than before, therefore the patient was referred to tertiary care centre. Detailed anamnesis revealed patient's frequent contact with the cellar at his work, where alcoholic beverages are stored. Fungal infection was suspected, culture samples were taken and empiric therapy of amphotericin B was started. 7 days later patient's condition was still worsening. Culture results confirmed fungal infection (*Acremonium kiliense*) and showed its resistance to amphotericin B and others commonly used antifungal drugs. Voriconazole was prescribed hoping to manage the infection but no improvement was seen. Finally, the patient underwent left perforating keratoplasty in the hope of removing the infected corneal tissue and potentially improving his vision. One month later, the patient presented with a clear corneal transplant and a visual acuity of 0.1 OS. There was no evidence of recurrent fungal infection in the corneal graft.

Conclusions:

1. Contact lenses are considered a safe and effective form of vision correction, yet treated carelessly, may cause severe complications.
2. Self-determined discontinuation of a treatment carries dangers like recurrence of an infection, increased pathogen resistance and more complicated course of a disease.

[356]

Gastrointestinal stromal tumour presenting in a Meckel's diverticulum in a 23-year-old male patient

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Background: Meckel's diverticulum is a congenital defect of the gastrointestinal tract occurring in approximately 2% of the population. Tumours of the Meckel's diverticula are uncommon and observed in 0.5% – 3.2% of cases. Of these tumours, 12% are gastrointestinal stromal tumours (GISTs). Of all complications reported in a Meckel's diverticulum, haemorrhaging accounts for only 11.8%. The most common presentation of GISTs is acute or chronic gastrointestinal bleeding. This paper presents the case report of GIST causing Meckel's diverticulum haemorrhage.

Case: A 23-year-old man presented with a subsequent episode of gastrointestinal bleeding manifesting by melena and anaemia. Physical examination revealed tenderness of the right iliac fossa medially without peritoneal signs. In history, the patient reported 3 previous episodes of gastrointestinal bleeding that resolved spontaneously. Also, the patient underwent several diagnostic tests including: double-balloon enteroscopy, capsule endoscopy, Meckel's scan, and after admission to the clinic: gastroscopy, abdominal x-ray, abdominal ultrasound, CT angiography, which detected no significant abnormalities. An exploratory laparoscopy was done. The inspection of small intestine revealed Meckel's diverticulum situated 50 cm from the ileocecal valve. Meckel's diverticulum was removed using a GIA stapler. Histopathological examination revealed an ectopic

gastric tissue and an adherent GIST involving the entire wall of the small intestine with a diameter of 4 cm within the Meckel's diverticulum. Mitotic activity was estimated to be 0 mitosis per 50 high-power fields. Immunohistologically, the tumour cells showed strong positive reaction to CD117, Ki 67 showed a proliferation rate of 3%. The GIST advancement was assessed as AFIP prognostic group I. The patient was discharged in a general good condition.

Conclusions: GIST of the Meckel's diverticulum is a rare condition. Meckel's diverticular tumours should be taken into account during the differential diagnosis of obscure gastrointestinal bleeding. Preoperative diagnosis using standard diagnostic procedures may be impossible. In this case surgery is considered the standard treatment and, based on AFIP, the prognosis is very good.

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V.A.C treatment of epiintestinal implant infection. Case Report

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Background: Despite the dynamic development of medicine in the twenty-first century, clinicians have still problems with treatment of implant infection. Our case refers to the patient who after plastic surgery of giant abdominal hernia turned out to have implant infection in the form of epiintestinal mesh.

Infection has contributed to dispersion of the wound and complications in healing.

Negative Pressure Wound Therapy also known as V.A.C was employed in the treatment.

Case: 46 year old man was admitted to the Surgical Ward because of enormous size of abdominal hernia. At the moment of admission, on 10th June 2015, the patient was complaining about having strong pain in his stomach, periodically there was a stuck of hernia.

Because of ailments, patient's quality of life dramatically decreased.

The surgery from 15th June 2015 went without any complications.

After 4 days, there was a dispersion of the wound and leakage of 200ml yellowish fluid of unknown origin.

V.A.C Therapy with silver coating was initiated.

On 24th July 2015 patient was discharged from the Surgical Ward in overall good condition with recommendation to continue V.A.C Therapy as an outpatient.

6 months after surgery, patient has returned to his working life and there is no mark of hernia right at the moment.

Conclusions: Despite the fact that the removal of implant is still regarded as the „gold standard” in treatment of post-operative complications such as a wound contamination, NPTW therapy seems to be more effective alternative. Thanks to this therapy to this therapy, wounds are healing faster and there is no motoric disfunction caused by removal of the implant.

[358]

Deployment of 3-D printers in pre-op planing for a patient with musculoskeletal deformities of right forearm

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Background: 3-D technology becomes more and more popular in medicine. Thanks to CT scans, we are able to elaborate data and print bones models for better preoperative preparation. Moreover, it allow us to design necessary equipment such as imlants or unike tools.

Case: In 2014, 8 year old girl was diagnosed with musculoskeletal deformities of right forearm. Deformities involved both radius and ulna. In two years malformation got exacerbated. The patient suffered from the limited range of movement with lack of supination. CT scans were performer. Malformed bones models were designed and printed by 3-D printer. Doctors conducted manual preoperative plannig using printed bones. Later, the team used computer program to analise and visualize effects of their modiffiactions. Having that knowledge, unike implants and instruments were desinged and virtual surgery was performer. The whole procedure has been

worked out step by step, each difficult moment of surgery was trained. That reduced operation time and risk of setbacks. Surgery was performed in June 2016. After six months of supervision, patient is in a good condition, the range of movement of the right forearm is slightly limited in comparison to left forearm and movements are painless. In RTG scan bones are completely rebuilt.

Conclusions: Technology development, reduction of manufacturing costs and common access to 3-D printers support standard procedures more and more. It enable us to personalize tools and implants due to non-standard operations, prepare more precise surgery and decrease level of complications.

[359]

„Rapid growth of gigantic intra-abdominal desmoid tumour during pregnancy and successful resection after delivery”

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Background: Desmoid tumours are locally aggressive neoplasms with no known potential for metastasis or dedifferentiation. They account for 0.03% of all documented neoplasms. Pregnancy has been reported as a risk factor for desmoid tumour progression or recurrence because of the presumed role of oestrogens in desmoid growth. Pregnancy-related intra-abdominal tumours are extremely rare and their clinical behaviour can be unpredictable and challenging when they arise in the ante-partum period.

Case: We present a case of a 32-year-old woman who had been diagnosed with an intra-abdominal mass during fetal assessment ultrasound performed at 25 weeks of gestation. Considering characteristics of the mass, the first diagnostic presumption was that of 2 fibroids. At 31 weeks of gestation she was admitted to the hospital with complaints of shortness of breath, abdominal pressure and difficulties to lie on a back. On examination a significant growth of the intra-abdominal mass with signs of necrosis was observed. Following this, due to worsening mother state and a vast increase of inflammatory markers, planned Caesarean section at 32 weeks of gestation was performed. Following the delivery of a live newborn intraoperative evaluation of intra-abdominal mass by multidisciplinary team of surgeons was performed, no connection with uterus and adnexa were observed and decision was made not to intervene. After performing post-operative CT scan gastrointestinal stromal tumour was suspected, inflammatory markers continued to grow and was decided to resect a tumour. A patient was successfully treated with a complete surgical resection of a 40x30x25 cm in size and 8140g in weight tumour arising from terminal ileum and mesentery of caecum. Also, right hemicolectomy with 50cm of terminal ileum resection and ileotransverse end-to-side colostomy was performed. However, post-operative histological examination revealed an intra-abdominal desmoid tumour. Patient had no complications and was discharged on post-operative day 10.

Conclusions: Although pregnancy-associated desmoids are extremely rare they should be a part of differential diagnosis in a rapid growth intra-abdominal mass assessed during pregnancy. Intra-abdominal desmoid tumours which arose during pregnancy pose management challenges due to the low incidence, variable disease progression, local aggressiveness and lack of randomized clinical trials investigating treatment approaches. An individual approach for every patient is required.

[360]

An incidental finding of a tracheal septum forming a double-lumen trachea in a 61-year-old patient

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Background: The aim of this case report is to present an incidental finding of a firm tracheal septum in a 61-year-old woman. A review of the literature on such anomalies suggests tracheal bronchus, obstructive pseudomembrane as a complication of endotracheal intubation or infections, pleural junctional line that could

give a false impression of a septum or tracheal secretions. A tracheal septum as a congenital defect has not been previously reported in humans.

Case: The patient was admitted to the hospital with mild dyspnea and preliminary diagnosis of a tracheal subglottic stenosis. During microlaryngoscopy, just below the subglottic stenosis, a firm, vertical symphysis (septum), forming a double-lumen trachea was found. There was no record of any previous difficulties with intubation - during nephrectomy, laparoscopy or hysteroscopy. CT scan performed after the microlaryngoscopy revealed an airway branch with a 7mm diameter arising from the trachea at the level of thyroid gland and joining its lumen 20mm below. As the patient's general condition after the dilatation surgery was stable, the patient was released and instructed to return for a follow-up in an outpatient setting. A bronchofiberscopy and an observation for proliferative diseases and microinjuries is to be performed.

Conclusions: Radiologic and endoscopic findings in the presented case do not resemble the conditions described in the literature, as the discovered septum does not have a pseudomembranous nature (that could arise as a result of trauma or infection) nor does it form a tracheal bronchus. Therefore, the finding is thought to be a congenital defect with minor influence on the patient's clinical condition.

[361]

Carcinoma of external auditory canal

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Background: Carcinoma of external auditory canal (CEAC) is known to be very rare with a rate of 1-6 per million people. It represents only 0,2% of malignant head and neck tumors. This type of tumor affects mostly people over age of 50 regardless of gender. The most common type of CEAC is a squamous-cell cancer. The most frequent symptoms of CEAC are ear ache, oedema in ear area, hearing deterioration, otorrhea or bleeding from ear canal, head ache and dizziness.

In most cases treatment relies on surgery that may be complemented by radiotherapy. In inoperable cancers, chemotherapy may be applied. Depending on the classification of CEAC there are performed extended resections of external auditory canal, lateral, subtotal or total petrosectomy. Additionally, the resection of parotid gland, concha of ear and surrounding lymph nodes is sometimes needed.

Case: A 56 years old female patient attended the otolaryngologic clinic due to ear buzzing lasting a few months, periodic otorrhea and hearing deterioration. Patient denied having head and ear ache or dizziness.

In otoscopic examination there was identified a tumor in the right ear meatus. It was filling almost the entire canal. There was no paresis or paralysis of right facial nerve detected. Biopsy confirmed the presence of squamous-cell cancer. The tumor was diagnosed using CT, MRI and USG. Computer imaging presented invasion of temporal bone and temporomandibular joint.

Doctors decided to perform lateral petrosectomy. During the operation, there was revealed the invasion of anterior wall of ear canal, capsule of temporomandibular joint and parotid gland. The isolation of facial nerve was necessary. While resecting the tumor and parotid gland, neurotmesis occurred. The facial nerve was stitched up. Invaded joint and mandibular nerve were also resected. All sections taken during operation were invaded, but the exposed fragments of meninges seemed to be free of cancer invasion. At the end of the procedure surrounding lymph nodes and submandibular gland were also resected. Tissue defects were filled up with adipose tissue from abdomen.

The recuperation of the patient went smoothly, but the functions of the right facial nerve were not recovered.

Conclusions: The presented case shows that despite extended computer imaging, it is very difficult to assess tumor invasion of surrounding tissues properly. Cancer involved more tissues than estimated before the operation. Due to complicated localization, the total resection of cancer cannot be confirmed.

[362]

Inaccuracy of a contemporary high resolution (1024x1024) digital angiography in evaluation of a left main coronary artery stenosis. A case series study documenting the unique role of a high-quality intravascular ultrasound for the left main precise evalua

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Background: A significant narrowing of a left main coronary artery (LMCA) results in a large ischemic territory and thus impacts patients' mortality. Its identification is commonly carried out with invasive angiography, performed currently with digital angiographs featured with high-resolution detectors (1024x1024 pixels). Despite that, frequently it is hard to establish a diagnosis and thus an intravascular ultrasound (IVUS), characterized with a bigger spatial resolution and tomographic view, is used to verify LMCA anatomy.

Case: To present a case series of 4 selected patients (mean age 65.5 ± 7.2 years, 1 ♀) with ambiguous LMCA anatomy recognized with AXIOM Siemens™ 1024x1024 angiograph and defined with visual semi-quantitative assessment as 40-70% DS, in whom high-quality IVUS (Galaxy™2 & 40 Mhz Atlantis SR Pro transducer) was performed. We give a detailed angiographic and IVUS insight into the anatomy of various configurations of LMCA narrowing (e.g. ostial vs distal lesions), accomplished with volumetric analyses of IVUS and a series of respective angiographic pictures selected from loops taken at 15fps. Further, we performed quantitative coronary analyses presenting data on %DS and minimal lumen cross-sectional areas.

Conclusions: Our study, illustrated with a series of detailed angiographies and complementary IVUS pictures, provides a practical (dynamic and realistic) and unique insight into the most frequent scenarios of LMCA narrowing.

[363]

Total aortic replacement in a 59 years old woman

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Background: Aortic dissection is a serious condition treated by open or endovascular surgery associated with high risk of morbidity and mortality[1]. Acute aortic dissection occurs in about 3 person per 100,000 per year. Surgical management of acute aortic dissection is connected with high mortality rate.

Case: A 59 years old female with moderate hypertension presented in March 2010 to the cardiac surgery department for replacement of ascending aorta due to aortic dissection type A. In May 2010 CT showed persistent distal dissection. The aortic arch has been replaced. Five months later main branches of abdominal aorta were supplied using bypass from left external iliac artery called octopus procedure. Next stage of treatment was endovascular stent-graft implantation to descending thoracic and abdominal aorta. One month later there was another endovascular procedure performed - an implantation of bifurcated stent-graft to abdominal aorta below renal arteries and both common iliac arteries. Patient had no postoperative complications. Post operational imaging studies indicated good perfusion of internal organs and CNS without endoleaks.

Conclusions: Treatment of aortic dissection spreading to whole length of artery is possible with step-by-step procedures. Combination of open and endovascular operations helps to minimize the risk of complications.

[364]

Difficulties in treatment a sex cord-gonadal stromal tumour by 19-year-old patient

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Background: Sertoli-Leydig cell tumour is a very rare tumour, which comprises about 0,2 % malignant of ovarian cancers. It occurs more often before the age of 30 and is connected with menstrual disorders like oligomenorrhoea or amenorrhoea. Treatment is individualized and depends on the age of the patient and the stage of the cancer based on the FIGO Classification. The gold standard is a surgical treatment. Range of operation is related to the age and ability of reproduction of the patient. Combined chemotherapy is proposed as an adjunctive therapy.

Case: A 19-year-old patient with a histological diagnosis of Sertoli-Leydig cell tumour was admitted to Clinic for follow-up treatment. Three months before, the patient was operated for the first time because of an ovarian cyst with diameter 7cm and polymorphic, soft structure located on the left ovary. The histopathological result of enucleated cyst was Sertoli-Leydig cell tumour stage IC based on FIGO classification so six weeks later the patient was re-operated and laparoscopic left adnexectomy was performed. Computer tomography of abdomen revealed enlarged groin and regional iliacal lymph nodes. After admission to the Clinic patient was proposed to have second-look laparotomy with staging. Because of disagreement of surgical treatment the patient was qualified to paclitaxel and carboplatin chemotherapy. Additionally, biopsy of the cervix and curettage of cervical canal was performed because of cervical dysplasia. Histopathological result revealed an ectopic and dysplasia to follow-up. First line of chemotherapy containing six courses was administered every three weeks. The tolerance of the treatment was good. After six courses, patient presented for a follow-up examination. In computer tomography of abdomen no signs of recurrence or metastases were revealed.

Conclusions: The gold standard of malignant gonadal ovarian tumour is a surgical treatment. Range of surgical procedure depends on stage, age and reproductive plan of the patient. In this case, due to the patient's refusal for a surgical staging, the conservative therapy was chosen as the best available option based on platinum-based antineoplastic and taxanes. Furthermore, this could be an effective treatment for Sertoli-Leydig cell tumour. The low grade of cancer staging gives the best prognosis and high 5-year survival rate.

[365]

Thymoma resection performed by video-assisted thoracoscopic surgery

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Background: Thymoma is a rare tumor, originating from the epithelial cells of the thymus. The resection of thymus with adjuvant chemotherapy is the treatment of choice in that cases. The distant outcome of that treatment depends on the local radicality of resection - complete removal of tumor and invaded mediastinal structures. Most often operation is performed using sternotomy, but in that case less invasive method was performed- video-assisted thoracoscopic surgery (VATS).

Case: 56-years old patient, treated for pulmonary mycobacteriosis, had the computer tomography examination and the mediastinal tumor was discovered accidentally (3x3,5 cm diameter). Tumor was invading the pericardium, the phrenic nerve, mediastinal pleura and the lung. Patient was admitted to the Thoracic Surgery Department, in order to perform invasive diagnostics. Endobronchial ultrasound transbronchial needle aspiration (EBUS-TBNA) was performed. There wasn't any histopatological diagnosis. Despite of the local malignancy patient was qualified for surgical treatment. Operation was performed in December 2011, using minimally invasive method, which was the right sided video-assisted thoracoscopy. The thymus invaded by tumor, mediastinal pleura, pericardial wall, right phrenic nerve and the right lung's parenchyma were radically resected. Postoperative period was without any complications and patient was discharged home five days after operation in good general condition. Four series of adjuvant ADOC system chemotherapy were applied. In distant outcome local recurrence of the tumor was not observed, but some metastases in liver were detected. They were treated by partial liver resection with thermoablation and the second-line chemotherapy.

Conclusions: Presented case study is very interesting because of two things. Firstly it is a really rare type of mediastinal carcinoma. Secondly because of the fact that despite of the local malignancy of the tumor there was used minimally invasive method of treatment with the good final result. It seems, that in some cases videothoracoscopy could replace the traditional sternotomy. It decreases the operative trauma and the risk of the post-operative complications. It also helps patients to fast return to their full activity.

[366]

Triple Cesarean Scar Pregnancy

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Background: 15% of couples in Poland suffer from infertility. In vitro procedures are successfully ended in around 29,8%, out of which around 2% of pregnancies are multiple pregnancies.

According to WHO around 40% of pregnancies in Poland are ended by cesarean section, and this number is still constantly growing. Each year more women are exposed to the complications related to that medical procedure.

When it comes to the in vitro procedure done in a patients with a previous cesarean section in their medical history, there appears a risk of fetal implantation in the cesarean scar in uterus. It is a life-threatening condition that can lead to uterine haemorrhage by dilatation or curettage because of improper site of implantation.

Case: Patient, 32 years old, second pregnancy, second birth was admitted to the Gynecological Endocrinology Clinic in the 7th week of pregnancy, because of suspicion of heterotopic pregnancy. During the ultrasound examination there was one, alive fetus located in the cavity of uterus and a bigeminal pregnancy (dichorionic, diamniotic) with one alive fetus and one empty gestational sac implanted in the uterine scar.

The course of pregnancy was complicated by hypothyroidism and polycystic kidney disease and a previous cesarean section in 2013.

After the agreement of Bioethical Commission, patient was qualified to the selective embryo reduction procedure in the uterine scar that was performed under the guidance of ultrasound by injection of 2,5ml of 10%KCl. The procedure was repeated one day later.

In the control ultrasound done right after the second procedure, there was no heart rate of fetus implanted in the cesarean scar.

In the 3rd week after the embryo reduction in the uterine cavity there was seen one alive fetus, growing properly. In the cesarean scar there was a slight trophoblast abruption.

The course of pregnancy till the end was proper. In 39th week of pregnancy there was born a healthy neonate by the planned cesarean section.

Conclusions: Heterotrophic cesarean scar pregnancy is a very rare form of heterotopic pregnancy.

Selective embryo reduction may constitute a safe, minimally invasive and reliable way to terminate the heterotopic gestation and preserve intrauterine pregnancy.

In 5% of cases, the procedure is complicated by miscarriage of properly implanted fetuses.

[367]

Multiple primary lung cancer in a patient with long – term nicotine addiction

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Background: Multiple primary lung cancer (MPLC) represents an uncommon type of the primary lung cancers. MPLC refers to two or more primary cancers in different sites of one or both lungs, with either consistent or different histology but no association between them. Based on the time when the tumors are identified, the

disease can be classified as synchronous or metachronous. Recently the number of detection of MLPC has significantly increased because of more frequent usage of modern imaging methods. Considering the lower survival rate in patients with sMPLC than those with primary cancers, we often have to take advantage of an aggressive surgical approach. The purpose of this case is to present the significance and the role of surgical treatment - VATS and thoracotomy in our patient with synchronous MPLC.

Case: A 69-year-old male patient, ex – smoker, was referred to the hospital for the surgical removal of tumors from both lungs, seen on chest X – ray. His physical examination findings were normal. Patient denied any dyspnoea, hoarseness, cough - feeling sore throat was the only symptom he presented. On CT and FDG - PET showed two masses in both lungs. One tumor in the apical segment of the left lower lobe was adherent to the pleura and descending aorta, without infiltration. Examination of the biopsy showed squamous cell carcinoma. Second lesion detected on scans was peripheral in the right upper lobe and adherent to the surface of the pleura. Because the result of histopathological examination of specimens taken from the right upper lobe was consistent with adenocarcinoma, the diagnosis was - MPLC. Patient was qualified to operation – first, the left inferior lobectomy and mediastinal lymphadenectomy were performed, using VATS, which was complicated by chylothorax. The second operation, anterolateral thoracotomy with right superior lobectomy and mediastinal lymph node dissection, was performed two and a half months later. Patient was discharged 8 days after the operation in a good condition.

Conclusions: It is highly important to distinguish intrapulmonary metastasis from MPLC. This differentiation can be in some cases very difficult. However, in all patients, especially patients with nicotine dependence, who have more than one lesion, the possibility of MPLC should be considered. Surgical resection can offer the greatest chance for long-term survival in patients with MPLC. Nonetheless, selecting an approach should always depend on the type of tumor and patient's condition.

[368]

Adult intussusception and mechanical bowel obstruction secondary to mucinous carcinoma of transverse colon – a case report

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Background: Intussusception is one of the causes of mechanical bowel obstruction. Intussusception usually occurs in infancy and concerns the small intestine. It occurs infrequently in adults (<1% of cases), over 50% of cases concern the large intestine. 10-12% of adult cases are caused by a focal lesion acting as a lead point: Meckel's diverticulum, the appendix, polyps and neoplastic lesions. Adult morphology of intussusception merits emergency operative treatment.

Case: 81-year-old woman with a history of internal diseases was urgently admitted to surgical ward due to bowel obstruction caused by transverse colon intussusception. The patient reported recurrent colic abdominal pain lasting more than 6 months, relieved by non-steroidal anti-inflammatory drugs. Two days prior to admission the pain persisted despite that treatment, the patient reported nausea, vomiting and failure to pass flatus and stool. On examination, the abdomen was soft, moderately tender on palpation, signs of peritonitis were absent. The patient lost 15kg in 6 months, over 20% of her weight. Laboratory results indicated malnutrition: albumins 3.2 g/dl (norm 3.5-5.2), total protein 5.19 g/dl (norm 6.0-8.0). Computer tomography showed the distal part of transverse colon folding into descending colon, thickening of descending colon wall to 18mm, local lymphadenopathy with enlargement to 8mm, transverse colon and descending colon dilation to 76 mm, presence of fluid levels. Emergency laparotomy was performed, intraoperative findings included invagination of transverse colon, with the head of intussusception extending to descending colon, dilation of transverse and ascending colon. Hemicolectomy with end-to-end anastomosis was performed. A transfusion of 2 units of red blood cells was needed. Postoperative recovery was uneventful, parenteral nutrition was introduced in the first day after the surgery, oral nutrition after 6 days. The patient was discharged 8 days after the procedure in good general condition. On histopathological examination, mucinous carcinoma infiltrating the entire wall of colon was found, without lymph node involvement: Dukes classification stage B, Astler-Coller stage B2, TNM stage T3 N0 M0. The patient refused chemotherapy and remains under outpatient care, with no symptoms of recurrence.

Conclusions: Colon cancer should be suspected as the leading point in all cases of adult bowel obstruction caused by large bowel intussusception, especially in patients with long history of increasing symptoms.

[369]

Acute pancreatitis complicated with paraplegia due to thrombosis of Adamkiewicz artery: a case report

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Background: Acute pancreatitis is an acute inflammatory process of the pancreas, which might cause several complications and in severe cases mortality may reach 30%. The increased clotting activity of the blood is a common phenomenon correlated with acute pancreatitis. The Adamkiewicz artery is the only major arterial supply feeding the anterior spinal artery along the lower thoracic, lumbar and sacral spinal cord. Observed patient developed thrombosis of the Adamkiewicz artery manifested by paraplegia which is a quite unique complication of the acute pancreatitis. No similar cases were found in medical literature.

Case: 37-year-old man was primary admitted to local hospital with severe upper abdominal pain and lower limbs paresis. Acute pancreatitis was diagnosed. After a couple of days patient was transferred to the Department of General Surgery and Transplantation of hospital of Medical University of Warsaw due to complications – pancreatic cyst, paraplegia and increasing multiorgan failure. In the second week of hospitalization the patient underwent two laparotomies consisting of cholecystectomy, omentectomy and drainage of the cyst. After surgery the pancreatic fistula was observed with secretion of up to 500ml fluid per day. In view of neurological complications angio-MR and specialists' consultations were performed. They proved demyelination or ischemia with the final discovery of Adamkiewicz artery thrombosis. Due to the fistula treatment patient was transferred to another hospital for ERCP. During the procedure he had sudden heart arrest with ventricular fibrillation. After successful resuscitation he waited one more week and in the stable condition he underwent ERCP once again. The prosthetics of Wirsung duct was implemented. Finally, in good general condition and without fistula symptoms patient was released from the hospital for the intensive neurorehabilitation.

Conclusions: Paraplegia caused by thrombosis of Adamkiewicz artery is an extremely rare complication of acute pancreatitis. As the case shows, it needs to be considered in severe cases with neurological symptoms. Administration of thrombolytic treatment should be deliberated in cases of severe thrombosis of Adamkiewicz artery in the future. Acute pancreatitis like majority of severe disorders needs preventative low-molecular-weight heparin administration. These patients also ought to have bedside rehabilitation involved into treatment.

[370]

Extraordinary coincidence of tethered cord, filum terminale lipoma and spinal dural arteriovenous fistula in a pregnant women. Case report

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Background: Tethered cord syndrome is a neurological disorder caused by abnormally low conus medullaris. Coexistence of intradural lipoma is a frequent finding and clinical symptoms are a target for surgery. Yet, coincidence of tethered cord syndrome (TCS) and spinal dural arteriovenous fistula (SDAVF) on sacral level is very uncommon and unexpected.

Case: A 30-year-old female presented with a history of a 10 years of pain in lumbosacral spine with casual radiation to both lower limbs. After her second pregnancy, she experienced 1 year of decreased power and sensation in lower limbs, balance disorders and 6 months of urinary and bowel incontinence. MR imaging demonstrated the tethered cord syndrome with filum terminale lipoma, widened garlands of veins on the spinal cord surface and myelopathic changes on thoracic level. Because of suspicion of SDAVF, a digital subtraction angiography (DSA) was performed, however it showed no abnormal changes. After delivery of the child and postpartum period, the patient was qualified for the surgery for detethering the cord. Nevertheless, during the surgery the SDAVF was indeed found at the S4 level. The SDAVF was disconnected, followed by detethering of filum terminale. The postoperative course was uneventful and in a 10-month follow-up neurological status of the patient has considerably improved with almost no incontinence nor motor deficit. A follow-up MRI showed the resolution of the myelopathic changes.

Conclusions: Such exceptional coincidence of the different conditions in some cases may be not excluded using the standard check-up “by the book”. Up to date, this is a third case of TCS, lipoma and SDAVF coincidence ever reported. It should be a remainder that even in a slightest suspicion of SDAVF, the range of spinal DSA should be broaden to exclude rare sacral SDAVF.

[371]

Huge left-sided traumatic diaphragmatic hernia treated with thoraco-phreno-laparotomy in 34-years old female

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Background: Diaphragmatic rupture usually results and occurs in about 5% from blunt abdominal trauma, which is often associated with motor-vehicle accidents and hence a predominance of young males. Rupture of the diaphragm is almost always associated with herniation of abdominal organs into the chest cavity, which is called a traumatic diaphragmatic hernia. Surgery is needed to repair a torn diaphragm especially when it is accompanied by obstruction of bowels and other internal organs. The procedure which can be performed is thoraco-phreno-laparotomy.

Case: We would like to present a case of 34-years old female who was transferred to our department in emergency case with suspicion of bowel obstruction caused by diaphragmatic hernia. A day before the patient was found with vomiting, abdominal pain and constipation. The patient gave history of multi-organ injury in 2004 including tetraplegia, psychoorganic syndrome and epilepsy. 2 years ago patient refused surgical treatment. On admission the condition of patient was severe. She was found with symptoms of bowel obstruction and dyspnea at rest. Due to condition of patient she was qualified to emergency surgery. After left-sided thoracotomy intrasurgical examination showed whole pleural cavity filled with enlarged intestinal loops, abdomen and part of colon. The localization of strangulation was found and then released. Unfortunately the reduction of diaphragma to abdominal cavity was unsuccessful. The final surgery was delayed and thorax closed. During next surgery which was thoraco-phreno-laparotomy the small intestine after multiple made manual procedure was finally reduced to stomach and then using stomach tube again reduced. The effect was collapse of the enlarged bowels. The content of hernia was gradually reducing to abdominal cavity concurrently with sewing up the diaphragm. The patient was discharged in a good condition.

Conclusions: Traumatic diaphragmatic hernia is always indication for surgery due to the fact that lacerations will not heal on their own. Even though a surgery is long and sophisticated early treatment is crucial for avoiding severe complications associated with prolonged diaphragmatic rupture and herniation of internal organs. Thoraco-phreno-laparotomy is an effective type of surgery which can provide patients full healing.

[372]

Importance of Diagnosing Medium Arcuate Ligament Syndrome (MALS) in an Asymptomatic Liver Transplant Patient

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Background: MALS, also known as celiac axis compression syndrome or Dunbar syndrome, is a rare and nonspecific disorder, first described by Harijola in 1963 and Dunbar in 1965. In MALS, the median arcuate ligament, a fibrous arch that connects the diaphragmatic crura on either side of the aortic hiatus, compresses the celiac trunk due to the abnormal position of either the celiac trunk or the median arcuate ligament. MALS typically presents in women (4 :1), aged 40 to 60. Usually patients are asymptomatic, however common clinical features include : postprandial abdominal pain, unintentional weight loss, nausea, vomiting, and abdominal bruit. Diagnosis of MALS is confirmed with positive findings on computer tomography (CT) or magnetic resonance

angiography combined with duplex ultrasonography (USG). MALS is treated with the surgical release of the median arcuate ligament and celiac ganglionectomy.

Case: 41 year old female presented with numerous inflammatory changes in the liver, which were later confirmed ,with CT and histopathological analysis, to be unresectable epithelioid hemangioendothelioma of the liver. Physical examination was normal. The patient denied abdominal pain, weight loss, nausea, vomiting, jaundice, fatigue, or GI bleeding. The patient underwent a piggy-back method liver transplant. After the transplantation, USG and CT showed no flow within the left and right hepatic arteries or within liver, resulting in ischemia of the liver. The patient was retransplanted six days later. During the retransplantation, hepatic arterial flow was not establish until the resection of the median arcuate ligament.

Conclusions: Patient did not present any typical symptoms and no positive findings on CT were described for MALS. Duplex USG was not performed. Simple further analysis of the CT scans and the introduction of low cost duplex ultrasound could have prevented ischemia , and thus retransplantation. Due to the nonspecific and frequently absent nature of the symptoms of MALS, diagnosis of the disorder in liver transplant patients should be based primarily on CT angiography with duplex USG. MALS should also be considered in the differential diagnosis of all liver transplants to avoid serious ischemic complications.

[373]

A case of disseminated peritoneal leiomyomatosis after two laparoscopic procedures due to uterine fibroids

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Background: Disseminated peritoneal leiomyomatosis (DPL) is a rare disorder characterized by the presence of multifocal nodules and tumors composed of proliferating smooth muscle tissue, spread throughout the peritoneum. Estrogens and progesterone are considered to be the main factors initiating the formation of disseminated leiomyomatosis. DPL is often asymptomatic, and acyclic vaginal bleeding or pain in the lower abdomen is associated with leiomyomatous rebuilt of uterus corpus.

Case: The 39-year-old multipara was admitted to hospital due to a tumor-like change, located in the proximity of the cervical stump, found during a transvaginal ultrasound control scan. In 2011 the patient underwent laparoscopic fibroid enucleation surgery. In 2013 she underwent laparoscopic amputation of the uterine corpus due to numerous fibroids. In both cases fibroid morcellation was performed.

One and a half year later transvaginal ultrasound scan revealed a mobile, solid tumor with regular shape and size of 83 × 61 × 60 mm. Magnetic resonance imaging of the abdomen and pelvis revealed a heterogeneous, richly vascularized tumor of the same size as mentioned above. Increase in size of internal iliac lymph nodes was an additional magnetic resonance imaging (MRI) finding. The patient's laboratory tests were within the normal range. Due to the suspicion of a proliferative process the clinical team decided to perform laparotomy surgery.

A tumor 8 × 7 × 6 cm in size coming out of a peritoneum was found during surgery. Multiple smaller tumors (3 cm in size) coming out of the peritoneum, intestinal appendices, pelvic ligaments and bladder wall were also present. On both sides ovaries were unchanged. The operating team decided to remove all the changes from the peritoneum, the bowel mesentery and omentum as well as to remove the cervix and both ovaries. Bilateral lymphadenectomy was also performed. The patient was discharged home on the fifth day after surgery in good condition. After 6 months the patient does not report any gynecological ailments.

Conclusions: Disseminated peritoneal leiomyomatosis is a very rare disease. It requires differentiation from other peritoneal tumors for the best solution choice. Laparoscopy on uterine fibroids may be a cause of DPL occurrence, particularly in the case of incautious morcellation. Surgery remains a mainstay of treatment when hormone therapy can be offered for patients who do not agree to undergo surgery or are in a high stage or severity of the DPL disease.

[374]

Acute hydrocephalus due to third ventricle colloid cyst - an uncommon reason for rapid deterioration

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Background: Colloid cyst of the III ventricle is a rare entity which, despite its benign histopathological character, may lead to a life-threatening condition. Most colloid cysts are incidental findings and prove to remain unchanged in long term observations. Although due to the lesion's location in the anterior part of the III ventricle the changes in its size and position may lead to obturation in the cerebrospinal fluid (CSF) circulatory pathways and to clinical manifestation of hydrocephalus. The symptomatic patients are a minority and most commonly report slow development of symptoms attributed to hydrocephalus. A small group of patients experiences a rapid onset of the disease – in the literature the risk of sudden neurological deterioration due to an acute hydrocephalus is estimated as 12,3% of symptomatic patients in most recent study. Here we present two cases of patients admitted with an acute hydrocephalus due to third ventricle colloid cyst.

Case: Two patients: a 48 yo male (A) and a 35 yo female (B) were admitted due to sudden onset of severe headache, blurred vision, nausea and vomiting lasting for a few hours. Patient A was admitted in a severe condition with a GCS (Glasgow Coma Scale) score of 4 at admittance with fixed dilated pupils. Patient B was admitted with 13 GCS however she quickly declined to 4 GCS with right-sided anisocoria. After initial computed tomography showing features of acute hydrocephalus both patients underwent immediate surgery upon arrival with placement of bilateral extraventricular drainages. Postoperatively the patient A improved to 7 GCS and the patient B improved to 15 GCS. On the basis of magnetic resonance imaging showing third ventricle colloid cyst the patients were qualified to surgery and underwent resection of the colloid cyst via right-sided transcortical approach. After surgery patient A gradually improved – at discharge he was in a logical contact, periodically fulfilling simple commands and opening eyes at voice. Patient B made an excellent recovery and was asymptomatic at discharge.

Conclusions: Colloid cysts of the III ventricle are uncommon lesions that rarely can block the ventricular system and lead to rapid neurological deterioration due to acute hydrocephalus. Initial bilateral extraventricular drainage at admittance followed by microsurgical resection of the lesion is a proven neurosurgical approach.

[375]

17-year-old boy with spontaneous pneumothorax caused by a cyst located on the upper-segment of the lung

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Background: Teenagers and young adults are the most common group in which spontaneous pneumothorax appears. Few percent of the patients have coexisting connective-tissue disease which can predispose to cysts appearance on upper-segment of the lung. While deep breath or trauma the cyst bursts what leads to spontaneous pneumothorax.

Case: 17-year-old patient was admitted to Emergency Department in Provincial Specialistic Childrens' Hospital in Olsztyn due to a sharp pain on the right side of the chest. Ectomorphic body construction, inadequate tallness comparing to his age group and exceptionally long lower and upper extremities were found in physical examination. Patient was complaining of increasing pain during breathing in. Percussion sound was increased and respiratory murmur was decreased in auscultation on the right side of the chest. No signs of trauma were found. Chest x-ray revealed right-sided pneumothorax. Chest wall drainage was performed. Patient declared big improvement in breathing after the procedure. Due to unknown cause of pneumothorax the patient was admitted to Ward of Clinical Pediatric Surgery and Urology for further diagnostics. Laboratory tests were performed and thoracoscopy was scheduled. Thoracoscopy revealed damages of the lungs. Cyst on right upper-segment of the lung was found, separated with use of automatic stapler and saved for histopathological examination. Patient was discharged in good condition after 5 days.

Conclusions: Spontaneous pneumothorax is a rare disease in pediatric hospitals. Nevertheless, it cannot be forgotten during chest pain differential diagnosis. Spontaneous pneumothorax can be caused by a cyst of the lung. Cyst could be caused by smoking cigarettes by the patient or undiagnosed connecting-tissue disease.

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Multiple complications of acute necrohemorrhagic pancreatitis

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Background: Acute necrohemorrhagic pancreatitis is an acute inflammation of the pancreas accompanied by the formation of necrotic areas and hemorrhage into substance of the gland and is mainly caused by alcohol overuse and gallstones.

Case: In November of 2011 a 40-year-old female was admitted to the Infant Jesus Clinical Hospital in Warsaw due to acute necrohemorrhagic pancreatitis caused by cholelithiasis. Levels of CRP and amylase were increased and computed tomography showed the presence of gallstones, necrosis of the head and body of pancreas and peripancreatic aseptic pseudocysts. Two months later, after performing ERCP, the patient's condition worsened. Computed tomography revealed retroperitoneal abscess, fistula of large intestine localized in splenic flexure and suspicion of a pancreatic fistula. The patient underwent cholecystectomy, necrotic tissue resection, drainage of retroperitoneal space, right hemicolectomy and ileostomy procedure. Initially the wound was dressed with V.A.C. and after a few days the secondary closure was performed. The control CT scans showed the progression of necrosis involving the surrounding fat tissue and enlargement of the peripancreatic pseudocyst. The patient was re-admitted to the hospital presenting with general health deterioration, fatigue, apathy, abdominal pain and polydipsia. There was also a suspicion of chronic pancreatitis. Laboratory tests results showed ketoaciduria leading to type 2 diabetes mellitus diagnosis. Subsequent hospitalization was due to planned restoration of continuity of the gastrointestinal tract, ileostomy reversal and peritoneal drainage. The wound was closed after 2 weeks following negative-pressure wound therapy. Soon the patient also underwent laparotomy in view of a hernia in postoperative scar. The hernia was repaired using natural implant Permacol™. In January 2017 the situation reoccurred. This time the ventral hernia was located in the scar of stomy reversal and repaired with polypropylene implant, which resulted in wound infection being the reason of present hospitalization.

Conclusions: In this case, both cause and early complications were predictable in contrast to subsequent complications like intestinal fistula, type 2 diabetes mellitus, postoperative hernias which were unexpected and required specialized care, long-term hospitalization and follow up.