



14th Warsaw International Medical
Congress

Abstract Book

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Warsaw, Poland

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General Information

Congress Dates

May 10-13, 2018

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

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Congress Internet Service

Website: www.wimc.wum.edu.pl

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Invitation

Dear Colleagues,

On behalf of the Organizing Committee we would like to warmly welcome you to the 14th Warsaw International Medical Congress for Young Scientists. We are more than honoured that you have chosen our Conference as the suitable place to present to the world results of your research. What is more, the fact that you have travelled great distance to spend these four days in Warsaw not only cause that we are very pleased but also gives us more motivation to work harder on the next WIMC editions.

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

For the third time the best participants will present their papers for the wide public on plenary session, during which the notable jury will choose the winner of the 14th WIMC Grand Prix. We have prepared for you a diversified 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 with the Nobel Prize Winner, prof. Robert Lefkowitz.

That will be the second time during this academic year that the Nobel Prize Winner will have lecture on the Medical University of Warsaw. The first visit was in November by marvellous professor Ada Yonath, who gave students a lecture during the 65th Anniversary of The Student Scientific Association. The Organisation without which it would not be possible to establish WIMC.

The 14th WIMC is a result of one-year- long work of over 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 35 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 14th Warsaw International Medical Congress Organizing Committee,



Professor Jakub Gołęb, MD, PhD
Advisor to Student's
Scientific Movement
In the Medical University of Warsaw



President of 14th
Warsaw International
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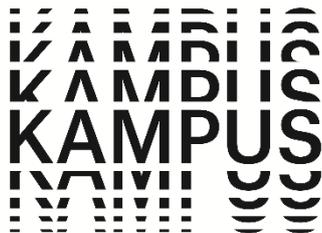
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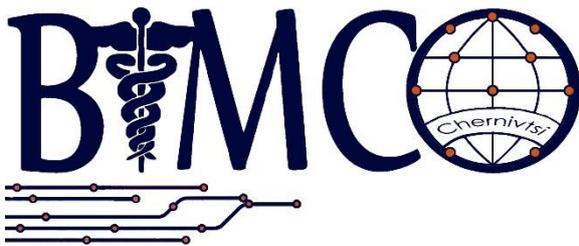
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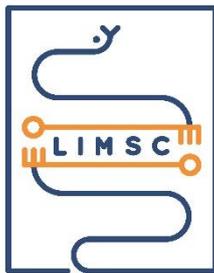
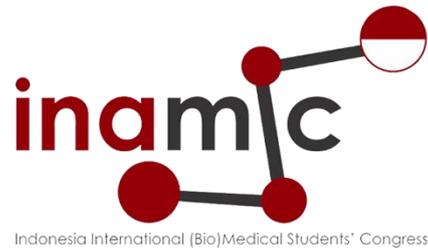
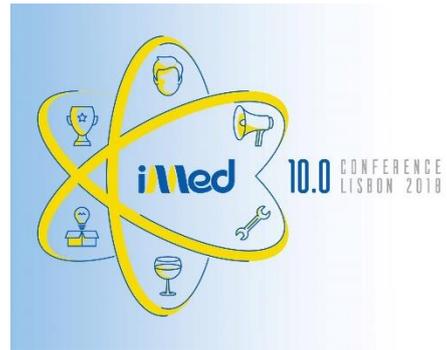


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Date:

Friday, May 11th, 2018

Location:

Room 139/140, Didactics Center

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[1]

Rat microvasculature compensatory reserve in myocardial thermal necrosis

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Introduction: Myocardial infarction can be accompanied by a complex of macrohemodynamic disorders and microcirculatory disturbances in body organs and tissues. Peripheral circulation because of its high safety margin can offset developing tissue metabolism disorders for a certain period maintaining vital tissue homeostasis. Identification of microcirculatory reserve is possible with certain functional tests. Captopril test applied to assess the state of macrohemodynamics can be used as a microvasculature condition loading test.

Aim of the study: The aim of the study was to identify compensatory reserves of the microvasculature of the experimental rat skin with myocardium thermal necrosis.

Material and methods: White outbred male rats had artificial lung ventilation. Laser Doppler flowmeter was used to study the thigh inner surface skin microcirculation. Thermal necrosis was caused in the left ventricle followed by re-registration of dopplerograms. All animals were injected Captopril and 15 minutes later peripheral circulation was recorded.

Results: In 15 min after coagulation, the microcirculation index (MI) of the skin was reduced by 14%, which was accompanied with a 2 time myogenic tone (MT) reduction and a 33% neurogenic tone (NT) reduction vs. the baseline values ($p < 0.05$ in both cases). The signs of decrease in the blood flow into the microcirculatory system were revealed (25% heart rhythms amplitude reduction).

After Captopril administration, the MI was reduced by 18% and became 29.5% lower than the baseline values. In the case, there was a complete recovery of all active regulatory (endothelial-dependent component of tone increased up to 28%, NT to 22%, MT to 38%) and regulation passive mechanisms were sharply depressed (the maximal amplitude of respiratory rhythms – 11 times, and that of cardiac waves – 4.6 times that indicates a decrease in arterial inflow and venous outflow from the skin microvasculature).

Conclusions: Skin microvasculature reaction to myocardium thermal necrosis can entirely reflect the process of hemodynamic centralization in the peripheral blood circulation. Injected Captopril leads to an even greater reduction in the arterial blood influx into the microcirculation system which was accompanied by an increase in all active regulation mechanisms. It can confirm inclusion of compensatory mechanisms at the level of peripheral circulation which can serve as one of the mechanisms to maintain homeostasis in myocardial necrosis, although this phenomenon requires further study.

[2]

Behavioral impairment in rats fed with high-fat diet and restricted in physical activity

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Introduction: Obesity has become a serious epidemical issue nowadays. Millions of adults and children suffer from obesity and its associated diseases i.e. cardiovascular disorders, type II diabetes mellitus, cancer, nonalcoholic fatty liver disease, metabolic syndrome etc. Recent studies confirm the relation between obesity and mental illnesses, such as schizophrenia, bipolar disorder, depression, and dementia. An 'obesogenic' environment that includes consumption of high-calorie foods and reduced physical activity might lead to the impairment of learning and memory.

Aim of the study: The aim of this study was to apply an obesity model using high-fat (HF) diet and restricted physical activity and investigate the correlation between obesity and behavioral changes including locomotion and memory.

Material and methods: 30 male albino rats were randomly assigned into 4 groups: experimental groups with HF diet and normal or low physical activity and control group rats fed with low-fat (LF) diet and housed in standard cages. The physical restriction was achieved by housing the animals in narrow cages for 22 hours per day. The weight gain of the animals was monitored twice per week during 70 days. Open field (OF) and novel object (NO) recognition tests were applied.

Results: Weight gain in animals fed HF diet were higher by 45% than in LF animals ($p < 0.01$). This difference is detected in rats housed both in standard and narrow cages. Adipocytes of physically restricted LF rats were larger by 15% compared to control group ($p < 0.05$). The data collected from NO test shows that physically restricted LF rats spent 42% less time to explore a new object ($p < 0.05$). OF results demonstrate that total active episodes in physically restricted LF rats are less than in control group ($p < 0.01$).

Conclusions: Above-mentioned metabolic alterations prove that combination of HF diet and restricted physical activity provides a valid model of obesity. Not only obesity as a metabolic disorder but also a low physical activity cause changes in

behavior. A balanced diet is not the only target for obese people; a physical activity is also strongly recommended to improve cognitive functions. For further study of obesity-induced behavioral changes more specific tests should be applied.

[3]

Effect of Ivabradine on Remodeling of the Heart and Aorta in Isoproterenol-Induced Heart Failure

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Introduction: The poor prognosis of heart failure makes this issue to be the most prominent problem of the present cardiology. In the SHIFT trial, the blocker of If-channel in sinoatrial node, ivabradine, reduced the sum of mortality and hospitalisations in patients with heart failure. Although the cardioprotective effect of ivabradine is mostly attributed to its heart rate reducing effect, several other pleiotropic mechanisms seem to participate including antiremodeling action.

Aim of the study: The aim of our study was to show, whether ivabradine is able to attenuate the remodeling of heart and aorta in isoproterenol-induced heart failure in rats.

Material and methods: 12-week-old male Wistar rats were randomly divided into four groups (n = 10 per group): controls (untreated), ivabradine (10 mg/kg/day), isoproterenol (5 mg/kg/day) and isoproterenol plus ivabradine. Ivabradine was administered in drinking water for 7 weeks, whereas isoproterenol was administered intraperitoneally for 6 weeks. Systolic blood pressure and heart rate were measured by non-invasive plethysmography (tail-cuff method) once a week. After 7 weeks, rats were euthanized and heart and aorta were removed and processed for morphometric and biochemical investigation.

Results: Isoproterenol induced heart failure associated with decreased systolic blood pressure, increased relative weight of left and right ventricle and increased content of soluble, insoluble and total collagen in the left ventricle. In the aorta, isoproterenol decreased wall thickness and increased collagen I/III ratio. In the isoproterenol group, ivabradine increased systolic blood pressure, decreased heart rate and attenuated left ventricular remodeling in terms of decreased left ventricular relative weight and content of soluble and insoluble collagen in the left ventricle. In the aorta, ivabradine decreased collagen I/III ratio potentially indicating improved aortic elasticity.

Conclusions: We conclude that besides heart rate reduction, the cardioprotective effect of ivabradine in isoproterenol-induced heart failure might be also associated with antiremodeling action of ivabradine on the heart and aorta.

[4]

Fluoroquinolones as a potential candidates for chemotherapeutics for urinary bladder and prostate cancer

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Trustee of the paper: Kamil Szeliski

Introduction: Urinary bladder and prostate cancers are most common and second most deadly group of cancers among men in Poland. Because the main reason of high number of failures in treatment is insufficient efficiency of currently used chemotherapeutics, many studies focus on finding new, more effective ones. Fluoroquinolones are considered to be a good candidates because of documented cytotoxic properties against many types of cancer cell lines and high concentrations they achieve in urine.

Aim of the study: Aim of this study was to determine differences in cytotoxic effect of ciprofloxacin and levofloxacin between cancer and normal cell lines of urinary bladder and prostate.

Material and methods: Four human cell lines were used in this study: normal uroepithelium SV-HUC-1, urinary bladder carcinoma T24, normal prostate epithelium RWPE-1 and prostate carcinoma DU-145. Cells were exposed to different concentrations of antibiotics (25-800µg/ml) for 24 and 48 hours. Changes in morphology of cells were observed under light microscope. MTT assay was used to determine the effect of different concentrations of fluoroquinolones on cells viability. Obtained results were used to calculate LC10, 50 and 90 (concentrations causing death of 10, 50 and 90% of cells). Real Time Cell Analysis using xCELLigence RTCA DP have been done to determine influence of this concentrations on proliferation potential. Additionally cell cycle and apoptosis assays were performed.

Results: The results showed that both ciprofloxacin and levofloxacin induced cytotoxic effect on tested cancer cells in time and concentration depending manner. Comparing levofloxacin to ciprofloxacin efficiency shows weaker effect of levofloxacin on both normal and cancer cells. Real time cell analysis confirmed results obtained with MTT assay. Microscopy

observations showed that all cell lines used for analysis change their morphology and shrink after exposure to high concentrations of fluoroquinolones.

Conclusions: Ciprofloxacin has very promising properties for urinary bladder cancer treatment, because it showed significantly higher cytotoxicity for cancer cells compared to normal uroepithelium in concentrations achievable after oral administration. Results obtained on prostate cancer cell lines suggested that potential use of ciprofloxacin may be possible only with high concentrations. Levofloxacin seems to be less effective than ciprofloxacin.

[5]

The effect of Flavonoid fractions isolated from seeds and skin of different origins Sapheravi grapes on the antioxidant enzymes found in rat liver

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Introduction: As known from the literature, positive impact of red wine on humans is conditioned by its polyphenolic compounds. These compounds are concentrated in seed and skin of grapes, that is considered as a production waste, while we can use these biologically active compounds to produce food supplement or pharmaceutical preparations. Also, we have to mention that the concentration and composition of these polyphenolic compounds is different in the conditions of different microclimates.

Aim of the study: Proceeding from the above, the aim of our study was to determine the effect of flavonoid fractions isolated from seed and skin of Sapheravi grapes, on the antioxidant enzymes in rat liver.

Material and methods: The objects under study were flavonoid fractions extracted from seeds and skin of Sapheravi grapes by using ethyl acetate and ethanol. The grapes had been collected from different regions of Georgia - Khashmi and Jimiti.

At the first stage of the experiment, the liver cells were isolated and incubated as with the initiator of lipids peroxide oxidation and studying objects, after which we detected the activity of liver antioxidant enzymes Catalase (CAT) and Superoxide Dismutase (SOD) by using spectrophotometric method. Also, we determined the change in concentration of Malondialdehyde (MDA), one of the ultimate products of lipids peroxide oxidation.

Results: As expected, the activity of enzymes was increased by 50% after lipids peroxidation initiation. The activity of enzymes was still on the level of control in specimens incubated with flavonoids. The concentration of MDA in lipids peroxide oxidation model was raised approximately by 60%, while in the samples which were incubated also with flavonoids, the concentration was still on the level of control or even lower.

Conclusions: As a conclusion, we can say that the flavonoid fractions derived from the skin and seed of different origin Sapheravi grapes express the high antioxidant properties and compensate the activity of liver antioxidant enzymes SOD and CAT with different intensity.

[6]

Rebound depolarization – the hidden secret of our brains

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Trustee of the paper: Przemysław Kurowski

Introduction: Rebound depolarization is an evoked membrane depolarization following the hyperpolarization of a neuron. During RD, an arriving inhibitory signal is converted into cell excitation. It arouses the interest of the scientific world because RD can be involved in physiological cortical neuron oscillations or in the increase of cortical neuron activity during epileptic seizures.

Aim of the study: The aim of our study was to clarify the cellular mechanisms underlying RD in the medial prefrontal cortex (mPFC) pyramidal neurons.

Material and methods: The experiments were carried out on layer V mPFC pyramidal neurons in slices obtained from 60-day-old rats. Recordings of membrane potential were performed in whole-cell current-clamp configuration in the presence of tetrodotoxin (TTX), glutamatergic and GABAergic blockers in extracellular solution. Therefore, the tested pyramidal neurons were synaptically isolated.

Results: The resting membrane potential in the tested neurons was -67.9 ± 0.95 mV. RD exhibited the following properties: evoked after prior cell hyperpolarization below -80 mV, had a threshold close to the resting membrane potential, an

amplitude of 30.6 ± 1.2 mV. RD was completely abolished by removal of Na^+ from the bath. RD was evoked after blockade of BK channels (paxilline, $10 \mu\text{M}$), removal of Ca^{2+} from extracellular solution or during activation of protein kinase C (PMA, $1 \mu\text{M}$). RD was modulated by metabotropic receptors.

Conclusions: The obtained results suggest that RD in layer V mPFC pyramidal neurons is evoked by the de-inactivation and subsequent activation of a voltage-dependent, low-threshold and TTX-resistant, inward Na^+ current. RD could be observed after preventing BK channel activation.

Acknowledgment: The study was supported by the Medical University of Warsaw (mini-grant number: FW5/NM1/17).

[7]

Respiratory depression caused by vasopressin administration

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Trustee of the paper: Tymoteusz Żera MD, PhD; Professor Jacek Przybylski MD, PhD

Introduction: Although cardiovascular effects of vasopressin (AVP) draw substantial attention, effects of AVP on respiration are mostly neglected. The key stimuli for AVP release include hypovolemia and hypotension. Interestingly, hypovolemia and hypotension also result in increased ventilation. Furthermore, arterial chemoreceptor stimulation (eg. due to hypoxia) causes not only hyperventilation, but also vasopressin release.

Aim of the study: Our goal was to investigate how intravenous AVP infusion affects ventilation.

Material and methods: The study was carried out on adult male Sprague-Dawley rats ($n=6$). The vascular catheters were implanted into femoral vein and femoral artery for intravenous infusions and for recording hemodynamic parameters, respectively. Next, tracheal tube was inserted for recording of the airflow. We measured the following parameters in urethane-anesthetized rats: mean arterial blood pressure (MABP), heart rate (HR), minute ventilation (MV) and respiratory rate (RR). We recorded changes of hemodynamic and respiratory parameters in response to intravenous infusion of isotonic saline (0.9% NaCl, 100 μL) followed by intravenous infusion of AVP at pressor dose (10 ng/100 μL).

Results: Infusion of isotonic saline had no effect on hemodynamic and ventilatory parameters. However, infusion of AVP resulted in a significant increase in MABP and a significant decrease in MV and RR ($p < 0.05$, paired Student t-test).

Conclusions: Our results show that intravenous AVP administered at pressor dose inhibits pulmonary ventilation.

We speculate that vasopressin released during hypovolemia and blood pressure drop counteracts enhanced respiratory drive from arterial chemoreceptors.

[8]

CK20 and CDX2 expression heterogeneity in colorectal cancer

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Introduction: Colorectal cancer (CRC) is the third most common cancer in men and the second most common cancer in women worldwide. The International World Cancer Research Fund predicts that in 2035 global CRC incidence will increase to 2.4 million a year (Ferlay et al., 2012). Most CRC express CK20 and CDX2 (Lassmann et al., 2002), but there are researches that describes intratumoral heterogeneity, what could have an effect on a tumor therapy (Zlatian et al., 2015).

Aim of the study: Our aim was to determine CK20 and CDX2 marker expression heterogeneity in CRC and its relation with depth of invasion, pT and G parameters as well as the relations to surrounding structures.

Material and methods: In a retrospective study 42 CRC cases were selected for further analysis of tumour morphology, grade and pT parameters according to the WHO and the AJCC (Hamilton et al., 2010; Compton et al., 2012) classification. CK20 and CDX2 expression was evaluated in 3 grades (1-light, 2-medium, 3-intensive) and expressed in relative percentages in different depths of tumor (surface of the tumor (TS), middle (TM), invasive front of tumor (IF)), and coefficient of the expression intensity was calculated. Descriptive statistical analysis was performed.

Results: The study included a total of 42 CRC cases, with an average CK20 expression of 1.94 [1.84-2.03] and mean CDX2 expression 1.96 [1.88-2.03]. CK20 expression varied from 2.18 [2.07-2.28] at TS to 1.79 [1.65-1.93] at tumour IF. There were no statistically significant differences in the expression of CK20 in the TS and in the TM ($p > 0.05$). There were statistically significant differences between CK20 expression in the IF of the tumor and in TS ($p < 0.01$). Regarding CDX2 expression no

statistically significant differences were found in TS (2.22[2.06-2.38]) and IF ($p>0.05$), but statistically significantly higher CDX2 expression ($p=0.03$) was found in TM 1.97[1.84-2.11], in difference from CDX2 expression in tumour IF 1.7[1.58-1.87]. Overall, 18 (42.8% [29.1-57.8]) pT3 and 14 (33.3% [21.0-48.4]) pT4, were included in the study group. There was 18(42.8% [29.1-57.8]) Grade3 and 13(30.9%[19.1-46.0]) cases of Grade2 CRC. No statistically significant differences were found in CK20 and CDX2 expression regarding pT and tumour grade.

Conclusions: 1. The obtained data shows that there could be invasion-related heterogeneity of CK20 and CDX2 expression.
2. The most intense expression of CK20 and CDX2 is in the surface of the tumor and the lightest - in the invasive front of the tumor.

[9]

Micro MRI study of the heart development in postmortem human embryos

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Introduction: Being the first functioning organ, the heart's development involves a complex multistep process that starts on the 19th day of embryogenesis. The majority of congenital malformations occur between the third and the eighth week of pregnancy, the congenital cardiac deformations being the most prevalent among newborns.

Rapid progress in medical imaging facilitates the assessment of early human development. However, as the embryonic period has the most dynamic and elaborate process, detailed morphological data is still highly required. Imaging using superconducting magnets (1,5 T to 9 T) has proven its efficiency in the analysis of human and animal embryos. Three-dimensional magnetic resonance micro-imaging (micro-MRI) provides adequate visualisation of human embryos smaller than 21 mm.

Aim of the study: The aim of this study is to provide an exhaustive morphological description of the developing human heart of three embryos in different Carnegie stages corresponding to the 4th, 5th and 8th week of gestation. This critical fast-evolving period in embryology

Material and methods: Three human embryos (Carnegie stage 12, 13 and 23) belonging to the collection of the Morphology Department of the University of Medicine and Pharmacy Cluj-Napoca were analyzed. The acquisition of images was performed using a Bruker BioSpec 70/16USM MRI operated at 7.04 Tesla. All the embryos were very well preserved and carefully examined in order to categorize them into the Carnegie stages revised in 2010.

Results: We were able to provide a detailed description of the morphological characteristics of the developing heart of three human embryos in different gestation stages. The increased spatial resolution made possible the acquisition of high quality micro-MRI images of the embryonic human heart and the 2D and 3D reconstructions allowed us to produce an even more accurate characterization of the aforementioned structures.

Conclusions: This study should be viewed as a descriptive study of the embryonic human heart. Considering that the first trimester of pregnancy is the most dynamic one and the majority of congenital malformations take place in this period it is of utmost importance to understand embryonic morphology and its underlying mechanisms. The micro-MRI plays a crucial role in acquiring high resolution images giving the opportunity of accurate characterisation of an embryonic structure.

[10]

Effects of duodenal-jejunal omega switch surgery and different diet patterns on plasma concentrations of fatty acid binding protein 4 (FABP4), C-reactive protein (CRP), leptin and chemerin, in Sprague-Dawley rats

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Introduction: Adipose tissue depots have been established as highly active endocrine and metabolically important organs that modulate energy expenditure and glucose homeostasis.

Treatment of metabolic imbalance can be improved with the knowledge of pathophysiological relations between obesity, inflammation, insulin resistance, and adipokines.

Aim of the study: To assess the influence of duodenal-jejunal omega switch surgery combined with different diet patterns, on plasma concentrations of fatty acid binding protein 4 (FABP4), C-reactive protein (CRP), leptin and chemerin.

Material and methods: 48 seven-week old male SD rats were randomly assigned to 2 groups. The first one (n=24) was on a high fat diet (HFD) for 8 weeks, while the other (n=24) was fed a normal chow diet (CD) for that time. During the surgery, a transection was conducted distally to the duodenal bulb and the distal part of the transected duodenum was closed. A second incision was performed in the first half of total small intestine length. An isoperistaltic end-to-end anastomosis was performed between the duodenal bulb and the selected loop. For the next 8 weeks, 24 of DJOS/SHAM animals were kept on the same diet as before (HF/DJOS/HF, HF/SHAM/HF, CD/DJOS/CD, CD/SHAM/CD), and 24 had a changed diet (HF/DJOS/CD, HF/SHAM/CD, CD/DJOS/HF, CD/SHAM/HF). FABP 4, CRP, leptin, chemerin were assessed using ELISA kits.

Results: For the FABP4, we observed significant differences between DJOS and SHAM in animals maintained on CD/CD; CRP values varied between DJOS and SHAM groups fed with HF/HF, CD/CD, and CD/HF; DJOS was related to a decrease in leptin and chemerin plasma levels in comparison to SHAM. The diet patterns: HF/HF, CD/HF, and HF/CD significantly increased leptin and chemerin plasma levels when compared to CD/CD.

Conclusions: HF diet, both before and after surgery, induced an increase of FABP4 levels compared to the control diet in both types of surgery. In each dietary pattern, DJOS surgery led to a decrease in CRP plasma levels. HF/HF caused metabolic disturbances over time, reversing progressive effects of DJOS surgery and decreasing leptin and chemerin sensitivity in comparison to CD/CD experimental groups.

[11]

Local inhibition of AT1 receptors in the carotid body decreases pressor response to peripheral chemoreflex activation by hypoxia in spontaneously hypertensive rats

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Introduction: The carotid bodies are main arterial chemoreceptors involved in the peripheral chemoreflex. Potentiated pressor response to peripheral chemoreflex activation has been described in pre-hypertensive and hypertensive patients as well as in spontaneously hypertensive (SHR) rats. Angiotensin type 1 (AT1) receptors are a potent target for anti-hypertensive therapy and are present in the carotid bodies. However, their role in the long-term regulation of the peripheral chemoreflex is not well defined.

Aim of the study: To determine if local inhibition of AT1 receptors in the carotid bodies affects cardiovascular response elicited by activation of the peripheral chemoreflex by acute hypoxia in hypertensive rats.

Material and methods: We implanted SHR rats with radio telemetry transmitters for chronic recording of arterial blood pressure and with osmotic mini-pumps for infusion of losartan, an AT1 receptor antagonist. One group of rats (n=6) received bilateral infusion of losartan (combined dosed 20 μ g/0.5 μ l/h) into the carotid bifurcation close to the carotid bodies for two weeks. The control group (n=6) received subcutaneous infusion of losartan at the same dose. The peripheral chemoreflex was triggered by an acute exposure of animals to hypoxia (10% O₂, 5 minutes) before, one week and two weeks after initiation of the losartan infusion.

Results: After two weeks of local infusion of losartan close to the carotid bodies, the pressor response to activation of the chemoreflex by hypoxia was significantly reduced in comparison to the pre-treatment value. It was also significantly reduced in comparison to control SHR rats receiving subcutaneous infusion of losartan. The chemoreflex sensitivity did not change in the control group during the study. There were no significant differences of arterial blood pressure between the groups.

Conclusions: Our findings indicate that AT1 receptors in the carotid bodies are involved in the pressor response to peripheral chemoreflex activation by hypoxia. However, local inhibition of the receptors in the carotid bodies seems to be insufficient for lowering arterial blood pressure in SHR rats.

[12]

Local and systemic hypothyroidism in an animal model of heart failure with preserved ejection fraction and the impact of triiodothyronine supplementation in its metabolic and cardiac function

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Introduction: Heart failure with preserved ejection fraction (HFpEF) accounts for at least half the cases of heart failure and there is still no effective treatment for it. Thyroid hormones (TH) imbalance has been implicated with metabolic and cardiac dysfunction. However, the TH status in HFpEF remains largely unknown.

Aim of the study: The aim of the present study is to characterize thyroid function and to evaluate the impact of triiodothyronine supplementation on metabolic and cardiac function in an animal model of HFpEF.

Material and methods: Firstly, we compared the thyroid function of ZSF1 Obese rats (animal model of HFpEF with hypertension, dyslipidemia, obesity and diabetes) with that of ZSF1 Lean rats by measuring serum and tissue levels of T3 and T4 (radioimmunoassay) and serum levels of TSH (ELISA). Then, we compared the metabolic and cardiac function of ZSF1Ob group with ZSF1 Obese rats supplemented with T3 in drinking water (ZSF1Ob+T3 group). Food and water intake were tracked. Animals were weighted and submitted to insulin resistance (IR) and oral glucose tolerance testing (OGTT), echocardiography, invasive hemodynamic evaluation and tissue collection. Single cardiomyocyte sarcomere shortening was monitored via an optical edge detector and cytosolic Ca²⁺ transients were recorded using FURA-2 AM during electrical stimulation.

Results: Compared to ZSF1Ln, ZSF1Ob presented with a significant decrease of serum and left ventricle levels of TH. Visceral adipose tissue TH levels and TSH serum levels were not significantly different.

TH levels of T3-supplemented rats were normalized. Food and water intake was not significantly different between groups. ZSF1Ob+T3 presented with significantly lower body, liver, perigonadal fat and perirenal fat weights and improved glucose metabolism and insulin sensitivity compared to ZSF1Ob. Echocardiographic and hemodynamic evaluation showed improved diastolic and systolic function in supplemented rats. This was further supported by an improved Ca²⁺ and sarcomere relaxation and cardiomyocyte contractility. Lastly, treatment with T3 returned the resting sarcomere length to a more physiological range and improved contractile response to Ca²⁺ transients.

Conclusions: In conclusion, HFpEF presents with local and systemic hypothyroidism. Triiodothyronine supplementation improves cardiac and metabolic function of ZSF1 Obese rats. This data suggests thyroid hormones may be an effective therapeutic target for HFpEF.

[13]

The effects of restricted feeding on the ultradian rhythm of corticosterone secretion and steroidogenesis in the rat adrenal

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Introduction: Glucocorticoids are vital hormones that are released in response to stress to regulate a number of physiological functions, including metabolism, inflammation and cardiovascular activity. Their release is characterised by an ultradian (pulsatile) pattern of hormone secretion which disturbance has been linked to obesity. The literature provides evidences suggesting that fasting can affect glucocorticoid secretion both by increasing hormone synthesis in the adrenal and by increasing corticosterone half-life.

Aim of the study: This project was aimed to explore the effects of restricted feeding and fasting on ultradian rhythm of corticosterone (CORT) secretion in the rat, and to further elucidate the mechanisms underlying the observed changes.

Material and methods: An automated blood sampling system was used to collect blood samples over a period of 24hrs from rats that were allocated to one of the three experimental groups: ad libitum, fasted and fed group. The blood plasma was further analysed by a radioimmune corticosterone assay to quantify the corticosterone levels. By using a reverse transcriptase quantitative polymerase chain reaction, the gene expression in the adrenal gland and in the liver, was measured from rats subjected to the three experimental conditions.

Results: This study has established that, compared to ad libitum fed animals, fasting increases, while feeding decreases basal CORT levels, but neither condition affects the hormone response to a mild stressor. Moreover, the increased CORT secretion in fasted rats was paralleled by a decrease of the inhibitory protein DAX-1 that is known to be crucial for the expression of key steroidogenic genes in the adrenal. On quantification of the hepatic genes, the CORT metabolising enzyme 11 β -hydroxysteroid dehydrogenase type 1 (HSD11B1), was markedly increased in the fasted group.

Conclusions: Our data suggests that the marked increase in CORT secretion in response to fasting cannot be explained by an increased adrenal steroidogenesis. An increase in the hepatic HSD11B1, which reduces cortisone to the active hormone CORT, could explain the observed hypercorticosteronemia.

[14]

Normotensive and spontaneously hypertensive rats show different hemodynamic response to intrabrain administration of TNF and interleukin 10

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Introduction: There is increasing evidence that pro- and antiinflammatory cytokines are involved in the central regulation of cardiovascular system. The archetypal cytokines with pro- and anti-inflammatory properties are, respectively, tumor necrosis factor (TNF) and interleukin 10 (IL-10).

Aim of the study: In our study we aimed to assess effects of TNF and IL-10 administered intracerebroventricularly (ICV) on blood pressure (BP) in normotensive Wistar-Kyoto (WKY) and spontaneously hypertensive (SHR) rats.

Material and methods: We carried out the study on adult male SHR (n=18) and WKY (n=18) rats. Under anaesthesia with urethane (1.5g/1kg b.w.), we inserted arterial catheter for recording BP and brain cannula for ICV infusions. We ICV administered bolus of either 0.9% NaCl (control), TNF (200 ng), or IL-10 (200 ng) and continuously recorded BP for 120 minutes. Gathered BP data was analyzed using additive mixed model (random intercept model with fixed effect for rat strain and nonparametric smooth function of time for each group).

Results: We observed different effects of ICV infused TNF and IL-10 on BP in SHR and WKY rats. TNF administration resulted in a steady increase of BP of SHR rats, while the pressure of WKY rats remained stable. We observed decreasing trends in BP for both control and IL-10 groups, however SHR rats responded to IL-10 administration with a greater decrease in BP than WKY rats.

Conclusions: Our findings indicate that SHR rats show enhanced response to ICV administered TNF and IL-10 in comparison to WKY rats. This supports the hypothesis of the cytokines contribution to the central regulation of cardiovascular system.

[15]

“Plastic antibodies” – an ideal way for β -hCG detection?

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Introduction: Nearly one million patients, i.e., 10-15% of pairs in reproductive age, suffer from fertility problems in Poland. Huge scale of these problems results in the negative birthrate in our country. These problems indicate how important is the development of new diagnostic tools for determination of fertility hormones. Human chorionic gonadotropin (hCG) is a glycoprotein hormone, which concentration in blood serum corresponds with many states related to fertility and pregnancy. Both high and low level of hCG as well as its α and β subunits are associated with certain disorders of either pregnant woman or a child. For instance, elevated β -hCG level is connected to occurring hemolytic anemia of a baby, pregnancy trophoblastic disease, multiple pregnancy and Down syndrome while low hCG levels with ongoing normal menstrual period corresponds likely to biochemical pregnancy and spontaneous and induced miscarriages.

Aim of the study: The aim of the study was to modify chemosensor surface with molecularly imprinted polymer (MIP) eligible to selectively recognize β -hCG, thus, allowing for β -hCG determination with better sensitivity than other methods available and, moreover, less expens

Material and methods: MIPs, known as “plastic antibodies”, are synthetic materials capable for selective recognition of many target molecules including glycoproteins. Preorganization of functional monomer around template molecules, followed by subsequent polymerization and template removal results in formation of molecular cavities inside of the polymer matrix that fit with shape size and pattern of interactions to template/target analyte molecules. Moreover, hierarchical structure of the MIP film deposited on the electrode surface significantly improved sensors analytical parameters.

Results: We optimized the determination procedure with devised chemosensors, i.e., the most convenient pH for the detection that is 10, to obtain best sensitivity and selectivity to β -hCG. The limit of detection was in 0,004 mIU/ml ! Moreover, by performing experiments in artificial serum samples we have proven matrix effect of real samples should not affect β -hCG determinations.

Conclusions: Obtained results are impressive and may help resolve many medical and financial dilemmas. The test will be the clue to fast and effective fertility problems treatment which help many Polish couples in order to develop Polish community.

[16]

The comparison of the articular and auricular chondrocytes used in cartilage tissue-engineering

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Introduction: Many people suffer from disease or age-induced joint injury and degeneration. A destruction of bronchial, nose and ear cartilage can also occur because of trauma or cancer. The current treatment options include surgical procedures, efficiency of which can be greatly improved by using natural engineered cartilage. In tissue engineering (TE) the cartilage is one of the well-studied tissues. The absence of blood supply and presence of only one type of cells, make a cartilage a convenient target to try building a functional tissue outside of the body. As a rapidly expanding field, TE through developing biomimetic tissue substitutes may provide alternative solutions for cartilage repair and regeneration.

Aim of the study: Our goal was to adapt main protocols to produce tissue engineered cartilage from bovine tissue. We aimed to isolate, culture and characterize bovine chondrocytes from different types of bovine cartilage and to incorporate them into various scaffolds.

Material and methods: Bovine articular and auricular cartilage tissues were used. Ex vivo scaffolds for chondrocytes growth were made using collagen, white and brown sodium alginate, and a combination of collagen and alginate. Cell number and proliferation rates were monitored using phase contrast light microscopy. The degree of decellularization was determined by hematoxylin and eosin staining (Armenian-German "Histogen" Pathology Center). Spreading of chondrocytes within the 3D scaffolds was examined using confocal microscopy and cell tracker dye (Red CMTPX). The experiments were carried out in the Institute of Physiology after L.A. Orbeli.

Results: The number and proliferation rate of auricular chondrocytes were higher than those harvested from articular cartilage ($p < 0.05$). The most rapidly growing auricular cells reached confluence after 8 days. On the 7th day after second passage (day 15th) the spindle-shaped cells formed more connections. The degree of decellularization was the highest for the auricular cartilage ($p < 0.05$). Sponges made of brown alginate were the most durable and exhibited the highest degree of chondrocyte spread in Z-dimension.

Conclusions: The data pointed to major differences in cell growth between articular and auricular chondrocytes, with the latter growing and proliferating significantly faster. Auricular cartilage can be a good option as a natural scaffold for chondrocytes seeding.

[17]

Study of predictors of maxillofacial malformations in a foetus

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Introduction: The problem of congenital malformations of the maxillofacial system (MFS) in newborns is of great research and practical significance. Malformations of MFS can result in risks of breathing difficulties, poor speech development, problems with sight and swallowing.

Aim of the study: The aim of the study was to investigate predictors of maxillofacial malformations in fetus.

Material and methods: The study involved 9704 fetuses born between 2011 and 2017 and included fetuses with dysplasia of the skull bones ($n = 63$), with a short frenum ($n = 54$), with congenital malformation of the eye ($n = 11$). Ultrasound intrauterine examination of 10357 fetuses was assisted among them cases of the cleft of the upper jaw of the lip ($n = 11$) as well as diseases associated with the pathologies were identified: hypochondria, hypomorphic immaturity of different degree, intrauterine growth retardation of the fetus and intrauterine hypoxia

Results: The control group comprised 130 infants and 244 fetuses. Congenital disorders of the eyes (1.5%) were revealed. Approximately the same number of newborns with a short frenum of the tongue (41.5%) and dysplasia of the skull bones (47.6%), cleft of the upper jaw and lip (7.6%) were identified. Data of retrospective analysis disclose the most frequent predictors of cleft lip were: transmitted infectious diseases in the mother during pregnancy (27.5%), alcohol dependence (37%), stress (15%), heredity (8%), and obesity (12%). Dysplasia of the skull bones was associated with the following factors: malignancy (90%), severe toxicosis in the mother of the fetus (68%), uncontrolled intake of certain drugs during pregnancy

(2%), infectious diseases of the mother during pregnancy (24%), genetic predisposition (3.2%). The concomitant factors of the short frenum were: genetic predisposition (53%), uncontrolled consumption of some drugs during pregnancy (15%), stress (4%), severe fetal toxicity (56%), mother's infectious diseases during pregnancy (7%), and bad habits of the mother (14%).

Conclusions: The most common maxillofacial malformations are skull dysplasia (47.6%); a short frenum of the tongue (41.5%), cleft lip (7.6%). Along with the cleft lip there may be such factors as infectious diseases in the mother during pregnancy (27.5%). Dysplasia of the skull bones can be accompanied by infectious diseases of the mother during pregnancy (24%). The main factor for the short frenum can be genetic predisposition (53%).

[18]

Arterial chemoreceptor reflex is potentiated by vasopressin

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Introduction: Gaseous and acid-base homeostasis of arterial blood to large extent depends on arterial chemoreceptor reflex originating from carotid and aortic bodies. This reflex is triggered by hypoxemia, hypercapnia, acidity and drop of blood pressure. Stimulation of arterial chemoreceptors beside hyperventilation causes a marked increase in vasopressin (AVP) blood concentration. Therefore, question arises if there is any feedback mechanism between vasopressin and arterial chemoreflex.

Aim of the study: Our goal was to assess how AVP affects arterial chemoreceptor reflex.

Material and methods: The study was done in adult male Sprague Dawley rats anesthetized with urethane. The animals were divided into the control (n=6) and experimental group (n=6). Blood pressure was recorded from the catheter implanted into femoral artery. Another catheter, placed in femoral vein served for intravenous injections. In addition, a tracheal tube was inserted through tracheotomy for recording the airflow. The arterial chemoreflex was triggered pharmacologically with potassium cyanide (KCN) (30 microg/100 microL), which was administered after pretreatment with 0.9%NaCl (100 microL i.v.) (control group) or pretreatment with AVP infusion (0.6ng/min/20 microL for 5 min) (experimental group).

Results: Stimulation of the chemoreflex with KCN led to increase in mean arterial blood pressure (MABP), respiratory rate (RR), minute ventilation (MV) and a decrease in end-tidal CO₂ (ETCO₂). Peak response to KCN injection did not differ between control and experimental group. However, experimental group had a significantly longer ventilatory response (p<0.05, Student t-test). In the experimental group, MV was still increased above the baseline and ETCO₂ was lower than baseline at 1 min after KCN-induced chemoreflex.

Conclusions: Our findings argue that vasopressin sensitizes the arterial chemoreflex which is manifested in the prolonged respiratory response to pharmacologically induced chemoreflex in rats.

[19]

Analysis of PD1 and PDL1 expression in inflammatory bowel diseases archival samples with immunohistochemistry

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Introduction: Inflammatory Bowel Diseases (IBD) are chronic, relapsing disorders of digestive tract of unknown etiology. There are two major subtypes of IBD: ulcerative colitis (UC) and Crohn's disease (CD). The crucial aspect of IBD is dysregulation of interactions in the immune system. PD-1 is one of the most important inhibitory co-receptor expressed by T-cells, which plays a down-regulation of immune responses.

Aim of the study: The project intends to evaluate an expression of PD-1 and its ligand PDL-1 in formalin-fixed paraffin-embedded (FFPE) samples from patients with IBD in comparison to unaffected tissue.

Material and methods: The study included 31 FFPE tissue samples: 10 from UC (10 colon samples), 11 from CD (8 small intestines and 3 colon) and 10 unaffected (4 small intestines and 6 colon). Each sample sections were stained using immunohistochemistry with anti-PD1 and anti-PDL1 antibodies. An expression was assessed manually in following compartments: mucosa, submucosa, muscularis and serosa. Results are supplemented with semi-quantitative analysis of staining with QuPath Software.

Results: The expression of PD-1 was observed only in mucosal layer and was lower in ulcerative colitis vs Crohn's disease and unaffected tissue. PD-L1 was expressed particularly in vascular endothelium and nervous ganglia and there was no significant difference between analyzed groups.

Conclusions: Decreased level of PD-1 in colon tissue could relate to UC pathogenesis and may be considered as a potential marker of disease. Further analyses are required to explain the role of PD-1/PDL-1 pathway in the process of pathological inflammation observed in IBD. The study pursues to explain the significance of observed differences.

[20]

The influence of different dyes used in tattoos on the cytotoxicity of human skin fibroblasts

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Introduction: The tattoos are the most common form of skin decoration. The pigment introduced into the dermis during the skin tattooing are mixtures of dyes suspended in a solvent. They also contain additives that improve the application properties and ensure the stability of the pigment. Titanium, barium, aluminum and copper are often used as components of dyes in tattoos. Some pigments also contain antimony, arsenic, cadmium, chromium, cobalt, lead and zinc. Some metal oxides are also used to achieve the desired color, transparency and fluorescence. Toxicity of metals and metal nanoparticles in tattoos is a problem that significantly affects the viability and mutations in the human skin cells-fibroblasts. Tattoo pigments also cause skin rashes, infections and skin inflammation.

Aim of the study: Evaluation of the influence of the most commonly used tattoo dyes on the cytotoxicity of human skin cells-fibroblasts

Material and methods: The evaluation of the toxicity of dyes used to perform the tattoo was carried out according to the method described by Carmichael. Cell viability was tested using a tetrazolium salt (MTT). In dead cells the conversion process does not take place, whereas the dye is converted to purple formazone under the influence of mitochondrial dehydrogenases. Cells in contact inhibition were incubated in medium containing various concentrations of the test compound. Incubation was carried out in a CO₂ incubator, at 37 °C, in an atmosphere of 5%. The next step was to remove the medium, rinse the cells with 1 ml PBS three times, add 1 ml PBS and 50 µl MTT at a concentration of 5 mg / ml, and then continue the incubation. Sorensen buffer was added successively and absorbance at 750 nm was measured. The absorbance value obtained in control cell cultures was assumed to be 100%. This value served as a comparison for the incubated cells in the presence of dyes. The fibroblast survival was expressed as a percentage of the control value.

Results: All applied dyes reduce the survival rate of the examined cells. In the case of green and black dye, the inhibition of survival is clearly dependent on the concentration of dye used. The results show that the white pigment is more cytotoxic than the yellow, causing applied at each concentration reduction survival by an average of about 64% in comparison to the control.

Conclusions: Dyes used in tattoos cause a decrease in the survival of fibroblast cells in human skin. The most harmful of the investigated inks is the one containing the white pigment - it causes the strongest cytotoxic effect regardless of the concentration of the dye used.

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[21]

Predictors of left atrial thrombus in atrial fibrillation

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Introduction: In non-valvular atrial fibrillation (AF), CHA2DS2-VASc score is recommended for the assessment of thromboembolic risk. However, the CHA2DS2-VASc score might not include all relevant predictors of left atrial (LA) thrombus formation in AF.

Aim of the study: To identify predictors of LA thrombus on transoesophageal echocardiography (TOE) in patients with non-valvular AF.

Material and methods: We performed a single-center observational study of 1033 consecutive patients with non-valvular AF, referred to our department in years 2012-2016 for catheter ablation or direct current cardioversion, in whom TOE was performed prior to the procedure. The primary endpoint was presence of LA thrombus on TOE. Logistic regression analysis was used to evaluate predictors of LA thrombus on TOE.

Results: In the study group (median age 60 years; 66% male; median CHA2DS2-VASc score 2), 116 (11%) patients received no oral anticoagulation (OAC), 464 (45%) patients received vitamin K antagonist (VKA), 210 (20%) - dabigatran; 242 (23%) - rivaroxaban and 1 patient received apixaban. On TOE, LA thrombi were detected in 59 (5.7%) patients. There were no differences in the incidence of LA thrombus between patients on VKA, patients on non-VKA-OAC (NOAC), or those without OAC, and no type of treatment strategy predicted the primary endpoint in logistic regression analysis. Univariate analyses identified following predictors of LA thrombus: older age, permanent and persistent AF (vs. paroxysmal AF), heart failure, presence of a pacemaker, glomerular filtration rate (GFR) <56 mL/min/1.73m² (cut-off point established based on Youden index), diabetes, previous stroke or peripheral embolism, pulmonary disease and coronary artery disease. In multivariate analysis, predictors of LA thrombus on TOE included: older age (OR 1.036 [per 10 years], 95%CI: 1.003-1.07, p=0.03), pacemaker (OR 3.4, 95%CI: 1.5-7.4, p=0.003), heart failure (OR = 2.5, 95%CI: 1.3-4.9, p=0.007), persistent AF (OR 5.6 [vs. paroxysmal AF], 95%CI: 2.6-11.9, p<0.0001), permanent AF (OR 9.0 [vs. paroxysmal AF], 95%CI: 3.4-23.5, p<0.0001) and GFR<56 mL/min/1.73m² (OR 2.0, 95%CI: 1.1-3.7, p=0.03).

Conclusions: In a real-world population of AF patients referred for cardioversion or catheter ablation, with majority treated with OAC, LA thrombus was found in approximately 6%. A few variables not included in the CHA2DS2-VASc score, such as renal dysfunction and AF type, proved strong, independent predictors of LA thrombus on TOE.

[22]

Heart rate variability and duration of intervals and components in resting electrocardiogram in elite athletes

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Introduction: Physical training in elite athletes leads to structural, functional and electrical changes to the heart. The electrical changes are seen in electrocardiogram.

Aim of the study: The objective of this study was to assess the influence of training with different level of dynamic component on the time domain measures of heart rate variability (HRV) and duration of intervals and complexes in resting ECG. The prevalence of bradycardia

Material and methods: Analyses of 12-lead resting ECG of 1721 consecutive elite, Olympic level athletes (age 16-38 years old; median 20 years; 1019 male), who participated in periodic health evaluation in National Centre for Sports Medicine between March 2016 and March 2017, were performed. In every single ECG, R-R intervals were measured and mean and standard deviation (SD) and difference between the longest and shortest R-R interval

(RRdif) were computed. Besides, the PR interval, P wave duration, QRS complex duration and corrected QT interval were measured. Athletes were grouped according to their sporting discipline using the classification of sports introduced by Mitchell et al. (2005) as Low Dynamic (LD), Moderate Dynamic (MD) or High Dynamic (HD).

Results: Athletes involved in HD sports had significantly higher mean R-R interval comparing to MD group and LD group (Mean±SD), 1114.6±199.0 ms vs. 1085,1±175,0 (p<0.01) and 1027,9±184,7 (p<0.01), respectively. There were no significant differences in standard deviation of R-R intervals between the groups. However, significant differences in RRdif were found between MD and LD group (215.6±139.3 ms vs. 194.2±132.8 and; p<0.05). Athletes involved in LD sports had significantly lower PR duration comparing to MD and HD groups, 147.2±21.6 ms vs. 151,7±24,1 (p=0.01) and 154,2±24,0 (p<0.01); Significantly higher corrected QT interval (computed according to Bazett's formula), 408.1±55.8 ms vs. 395,7±49,1 (p<0,01) and 395,7±49,1 (p<0.01), respectively. In the entire study group we found 25.1% athletes with bradycardia; 3.2% with first-degree atrioventricular block (PR>200 ms); 3.0% with QRS≥120 ms and 3.8% with prolonged QT (QTc>500 ms).

Conclusions: This study shows that although athletes practicing highly dynamic sports have significantly longer mean RR intervals in resting ECG, compared to athletes practicing sports with a lower dynamic component, the standard deviations of the mean, considered as measure of heart rate variability, do not differ significantly in these athletes.

[23]

Risk factors for deep vein thrombosis and the location of the thrombosis

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Introduction: The risk of pulmonary embolism (PE) in patients with acute deep vein thrombosis (DVT) of the lower limbs is linked to the location of the thrombosis. Thus, proximal DVT (femoral or popliteal veins) or extended DVT (thigh and calf) is associated with a higher risk of PE than isolated DVT (calf only).

Aim of the study: The aim of the study was to evaluate if there is an association between the risk factors of DVT and a certain location of DVT.

Material and methods: This prospective, cohort study included 167 patients diagnosed with acute DVT of the lower limbs (age 61.1±14.3; 83 (49.75) women and 84 (50.3%) men). We recorded the presence of several risk factors for DVT: history of DVT, cancer, varicose veins, autoimmune diseases, heart failure, obesity, immobilization in bed for at least 3 days, travels longer than 4 hours in the last month, surgery in the last month, infectious diseases, fractures, local trauma. We also performed genotyping for the factor V Leiden (FVL) mutation, prothrombin G20210A mutation, MTHFR C677T and A1298C mutations, VKORC1 -1639 G>A and PAI-1 -675 4G/5G polymorphisms. We divided the patients according to the location of the thrombus in: extended + proximal DVT (113 patients) and isolated calf DVT (54 patients).

Results: The following variables were associated with a greater probability of isolated calf DVT: heart failure (p=0.08), immobilization (p=0.03), varicose veins (p=0.04), calf infections (p=0.08). Extended DVT was more likely to be encountered in men (p=0.06) and cancer (p=0.04). The mutations were associated with extended DVT, but without statistical significance. The multivariate analysis showed that the immobilization (OR 0.1; p=0.05) and the male gender (OR 2; p=0.05) were independently linked to the location of DVT.

Conclusions: The immobilization in bed for more than 3 days might be associated with isolated calf DVT and the extended DVT could be more frequent in men.

[24]

Balloon pulmonary angioplasty improves renal function in patients with chronic thromboembolic pulmonary hypertension

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Introduction: Balloon pulmonary angioplasty [BPA] is a new procedure performed in chronic thromboembolic pulmonary hypertension [CTEPH] patients. During BPA high doses of contrast medium are used. There has been no previous work on influence of BPA on renal function.

Aim of the study: The purpose of the study was to assess renal function in CTEPH patients treated with BPA.

Material and methods: We have retrospectively analyzed 250 BPA sessions performed in 68 CTEPH patients from 2013 to 2017. For each BPA procedure serum creatinine [SC] concentration and creatinine clearance [CC] estimated by Cockcroft-Gault equation were measured before and 72 hours after. Contrast induced nephropathy [CIN] was defined as a rise in SC by 25% or 0,5mg/dl from the baseline value within 72 hours of contrast administration. In 41 individuals who have completed BPA treatment SC and CC were assessed before and after the completion of the treatment, in addition to right heart catheterization parameters, NT-proBNP plasma level concentration and distance covered in six minutes walk test [6MWT]. All the values were compared with use of Student T-test.

Results: The mean use of contrast medium for BPA was 266±81 ml. The SC concentration has not changed within 72 hours after BPA (mean change 1,00±0,29 vs 1,01±0,60md/dl; p=0.92) and CC neither changed (85,0±30,1 vs 85,7±31,3 ml/min/1.73m²; p=0.79). CIN was noted in 2 cases (0,8%) and none of the patients required dialysis. In the subgroup of 41 individuals who completed their BPA treatment, a significant improvement of SC concentration (1,01±0,28 vs 0,95±0,26 mg/dl; p=0.01) and significant improvement of CC (79,2±30,6 vs 84,2±31,2 ml/min/1.73m²; p=0.01) was noticed in addition to improvement of: right atrial pressure (9,1±4,1 vs 5,0±2,2 mmHg; p<0.01), mean pulmonary artery pressure (49,1±10,7 vs 29,8±8,3 mmHg, p<0.01), cardiac index (2,42±0,6 vs 2,70±0,6 L/min/m²; <0.01), pulmonary vascular resistance(9,42±3,6 vs 4,4±2,3Wood Units; p<0.01), NT-proBNP (2144±2616 vs 419±848 pg/ml; p<0.01) and 6MWT (333±156 vs 432±135 meters; p<0.01).

Conclusions: Renal function improved after the series of BPA in CTEPH patients in addition to hemodynamic parameters, NT-proBNP and 6MWT. Despite relatively high volume of contrast medium used for BPA, renal impairment was not observed.

[25]

Association of soluble ST2 and galectin – 3 in patients with paroxysmal and persistent atrial fibrillation

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Introduction: Progression of atrial fibrillation (AF) is commonly associated with fibrosis, increased hemodynamic overload and atrial enlargement. There is a demand for novel biomarkers to improve the evaluation of structural remodelling of atria and to comprehend the changes caused by arrhythmia as well. To meet these expectations in recent years researchers have looked with great interest into soluble ST2 (sST2) and galectin-3 (Gal-3). sST2 is a biomarker responsible for hemodynamic stress and it correlates with poor prognosis in heart failure patients, whereas Gal-3 is associated with fibrosis, cardiac remodelling and prediction of poor outcomes in heart failure.

Aim of the study: To evaluate the correlation of serum biomarkers - Gal-3 and sST2 in patients with paroxysmal (px-AF) and persistent (ps-AF) AF scheduled for pulmonary veins isolation (PVI).

Material and methods: The study included 64 patients with ps-AF and 49 patients with px-AF qualified for PVI. Serum concentrations of Gal-3 and sST2 were measured directly before PVI.

Results: Patients with px-AF had higher median age (63 (52-67) years) than ps-AF (65 (48-61) years); p=0.046) and more frequently were female (39% vs 17%; p=0.02). Median serum concentrations of Gal-3 did not differ between the px-AF group (8.86 (7.12-11.33) ng/ml) and the ps-AF group (8.12 (7.15-11.75) ng/ml; p=0.82). Whereas, in the ps-AF group were significantly higher sST2 concentrations (34.33 (31.08-39.21) ng/ml), than in the px-AF group (27.26 (24.02-31.54) ng/ml; p=0.001).

Conclusions: Patients with ps-AF had higher sST2 serum concentrations than patients with px-AF. Based on that observation, ps-AF probably is more likely associated with increased haemodynamic overload of heart than px-AF. However, further research needs to be done to investigate whether sST2 serum concentration can predict arrhythmia recurrences in patients with AF undergoing PVI.

[26]

Association between the presence of the left-sided septal pouch and an increased risk of cryptogenic stroke

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Introduction: The atrial septal pouch is an anatomic variant of the interatrial septum. The morphology of the left-sided septal pouch (LSSP) may favor blood stasis and predispose to thromboembolic events. In our study, we determined the association between the LSSP presence and cryptogenic stroke.

Aim of the study: This study sought to assess if the presence of the LSSP may be a risk factor for cryptogenic stroke.

Material and methods: A total of 126 consecutive cryptogenic stroke patients and 137 age-matched non-stroke control patients were analyzed retrospectively. All stroke cases were confirmed by magnetic resonance or computed tomography of the brain. We performed a chart review (history, physical exam, consultations and outpatient notes) for all patients to collect demographic data and medical histories. The presence and dimensions of the LSSPs were assessed using transesophageal echocardiography.

Results: The mean age of the study group was 43.1 ± 11.1 years and the mean age of the control group was 45.3 ± 10.0 years ($p=0.09$). There were significantly more males in the non-stroke group compared to cryptogenic stroke group (69.3% vs. 48.4%, $p>0.001$). Both atrial fibrillation and arterial hypertension were less common in the cryptogenic stroke group than in non-stroke controls ($p<0.05$). No other significant differences in patients' demographic data were found. The LSSP was present in 55.6% of cryptogenic stroke patients and in 40.9% of non-stroke patients ($p=0.02$). The prevalence of right-sided septal pouch (RSSP) in these groups was 12.7% and 5.1%, respectively ($p=0.03$). In univariable analysis, patients with LSSP were more likely to have cryptogenic stroke (OR=1.81; 95%CI=1.11–2.95; $p=0.02$). After adjusting for other risk factors via multiple logistic regression, the presence of an LSSP was found to be associated with an increased risk of cryptogenic stroke (OR=2.02; 95%CI=1.19–3.41; $p=0.01$). There were no statistically significant differences in size of the LSSP between stroke patients and the non-stroke group ($p>0.05$).

Conclusions: There is an association between the presence of an LSSP and an increased risk of cryptogenic stroke. More attention should be paid to clinical evaluations of LSSPs.

[27]

Quantitative Flow Ratio (QFR) as wire-free diagnostic method for assessment of intermediate coronary stenosis in comparison to wire-based Fraction Flow Reserve (FFR)

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Introduction: Functional coronary testing is the gold standard for detecting myocardial ischaemia and allows for conservative treatment of up to 30% of patients with angiographic significant stenosis without increase risk of adverse cardiac events. In the cathlab FFR is used for the assessment of intermediate coronary stenosis. FFR has many disadvantages e.g. increased risk for vessel injury by pressure-wire, adenosine administration and prolonged procedure. QFR is a wire-free method computed from lumen contours in standard angiographic projections and uses frame count during baseline conditions to estimate contrast flow velocity. Lesion evaluation with QFR may appear as a cost saving and safer alternative to pressure wire-based assessment.

Aim of the study: The aim of this study was to evaluate diagnostic performance and accuracy of the QFR against FFR.

Material and methods: A retrospective, single-center, observational study assessing data of 247 patients, who underwent invasive coronary angiography (ICA), subsequent FFR measurements and QFR reconstructions compared with FFR as a reference by two independent operators.

Results: The QFR and FFR from 247 unselected patients with intermediate coronary lesions were compared. 247 lesions met the technical eligibility criteria for QFR analysis. The mean QFR was 0.79 with a median of 0.81 (range 0.43-0.98). The QFR<0.79 that corresponds to wire-based ischaemic threshold (FFR≤0.80) was found in 42%

(n=104) of lesions. $\text{OFR} \leq 0.74$ was found in 43% (n=107) of lesions, whereas $\text{OFR} \geq 0.83$ in 38.5% (n=95). The best QFR cut-off values correlating with $\text{FFR} < 0.80$ was $\text{QFR} = 0.79$ ($\text{AUC} = 0.94$). Accuracy of QFR models to identify $\text{FFR} < 0.80$ at vessel level was 85.5%. QFR of 31% lesions (n=77) was between 0.74-0.83 ("grey zone"). In 69% of the study population (n=170) QFR performed sensitivity and specificity above 95%.

Conclusions: The QFR method is having high diagnostic accuracy and can be used to estimate the severity of coronary artery lesions. Implementation of QFR do not require a pressure wire and pharmacologically induced hyperaemia and allows for wire-free functional assessment in 2/3 patients. Two step procedure of initial angiography QFR measurement and subsequent elective wire-based FFR of "grey zone" lesions may improve safety and patients comfort. In conclusion, it is cost saving, reducing risk and procedure time.

[28]

Correlation of sleep disturbances and ectopic activity of myocardium in women with ischemic heart disease in postmenopause

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Introduction: More and more data on the negative impact of sleep-disordered breathing (SDB) on the cardiovascular system have been reported recently.

The aim of the study was to assess frequency and structure of cardiac arrhythmia in women with ischemic heart disease (IHD) and SDB in a postmenopausal period.

Aim of the study: The aim of the study was to assess frequency and structure of cardiac arrhythmia in women with ischemic heart disease (IHD) and SDB in a postmenopausal period.

Material and methods: We examined 105 postmenopausal women with IHD (mean age 69.75 ± 6.4 years), divided into 2 groups. Group 1 included 62 patients with IHD and SDB. Group 2 involved 43 women with IHD who did not have SDB. Patients underwent holter monitoring of the ECG (Cardiotechnics 04 -8 (m), Inkart, Russia). Respiratory monitoring (Somnocheck micro, Weinmann, Germany) was performed to assess respiratory disturbances in sleep. Statistical processing of data was carried out with STATISTICA 6.0 software package.

Results: In patients with IHD and SDB, the index of apnea/hypopnea (AHI) was 22.4 ± 2.4 episodes/hour, which is significantly higher in comparison with the group of IHD patients and without SDB (3.2 ± 0.9 episodes/hour; $p < 0.01$). The minimum blood saturation during sleep (min SpO₂) in the patients of the first group was 70.1%, which was significantly lower than in the second group (89.9%, $p < 0.05$). The results of the study showed that the overall frequency of recording of supraventricular arrhythmias (96.8% and 97.7%) did not differ significantly between the groups ($\chi^2 = 1.38$, $p > 0.05$). In patients with IHD and SDB, the daily amount of supraventricular extrasystole ($p < 0.01$) and episodes of supraventricular tachycardia ($p < 0.05$) significantly increased in comparison with patients of the second group. Ventricular extrasystole (VE) was significantly more often detected in patients of group 1 than in group 2 (61.2% and 34.9%, $\chi^2 = 14.2$, $p < 0.01$). When analyzing the structure of the VE, it was noted that in patients with IHD and SDB in comparison with the group 2, paired (27.4% and 6.9%) and polytope VE (22.6% and 9.3%). Ventricular arrhythmias were more frequently recorded in patients of the 1st group at night circadian type than in women with IHD without SDB ($\chi^2 = 24.6$, $p < 0.001$). Correlation analysis revealed an increase in the grading of VE with a decrease in min SpO₂ ($r = -0.38$, $p < 0.05$).

Conclusions: In terms of prognosis, unfavorable ectopic activity of the myocardium is more often recorded in women with IHD and SDB. The level of hypoxemia is interrelated with ventricular arrhythmias of higher grades.

[29]

Automated external defibrillator use in public places: a study of acquisition time

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Introduction: Sudden cardiac arrest (SCA) is a frequent cause of death in the developed world. Early defibrillation, preferably within the first minutes of the incident, significantly increases survival rates. Accessible automated external defibrillators (AED) in public areas have been promoted for many years, and several locations are equipped with these devices.

Aim of the study: The aim of the study was to assess the real-life availability of AEDs and assess possible sources of delay.

Material and methods: The study took place in the academic towns of Poznan, Lodz, and Warsaw, Poland. The researchers who were not aware of the exact location of the AED in the selected public locations had to deliver AED therapy in simulated SCA scenarios. For the purpose of the trial, we assumed that the SCA takes place at the main entrance to the public areas equipped with an AED.

Results: From approximately 200 locations that have AEDs, 78 sites were analysed. In most places, the AED was located on the ground floor and the median distance from the site of SCA to the nearest AED point was 15 m (interquartile range [IQR] 7–24; range: 2–163 m). The total time required to deliver the device was 96 s (IQR 52–144 s). The average time for discussion with the person responsible for the AED (security officer, staff, etc.) was 16 s (IQR 0–49). The AED was located in open access cabinets for unrestricted collection in 29 locations; in 10 cases an AED was delivered by the personnel, and in 29 cases AED utilisation required continuous personnel assistance. The mode of accessing the AED device was related to the longer discussion time ($p < 0.001$); however, this did not cause any significant delay in therapy ($p = 0.132$). The AED was clearly visible in 34 (43.6%) sites. The visibility of AED did not influence the total time of simulated AED implementation.

Conclusions: We conclude that the access to AED is relatively fast in public places. In the majority of assessed locations, it meets the recommended time to early defibrillation of under 3 min from the onset of the cardiac arrest; however, there are several causes for possible delays. The AED signs indicating the location of the device should be larger. AEDs should also be displayed in unrestricted areas for easy access rather than being kept under staff care or in cabinets.

[30]

Impact of a blood type (AB0) on a degree of acquired thrombocytopenia and hemoglobin drop observed early after TAVI

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Introduction: Transaortic valve implantation (TAVI) is a quickly developing alternative therapy for surgical aortic valve replacement (SAVR). Short and long-term complications remain a key issue in debate concerning appliance of this technic. Patients with non-O (mostly type A) blood groups have higher plasma von Willebrand factor (vWF) levels than those with type O. vWF mediates platelet adhesion, aggregation and thrombosis. Non-O blood types, were also related to increased prevalence of morbidity and mortality in various cardiovascular diseases. Vascular complications, signified by a hemoglobin (HGB) drop and related to phenomenon of an early post-procedural platelet count (PLT) decrease, are associated with adverse outcomes following TAVI.

Aim of the study: We investigated impact of the AB0 blood type/group on a HGB and PLT changes measured early post TAVI. Also, we assessed impact of AB0 blood type on a 30-day mortality after TAVI.

Material and methods: Among 443 consecutive pts [80.5 ± 7.3 yrs, 63% female, median EuroSCORE II = 3.4% (min 0.5% - max 27.7%)] treated with TAVI (8/2009–10/2017) AB0 blood type was verified and serial changes in PLT and HGB were measured (prior to and daily 7 days post-procedure).

Results: Overall 30-day mortality was 4.7% (21/443). Baseline demographic, clinical and procedural data was compared between A vs non-A and O vs non-O groups. PCI history was more frequent among pts with non-O group, whereas other variables were similar between studied groups. An early PLT drop was seen on day 1, reaching nadir on day 2-3 [median $\Delta\%PLT_{max} = -42\%$ (-53% – -32%)], whereas HGB drop was seen on day 1, reaching its nadir at day 3 [$\Delta\%HGB_{max} = -20\%$ (-27% – -14.5%)]. The bigger $\Delta\%PLT_{max}$ the more $\Delta\%HGB_{max}$ dropped ($r=0.312$, $p<0.001$). Extents of $\Delta\%PLT_{max}$ & $\Delta\%HGB_{max}$ did not differ among studied groups. 30-day mortality was similar between studied groups.

Conclusions: There is an early and substantial PLT drop after TAVI signifying systemic reaction, with parallel HGB decrease. Our data demonstrate that pts with O compared to non-O blood as well as pts with A compared to non-A blood did not differ with regard to the early PLT and HGB response, with similar 30-day mortality.

[31]

Bleeding complications in patients undergoing transcatheter aortic valve implantation

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Introduction: Bleeding complications are a significant adverse event of transcatheter aortic valve implantation (TAVI). More importantly, their occurrence impacts long-term mortality. Unfractionated heparin (UFH) is routinely administered during TAVI. UFH reversal with protamine sulphate (PS) is recommended, but was not assessed in a randomized fashion.

Aim of the study: The aim of this study was to determine impact of PS administration on bleeding occurrence and assess other potential risk factors in patients undergoing TAVI.

Material and methods: A total of 54 consecutive patients qualified to TAVI between 12.2014 and 03.2016 were included in the study (55.6% females, mean age 80.6 ± 6.6). Patients were divided into two groups depending on PS administration during the procedure. The primary endpoint was major and life-threatening bleeding according to Valve Academic Research Consortium. Statistical analysis was performed using SPSS version 24 and consisted of Chi-square test, Mann-Whitney U test, binomial logistic regression and receiver operating characteristic (ROC) curve analysis.

Results: Fifteen patients (28% of the entire cohort) received PS. Baseline comparison demonstrated less frequent presence of severely symptomatic heart failure in the PS group (NYHA class III or IV, 40% vs 79.5%, $p=0.008$). The mean age, BMI, dose of UFH units/kg, complete blood count, APTT, serum biochemical profile did not differ between the two groups. The primary endpoint occurred in 13 patients (24.1%). PS administration had no significant impact on bleeding occurrence ($p=0.78$). There was an association between the dose of UFH units/kg and bleeding rate (OR 1.04 per 1 unit/kg increment, CI [1.01-1.07], $p=0.011$). ROC analysis demonstrated a good predictive ability of UFH units/kg with area under the curve (AUC) 0,76, $p=0.005$ and an optimal cut-off value of UFH=103.7 units/kg (OR 8.06, CI [1.88-34.52], $p=0.005$). Moreover, history of bleeding (OR 4.15, CI [1.11-15.49], $p=0.034$), COPD or asthma (OR 4.5, CI [1.05-19.32], $p=0.043$) and ejection fraction (EF, OR 0.94 per 1% increment, CI [0.89-0.99], $p=0.03$) also predicted the primary endpoint occurrence.

Conclusions: In our study, patients receiving protamine sulphate during TAVI were less likely to present with severely symptomatic heart failure. PS administration did not impact bleeding rate. The dose of UFH units/kg, low EF, history of bleeding predicted primary endpoint occurrence. A pre-procedural determination of the maximum dose of heparin units/kg may limit occurrence of the primary endpoint.

[32]

Paraoxonase 1 activities - prognostic factor for six-months mortality in patients with acute ST-elevation myocardial infarctionL. Ciumărnean¹, M. Greavu², Ș.C. Vesa³, M.I. Benedek⁴, L.R. Gheghe⁴

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Introduction: PON1 is an enzyme studied for its role as a biomarker in diseases involving oxidative stress and inflammation. More recently, the focus has been on its protective role in vascular diseases, acting as an anti-atherosclerotic component of HDL. It is synthesized primarily in the liver, induced by PON1 gene via PPAR- γ and it appears in the serum associated with high-density lipoproteins.

Aim of the study: The aim of the study was to evaluate if serum paraoxonase 1 activities (lactonase, arylesterase and paraoxonase) can predict the mortality in patients six months after an acute ST-elevation myocardial infarction.

Material and methods: The study included 75 patients (mean age 64.4±12.5 years; 25 (33.3%) women and 50 (66.7%) men) which were diagnosed with acute MI, using the criteria in place. All patients underwent coronarography. We determined the PON1 activities (paraoxonase, arylesterase and lactonase) by spectrophotometric methods in heparinized plasma. We did a six-months follow-up and recorded the mortality.

Results: There were 8 (10.7%) deaths in our cohort. The paraoxonase values were higher in survivors (26.6 (16.9; 52.3) U/ml) than in deceased patients (16.8 (11.9; 43) U/ml) ($p=0.2$). The lactonase levels were higher in survivors (26.4 (19.6; 32.7) $\mu\text{M/L}$) than in deceased patients (23.1 (18.6; 23.1) $\mu\text{M/L}$) ($p=0.2$). The arylesterase levels were higher in survivors (13.3 (10.4; 16.3) U/ml) than in deceased patients (11.5 (9.5; 12) U/ml) ($p=0.1$). The mortality was not predicted by the type of infarction, type of intervention, or medication taken by the patients.

Conclusions: The study showed that the serum values of paraoxonase were not predictive for the mortality at six months after an acute ST-elevation myocardial infarction, although they were higher in survivors. A longer period of follow-up might be useful.

[33]

Adaptive capacity of cardiovascular system in smoking students of Grodno Universities

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Introduction: The circulatory system is increasingly used in order to assess the adaptive activity of the organism, because it plays a leading role in the adaptation (A) processes. This is manifested in a change in its level of functioning and the degree of tension of regulatory mechanisms. Adaptive capacity (AC) of the cardiovascular system is an indicator of the body's adaptability to various changing environmental conditions. Smoking has a negative impact on the functioning of the body as a whole and the circulatory system in particular.

Aim of the study: Therefore, the aim of our work was to study the influence of smoking on the adaptive capacity of the students of Grodno State Agricultural University and Yanka Kupala State University of Grodno at the beginning and end of the first academic term.

Material and methods: 59 students of Grodno State Agricultural University and 62 students of Yanka Kupala State University of Grodno (from the first to the fifth year) took part in the research. The students' heart rate, blood pressure, body weight and height were measured. AC was calculated by R.M. Bayevskiy (1979). Index rating scale AC (A.P. Berseneva, 1991): 1 — $\leq 2,10$ — satisfactory A; 2 — 2,11 — 3,20 — functional tension of mechanisms of A; 3 — 3,21-4,30 — unsatisfactory A; 4 — $\geq 4,31$ — A breakdown. The research was conducted in early September and late December. Students were divided into two groups: non-smokers and smokers. To compare the groups, we used nonparametric tests: Wilcoxon and U Mann-Whitney tests. The differences were considered statistically significant at $p<0.05$. Statistical data processing was performed using STATISTICA 6.0.

Results: It was established that in September there had been no difference in AC between non-smoking and smoking students: 2,02 [1,87; 2,33] and 2,10 [1,96; 2,23], respectively. At the end of the first term there was an increase in AC in both study groups of students, but non-smokers' AC increased by 4.4 %, and smokers' AC jumped by 10.0%, $p=0.0056$.

Conclusions: The research shows that students have a tension of adaptation mechanisms by the end of the first term, which can be associated with a significant increase in mental and emotional stress during studying, while smoking aggravates the state of the cardiovascular system.

[34]

Cardiac Depression Scale: Validation of Latvian Version

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Introduction: In literature there are many reports of depression (D) among heart disease patients^{1,2} and cardiovascular diseases still remain main cause of morbidity and mortality in the World as reported by World

Health Organization. The Cardiac Depression Scale (CDS) by Hare and Davis is a self-report 26-item Likert scale based instrument measuring D severity particularly in adult cardiac patients³. There is currently no available Latvian version CDS.

Aim of the study: The aim of the study was to translate and validate the Latvian version of CDS.

Material and methods: Translation and back-translation of the CDS was made following the validation procedures. Latvian version of CDS (CDS-LAT), valid Latvian versions of GDS-LAT (30-item) and Q-LES-Q-SF-LAT were administered to 106 cardiac inpatients of Latvian Cardiology Centre (P.Stradins Clinical University Hospital, Riga, Latvia) age 70.7 ± 8.1 years, 50 females, 56 males. Statistical analysis was done by IBM SPSS. Chronbach's α (α) score was calculated by exploratory factor analysis with polychoric correlations. Receiver operating characteristics (ROC) curves were analysed to evaluate CDS-LAT utility at different degrees of D. Cut-off scores were assessed for mild to moderate and severe D. Concurrent validity was tested with Pearson's correlation coefficient between the CDS-LAT, GDS-LAT and Q-LES-Q-SF-LAT.

Results: CDS-LAT showed an adequate cultural relevance and content validity. The factor analysis revealed a satisfactory internal consistency ($\alpha = 0.82$). A cut-off score of >92 in CDS-LAT predicts mild to moderate D in cardiac patients with 83% sensitivity and 71% specificity as indexed in GDS. A cut off score of >120 in CDS-LAT had 100% sensitivity and 99% specificity for severe D. ROC curve showed that CDS-LAT is an excellent diagnostic test for severe D (AUC = 0.99, $p < 0.001$, 95% CI, 0.99 – 1.00) and a good diagnostic test for mild to moderate D (AUC = 0.84, $p < 0.001$, 95% CI, 0.76 – 0.91). Excellent concurrent validity correlating with GDS-LAT ($r = 0.72$, $n = 106$, $p < 0.01$) and Q-LES-Q-SF-LAT ($r = -0.61$, $n = 106$, $p < 0.01$).

Conclusions: CDS-LAT is valid, reliable, effective and acceptable measure of D in cardiac patients demonstrating more accuracy in diagnosis of D than GDS-LAT and Q-LES-Q-SF-LAT.

[35]

Echocardiography in assessment of patients with acute ischemic stroke

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Introduction: Atrial fibrillation (AF) is the most common cardiogenic cause of acute ischemic stroke (AIS). AIS can be the first sign of AF. A sinus rhythm (SR) during AIS does not exclude a paroxysmal AF (PAF).

Aim of the study: Comparison of echocardiographic parameters of patients with AIS and undiagnosed AF. Assessment of prevalence of echocardiographic signs that can suggest PAF.

Material and methods: Transthoracic echocardiograms (TTE) performed in patients with AIS admitted to neurological ward between 10.2013 and 09.2017 were analyzed. The occurrence of AF was verified in medical documentation. 663 patients were included in the study (52% men) with average age of 71 years.

Patients were divided into three groups:

Patients with AF during transthoracic echocardiography (TTE) (N=117) - "gAF"

Patients with SR during TTE with the history of AF (N=56) - "gPAF"

Patients with SR during TTE without the history of AF (N=490) - "suspAF"

Following parameters were evaluated: LVED (left ventricle end-diastolic diameter), IVSd (interventricular septum diameter), left ventricular mass (LVmass), left atrium diameter (LAd), LAA (left atrium area) and EF (ejection fraction). The prevalence of different echocardiographic factors that may indicate AF (eg relevant enlargement or left atrium and mitral defect) known from literature was analysed.

Results: The significant differences in left atrium size (LAA, LAd) were observed between all groups (gAF, gPAF, suspAF) LAA resp. 33cm^2 ; $28,4\text{cm}^2$; 24cm^2 ($p < 0,001$). Parameters of left ventricular hypertrophy (IVSd, LVmass) were higher in gAF than in suspAF group. LVEDd was similar in all groups. In gAF and gPAF EF was lower than in suspAF group resp. 53,7%, 55,7% and 58,6%. Echocardiographic signs suggesting the presence of AF were present in 53,6% of gPAf and 38,1% of suspAF group ($P < 0,001$).

Conclusions: Morphological changes, mostly related to left atrium size, are present in TTE among patients with AF and AIS.

More than 1/3 of patients with AIS without history of AF have shown echocardiographic features that can suggest presence of paroxysmal AF. Those patients may benefit from extended cardiologic follow-up in order to detect the arrhythmia.

[36]

Impact of peripheral non-significant coronary artery plaques on remodeling of the left main coronary artery

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Introduction: It is unknown if atherosclerosis in remote coronary segment may influence the dimensions of left main coronary artery.

Aim of the study: To assess the impact of coronary artery atherosclerotic plaques in downstream vessels on the dimensions of the atherosclerosis-free left main coronary artery.

Material and methods: Consecutive CTA examinations (Somatom Definition Flash, Siemens, Forchheim, Germany) were reviewed to identify two study groups: Group 1: patients with absolutely healthy coronary vessels; and Group 2: patients with normal LMCA and coexisting non-significant (<30% of lumen narrowing) coronary plaques located downstream within left coronary artery. In both groups lumen area (LA) and lumen diameter (LD) in LMCA were measured and compared. Every patient before the examination receive sublingual nitrates (0.8 mg). All measurements were performed with the use of dedicated workstation – syngo.via (Siemens, Germany).

Results: Overall 342 CTA examinations were reviewed. We identified 29 patients (age 53.1 ± 13.2 , 12 men) in Group 1 and 50 patients (age 58.8 ± 9.9 , 18 men) in Group 2. Both study groups had similar demographic and clinical variables. The distribution of left vessel dominance pattern was also identical (7% vs 6% $p=0.89$). Patients from group 1 had significantly larger LA and LD in LMCA ($22.76 \text{ mm}^2 \pm 7.58 \text{ mm}^2$ vs. $17.61 \text{ mm}^2 \pm 5.40 \text{ mm}^2$ $p<0.01$ and $5.31 \text{ mm} \pm 0.86 \text{ mm}$ vs $4.67 \text{ mm} \pm 0.72 \text{ mm}$ $p<0.01$, respectively). The same differences were presented in male subgroups ($25.62 \text{ mm}^2 \pm 4.67 \text{ mm}^2$ vs. $19.34 \text{ mm}^2 \pm 5.77 \text{ mm}^2$ $p<0.01$ for LA and $5.71 \text{ mm} \pm 0.54 \text{ mm}$ vs $4.92 \text{ mm} \pm 0.72 \text{ mm}$ $p<0.01$ for LD) but not in the female population ($20.75 \text{ mm}^2 \pm 8.67 \text{ mm}^2$ vs. $16.64 \text{ mm}^2 \pm 5.02 \text{ mm}^2$ $p=0.13$ for LA and $5.03 \text{ mm} \pm 0.95 \text{ mm}$ vs $4.53 \text{ mm} \pm 0.69 \text{ mm}$ $p=0.11$ for LD).

Conclusions: Presence of peripheral non-significant coronary artery atherosclerotic plaques impacts the LMCA dimensions in male, possibly by inducing negative vessel remodeling or altering vasoactive response to nitroglycerine.

[37]

Surgical treatment of end-stage heart failure - single institution experience

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Introduction: Management of heart failure(HF) is challenging not only for cardiologist but also for cardiac surgeon. Heart transplantation(HTX) remains golden standard for treatment of this condition. Insufficient number of donors obliges physicians to use alternative methods like mechanical circulatory support(MCS). Adequate utilisation of all therapeutic options gives patients a chance for longer life with improved quality.

Aim of the study: The aim of this study is to show our institution's experience of treatment of end-stage HF using HTX and MCS.

Material and methods: We have retrospectively analysed data of 83 patients who required HTX and/or MCS due to end-stage HF in Cardiac and Vascular Surgery Department, Medical University of Gdansk, between 2001 and 2016. Each patient was initially qualified for HTX. Part of them due to worsening general condition required application of MCS. Patients were separated into three groups depending on type of treatment used: "H" - HTX only, "M" - MCS only, "MH" - MCS and HTX. Groups were analysed in terms of etiology of HF, complications and

condition before and after treatment. Data is presented as mean±standard deviation or median(range) dependently on the distribution.

Results: In analysed period total number of patients who received Htx was 44(group H and MH). Nineteen (43%) of them required preemptive MCS(group MH). Another group of 39 patients had only MCS as bridge-to-recovery or HF destination therapy(group M). In groups H, HM and M main causes of HF were dilated cardiomyopathy, idiopathic cardiomyopathy and postoperative low cardiac output syndrome, respectively.

Mcs was mostly complicated by acute kidney insufficiency in M group and device thrombosis in MH group. Median time of MCS was 20.0 days(1-210) in M group and 66.5 days(6-781) in MH group. 23(59%)patients from M group died during therapy mostly due to multiorgan failure. Recovery of HF in M group occurred in 12(31%) cases.

Main complication after HTX were cardiac tamponade in both H and MH groups. Death after HTX in H group and MH group were recorded in 5(20%) and in 9 cases(47%) respectively.

Conclusions: We consider MCS as the treatment complementary to HTX in management of end-stage HF. In spite of possible complications optimal utilisation of MCS technologies allows patients to await HTX especially in cases in which conventional therapies are insufficient. MCS could also lead to recovery or be destination therapy depending on etiology of HF and other clinical factors.

[38]

Comparing of the response to antiplatelet therapy with ticagrelor and clopidogrel

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Introduction: Dual antiplatelet therapy consisting of aspirin and P2Y12 antagonist is a cornerstone of treatment in patients with acute myocardial infarction (AMI) undergoing percutaneous coronary intervention (PCI). One-third of patients with AMI do not respond to clopidogrel, which is associated with worse prognosis. Ticagrelor is recommended over clopidogrel in patients with AMI due to more potent and predictable antiplatelet effect. However, the proportion of patients not responding to ticagrelor is not known.

Aim of the study: This study compares the response to therapy with ticagrelor and clopidogrel.

Material and methods: 48 consecutive patients admitted to 1st Chair and Department of Cardiology, Medical University of Warsaw due to the first AMI who received a loading dose of clopidogrel (600 mg) prior to PCI were enrolled in the study. Patients were randomized in 1:1 ratio either to replace clopidogrel with ticagrelor (study group) or to continue the treatment with clopidogrel (control group). Blood was collected three time (i) 24 hours after administration of clopidogrel, (ii) 48 hours following randomisation, and (iii) 6 months following the index hospitalization. Response to P2Y12 antagonists was analysed by impedance aggregometry using adenosine diphosphate (ADP). Patients who exhibited more than 46 aggregation units (AU) in response to ADP were considered non-responsive to P2Y12 antagonists, as recommended by European Platelet Academy.

Results: There were no statistical differences between the two study groups regarding demographic and clinical characteristics (63±10 years, 75% male in the study group; 65±10 years, 71% male in the control group). At baseline, platelet reactivity was 30±21AU in response to ADP, and 13 out of 48 patients (27%) did not respond to clopidogrel. In study group, platelet reactivity was lower than in control group, both during the index hospitalisation (18±14AU vs 39±20AU; p=0.001) and after 5.7±1.4 months follow-up (28±14AU vs 40±20; p=0.01). Following randomisation, 2 out of 24 patients (8%) did not respond to ticagrelor and 6 out of 24 patients (25%) did not respond clopidogrel. At follow-up, the same 2 patients did not respond to ticagrelor, and 7 out of 24 patients (29%) did not respond clopidogrel.

Conclusions: Ticagrelor inhibits activation of platelets more efficiently than clopidogrel. Nevertheless, about 8% of patients do not respond to ticagrelor, also after 6 months. Whether non-responsiveness to ticagrelor is associated with worse prognosis, remains to be determined.

[39]

Cusp extension – old method, new possibilities

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Introduction: Nowadays, aortic valve repair is considered to be an alternative to prosthetic valve implantation for the management of aortic regurgitation (AR). The number of valve repair procedures is increasing and the surgical methods continue to evolve. One of the methods is cusp extension, which involves elongation of the cusp with a patch.

Aim of the study: The aim of the study was to assess retrospectively the patients who underwent aortic valve repair using cusp extension method.

Material and methods: The study group consisted of 33 patients, who underwent cardiosurgical procedure known as cusp extension in Silesian Center for Heart Diseases in Zabrze between 2008 - 2017. Analysis included 27 men and 6 women. Mean age of the group was 37±17 years. Prior to operation patients were assessed echocardiographically: mean ejection fraction (EF) was 54±19%, mean LV diastolic diameter 62±22 mm, and mean LV systolic diameter 45±24mm. All the patients suffered from severe AR. In the analysed group, there were 17 patients with bicuspid aortic valve and 2 with monocuspid aortic valve. Early postoperative outcomes were assessed.

Results: During the aortic valve repair patches made of autogenous pericardium, equine pericardium (Edwards Lifesciences) or CorMatrix ECM were used. After the operation patients were also assessed echocardiographically: mean EF was 51±11%, mean aortic peak gradient 24,26±13,43 mmHg, mean value of aortic mean gradient 11,92±7,24 mmHg, mean LV diastolic diameter 54±9 mm, and mean LV systolic diameter 40±10mm. Postoperatively, 10 patients showed trace AR and 3 had mild AR. One of the patients presented mild aortic stenosis. There was no in-hospital mortality among the patients.

Conclusions: Aortic valve correction using cusps extension is a safe procedure. This method is worth considering, especially for young patients, as anticoagulants are unnecessary after such operation. However, further research and follow-up are required.

[40]

Galectin-3 assessment after ST-segment elevation myocardial infarction treated with percutaneous coronary intervention

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Introduction: Myocardial infarction causes deleterious processes resulting in left ventricular remodelling (LVR) and heart failure (HF). Galectin-3 (Gal-3) affects on LVR as a result of inflammatory processes and fibrosis and is known as a prognostic value in predicting outcomes in HF patients. However, we still do not know the role of Gal-3 in patients with ST-segment elevation myocardial infarction (STEMI).

Aim of the study: The aim was to assess concentrations of Gal-3 in patients after first STEMI treated with percutaneous coronary intervention (PCI) in comparison to the control group. Additionally, we evaluated correlation between concentrations of Gal-3 and basic clinical

Material and methods: We enrolled patients admitted to our department with first STEMI treated with PCI in years 2014-2017. The control group consisted of patients with risk factors for cardiovascular diseases, but without history of coronary artery disease or HF. Gal-3, N-terminal pro-B- type natriuretic peptide (NT-proBNP), cardiac troponin I (cTnI), C-reactive protein (CRP) and other routine laboratory were evaluated 72-96 hours after admission. Transthoracic echocardiography was performed 36–48 hours after PCI. Exclusion criteria were:

previous STEMI/non-STEMI, pre-existing HF, severe renal dysfunction, severe liver disease, chronic inflammatory disease, current neoplastic disease and life expectancy <1 year.

Results: We recruited 119 patients (70% men, aged 59 years, left ventricular ejection fraction (LVEF) 46%) to the study group and 17 patients (53% men, aged 60 years, LVEF 59%) to the control group. Median Gal-3 concentration in the study group was 7.1 ng/mL (5.6-8.8), while in the control group – 6.3 ng/mL (4.8-7.6). Both groups did not differ with regard to history of hypertension, diabetes, dyslipidemia, or family history of cardiovascular diseases, but there was a difference regarding smoking status (73.3 vs. 64.7%) and CRP level (3.0 vs. 1.6 mg/L). Level of Gal-3 positively correlated with age, time to PCI, hospitalization time, NT-proBNP and CRP concentrations, and negatively with hemoglobin level, LVEF, glomerular filtration rate (GFR), urea and uric acid. There was no correlation between Gal-3 and cTnl.

Conclusions: Gal-3 serum levels correlates with indices of left ventricular function and inflammation in patients after first STEMI. Future studies are needed to explore the role of Gal-3 as a useful predictor of LVR after myocardial injury.

[41]

Vocal cord paralysis after surgical closure of a patent ductus arteriosus

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Introduction: Interventional closure of a patent ductus arteriosus (PDA) is considered standard treatment for symptomatic neonates refractory to medical therapy. Sometimes iatrogenic injury to the left recurrent laryngeal nerve during the procedure can result in a vocal cord paralysis (VCP).

Aim of the study: This study aimed to estimate the incidence of VCP in patients post interventional PDA closure and to identify any associated risk factors and morbidities in preterm infant population.

Material and methods: A thorough search of the major electronic databases was conducted to identify studies eligible for inclusion into this meta-analysis. Studies reporting data about incidence of VCP (primary outcomes) or risk factors and morbidities for VCP in preterm infant population (secondary outcomes) were included.

Results: A total of 33 studies (n=5582 patients) were included into the analysis. Overall pooled incidence estimate of VCP was 6.9% (95%CI: 4.7-9.5). The incidence of VCP after PDA closure was significantly much higher in premature infants (11.2% (95%CI: 7.0-16.3)) than in non-premature patients (2.4% (95%CI: 1.4-3.8)). The data showed that VCP was most common after surgical ligation, followed by surgical clipping and transcatheter coil occlusion. The risk factors for postoperative VCP in preterm infants included birth weight and gestational age. In addition, VCP was significantly associated with the occurrence of bronchopulmonary dysplasia, gastrostomy tube insertion and increased duration of mechanical ventilation.

Conclusions: Vocal cord paralysis remains a frequent complication of interventional closure of PDA, especially in premature neonates. Surgeons should take particular caution when performing PDA ligation or should consider performing PDA clipping or transcatheter coil occlusion. The high incidence of this complication and its associated severe morbidities warrants greater efforts to prospectively assess vocal cord mobility status in high-risk infants who undergo PDA surgical closure.

[42]

New onset bundle branch block in acute coronary syndrome

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Introduction: New bundle branch block (BBB) is one of the symptoms which appears in ECG in acute coronary syndrome (ACS). So far, acclaimed symptom which needs immediate conducting was new left bundle branch

block (LBBB). In recent years, there have been more reports about significant diagnostic role of new right bundle branch block (RBBB).

Aim of the study: To assess clinical characteristic, angiography lesions and in-hospital outcomes of patients with new LBBB and RBBB in ACS.

Material and methods: From patients, who were admitted in 2007-2016 because of ACS, on the basis of admission ECG, BBB was observed in 408 patients. Next, available in hospital database previous ECGs of patients were analysed. 125 LBBB and 153 RBBB patients were identified. Data and clinical outcomes of LBBB, RBBB and 1015 patients with ACS without BBB were compared.

Results: Patients with LBBB were older than patients without BBB (76 vs 68 years; $p < 0,001$), more often were diagnosed with myocardial infarction (55(44,00%) vs 354(34,91%); $p = 0,057$), stroke (11(8,80%) vs 47(4,64%); $p = 0,075$), heart failure (69(55,20% vs 269(26,55%); $p < 0,001$) and renal failure (34(27,42%) vs 156(15,40%); $p = 0,001$). Patients with RBBB were older (73 vs 68 years; $p < 0,001$), more often were diagnosed with stroke (12(7,84%) vs 47(4,64%); $p = 0,137$), heart failure (49(32,03%) vs 269(26,55%); $p = 0,187$) and diabetes mellitus (66(43,14%) vs 373(36,79%); $p = 0,155$).

Comparing coronarography with group without BBB tendency to more often significant stenosis in left main ($p = 0,121$) and right coronary artery ($p = 0,072$) in patients with LBBB and to more often stenosis of left main ($p = 0,093$) and anterior descending artery ($p = 0,020$) in patients with RBBB were observed.

In-hospital mortality rate was 1,6% in LBBB, 2,61% in RBBB i 2,08% without BBB.

Conclusions: New BBB in ACS is rare but significant problem in invasive cardiology. Important step of diagnostic is analysis of previous ECGs to estimate time of BBB occurrence. Our study shows that patients with LBBB as well as ignored in guidelines patients with RBBB are in high risk group, that is illustrated by in-hospital mortality. Presence of significant coronary stenosis correlates with anatomical blood supply to the bundle.

Dentistry

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[43]

Comparison of the sensitivity for detecting risk factors of periodontitis among conventional radiography

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Introduction: Chronic periodontitis is an infectious disease that results in the loss of connective tissue attachment as well as alveolar bone. The etiopathogenesis of chronic periodontitis includes local factors or iatrogenic factors. Among the latter there are overhanging dental restorations which affect the formation of supragingival plaque and changes in subgingival biofilm.

Aim of the study: The aim of the study was to establish the use of panoramic radiography in periodontitis local factors detection. In addition, we have performed a deep correlation between the periodontitis local factors and degree of the lesion the lead to.

Material and methods: We have taken into analysis 180 panoramic pictures. We selected cases which illustrate overlapping dental restorations. Planmeca Romexis Viewer was used to conduct the study. Dental plaque accumulation local factors were taken into consideration. The study included age and sex of patients, general condition of the alveolar bone, the correct contact with the opposed arch, the state of the adjacent tooth and the same information about the unilateral tooth. Inappropriate fillings were also assessed. The obtained results were subjected to statistical analysis by mean of Statistica 13.1 (StatSoft, USA). Values for which the significance level was $p < 0.05$ were considered valid and statistically significant.

Results: The results of the study revealed that the most crucial factor influencing the level of alveolar crest is the interproximal restoration in posterior teeth. Using the three dimensional models we observed the effect of extension on class II restorations on the loss of alveolar process mainly in teeth with mesiodistal restorations (U-Mann-Whitney test $p < 0.002$ $U = 3.11$). The average bone lesion measured in the panoramic pictures adjacent to above mentioned class II restoration was 2.01 mm, whereas in teeth with three walls restoration on opposite side of the dental arch the loss was significantly higher (4.01 mm, $p < 0.0026$; $U = 7,12$). Moreover we have performed the Spearman's rank correlation coefficient, used as nonparametric measure, in order to calculate the influence of size of overhanging filling and the edge of alveolar crest was $R = 0.73$, confirming therefore strong correlation.

Conclusions: Panoramic radiography is helpful instrument in diagnosing patients suffering from chronic periodontitis. Due to digital imaging it is possible to determine appropriate treatment among patients with recognized periodontal disease.

[44]

Dental care habits, oral hygiene and gingival health in polish wind musicians - questionnaire study

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Introduction: Wind musicians have to be more considerate with oral hygiene. The main factor that have negative indication on oral health are increased air flow through oral cavity during playing, stress during performances and the way of mouthpiece contacting mouth. The last factor divide wind instrument into two groups: brass instruments when mouthpiece is touching lips, and woodwind instruments when player either: lays the instrument on teeth and cover it with lips (single reed mouthpiece instruments), or covers the fipple with lips (double reed mouthpiece instruments), or puts mouthpiece on lower lip and chin (flutes).

Aim of the study: Evaluation of oral health and oral care habits in wind musicians.

Material and methods: Questionnaire was taken by 211 wind musician in age between 15 and 64 years old. It was divided into sections: general information, hygiene of mouthpiece, oral hygiene, consultations with periodontist, periodontium health, oral mucosa health, information about time spend on playing, intake of stimulants and general health. The results were compared, and percentage of patients with bleeding depending on the age, the kind of instrument and changes on mucosa was counted.

Results: Majority have knowledge about the importance of proper mouthpiece hygiene. Contacting with saliva, the humidity leaving reed unclean make opportunity for bacterial and fungus growth. Nevertheless only flute players clean mouthpiece after each usage (99%), such behaviour can be observed in only 56% of single reed mouthpiece players, 38% of double reed mouthpiece players and 33% of brass players. In each group approximately 50% of questioned musicians have changes on oral mucosa which weren't consulted with a doctor. Specifics of playing wind instruments predispose oral mucosa to irritation and trauma. Therefore in flute players the frequency of changes is 20% lower because mouthpiece is only contacting lips. The fact that none of the patients consulted changes on oral mucosa is alarming. The universal method of indicating inflammation was presences or absences of bleeding. There are no significant differences in number of patients with this problem in different instruments groups, but more than 50% of questioned musicians observe this problem.

Conclusions: Among questioned musicians there is need for oral hygiene improvement. These patients should also go under special dental care, paying attention to periodontium and oral mucosa health.

[45]

Comparison of two ways to placement implants based on in vitro studies using 3D printed models of mandibula

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Introduction: In recent times many case studies, which showed clinical application of drill guides, appeared. Most of them shows positive impact of using drill guides on treatment outcome. The in vitro operative procedure is opportunity to weigh 'with drill guide method' against 'without drill guides method'.

Aim of the study: The reference of influence of drill guides on accuracy and repeatability of surgical procedure.

Material and methods: The CBCT research was made before the due prosthetic treatment. Drill guide was designed with a view to the final restoration and made by acrylic with Stereolithography. Acrylic is a material which can be sterilized. The same drill guide was used for research's purposes after it had been using during surgical procedure. DICOM files from patient's CBCT were used to prepared digital model of mandibula. 10 physical models of bone were made by polyamide with SONDASYS – industrial Selective Laser Sintering additive manufacturing machine. Standard surgical procedures were performed on 5 models of mandibula. Surgical procedures with a drill guide were also performed on rest of models. The shape of models gave the opportunity to recreate clinical conditions. Next plastic bones with implants were scanned with optical scanner. Degrees of differences in implants' localization were visualised using 3D scans and statistical analysis of distances measurement.

Results: Maps of variation in the implants placement made by scans, showed more differences in 'without drill guide' group. 5 bones with implants placed with drill guide were more similar in 1mm and 0,5mm tolerance. Also differences in distance between reference points were smaller in this group.

Conclusions: Although clinical experience shows that 'without guide' method of implants may be acceptable, in vitro studies shows that using drill guides improves accuracy and repeatability of surgical procedure. Using additive technology in implantology treatment help to transfer plan of treatment from software to oral cavity.

[46]

Comparative assessment of efficiency of removable and fixed retainers in patients with completed orthodontic treatment

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Introduction: Final stage of orthodontic treatment is consolidation of results obtained in active therapy. For stable results are used different removable and fixed retainers.

Aim of the study: The aim of the study was to estimate clinical efficiency of removable and fixed retainers in patients with completed orthodontic treatment.

Material and methods: Material and methods: The study was organized on basis of Pediatric Dentistry Clinic (Russia) in 2015-2017 as a prospective randomized clinical trial in terms of which 32 patients (18-30 years of age) were selected. They underwent treatment for prognathia (class II malocclusion) on braces: 16 of them were treated for I subclass- incisor protrusion (1a, 1b), other 16 for II subclass -incisor retrusion (2a, 2b). Each subclass patients were divided into 2 groups. So we had 4 groups with 8 patients in each. Each group was assigned an order number: 1a, 1b, 2a, 2b. In Group 1a, 2a the retention carried out on bonded retainers, in Group 1b, 2b — on vacuum-formed ones, produced with Biostar molding machine. The retention results were evaluated right after the treatment completion, and in 6, 12, 18 months by analyzing models and recording the following measurements: interpremolar width, intermolar width, anterior arch length.

Results: In Group 1a anterior arch length increased more significantly than in Group 1b within the first 6 months in 6 patients (75%). Within the next measuring in 12 and 18 months wasn't determined any difference in relapse rate and intensity. Anterior arch length in Group 2a and 2b changed proportionally, wasn't determined any difference in relapse rate according to retention results. Based on the interpremolar and intermolar width there wasn't registered any statistically significant difference at the end of treatment, and in 6, 12, 18 months after its completion in different groups with application of both- bonded or vacuum-formed retainers.

Conclusions: Using vacuum-formed retainers after prognathia with incisor protrusion treatment more stable results are achieved within first 6 months of using this retainer, than when bonded ones are used. So, it is recommended to use vacuum-formed retainers in such group of patients. After prognathia with incisor retrusion treatment the relapse rate was low and comparable with application of both- bonded and vacuum-formed retainers. So, any of these device can be beneficially applied in this group of patients.

[47]

Comparative analysis of some antiseptic agents used to clean effectively removable dental prostheses

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Introduction: The surface of removable dental prosthesi is a basis for adhesion, colonization and reproduction for lots of microorganisms. Therefore, bacterial flora of removable dentures, especially in combination with poor hygiene, may cause various inflammatory diseases of the oral mucous membrane as well as other complications. Application of broad-spectrum disinfectant agents with high antimicrobial activity to eliminate microorganisms that are on the surface of dentures is of great significance for dental health.

Aim of the study: The aim of the study was to compare effectiveness of antiseptic agents "MD 530" and "Avancept" applied for removable dentures cleaning.

Material and methods: Antibacterial activity of antiseptics was investigated in 22 samples of removable dentures from patients aged 45 - 58 years, with defects of dentition and complete lack of teeth. Biomaterial from the surface of the dentures was taken with a sterile swab before and after the disinfection. It was placed in a Stuart's transport medium. Cultivation of microorganisms and their identification was performed according to a Standard Protocol of Investigation.

Results: The main representatives of the bacterial biofilm denture are Streptococcus: *S. sanguinis*, *S. oralis*, *S. parasanguinis*, *S. vestibularis*, *S. constellatus*, *S. salivarius*; Lactobacillus: *L. fermentum*, *L. gasseri*, *L. rhamnosus*, *L. vaginalis*, *L. oris*, as well as anaerobic microorganisms: *V. parvulla*, *V. atypica*, *Abiotpophia defectiva*, *G. adiasens* less *P. melaninogenica*, *Bifidumbacterium dentium*, and *Candida*: *C. albicans*, *C. kefur*, *C. inconspicua*. The severity of the antibacterial activity of the studied antiseptics was not equal in relation to different types of microorganisms. The MD 530 resulted in death of all types of microorganisms in 55% cases, while Avancept showed the similar activity only in 44% cases. Anaerobe microorganisms were the most sensitive to the studied antiseptics representatives of the biofilm, as after cleaning of dentures their 100% death was identified. The most resistant to antimicrobial activity of antiseptics were lactobacilli (*L. fermentum*, *L. gasseri*, *L. rhamnosus*) and streptococci (*S. salivarius*, *S. oralis*, *S. constellatus*). Low activity of both antiseptics against *Candida* was disclosed.

Conclusions: Antiseptics "MD 530" and "Avancept" demonstrate intensive antibacterial activity against parodontopathogenic bacterial microflora and weak effect against *Candida* microorganisms.

[48]

Comparison of axial walls convergence of full crown preparations done with and without magnification loops

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Introduction: Full-coverage crown is common choice of restoration for extensively damaged teeth. Ability of the dentist to adequately prepare teeth is important for success and durability of these restorations. Retention and resistance of crown is affected by convergence angle of preparation, height of preparation, height to base ratio of preparation and type of luting cements. Recently there is a wide usage of magnification in dentistry. Operating microscope or loops can provide clinician better visualization of preparation, possibly giving an advantage in achieving better preparation.

Aim of the study: To assess the preparations for prosthetic crowns made with and without magnification loops. To assess the taper of axial walls of resulted preparations.

Material and methods: 10 plastic teeth on the phantom were prepared for prosthetic crowns by 5th year dental student. The procedures are done using magnification loops and without them. Preparations were photographed with digital camera in mesio-distal, buccal-lingual and occlusal planes. Pictures of prepared teeth were transferred to AutoCAD software for the measurement of angle of convergence.

Results: Taper achieved without loops: 2nd lower molar: 5°, 2nd lower premolar: 13°, 1st lower incisor: 9°, 1st upper incisor: 9°, 1st upper molar: 36°. Taper achieved with loops: 2nd lower molar: 5°, 2nd lower premolar: 22°, 1st lower incisor: 4°, 1st upper central incisor: 5°, 1st upper molar: 16°.

Conclusions: As results show in average the better taper of preparation was achieved using magnification. As for me also the big advantage was extra source of light attached to the loops, which always allowed good visualization of any tooth surface.

[49]

Evaluation of efficiency of complex treatment of patients with dysfunction of the temporomandibular joint

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Introduction: The incidence of the temporomandibular joint (TMJ) dysfunction is increasing. It is clear that the treatment of the dysfunction should be comprehensive, taking into account etiology, pathogenesis, stage of the disease, course and the state of the patient.

Aim of the study: The aim of our study was to evaluate effectiveness of psychopharmacocorrection and splenotherapy TMJ dysfunction.

Material and methods: The study involved 127 patients: 107 patients with TMJ dysfunction and 20 without signs of the pathology. We performed rheography and electromyography in dynamics. The core of the complex treatment was that at the first stage the patients were given psychopharmacocorrection together with a psychiatrist and / or psychotherapist. Then all patients were made individual occlusal tires according to R. Slavicek (2008) on the lower jaw to normalize an occlusal relationship, stabilization the position of the lower jaw and restore the height of the lower third of the face. So, we had a correct position for the head of the lower jaw relative in the articular cavity and the intraarticular disc, which prevented the development of an imbalance between the chewing muscles. With visual assessment of the parameters after the treatment, we marked a steep anacrotic, sharp peak, a well-marked dicrotic wave that was located in the middle third of the catacos. These changes characterize the normalization of the vascular tone of the periarticular tissues.

Results: In group 2A the values approached the norm. There was an increase in the rheographic index, an amplitude-frequency index, and the blood flow velocity indicating an increase in the blood filling of the investigated region as a result of decompression of the vessels. On electromyograms at physiological rest in patients of Group 2A after a month of wearing the mouthguard there were no spontaneous outbursts of excessive muscular activity. In Group 2B, improvement only occurred after 3-6 months with unstable results. Data of electromyography at the primary examination and 12 months after the treatment in patients of group

2A demonstrated 94.7% efficiency. There was gradual disappearance of muscle tension and soreness indicating a readjustment of the joint and muscle receptors to work in a new position, which we had with a mouthguard.

Conclusions: Psychopharmacocorrection jointly with splint therapy provide normalization of the position the heads of the condylar processes in the TMJ and leads to decompression of the blood vessels and normal function of the chewing muscles and the TMJ.

[50]

Evaluation of the difference in screwing and unscrewing times and the comfort of usage of selected screws used in endoscopically assisted osteosynthesis of the mandible

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Introduction: Titanium plates are often being used for performing osteosyntheses of both the mandible and the maxilla. They need to be attached to the bone on both sides of the fracture in order to keep the bone fragments together. To achieve that a large variety of screws is being used. They differ in size and material. Some of them have a screw tap. During the procedure an endoscope may be used to minimize the damage to other tissues.

Aim of the study: The aim of the study was to evaluate the difference in screwing and unscrewing times as well as the comfort of usage of selected screws produced by the companies Synthes and Martin while endoscopically attaching a plate.

Material and methods: Five screw-types were tested. Two provided by Synthes (1. Synthes screw with a cruciform driver; 2. Synthes Matrix) and three by Martin (3. Martin maxDrive; 4. Martin centreDrive without screw tap; 5. Martin centreDrive with screw tap). For purpose of testing the screwing and unscrewing times they were used an endoscopically assisted attachment of a titanium plate to a synthetic bone. The procedure was performed by three groups, each consisting of three people. The first group had neither surgical experience nor had ever used an endoscope. The second consisted of surgeons not skilled in the usage of an endoscope, while the third one consisted of surgeons using the endoscope for performing medical procedures on a daily basis. Afterwards all of them were asked to fill in a questionnaire in which they were asked about the comfort of screwing, unscrewing and the general comfort of usage of each of the tested screws. The results have been statistically evaluated by means of the Mann-Whitney test.

Results: The average time of screwing was 32,8 (Synthes screw with a cruciform driver), 16,9 (Synthes Matrix), 28,6 (Martin maxDrive), 14,4 (Martin centreDrive without screw tap), 17,7 (Martin centreDrive with screw tap) and the average time of unscrewing 20,3 (Synthes screw with a cruciform driver), 11,7 (Synthes Matrix), 17,3 (Martin maxDrive), 15,8 (Martin centreDrive without screw tap), 16,8 (Martin centreDrive with screw tap), while the average comfort of usage was rated as 4,8 (Synthes screw with a cruciform driver), 7,6 (Synthes Matrix), 4,8 (Martin maxDrive), 7,1 (Martin centreDrive without screw tap), 6,6 (Martin centreDrive with screw tap).

Conclusions: Based on the statistical evaluation it seems that Synthes Matrix and Martin centreDrive without screw tap allow the fastest and most comfortable usage.

[51]

Evaluation of composition and genetic diversity of DNA macrorestriction patterns of oral Staphylococcus epidermidis and S. aureus microbiota in the group of immunocompromised patients

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Introduction: Staphylococcus epidermidis (SE) and S. aureus (SA) constitute an important component of human oral microbiota. It's assumed that sustained natural microflora is not dangerous to generally healthy people, but for immunocompromised patients, it may pose a threat of serious, life-threatening infections

Aim of the study: Estimation of oral SE and SA flora composition, its stability, time- and site- dependent genetic diversity of DNA macrorestriction patterns at the within-species level, in the group of immunocompromised patients.

Material and methods: Strains were isolated on Chapman agar plates and identified with Vitek 2 device and/or mass spectrometry Vitek MS, Biomerieux. The pulsed-field gel electrophoresis (PFGE) was performed with the CHEF DRII system, by Bio-Rad. The cultures of strains were enclosed in 0.02% gel rings (low melt preparation agarose, Bio-Rad). DNA cleaving was performed by the restricting enzyme, SmaI. Gels were routinely run at 6V/cm at 14°C on 1% agarose concentration, with pulse times of 5 to 40 seconds for 21 hours. Gels were stained with ethidium bromide and analyzed with UV light. Isolates demonstrating 100% similarity, were considered identical, while those with equal or more than 79% of similarity, were considered as closely related.

Results: From each patient 1 to 7 strains were isolated. Among 119 isolates, 56% were obtained from dentures, whereas 44% from throat areas. SA colonization was found in 13 (48%) patients and its strains consist of 15% of all isolates. 85% was represented by SE. The majority of isolates were obtained from swabs collected prior to organ transplant. The PFGE patterns revealed that similarity values among SE ranged from 31 to 85%. In case of only 3 (11%) patients, closely related isolates were found within one subject, despite a patient with 7 isolates. Similarity values among SA ranged from 38 to 78%. None of the isolates were considered identical.

Conclusions: The population of endogenous oral SE and SA strains in immunocompromised patients features high diversity within the species. It also tend to evolve severely in mechanism of clone replacement and clonal spread. That makes natural staphylococcal flora a substantial threat for developing opportunistic infections.

[52]

Study of emotional reactions during chewing

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Introduction: For the first time a computer polygraph (lie detector) was used to evaluate mastication function and a new original method to study mastication process, based on the assessment of psychoemotional state of a person by evaluating the characteristics of mastyciogram and accompanying chewing changes in the skin galvanic reaction (SSR) was proposed.

Aim of the study: The aim of the study was to reveal the emotional reactions of a person in the process of working muscles moving of the lower jaw during chewing.

Material and methods: The experiment involved 10 volunteer students who had integral dentition and physiological appearance of the occlusion. A computer polygraph Barrier-14 (Moscow, Russia) was used. The location of sensors: a respiratory - under the chin of the subject to record the mastyciogram (the motor component of the chewing), the SGR sensor - on the two non-adjacent fingers of the left hand (the emotional component of the chewing). During the study, the subject was asked to chew the standard portions of 20 grams of fresh black bread with assorted flavors: sweet taste (sugar), sour taste (citric acid), salty taste (table salt), bitter taste (table mustard).

Results: The process of chewing food with different tastes initiated a series of specific vegetative and emotional reactions. Simultaneous registration of mastiatsiograms and SGR allowed us to establish the relationship between the parameters of the chewing cycle and the taste characteristics of the tested samples, with the greatest changes in the duration and configuration of the phases of orienting chewing and swallowing. The curves of SGR clearly defined the nuances of emotional reactions depending on the type of taste receptors involved in the chewing process, which was manifested by a change in the amplitude and frequency of the response peaks that appear after and after, as post-taste reactions.

Conclusions: "Barrier-14" provides an opportunity to evaluate emotional reactions in dentistry patients. It can be beneficial in adjustment of dentures. In addition, the software features can process the results mathematically (statistically). The advantage of the method is also its simplicity and accessibility. Possibilities of mastyciography with parallel recording of SGR opens new prospects for studying the act of chewing both in the norm and in the pathology of the dentoalveolar apparatus.

[53]

Root surface SEM analysis after in vitro apicoectomy performed with Pizosurgery and drill

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Introduction: Apicoectomy is a surgical method used in periradicular pathologies. It is performed in clinical situations like: horizontal fracture in $\frac{1}{3}$ of the apical root; periapical tissue inflammation including $\frac{1}{3}$ of the root length; failure of root canal treatment. The traditional method of resection consists of drills and a rotating tip usage. Introduction of piezoelectric instruments in oral surgery allows for more precision work thus reducing the risk of damaging soft tissues.

Aim of the study: The aim of the study is to analyse and compare the surface integrity of the roots after resection with microhead handpiece and piezoelectric tip.

Material and methods: 14 teeth have been assembled and divided into two groups of 7- for an in vitro resection with a piezoelectric device and resection with a dental drill.

Roots remained after resection have been trimmed on the other side in order to fit into SEM for examination, which was made afterwards.

Results: The images were obtained at a magnification of 26X,50x,250x,1000x. The images of the surface after resection with piezosurgery and a drill were compared, measured and analysed. Obtained results indicates that teeth resected with a piezoelectric device characterise with more homogeneous and smooth surface of the roots, preserved tissues morphology and visible dentinal tubules, while teeth resected using traditional method characterised with impaired tissues surface structure, noticeable shavings and remnants of dentin forming smear layer.

Conclusions: Piezoelectric instruments usage allows greater surface integrity of resected roots and shortening treatment time (by $\frac{1}{3}$ on average). On the other hand drills are mechanically wearing which results in treatment lengthening and greater morphology impairments of the resected surfaces. A vital factor affecting the obtained results is an operator's experience.

[54]

Application of 3D printing for bone graft fabrication in oral implantology

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Introduction: Considering complex anatomy and interventions in maxillofacial region, there is a need to improve surgical procedures in order to reduce operating time, facilitate surgeon's work and meet the expectations of patients. New possibilities have been provided by 3D printing technologies, such as stereolithography (STL). STL enables the printing of 3D models derived from patient's radiologic images (CT, CBCT, MRI). The study focuses on application of STL for 3D scaffold fabrication in oral implantology.

Aim of the study: Frequently encountered problem with an ideal implant placement and long-term prognosis is insufficient horizontal and vertical bone level in esthetic zone and molar regions, especially due to periodontopathies. The most common materials used in order to

Material and methods: Study model consisted of pig maxilla and mandible. A pre-operative CBCT of selected bone defects was done. Then a set of manually adjusted allogenic bone grafts (control group, set 1) and a set of individually designed in VisNow□ program 3D printed (STL) scaffolds (set 2), were fixed. Time of each procedure was measured. A postoperative CBCT was done. Scans were processed and precision of bone reconstruction was mathematically evaluated in VisNow□ program, basing on air residues between bone defect walls and graft surface.

Results: The study proves that 3D printed customized grafts show better contiguity with bone defect structures, presenting very high precision of bone reconstruction. Visual software (VisNow□) facilitates surgical planning and simulations. Operating time was significantly reduced with the usage of STL. Costs of the procedure

demonstrates that 3D printing technologies are suitable substitutes for allogenic and xenogenic bone grafts in oral implantology.

Conclusions: Successful application of 3D printing technologies along with tissue engineering can avoid challenges related to conventional treatment. Necessary adjustments to biodegradable materials and visual softwares should improve STL efficacy in dental applications. Research from animal and clinical studies in this field is still ongoing, as atraumatic and personalized medicine is becoming increasingly popular.

[55]

Application of reverse engineering as an alternative to conventional methods of controlling fit accuracy of prosthetic restorations

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Introduction: Reverse engineering used in many technical applications is becoming a useful tool in the field of medicine. By obtaining a digital image of a physical object it is possible to perform a detailed analysis of the parameters of the prosthetic restoration, in particular the assessment of internal and marginal fit which is one of the most important factors from the clinical point of view. This is an alternative to the replica technique described in the literature and another method of measuring internal fit.

Aim of the study: The aim of the study was to compare marginal and internal fit of bridge measured using reverse engineering and replica technique.

Material and methods: The five prosthetic bridges were analyzed for digital best fit, which were presented on the heat maps. The procedure was performed using technical 3D optical scanner and specialist software. 50 measurement points for each bridge were selected to determine numerical marginal and internal fit of the restorations. The same bridges were investigated using replica technique, the silicone cast was measured at 50 points under the microscope for each restoration. A statistical analysis was performed to compare the obtained results.

Results: Measurements did not statistically differ in both individual study groups.

Conclusions: Reverse engineering is a valuable alternative to assessing the parameters of prosthetic restorations, allowing to obtain results corresponding to the replica technique and characterized by the advantage of graphically representing the entire surface of the restoration, possibility of controlling every dimension and angle as well as thickness of the walls of the restoration.

[56]

Correlation between oral health and hygienic, dietetic habits of children under 6 years old and their parents

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Introduction: Children's health behaviour are moulded mostly by parents. Their dietetic and hygienic habits, approach to dental treatment have an influence on children's oral health. Awareness about correlation between parents' and children's oral health can be useful to elaborate effective plan reducing caries prevalence.

Aim of the study: To determine a correlation between oral health, hygienic, dietetic habits of children under 6 y.o. and their parents

Material and methods: The study was conducted for healthy patients under 6 y.o. and their parents in Department of Paediatric Dentistry, MUW. Dental caries (DMFT/dmft) and oral hygiene (OHI-S) were examined. The questionnaires for parents were given, concerning dietetic and hygienic habits and caries risk factors. Statistica 12 software and Spearman's rank correlation were used for statistical analysis. The study received Bioethics Committee approval

Results: Sixty children (mean age $4\pm 1,37$ years) and sixty parents (mean age $37\pm 5,24$ years) participated in the study. The mean value of OHI-S was $0,5\pm 0,55$ and $0,96\pm 0,9$ respectively. dmft- $2,75\pm 3,15$ and DMFT- $8,02\pm 4,86$ in parents. A statistically significant correlation was found between children's and parent's OHI indexes ($r=0,380$), frequency of brushing teeth ($r= 0,355$), inappropriate dietetic habits like drinking soda drinks by children and parents ($r= 0,375$). There is an association between dmft, OHI index and the age of starting brushing teeth (r respectively at level $0,321$ and $0,304$). Only 60% of participants control their children during teeth brushing.

Conclusions: Parent's oral hygiene and dietetic habits have an influence on children's oral health and hygienic, dietetic habits. Children's and parent's OHI indexes and dmft are correlated.

[57]

Oral Hygiene Competence Assessment in Students of the Dentistry Faculty with Different Types of Temperament

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Introduction: Quality of oral hygiene always influences oral cavity diseases and tooth destructions. It is highly important for patients to keep their oral hygiene in proper condition. The process involves cooperation between a patient and his dentist, so assessment of patient's compliance for hygiene is significant. This kind of information can help doctors to choose the best tactics of cooperation with various types of patients' temperament.

Aim of the study: The aim of the study was to analyze the correlation between patients' oral hygiene competence and type of their temperament.

Material and methods: Two questionnaires were given to 1st year students ($n=50$) of the Dentistry Faculty. They included "Temperament Formula" for temperament assessment.

The questionnaire was also designed to investigate students' competence in oral hygiene with particular emphasis on methods and tactics of teeth cleaning, modern facilities for oral care and the frequency of visits to a dentist.

Results: : We had some temperament groups: sanguine-32%, phlegmatic-30%, choleric-22%, melancholic-2% and 14% mixed temperament individuals.

Because of insufficient number of melancholics and individuals with mixed temperaments we didn't include them in calculation of several parameters.

Hygiene skills: There is a distribution of individuals with different types of temperament and their compliance to oral hygiene

- Dentist's recommendations about facilities (43,75%, 18,18%, 30%)
- Choose tooth-brushes by themselves (60%, 54,55%, 30%)
- Rely on advertisement (30% in every group)
- Bleaching tooth paste (18%, 63%, 8%, 14%)
- Prophylactic tooth paste (25%, 27,27%, 40%, 86%)
- 2 cleanings a day (31,35%, 81,82%, 73,33%)
- 1 cleaning a day (25%, 2%, 26,67%)
- Recommended cleaning strategy (31,35%, 36,36%, 40%)
- 3 minutes for procedure (40%, 54,55%, 31,35%)
- Tongue cleaning (50%, 54,6%, 46,67%)
- Mouth rinse usage (25%, 27,27%, 6,67%)
- Visiting dentist twice a year (56,25%, 36,36%, 66,67%)

Conclusions: The study shows that phlegmatic persons are better informed about oral hygiene. Unfortunately, even the dentistry students are not well informed about this subject in professional aspect.

[58]

Gender correlation between compensatory occlusal curves values according to Cone Beam Computer Tomography measurements

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Trustee of the paper: Oksana Kovaleva, PhD

Introduction: Background. Human's orofacial system has a number of functional features, which improve its adaptation characteristics. Existing of Spee and Wilson compensatory occlusal curves are conditioned by these mechanisms. Spee and Wilson curves do not have standardized values. The data should demonstrate occlusal forces and neural control over mastication.

Aim of the study: The aim of the study was to measure occlusal compensative curves and asses gender correlation of these parameters.

Material and methods: We collected data from 75 CT (43 women and 31 men) radiograms made by standardised Cone-Beam-Computer-Tomography method in 8x8, 8x15, and 13x15 sizes, using Ez3D2009 and OnDemand3DDental software. All data were analysed in statistic software IBM SPSS statistic 23. Kolmogorov-Smirnov confidence criteria were applied for all data. Dropped perpendicular from occlusal plain to outermost cusp on lower masticatory teeth on functional side for Spee curve and dropped perpendicular from occlusal plane to cross point of 2 straight lines drawn though cusps on last lower molars for Wilson curve were measured. Participants were chosen according to following criteria: lack of systemic diseases, orthognatic bite, lack of dystopic wisdom teeth and restorations on cusps in masticatory teeth.

Results: The study revealed gender correlation between Spee and Wilson curves.

Spee/Wilson values interval was higher among men (from 0,7 to 1,5 among men and form 0,5 to 1,2 among women). Medium Spee/Wilson value was higher in men (1,174 for men and 0,841 for women). Medium Spee value among men was higher (4, 1703 for men and 3, 5916 for women). Medium Wilson value was slightly lower in men (6, 4168 for men and 6, 8837 for women).

Conclusions: Due to higher medium values of Spee curve and spread Spee/Wilson values it is possible to conclude that men tend to place more forces on vertical masticatory movements, and women – to horizontal movements. In a clinical contest, the data can be used for the planning of dental care and material selection according to patients' gender and giving proper anatomic shape for restorations based on articulation registration data with gender characteristics.

[59]

Comparative analysis of the clinical, radiological and histopathological picture of the keratocystic odontogenic tumour (KCOT) - a retrospective study

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Trustee of the paper: Piotr Regulski DMD, PhD, BS, Zygmunt Stopa MD, PhD, Dorota Biernacka-Wawrzonek MD, PhD, Paweł Pihowicz MD

Introduction: Deriving from odontogenic epithelium tumour was considered as non inflammatory cyst for many years and was described as keratocyst. Clinical process, aggressive behavior manifested by the ability of destroying adjacent tissues and high metastasis tendency, as well as latest informations involving histology and genetics caused that World Health Organization classifies this alteration as odontogenic tumor since 2005.

Aim of the study: Assessment and comparison of diagnoses made on the basis of the clinical, radiological and histopathological picture of keratocystic odontogenic tumour (KCOT) - a retrospective study. The selection of the representative characteristics of clinical and rad

Material and methods: A selection and retrospective study of the Cranio-Maxillo-Facial Surgery, Oral Surgery and Implantology of Medical University of Warsaw patients' medical history, with diagnosed keratocystic odontogenic tumour, theirs radiological examinations (panoramic radiograph and CBCT) made in the Department of Dental and Maxillo-Facial Radiology of Medical University of Warsaw, and assessment and comparison of

diagnosis made on their basis. Comparison with a control group consisting of patients with histopathological recognition of the odontogenic cyst. All of the examinations were made as a regular diagnostic process of patients coming to the Clinics and Departments mentioned above, no patient was exposed to X-ray radiation for scientific purposes only. A statistical analysis conduction of individual characteristics of the clinical and radiological picture and a degree of correlation assessment between these characteristics and the histopathological diagnosis.

Results: Data analysis of 18 patients in two groups with equal number of people. The women constituted for 66,6% of the test group, average age was 42,6 years, tumors were located mainly in the mandible, often in the proximity of the impacted teeth, and caused the relocations of those teeth, recurrences occurred. The men constituted for 55,6% of the control group, average age was 47,3 years, cysts were located mainly in the maxilla, impacted teeth in the proximity occurred less often, cysts caused the resorption of teeth, recurrences did not occur.

Conclusions: Patients with a diagnosed keratocystic odontogenic tumour require regular and long- term check-tests. In those cases, radical surgical treatments should be considered on account of the recurrence frequency.

Dermatology

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Scientific Patronage:

Polskie Towarzystwo Dermatologiczne

Stowarzyszenie Lekarzy Dermatologów Estetycznych



Date:

Saturday, May 12th, 2018

Location:

Room 23, Library - CBI

Regular:

Kinga Grzelak

Julia Nowowiejska

Kseniia Tkachyshyna

Joanna Zozula

Magdalena Chrabąszcz

Maryla Michalak

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[60]

Clinical profile of 45 patients with vulvar lichen sclerosus – a retrospective study

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Trustee of the paper: dr. hab. n. med. Ewa Romejko-Wolniewicz, lek. Agnieszka Dobrowolska-Redo, lek. Monika Kalinowska**Introduction:** Lichen sclerosus is a chronic localized dermatosis, with an autoimmune pathogenesis. It is likely to occur in the anogenital region. Lichen sclerosus affects more female than male patients with 10:1 ratio. There is no causative therapy. Topical steroids remain gold standard for the treatment. Due to the insufficiency of clinical data, there is a necessity to study aetiology, pathogenesis and optimal therapy of lichen sclerosus.**Aim of the study:** Our aim was to profile patients with vulvar lichen sclerosus, evaluate treatment options and to define risk factors.**Material and methods:** The retrospective study included the analysis of medical records of 45 women. This study group included patients with vulvar lichen sclerosus, confirmed by biopsy. All patients were admitted to tertiary referral hospital in Warsaw (Poland) between 2014 and 2017. The calculations were conducted with Statistica 13.0. We have analyzed the data concerning patients' symptoms, potential risk factors and current therapy.**Results:** The mean age of patients was 57 years old (SD=14). The proportion of premenopausal to postmenopausal patients was 26.2% to 73.8% (11 to 31). The chief complaint was vulvar pruritus (n=35, 83.3%). The lesions were most frequently localized on the labia maiora (n=16, 35.6%), the frenulum of labia minora (n=10, 22.2%), the labia minora (n=6, 13.3%) and the clitoral prepuce (n=5, 11.1%). No statistically important differences were found between premenopausal and postmenopausal women concerning the dominant symptom (p=0.381) and the labia maiora as a prevalent localisation of lesions (p=0.465). The majority of the patients (n=32) were treated with topical steroids, including 0.1% hydrocortisone butyras (n=21, 52.5%), 0.05% clobetazol propionate (n=21, 52.5%) and 0.1% betamethasone dipropionate (n=5, 12.8%). All treated patients reached good clinical response, defined as reducing the severity of the symptoms.**Conclusions:** Whereas vulvar pruritus remains the most common symptom of vulvar lichen sclerosus, the dominant localization of the lesions cannot be easily determined. Though, there is a prevalence of symptoms occurring on the labia maiora and the frenulum of labia minora. Topical corticosteroids are a beneficial treatment for LS. However, further research is needed.

[61]

Localized scleroderma. A retrospective analysis of 70 patients hospitalized at the Department of Dermatology and Venereology

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Trustee of the paper: Anna Baran MD, PhD, Professor Iwona Flisiak MD, PhD**Introduction:** Localized scleroderma (morphea) is an autoimmune connective tissue disease of not fully explained etiology that can be limited to the skin or involve subcutaneous tissue and underlying tissues. It occurs with a frequency of 0.3 to 3 cases per 100,000 per year, is more common in women than men, with peak age of 50 years old.**Aim of the study:** Retrospective analysis of medical records of patients with morphea.**Material and methods:** Seven-year retrospective analysis of patients hospitalized with morphea at the Department of Dermatology. Gender, age of patients, comorbidities, clinical course of the disease and treatment were considered. Results were analyzed using Chi-squared test.**Results:** In the analyzed period 70 patients were hospitalized with morphea, 56 females (80%) and 14 males (20%). Age of patients ranged from 7 to 77 years, with average of 43.6. Five patients (7%) reported morphea among family members. The history of skin lesions ranged from one month to thirty years and persisted five years in average. The most common manifestation was skin thickening (70%), red-brown plaques (51%) and atrophic lesions (41%). In 31% of mentioned skin lesions lilac ring was observed. Lesions were localized most commonly on the trunk (74%), lower (41%) and upper (36%) limbs and on the head (17%). In 17% of patients

lesions were observed in both upper and lower limbs. Pruritus was reported by 14% patients. The most common comorbidity was arterial hypertension (24%), thyroid diseases (18%), autoimmune diseases (17%), Lyme disease (13%), hypercholesterolemia (11%), osteoarthritis (11%), depression (7%) and carbohydrates metabolism disorders (7%). Elevated levels of inflammatory markers were observed in 13% of patients. In 63% cases the diagnosis was confirmed by the histopathological examination. Correlations between morphea and the following were observed: arterial hypertension, thyroid diseases, ischaemic heart disease, Lyme disease, elevated levels of inflammatory markers, monocytosis and smoking. Almost 57% of patients received procaine penicillin (in 3 of them Hoigne syndrome occurred) and 10% phototherapy.

Conclusions: The analysis confirmed that morphea is a disease of a chronic course affecting women in majority and usually people between fourth and fifth decade of life, as well as that lesions mostly present as skin thickening localized over the trunk. In patients with morphea thyroid disorders and Lyme disease were observed more frequently. Smoking in such patients is contraindicated as it may worsen their condition.

[62]

Assessment of pain, quality of life, anxiety and depressive disorders and their correlation in Ukrainian patients with epidermolysis bullosa

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Trustee of the paper: associate professor Katerina Koliadenko, Ph.D

Introduction: Pain is an integral part of life of every patient suffering from epidermolysis bullosa (EB). Recently, several studies concerning this topic have been performed in a number of countries. Nevertheless, such study was not conducted in the Ukrainian population.

Aim of the study: To provide comprehensive evaluation of pain according to its intensity, influence on quality of life (QoL), presence of neuropathic component of pain (NCoP) and aggravating factors (anxiety, depression) in patients suffering from EB in Ukraine.

Material and methods: We examined 46 Ukrainians of both sexes with a confirmed diagnosis of congenital EB, comprising 22 children (4-16 years old) and 24 young people (17-35 years old). The severity of the disease was determined according to the Birmingham Epidermolysis Bullosa Severity score. A linear visual analogue scale was used to assess pain in patients. The presence of NCoP was determined by the shortened version of the neuropathic pain diagnostic questionnaire - DN4. QoL was assessed by the Dermatology Life Quality Index and the Children's Dermatology Life Quality Index. The Hospital Anxiety and Depression scale was used to assess anxiety and depressive disorders.

Results: The severity of EB and intensity of pain in the first and the second research groups had a positive weak correlation $r=+0,13$ ($p>0.05$) and a positive moderate correlation $r=+0,65$ ($p<0,01$) respectively. The severity of EB and the presence of NCoP had a positive moderate correlation $r=+0,32$ ($p>0.05$), $r =+0,56$ ($p<0,01$) respectively. The severity of EB and its impact on the QoL had a positive moderate correlation $r=+0,59$ ($p <0,01$) and $r=+0,59$ ($p<0,01$) respectively. The severity of EB and the presence of anxiety and depression in the older age group $r=+0,1$ ($p>0.05$), $r =+0,16$ ($p>0.05$) respectively.

Conclusions: For the first time in Ukraine it was found that patients of the older age group had an increase of severity of EB associated with an increase of the pain intensity as well as appearance of NCoP and an impairment of the QoL. Among children there was an increase of EB severity correlated with deterioration in the QoL. An increase in the intensity of pain and the appearance of NCoP did not occur. It was established that there was no connection between anxiety, depression and the severity of EB in the older age group.

[63]

Analysis of the most common photosensitizers - results of a single-centre retrospective study

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Introduction: Photosensitivity refers to skin symptoms caused by exposure to sunlight. A variety of topical and systemic drugs, psoralens in plants or fragrances in cosmetics can increase photosensitivity of the skin typically in the UVA or UVB spectrum of light.

Aim of the study: The aim of the study was to identify the most common photosensitizing substances.

Material and methods: The retrospective study was based on data from the Department of Dermatology, Medical University of Warsaw. The study collected results of a group of 66 patients (26 male and 40 female) from 2009 to 2013 who showed photosensitivity in contact with 38 photosensitizers. The youngest patient was 8 years old and the oldest was 88. Phototesting and photopatch tests were performed. During the study the International Contact Dermatitis Research Group visual scoring system was used.

Results: 41 out of 66 patients (62,12%) were hypersensitive to UVB radiation, and 6 (9,09%) were hypersensitive to UVA radiation. Positive photopatch test reactions to one of chemicals were detected in 21 patients (31,82%), 28 patients (42,42%) were positive to more than one photosensitizer. Most of the patients were photosensitive to coal tar - 31 patients (63%), peru balsam - 13 patients (26,5%) and nickel - 12 patients (24,5%).

Conclusions: Photopatch testing is a valuable examination in patients who report photosensitivity. It helps the patient to find a photosensitizing substance, which should be avoided in everyday life.

[64]

Intestinal barrier integrity in patients with plaque psoriasis

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Trustee of the paper: Mariusz Sikora, MD, PhD

Introduction: Psoriasis is a chronic inflammatory disease estimated to affect 2–4% of the world's population. Growing evidence suggests that human homeostasis depends on a mutualistic relationship with gut bacteria that produce a number of biologically active compounds. Therefore, enteric microbiota dysbiosis with gut barrier disruption may be important factor in the development of psoriasis.

Aim of the study: The analysis of the intestinal barrier integrity in psoriasis.

Material and methods: Concentrations of gut barrier integrity markers: claudin-3 and intestinal fatty acid binding protein (I-FABP) were determined in the blood plasma of patients with plaque psoriasis (n = 40) and healthy individuals (n = 20) using commercially available ELISA test kits. Statistical analysis included means, standard deviation, t-test and Pearson correlation.

Results: Claudin-3 concentration was higher in patients with severe psoriasis compared with patients with mild psoriasis and healthy control ($p < 0.05$ and $p < 0.01$, respectively). I-FABP level was increased in patients with psoriasis ($p < 0.05$). Additionally, concentrations of claudin-3 and I-FABP also significantly correlated with disease activity assessed by Psoriasis Area and Severity Index ($r = 0,36$; $p < 0.05$)

Conclusions: Our results support the hypothesis that dysfunction of intestinal barrier disturbs the homeostatic equilibrium between the microbiota and immune system that may result in chronic systemic inflammation. Further studies are needed in order to develop new therapeutic interventions based on modulation of gut microbiota and intestinal permeability.

[65]

The assessment of colonization level and propensity to form biofilm by Staphylococcus aureus strains, isolated from patients with atopic dermatitis

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Introduction: Atopic dermatitis (AD) is a complex inflammatory skin disorder of unclear pathogenesis. Majority of AD patients were colonized by Staphylococcus aureus (SA), presented in the lesional skin (LS), nonlesional skin (NS) and nasal vestibule (NV). The important aspect of SA is propensity to form biofilm, adhesive surface-attached colonies that become resistant to antibiotics and immune responses.

Aim of the study: The aim of the study was to evaluate level of SA colonization and propensity to produce biofilm by SA strains, isolated from patients with AD from: NS, LS and NV.

Material and methods: The experimental group was 54 patients with AD from The Clinic of Dermatology of Teaching Hospital in Warsaw, who were colonized by SA. The 128 strains SA were isolated from NS, LS and NV. To the control group belong 36 persons without AD symptoms.

The swabs were collected on transport medium AMIES, inoculated and isolated on blood agar and mannitol salt agar plates. The identification was performed by using VITEK MS, BioMerieux.

The ability to form biofilm was verified by Christensen's method. Overnight grown bacteria was inoculated into polystyrene microtiter plates and incubated at 37°C for 24h. Subsequently the wells were washed with PBS, dried and stained with crystal violet. The absorbance of the adherent biofilm was measured at 492 nm in a microplate reader (Awareness Technology Inc).

An absorbance of 0,120 was distinguished biofilm producers from non-producers (NSPs). The strains with absorbance above 0,240 were determined as strong slime producers (SSPs).

Results: In control group, 7 (19,4%) persons were SA carriers in NV. In experimental group were isolated 35 (27,3%) strains of SA from NS, from LS- 48 (37,5%) and from NV- 45 (35,2%).

Out of 128 tested strains, 89 (69,5%) formed biofilm, including 65/89 (73%) were determined as SSPs. In control group biofilm produced 5 (71,4%) strains and 100% were SSPs.

Among SA isolated from NS biofilm produced 17 (48,6%) strains, including 13/17 (76,5%) SSPs, from LS- 38 (79,2%), including 24/38 (63,2%) SSPs and from NV- 34 (76,5%), including 28/34 (82,3%) SSPs. From 25 patients were isolated SA from each of 3 locations: LS, NS, NV. The absorbances for these strains were ascribed a ranges (<0,120=0, 0,120-0,240=1, >0,240=2) and were calculated a correlation coefficients: 0,40 for LS and NS, 0,46 for LS and NV, 0,19 for NS and NV.

Conclusions: Changes in immunity system and disrupted barrier function in AD predispose especially to SA colonization, regardless of biofilm formation.

[66]

Effects of non-steroid anti-inflammatory therapy in patients with psoriatic arthritis

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Introduction: Psoriasis is one of the most common diseases of mankind, with an incidence of 2 to 8% of the population of different countries. Despite the great awareness of the main differential diagnostic criteria for psoriatic arthritis, many cases of this disease remain unidentified and untreated.

Aim of the study: The objective of the study was to investigate of the effectiveness of meloxicam and focus its effect on the level of pro-inflammatory cytokines.

Material and methods: We supervised 85 people aged 23 to 75 years, of which 45 were women and 40 men. 45 people suffering from psoriatic arthritis were included in the main group. The control group consisted of 40 practically healthy persons without manifestations of psoriasis and indications of its presence in history. This study conducted at Zaporizhzhya Regional Dermatovenerology Dispensary (Zaporizhzhya, Ukraine) included oral administration of meloxicam in a therapeutic dose of 15 mg per day for a duration of 1 month. The assessment of quality of life was carried out according to the questionnaire, assessment of situational anxiety - according to Spielberger scale. General clinical blood and urine tests were performed using unified methods. The levels of IL-1 β , IL-6, FNP- α in serum were determined by ELISA method. The obtained results were statistically processed using standard computer programs.

Results: The IL-1 β and IL-6 n/l in control group was 18,2 \pm 2,18; 3,75 \pm 1,05 and in the comparison group before treatment 61,7 \pm 5,34; 17,9 \pm 1,53 and after treatment 36,3 \pm 2,35; 11,2 \pm 1,47 respectively. The TNF α ng/l in the control group was 112,4 \pm 11,7 and in the main group before treatment 17,9 \pm 1,53 and 11,2 \pm 1,47 after treatment. The cumulative index of quality of life in the control group was 1,32 \pm 0,12 and in the main group 2,15 \pm 0,12 before and 1,64 \pm 0,15 after treatment. On evaluating the situational anxiety in the control group it was 42,10 \pm 1,11 and in comparison group it was 49,4 \pm 1,23 before and 46,1 \pm 1,12 after treatment.

Conclusions: The use of a meloxicam in treating patients with psoriatic arthritis had chondro-protective effect, lead to a rapid decrease in the intensity of pain and morning stiffness in the joints, reduction of its duration, improvement of quality of life of patients and reduction of situational anxiety.

[67]

Evaluation of the influence of dyes used in tattoo on the process of collagen biosynthesis and prolinase activity in human skin cells

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Introduction: Collagen is a main protein of connective tissue. It has a very high tensile resistance. It is synthesized in skin fibroblasts. It is responsible for skin elasticity. Reduction of collagen level in the skin accelerates the aging process and wrinkles formation. It is used in cosmetics, especially in creams and anti-wrinkle ointments. Collagen has an unusual composition of amino acids. It contains large amounts of glycine and proline. One of the important elements involved in the metabolism of collagen is proliadase. It is one of the cytoplasmic enzymes that participates in the last stages of collagen degradation. An increase in the activity of prolinease may lead to an increase in collagen degradation, which in turn may lead to impaired synthesis of this protein.

Aim of the study: Evaluation of the influence of dyes used in tattooing on the biosynthesis of collagen in human skin cells - fibroblasts.

Material and methods: Measurement of collagen biosynthesis: Human skin fibroblasts were incubated for 24 hours in the presence of various concentrations of the dyes tested. The determinant of the level of collagen biosynthesis is the amount of 5 [3H] proline builded- in proteins sensitive to the action of bacterial collagenase. The radioactivity of the samples was measured.

Measurement of proliadase activity: The activity of proliadase was determined according to the Myar method. Fibroblast cultures were incubated for 24 hours in presence of various concentrations of the dyes. The amount of proline that was released from the substrate was determined colorimetrically at a wavelength of 515 nm.

Results: The results show that all the dyes impair the biosynthesis of collagen in the examined cells. In case of green and red pigments there is a clear dependence between the inhibitory effect and the applied dye concentration. In the case of using white dye, the dependence of the inhibitory effect on the concentration used was not observed. White dye concentration does not affect the inhibition of collagen synthesis. The white pigment in each of the tested concentrations caused a decrease in the level of collagen biosynthesis by about 55-60% in relation to the control sample. The weakest effect that impaired collagen biosynthesis in the examined cellular model showed a yellow pigment. Only white pigment reduces the activity of proliadase. Other dyes increase the activity of proliadase.

Conclusions: Reduction in collagen synthesis and the increase the proliadase activity reduces the skin flexibility and accelerate skin aging processes.

Endocrinology & Diabetes

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POLSKIE TOWARZYSTWO
DIABETOLOGICZNE



POLSKIE TOWARZYSTWO HEPATOLOGICZNE
POLISH ASSOCIATION FOR STUDY OF LIVER



Date:

Friday, May 11th, 2018

Location:

Room 23, Library - CBI

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[68]

Insulin requirements in children and adolescents with type 1 diabetes (T1D) during diabetic camp – observational studyKarolina Kunecka¹, Barbara Nowak¹

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Introduction: The insulin requirement is one of the factors reflecting metabolic control in children with type 1 diabetes. According to ISPAD it should not exceed 1j/kg/day. Overdosing of insulin promotes macroangiopathy. Healthy diet and physical activity may reduce dose of insulin. The impact of the physical effort or change in daily life style on total dose of insulin is known. However there is no much evidence so far.

Aim of the study: In this study we analysed how total daily dose of insulin (TDD) is changing during the diabetic camp.

Material and methods: The study group consisted of 34 T1D children (18boys) with the mean age 12,93 ± 2,16 years and mean diabetes duration 4,18 ± 3,22 years. Analysed period included 2 weeks of camp compared to 2 weeks of school year. Following data were collected: height, weight, mean glycaemia, total daily insulin dose (TDD; units/kg/day), basal/TDD (basal%), HbA1c, hypoglycaemia (episodes per 2 weeks).

Results: Insulin requirement during the camp was significantly lower than during school time (36,02 vs. 41,41units/day, p= 0,0014; 0,67 vs. 0,79 units/kg/day, p=0,0004), while mean glycemia remained comparable (149,39 vs. 157,36 mg/dl, p > 0,05). Basal% was similar in both periods of time (40,95% vs. 38,85%, p > 0,05). Mean HbA1c measured during the camp was 6,85 ± 0,94 mg/dl.

We noticed more episodes of hypoglycaemia during the camp (13,68 vs. 10,50 episodes/2 weeks, p=0,016). There were no severe hypoglycemia.

Interestingly, during the camp we observe a difference between children who exercise only PE lessons and those practicing regular additional physical activity. The reduction of TDD was lower in children having more physical activity during the year, however it was only a trend (TDD reduction: 3,26 vs. 8,95 units/day; p=0,08).

Conclusions: During the camp, in most of the children insulin requirement was lower. Adequate reduction of insulin doses could protect patients against episodes of hypoglycaemia. Particular attention should be paid to children who do not practice sports during the school year. Our research can provide valuable guidance to caregivers of T1D children during the summer camp.

[69]

Vacation with high-tech - predictive low glucose management protects children and adolescents from hypoglycemia in summer camp conditions but increases exposure to hyperglycemia

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Introduction: Continuous glucose monitoring (CGM) is becoming an integral part of therapy for people with type 1 diabetes (T1DM). It provides both quality-of-life and diabetes-control-related benefits. Many studies concerning its utility were performed, but there are limited number of studies assessed glucose variability in children in real life conditions.

Aim of the study: To compare CGM-based parameters of glycemic control in children and adolescents with T1DM treated with sensor-augmented insulin pump therapy with low glucose suspend or predictive low glucose management (PLGM) during summer camp.

Material and methods: During two summer camps children and adolescents with T1DM treated with sensor-augmented insulin pump therapy with low glucose suspend (LGS) or predictive low glucose management (PLGM) were included in the study. Glycated hemoglobin (HbA1c) was measured by HPLC. Data from CGM were used to calculate parameters reflecting glycemic control and variability based on experts' guidelines. Participants who provided less than 120 hours' worth of measurements were excluded. For children who participated in both camps, a more complete CGM entry was assessed.

Results: Sixty six patients' records were accepted for analysis (LGS: 42%; PLGM: 58%). Participants mean age was 13 ± 2.5 years, diabetes duration 7.6 ± 3.6 years and HbA1c $7.27\pm 0.62\%$. HbA1c did not differ between the groups (LGS: 7.2 ± 0.6 vs. PLGM: $7.3\pm 0.6\%$, $p=0.49$).

Children using PLGM had significantly lower percentage of glycemia ≤ 70 mg/dl ($3.8\pm 2.1\%$ vs $6.9\pm 3.9\%$, $p<0.001$) and ≤ 54 mg/dl ($0.58\pm 0.61\%$ vs $1.6\pm 1.47\%$, $p=0.002$) when compared with LGS. Moreover, they had lower hypoglycemia index (0.99 ± 0.45 vs 1.66 ± 0.75 , $p<0.001$) and number of hypoglycemic episodes (2 ± 2.3 vs 4 ± 3.3 , $p=0.007$). However, PLGM group displayed higher mean glycemia (149 ± 16 mg/dl vs 138 ± 15 , $p=0.005$), higher percentage of values in hyperglycemic (180-250 mg/dl) range (PLGM: $19.3\pm 6.8\%$ vs $15.4\pm 6.4\%$, $p=0.02$) and higher hyperglycemia index (5.8 ± 2.2 vs 4.6 ± 2.2 , $p=0.03$).

Conclusions: PLGM in comparison to LGS is more effective in preventing hypoglycemia in children and adolescents with T1DM during a summer camp at the cost of mildly increased risk of hyperglycemia.

[70]

HPA axis and Psoriasis- Did we finally find the key for the pathogenesis?

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Introduction: The association of endocrine system, especially the hypothalamic-pituitary-adrenal (HPA) axis with psoriasis is nowadays the topic of research. The discovery of the skin analog of HPA axis led us to understand the psoriatic skin response to stress. In 2017 Hannen et al. showed the steroidogenesis is impaired in psoriasis lesion and non-lesional skin. Whether this is a starting disturbance or the effect of the global HPA axis dysfunction is not known.

Aim of the study: The aim was to test whether severity of psoriasis is related to ACTH/cortisol index, as a marker of HPA axis function.

Material and methods: The study consisted of 40 patients with psoriasis (12 women/28 men) after written informed consent. Paper surveys about the comorbidities, drugs, family history of psoriasis, the alcohol and cigarettes intake were performed. Severity of disease was assessed by PASI, BSA and DLQI. The concentrations of serum ACTH, cortisol and other basic laboratory tests were measured. Body composition parameters were measured.

Results: The prevalence of mild psoriasis was in (PASI<12) 6 cases, moderate (12<PASI<30) 22 cases and severe (PASI>30) 12. We found the positive correlation between ACTH/COR with PASI ($r= 0.31377$; $p= 0.0487$), and negative correlation with Age ($r= -0.35321$, $p=0.0254$). We also found a positive correlation between total cholesterol level and ACTH ($r=0.38655$; $p=0.0151$). There was no significant correlation between the ACTH/COR and bioimpedance results.

Conclusions: Our analysis shows the relation between the balance in HPA axis and the PASI, which indicates that not only skin-derived HPA axis is affected. Further natural step in appearance of these evidence are longitudinal observational study in risk group of psoriasis, revealing if changes are primary or secondary. Literature analysis on the subject let us suspect that such alteration in the HPA axis is primary.

[71]

The assessment of the newest system 640G in the treatment of children with type 1 diabetes (T1D)

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Introduction: Medtronic MiniMed 640G system is the newest technology commercially available in the treatment of patients with T1D, significantly more expansive than classic insulin pump and not refunded by the public health-care system. Fear of hypoglycemia is one of the major factors limiting achievement of target HbA1c, i.e. <6,5%. The system features automatic suspension of basal insulin delivery in response to prediction of hypoglycemia, based on continuous glucose monitoring (CGM) data (low glucose suspend, LGS).

Aim of the study: The aim of our study was to assess the impact of the system on metabolic control in pediatric patients with T1DM.

Material and methods: 17 patients (10 males), mean age 7.8 ± 3.97 yrs, mean T1D duration 1.91 ± 2.66 yrs, mean HbA1c value $8.01 \pm 2.42\%$; 64 ± 3 mmol/mol were included into the study. Before applying the 640G system all patients were treated with classic insulin pump. HbA1c value (%; mmol/mol), mean blood glucose (MBG) (mg/dl) \pm standard deviation (SD), incidence of hypoglycemic episodes (blood glucose <70 mg/dl), insulin dose (U/kg/d) and basal insulin rate (% of daily dose) were compared between the two-week time periods before and after application of the 640G system. Additional analysis was performed to assess the correlation between the episodes of LGS activation during two-week time period and parameters of diabetic metabolic control. Data was collected retrospectively.

Results: There was no statistically significant difference between HbA1c 8.01 ± 2.49 vs. 7.36 ± 2.09 ($p=0.3794$), MBG 139.5 ± 4.36 vs. 136.5 ± 4.96 mg/dl ($p=0.6525$), MBG SD 66.24 ± 3.71 vs. 58.88 ± 3.91 ($p=0.1817$), incidence of hypoglycemic episodes 341 vs. 254 ($p=0.1369$), total insulin dose 0.57 ± 0.06 vs. 0.66 ± 0.06 U/kg ($p=0.3153$) and basal insulin rate 30.29 ± 2.37 vs. 29.76 % of daily dose ($p=0.8837$) between the analyzed time periods. However, we observed significant correlation between the number of total pump suspends and MBG (95% CI from -0.8317 to -0.449), $r=-0.5848$, $p=0.0137$, HbA1c value (95% CI from -0.9065 to -0.37), $r=-0.7389$, $p=0.0015$ and basal insulin rate (95% CI from -0.7862 to -0.01388), $r=-0.4912$, $p=0.0452$.

Conclusions: In our study higher concentration of HbA1c, higher MBG values as well as lower basal insulin rate were factors associated with lower risk of hypoglycemia and fewer MiniMed 640G pump suspends. Further research is needed to assess if the system improves long term metabolic control and quality of life in pediatric population with T1DM.

[72]

Race against obesity: population-based assessment of exercise capacity of children and adolescents with type 1 diabetes in Cooper's 12-minute run test

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Introduction: Regular physical activity counteracts cardiometabolic risk factors in children and provides even more benefits for those with type 1 diabetes (T1DM) in terms of better glycemic control. However, youth with T1DM face disease-related barriers when engaging in exercise, which may affect their overall fitness. There is need for assessment of physical capacity in this group.

Aim of the study: The aim was to evaluate physical fitness of children with T1D in a Cooper's 12-minute run test performed during the annual summer camp.

Material and methods: The covered distances were calculated into z-scores and percentiles based on national charts for Cooper test for sex and age. Heart rate was measured at rest and after the run. Glycemia was recorded before, immediately after and 30 and 60 minutes after the test. Additional collected data included body mass index calculated into z-score, body fat percentage (measured with bioimpedance, expressed as z-score), glycated hemoglobin concentration.

Results: The run was completed by 80 individuals (33 boys, 45%; mean age 13.6 ± 2.1 years) without severe episodes of hypoglycemia. The mean covered distance was 1914 ± 298 m, which corresponded to 46th percentile (± 24) and was not significantly worse than results of reference population (z-score -0.12 ± 0.71 vs 0, $p=0.12$). The children participating in the study were more overweight than general pediatric population, both in terms of body mass index (Z-score 0.48 ± 0.94 vs 0, $p<0.001$) and body fat [Z-score: 0.37 ± 0.85 vs 0, $p<0.001$]. Age, body mass index z-score, body fat percentage z-score, heart rate and glycemia after the test were found to be independent predictors of children's results.

Conclusions: Youth with type 1 diabetes presented similar exercise capacity to sex- and age-matched population but exhibited increased body mass index and body fat percentage. Older age and increased adiposity negatively affected the tests results. Cooper test can be safely used in children with diabetes as routine test to assess physical capacity.

[73]

The influence of dislocation of pituitary stalk on blood levels of selected hormones in patients with partial empty sella syndrome

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Introduction: The partial empty sella syndrome (PESS) may appear with dislocation of pituitary stalk, which may intensify hormonal imbalance.

Aim of the study: The aim of the study was to research the influence of dislocation of pituitary stalk (DPS) on blood levels of selected hormones in patients with partial empty sella syndrome.

Material and methods: An analysis of hospital's database was performed to carry out the research and 12 patients with PESS hospitalized in 2017 were chosen. PESS and DPS were identified by MRI of the pituitary gland. Patients were divided into 2 groups by presence of DPS: Group 1: patients with DPS: n=7 (58,3%), Group 2: patients without DPS: n=5 (41,7%). Blood levels of ACTH, cortisol at 8:00 and 20:00, DHEA-S, testosterone, FSH, LH, estradiol, TSH, FT3, FT4, prolactin, IGF-1 and GH in patients were compared. The average age 51,4±14,5, men: n=5(41,7%).

Results: Statistically significant difference was shown in FSH blood levels (Group 1: 42,8±37,1 vs. Group 2: 7,8±10,2 [mIU/ml], p=0,04), significant difference was not shown in other hormones levels and in extent of sex distribution between patients of both groups. Within group of women with DPS compared to women without DPS, significantly lower DHEA-S (p=0,001) and estradiol (p=0,001) blood concentration were observed, but there was no difference in menopause occurrence. Within group of men with DPS in comparison with men without DPS, significantly higher IGF-1 (p=0,001) and GH (p=0,001) blood concentration were observed.

Conclusions: The dislocation of pituitary stalk may influence on hormone blood levels in patients with partial empty sella syndrome.

[74]

What polish women after the delivery know about Gestational Diabetes Mellitus (GDM)

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Introduction: Gestational Diabetes Mellitus is a problem which concern about 3-10% of pregnant women. This disease may affect the mother as well as the unborn child. Guidelines recommend each pregnant women to have blood glucose test performed, however the awareness of the disease is quite poor among patients.

Aim of the study: The aim of our study was to assess the knowledge of gestational diabetes mellitus among women after childbirth.

Material and methods: 150 women hospitalized after the delivery in the obstetrician ward in Tarnowskie Góry (Poland) took part in the project. They were surveyed with the Gestational Diabetes Mellitus Knowledge Questionnaire (GDMKQ, Hussain Z et al.). Medical history and anthropometric data were also collected and all data was analyzed in Statistica 12.5 programme.

Results: Mean age of women participating in our research was 33,04± 4,79. Their mean declared BMI before pregnancy was 23.31± 4,73. Two of them suffered from GDM, however 134 of them presented at least one risk factor for this illness. Average score of GDMKQ was 10±3,76/15points (66,66%). Women had the best knowledge in the category of basic information about GDM. Questions about risk factors turned out to be the most difficult ones. Woman with higher education gained significantly more points than woman who finished primary school (p<0.05, ANOVA Kruskal-Wallis Test).

Conclusions: In the view of increasing number of patients with different types of diabetes worldwide, it seems significant to increase the knowledge about GDM among women with normal glucose tolerance during pregnancy as this disease may occur in the future especially among the ones with risk factors for it.

[75]

The incidence of cystic lesions of the pancreas in diabetic population: causal or casual?

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Introduction: Endoscopic ultrasonography (EUS) is widely considered to be an efficient method used in detecting minimal focal lesions of the pancreas. Diabetes Mellitus (DM) is known to correspond with abnormal findings of pancreas in most types of radiological imaging.

Aim of the study: We investigated the possible link between diagnosed DM and the focal lesions of pancreas imaged with EUS.

Material and methods: We retrospectively reviewed 167 patients with DM (85,63% patients over 50 years old) who underwent EUS in Department of Gastroenterology between March 2012 and October 2017. Control subjects with focal lesions of the pancreas were further investigated with regard to the type of diabetes (lasting less than 36 months/lasting more than 36 months), type of the abnormalities seen in the EUS (cystic/solid), and pharmacological treatment with anti-diabetic medications (insulin/metformin).

Results: 48 of 167 patients (28,74%) were recognized with focal lesions of the pancreas. Contrary to expectations, a dominant number of 39 patients (23,35%) was seen with cystic lesions, with a lower number of 9 patients (5,39%) presenting with solid lesions. Patients with acute pancreatitis were excluded. Finally, a significant figure of 35 cystic lesions (20,96%) was detected in total of 167 screened patients - of which 20 (57,14%) corresponded with DM lasting less than 36 months and 15 with DM lasting more than 36 months (42,86%). Cystic lesions were more prevalent in individuals with DM lasting less than 36 months ($p=0.0043$).

Prevalence of pancreatic cystic lesions in patients with DM lasting less than 36 months was significantly higher in metformin users than in individuals that did not receive metformin (66.6% vs 33,3%, $p=0.04$). In addition, 6 of 48 (12,5%) pancreatic lesions were classified as intraductal papillary mucinous neoplasm (IPMN) during the EUS examination or in a histopathological result.

Conclusions: We proved that the prevalence of cystic tumors in diabetic population is higher than in the general population. The results suggest a possible effect of metformin on the risk of developing cystic pancreatic lesions. The obtained results may be explained by the coexistence of diabetic pancreatopathy as well as the increased risk of cystic tumors in the diabetic population. These findings may have important clinical implications, however they should be explored further in a more complex study.

[76]

Body mass index (BMI) as a risk factor of glucose metabolism disorders among patients with reactive hypoglycemia

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Introduction: Obesity is a risk factor of glucose metabolism disorders and probably may relate to higher risk of such dysfunction.

Aim of the study: The aim of the study was to investigate obesity defined by body mass index (BMI) in patients with reactive hypoglycemia and to evaluate if it is a risk factor of another disorders of glucose metabolism among this group of patients.

Material and methods: 118 patients with reactive hypoglycemia, hospitalized between 2015 and 2017, were included. Reactive hypoglycemia was diagnosed based on results of prolonged glucose tolerance test. Abnormal body weight was evaluated based on body mass index (BMI). Patients were divided into three groups based on

BMI: Group 1: BMI<25kg/m²: n=70(59,3%), Group 2: 25kg/m²≤BMI<30kg/m²: n=23(19,5%), Group 3: BMI≥30kg/m²: n=25(21,2%).

Results: There was no significant difference between compared groups in terms of frequency of abnormal fasting glycemia (Group 1: 0% vs. Group 2: 4,3% vs. Group 3: 8% (p=0,07)). There was significant difference between compared groups in terms of frequency of impaired glucose tolerance (Group 1: 4,3% vs. Group 2: 8,7% vs. Group 3: 20%(p=0,049)). Patients assigned to third group were characterized by significantly higher glycemia in the first (p=0,009) and the second (p=0,03) hour of test. Patients assigned to the third group were characterized by statistically significant higher insulinemia during each hour of glucose tolerance test, as well as higher HOMA-IR mean values (Group 1: 1,3±0,8 vs. Group 2: 1,9±1,6 vs. Group 3: 2,8±1,8 (p=0,0001)) in comparison with Group 1 and Group 2. Logistic regression analysis shows that BMI is an independent risk factor of impaired fasting glucose (p=0,02), impaired glucose tolerance (p=0,0005) and hyperinsulinemia (p=0,00001).

Conclusions: Higher BMI among patients with reactive hypoglycemia is related to higher risk of glucose metabolism disorders; such as abnormal fasting glycemia, impaired glucose tolerance and hyperinsulinemia.

[77]

Insulin resistance as a risk factor of atherosclerosis in patients with reactive hypoglycaemia

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Introduction: Life style and nutritional habits belong to modifiable risk factors of atherosclerosis. Insulin resistance and reactive hypoglycaemia are strictly related to life style. However, the degree of correlation between those two factors and the risk factors of atherosclerosis wasn't determined.

Aim of the study: The aim of the study was to determine the prevalence of insulin resistance among patients with reactive hypoglycaemia and to determine the correlation of insulin resistance with atherosclerosis risk factors.

Material and methods: To conduct the study, hospital database was analysed. 118 hospitalized patients with reactive hypoglycaemia in period between year 2015 and year 2017 were included. Reactive hypoglycaemia was diagnosed based on prolonged glucose tolerance test. Insulin resistance was determined using HOMA - IR index. Patients were divided into three groups, basing on their HOMA - IR: Group 1: HOMA-IR ≤1: n=39 (33,1%), Group 2: HOMA-IR>1 and ≤2: n=47 (39,8%), Group 3: HOMA-IR>2: n=32 (27,1%). Patients were compared in terms of atherosclerotic risk (age, gender, lipids, arterial hypertension, smoking habit, abnormal fasting glycemia, impaired glucose tolerance) and atherogenic index (total cholesterol/HDL-C fraction value).

Results: Patients from compared groups differed statistically in terms of fasting glycemia (p=0,02), impaired glucose tolerance (p=0,02), total cholesterol concentration (p=0,02), LDL cholesterol (p=0,046), HDL cholesterol (p=0,0005), triglyceridemia (p=0,0001), BMI (p<0,0001), atherogenic index (p=0,0001), increase atherogenic index (p=0,0003). Statistically significant positive correlation between HOMA - IR and BMI (R=0,56), fasting glycemia (R=0,3), triglyceridemia (R=0,43) was proven. Statistically significant negative correlation between HDL cholesterol and HOMA-IR (R=-0,36) was shown. Logistic regression showed, that HOMA IR is an independent risk factor of increased atherogenic index (p=0,0002).

Conclusions: Insulin resistance occurring among patients with reactive hypoglycaemia correlates with more frequent occurrence of atherosclerosis risk factors.

[78]

Sexual Function Assessment in women with Functional Hyperandrogenic syndrome

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Introduction: Hyperandrogenic syndrome is one of the most common disorders found in patients of gynaecological endocrinology, in which patients suffer from excessive secretion of androgens resulting in masculinization, defeminization and metabolic disorders. Moreover, it includes disorders of sexual function, but so far there has been no thorough research about its correlation to the clinical picture and laboratory findings.

Aim of the study: The aim of the study was to compare sexual function using female sexual function index (FSFI) questionnaire in women with the functional hyperandrogenic syndrome (FHS): polycystic ovary syndrome (PCOS), congenital adrenal hyperplasia (CAH) considering cli

Material and methods: The study included 73 women aged 18-40 years with functional hyperandrogenic syndrome: 56 with PCOS, 17 with congenital adrenal hyperplasia and 20 healthy controls. All participants completed Female Sexual Function Index (FSFI) questionnaire assessing sexual function in the domains of desire, arousal, lubrication, orgasm, satisfaction and pain. All participants had additionally clinical laboratory assessment performed.

Results: Study results indicate that patients with PCOS show to have the highest quality of sexual functions in comparison to women suffering from CAH and control group.

Conclusions: Authors found that sexual function quality index is highly correlated with the levels of specific androgens.

[79]

Analysis of the iodine deficiency prevalence in residents of the Smolensk region

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Introduction: The problem of iodine deficiency and its adverse consequences for the population of Russia, especially for children and adolescents, does not lose its relevance. Endemic goiter prevalence in Russian schoolchildren is on average 15-40%. Iodine deficiency disorders occupy the leading position in the thyroid pathology structure in Russian population: up to 65% in adults and up to 95% in children.

Aim of the study: The aim of our study was to analyze the prevalence of iodine deficiency in primary school children of the Smolensk region, considering the epidemiological criteria of iodine deficiency disorders.

Material and methods: Epidemiological criteria for assessing the iodine deficiency disorders severity in children (according to F. Delange, 1997) were the incidence of endemic goiter according to palpation data, the volume of the thyroid gland, the median concentration of iodine in the urine. We examined 205 pupils of 7-8 years. Ioduria was determined by the arsenic cerium method (O. Wawschinek, 1985). Thyroid gland volume was assessed by palpatory and ultrasonic methods taking into account gender, age and body surface area, according to WHO recommendations (1997). The ultrasonic study was carried out with AlokaSSD-550 apparatus (Japan) equipped with a 7.5-MHz sensor.

Results: The results of our studies demonstrated that the ioduria median was 61.8 $\mu\text{g/l}$, and the proportion of urine samples with an iodine level of less than 50 $\mu\text{g/l}$ was 28.6%. Ioduria data showed a mild degree of iodine deficiency. Ioduria level testified to the insufficient degree of iodine salt and iodine preparations use for the prevention of iodine deficiency conditions in primary school children. The incidence of endemic goiter in pupils according to the results of palpation and ultrasonic study was 26.3% and according to the DeLange criteria (1997) corresponded to "average iodine deficiency".

Conclusions: The study demonstrates that the Smolensk region has a mild degree of iodine deficiency. The level of ioduria did not correspond to the prevalence of endemic goiter in schoolchildren. Iodine salt and iodine preparations use for the prevention of iodine deficiency disorders in schoolchildren was insufficient.

[80]

Daily rhythm of cortisol secretion in patients with hypoglycaemia

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Introduction: Decreased cortisol concentration may be a risk factor of hypoglycaemia.

Aim of the study: The aim of the study was to assess the influence of cortisol concentration on glucose concentration among patients with hypoglycaemia.

Material and methods: To conduct the study, hospital database was analysed, and 89 patients hospitalised between 2015 and 2017 were identified. All the participants underwent diagnostic tests for reactive hypoglycaemia, as well as had daily cortisol rhythm measured: in the morning at 8.00 am and in the evening at 8.00 pm. Hypoglycaemia was defined as glucose concentration lower than 70mg/dl in fasting glycemia or in the prolonged glucose tolerance test.

Results: In the prolonged glucose tolerance test, the significant difference in hypoglycaemia incidence was observed, which was more often observed in the third (66,3%) and fourth (41,6%) hour of the test, as well as in the glucose concentration, which was the lowest in the third ($67,2 \pm 17,1$ mg/dl) and fourth ($69,1 \pm 10,7$ mg/dl) hour of the test. Mean cortisol concentration at 8.00 am was $13,4 \pm 5,8$ μ g/dl, at 8.00 pm $4,9 \pm 3$ μ g/dl. Mean morning to evening cortisol concentration ratio: $3,4 \pm 1,8$. There was a statistically significant correlation between morning cortisol concentration and insulin concentration in fifth hours of the test ($R = -0,24$, $p = 0,03$), as well as between cortisol morning to evening concentration ratio and morning glycaemia ($R = 0,2$, $p = 0,04$). In the logistic regression model, it was proven, that lower cortisol levels are an independent fasting hypoglycaemia risk factor ($p = 0,004$), similarly to high morning to evening cortisol concentration ratio ($p = 0,02$).

Conclusions: Low cortisol concentration is not associated with reactive hypoglycaemia, although it can be a risk factor of fasting hypoglycaemia.

Genetics & Molecular Biology

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[81]**The role of histone H3 lysine 9 dimethylation in the regulation of mouse zygotes first mitosis**

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Introduction: Epigenetic modifications of histone tails regulate the chromatin structure which also affects gene expression. A heterochromatin mark- H3K9me2 (dimethylation of lysine 9 on histone H3)- is present in mouse oocyte female chromatin right after ovulation and it is claimed that male chromatin acquires this modification 10 hours after fertilization. Due to asymmetry of this modification, it's signal is less intensive in paternal chromatin even after first cell division. Loss of writers- proteins which mark chromatin- is correlated with instability of chromatin domains.

Aim of the study: In our thesis we aimed to investigate how loss of H3K9me2 in male chromatin affects first zygotic division.

Material and methods: Zygotes were collected from Fallopian tubes of eight-week-old mice (F1C57BL/6Tar x CBA/Tar) 24 and 26 hours post coitum. Cells were washed in M2 medium, then were divided into two groups control (plain M2 medium) and experimental (with addition of uncompetitive inhibitor of methyltransferase G9a which marks H3K9). After an overnight incubation zygotes were preserved and we immunolocalized H3K9me2.

Results: We showed that H3K9me2 is asymmetrically distributed in pronuclei and it appears to be crucial for the proper cell division. Without this heterochromatin mark, we observed several abnormalities during mitosis- some zygotes were paused in prophase (n = 176), others in metaphase (without forming proper metaphase plate; n = 11). A few zygotes have completed the first cell division (n = 6), but only 1 embryo had proper nuclear morphology. Zygotes in control (n = 126) showed us that H3K9me2 appears in male pronucleus in near centromere region.

Conclusions: This mark seems to be important during cell division and lack of its presence might cause impairment of mitotic apparatus.

[82]**Submicroscopic state of the pineal gland and kidneys under the action of propranolol in standard light conditions**

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Introduction: The activity of any organ is a harmony of rhythms. Both morphologic structures and physiologic processes comply with them.

Aim of the study: To clarify the role of the beta-adrenergic blockade in the control of chronorhythms of kidney function

Material and methods: The study is performed on 72 white non-linear adult male rats weighing 160 ± 20 g using the methods of electron and light microscopy, statistical processing.

Results: Submicroscopic studies of the pineal gland affected by propranolol in standard light conditions (12 h light / 12 h dark) show that the content of "dark" pinealocytes grows at 02.00 and at 14.00. Their matrix has a high electron density. The inhibition of pinealocytes secretory activity is manifested by a decrease in the area of the nuclei of the "dark" cells, they have a marked introversion of karyolemma. Nuclear pores are weakly contoured, areas of heterochromatin are found in karyoplasm. Hypotrophied nucleoli are thick and strongly osmiophilic. Cytoplasm of such pinealocytes contains an osmiophilic hyaloplasm with damaged organelles, cleared matrix mitochondria and cristae damage. The uneven thickening of the tubules of the granular ER and Golgi's sac is observed. In such cells, there are few hormonal granules. The karyoplasm of the nuclei of the "light" pinealocytes is made of euchromatin, the nucleolus is thick, osmiophilic, there are few nuclear pores in the

karyolemma, the perinuclear space widens. The cytoplasm contains single small osmiophilic serotonin granules, mitochondria of round and changed form, with a focally cleared matrix and a little crista.

Submicroscopically kidney nephron components show that both at 02.00 and at 14.00 structural changes occur in the elements of the renal corpuscles and their filtration barrier. There is a luminal expansion and blood filling of the hemocapillaries of the glomerulus. The cytoplasm of endotheliocytes is light, looks tumid. The karyoplasm includes euchromatin, the karyolemma has uneven areas, and the perinuclear space unevenly widens. Zone of organelles contains altered structures. Ultrastructurally nephron tubules have changes in nuclei and cytoplasm of epithelial cells at proximal and distal segments. In cytoplasm, various sizes of mitochondria are revealed, some of them are hypertrophied, with a cleared matrix and partially damaged cristae

Conclusions: Hence, such a submicroscopic state of pineal gland and kidneys indicates a decrease in the activity of organs under conditions of this experiment.

[83]

Turner syndrome in children - variants of karyotype, accompanying defects and diseases

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Introduction: Turner syndrome (TS) is a genetic defect with a total or partial loss of the second X chromosome in all or part of the cell lines. Girls with Turner syndrome are characterized by short stature, dysmorphic features and gonadal dysgenesis. They suffer more often than the general population from congenital defects of the circulatory system, urinary tract, endocrine disorders, eye and hearing disorders, and autoimmune diseases.

Aim of the study: The aim of the study was a clinical analysis of a group of girls with Turner syndrome under the care of the Department of Paediatrics and Endocrinology.

Material and methods: This was a retrospective study of 24 patients, treated for short stature in the course of Turner syndrome at the Department of Paediatrics and Endocrinology for last 10 years. The prevalence of different types of karyotype and the occurrence of typical defects and diseases associated with the Turner syndrome were analysed.

Results: Among the 24 patients, 54% (13) had a karyotype of 45, X, and 46% (11) had other chromosome abnormalities: mosaicism (7), ring chromosome (3) and deletion of the short arm of the X chromosome (1). Besides the short stature at least one characteristic dysmorphic feature was observed in all patients. More than the 3 features were observed in 83% of girls with a karyotype of 45, X and 55% with other karyotype variants. Defects and diseases associated with the syndrome were found in 83% (20) patients - 12 with karyotype 45, X and 8 with other variants. The most frequent congenital defects were cardiac defects, found in 38% (9) of patients. The largest percentage among them were aortic bicuspid valve (5 patients) and coarctation or subcoarctation of the aorta (4). In 29% (7) of patients there were hearing defects and diseases, in 17% defects of visual system and in 13% (3) urinary system defects. In 58% (14) autoimmune diseases were detected. The most frequent of them was Hashimoto's disease, next celiac disease, atopic dermatitis and inflammatory bowel disease.

Conclusions: Characteristic phenotypic features can be found in all patients with Turner syndrome. In the analyzed group, it was observed that girls with other variants of the karyotype than complete monosomy 45, X have less of these features. No correlation was observed between the type of karyotype and the frequency of congenital diseases and defects. The clinical vigilance of searching and monitoring accompanying diseases should not be reduced in case the Turner syndrome with the karyotype other than complete monosomy 45, X.

[84]

The role of autophagy in neutrophil extracellular traps formation differentiated HL-60 cells

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Introduction: Neutrophil extracellular traps (NETs) formation is one of the neutrophil strategy to defend body against invading pathogens. The mechanism of NETs release remains a poorly understood phenomenon. Several studies indicate that NETs formation is dependent on an interplay between three processes: histone citrullination, production of reactive oxygen species (ROS) and autophagy. Studies focused on the involvement of autophagy pathway in NETs are based only on non-specific pharmacological agents, In order to understand contribution of autophagy in NETs formation genetically modified models are required and such approach have not been described so far.

Aim of the study: The aim of this study was to evaluate the role of autophagy pathway in neutrophil extracellular traps formation using the genetically modified in vitro HL-60 model.

Material and methods: ATG5, an essential gene for autophagosome formation, was knock-out by Adgene One lentiviral system using lentiCRISPRv2 with cloned sgRNA targeting ATG5 sequence. Stable ATG5 knock-out HL-60 cell line was obtained with lentiviral transduction and selection with puromycin. Subsequently, a new clonal line were established. ATG5 deficiency in HL-60 clones was confirmed by Western Blot. ATG5 knock-out HL-60 cells were differentiated towards granulocyte-like cells using N, N- dimethylformamide (DMF, 70 mM for 5 days). Cell differentiation was assessed morphologically by May-Grünwald-Giemsa staining and by evaluating CD11b and CD14 expression by flow cytometry. Cells were subjected to NET-inducing agents the phorbol myristate acetate (PMA) or calcium ionophore(CI) NETs release was evaluated qualitatively by fluorescent microscopy and quantitatively by fluorometry.

Results: Among 36 obtained clones only 4 was ATG5 deficient as confirmed by Western blot analysis. ATG5 knock out HL-60 cells revealed lack of ability to form autophagosomes, upon chloroquine incubation, by analysis of LC3-I conversion to LC3-II using Western blot. Selected clones were used for further experiments. DMF differentiated knock-out HL-60 cell morphology, assessed by May-Grünwald-Giemsa, was similar to peripheral blood neutrophils. Flow cytometry also revealed that DMF effectively differentiated HL-60 cells toward granulocyte-like cells. Lack of CD14 expression indicate that DMF treatment did not induce monocyte differentiation. DMF differentiated HL-60 clones were stimulated to release NETs with PMA and CI. We observed lower NETs release in all clones when compared to controls. NETs release upon PMA stimulation was significantly lower than in the CI stimulated clones.

Conclusions: We concluded that granulocyte- like cells, obtained by genetic manipulation of HL-60, without the vital autophagy gene are able to form NETs, but with lower efficiency when compared to controls.

[85]

An example of use of microRNA sponge for efficient upregulation of gene expression

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Introduction: It is known that microRNAs (miRNAs) regulate post-transcriptional gene expression. We proved that miRNA-182-5p binds to the 3'-untranslated region of AIT (apical iodide transporter, also known as SLC5A8). This leads the decrease of AIT and subsequent aberrances in iodine transport within the cells. MicroRNA function can be investigated with the use of sponge plasmids, containing abundant complementary binding sites to specific miRNA and resulting in its decreased levels within the cells.

Aim of the study: The aim of this study was to create, validate and prove the impact of miRNA-182-5p sponge on upregulation of SLC5A8 expression in HEK293 cell lines.

Material and methods: Experiments were performed with the use of miRNA-expressing pcDNA3 vector (miRNA-control, -182-5p) and a modified pGL3 vector with a synthetic oligonucleotide (sponge) cloned downstream of the luciferase gene. HeLa cells were co-transfected with the sponge and miRNA-expressing plasmid and subjected to luciferase assay to confirm binding of miRNA to appropriate sponge. HEK293 cells were transfected with the sponge plasmid and quantitative real-time PCR were performed.

Results: Luciferase reporter assay confirmed that the luminescence ratio of miRNA-182 sponge was decreased by 25% ($p=0.0004$) in the presence of miRNA-182-5p compared to miRNA-control, whereas miRNA-control sponge ratio was reduced by 8% ($p=0.0041$) in the presence of miRNA-control in comparison with miRNA-182-5p. RT-qPCR showed that transfection of HEK293 cells with miRNA-182-5p sponge led to increased expression of SLC5A8 mRNA 15.18 fold ($p<0.0001$) compared to control cells.

Conclusions: Subjecting HEK293 cells to transfection with miRNA-182-5p sponge efficiently upregulates expression of AIT by decreasing the levels of miR-182-5p. This is an example of a specific and efficient gene expression modulation strategy.

[86]

Investigation of NMNAT-1 on a knockout osteosarcoma cell line, generated by CRISPR/Cas9 system

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Introduction: Nicotinamide mononucleotide adenylyltransferases (NMNATs) known as key enzymes of NAD biosynthesis. They play a central role both in the de novo and salvage pathways. There are three human isoforms of NMNATs. They differ in tissue distribution, in function and in their subcellular localization. NMNAT-1 has a nuclear localization and supplies the substrate for the nuclear NAD dependent enzymes like the poly(ADP-ribose) polymerase 1 (PARP-1) and Sirtuin 1. Beside its main role as an electron carrier, NAD also participates as a substrate in a number of signaling pathways, including poly(ADP-ribosyl)ation. In one hand NMNAT supports PARP-1 catalytic activity by producing enough substrate for its activity. On the other hand NMNAT-1 itself may also modulate the activity of PARP-1 independently of NAD-production.

Aim of the study: The available information about the possible role of NMNAT-1 in tumor cells are limited. We aimed to prepare a stable silenced osteosarcoma cell line with the CRISPR/Cas9 system. Then investigate the effect of the absence of NMNAT-1 on the viability of c

Material and methods: NMNAT-1 silencing was performed by CRISPR/Cas9 on U2OS osteosarcoma cell line. NMNAT-1-expression was analyzed with RT-qPCR and Western blot. U2OS cell line was treated with different types of DNA targeted antitumor drugs. Cell viability was determined with Calcein-AM assay. Cell proliferation was determined with sulforadamine B assay. Apoptosis was investigated with a high content screening based caspase activity assay, and necrosis was measured by LDH activity.

Results: NMNAT-1 knock out(KO) U2OS cell line was successfully prepared. KO cell line showed increased sensitivity to oxidative stress and the normally appearing poly(ADP-ribosyl)ation was not detected. We found higher sensitivity to DNA attacking antitumor agents both in mono and in combined treatments. The absence of NMNAT-1 caused decreased total NAD level. Both the apoptosis and the necrosis were higher in the KO cell line.

Conclusions: NMNAT-1 protein expression was successfully eliminated by CRISPR-Cas9 method in U2OS cells. Higher sensitivity to DNA-targeted anti-tumor treatments was found. Our results show that NMNAT-1 could be a new pathway to block PARP-1 mediated DNA repair, and could be a potential pharmacological target in the therapy of malignancies.

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[87]

Platelet microRNAs and their future use as biomarkers for cardiovascular complications in diabetic patients

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Introduction: Activated platelets play a central role in the acute complications of atherosclerosis, which often leads to fatal ischemic events at later stages of the disease. There is a compelling need to better understand the mechanisms underlying cardiovascular diseases and the development of their complications. MicroRNAs (miRNAs) have recently emerged as regulators of physiological and pathophysiological processes in cardiovascular (CV) health and disease, which suggests potential diagnostic and therapeutic use of these molecules. Owing to their biochemical stability and rather easy acquisition from blood plasma, miRNAs offer fascinating opportunities to create novel biomarkers for CV events.

Aim of the study: Evaluation of novel miRNAs associated to platelet reactivity in respect to occurrence of CV complications in the studied population.

Material and methods: Study population: The study was conducted on 237 participants formerly included in the AVOCADO (Aspirin vs./Or Clopidogrel in Aspirin resistant Diabetics inflammation Outcomes) study. All subjects had been diagnosed with type 2 diabetes mellitus (T2DM).

Material: Plasma isolated from whole blood samples

Methods: RNA was extracted from blood plasma samples using the mirVANA PARIS Kit and quality of extracted RNA was evaluated using a fluorometric assay. Gene expression profiling analysis was performed using the Clariom D pico chips, analysed on the Affymetrix platform.

Results: Obtained profiling results showed a robust and significant modulation in the expression level of miRNAs and mRNAs between the experimental group, which included patients that had developed an event, and the control group, which included subjects from the same cohort that had not developed events during the follow up period. Among the 125 miRNAs with a significant modulation between the study groups, we found that miR-6869 and miR-1915 had the most differential expression.

Conclusions: The present work demonstrates significant differential expression of circulating miRNAs between the study groups and suggests that circulating miRNAs are potential vascular injury biomarker candidates, which could be used to predict future occurrence of cardiovascular events in T2DM patients.

[88]

CD200/CD200R signaling pathway in pathogenesis of chronic inflammation and gastric cancer

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Introduction: Gastric cancer (GC) is one of the leading causes of cancer death worldwide. The membrane glycoprotein CD200, widely expressed on multiple cells/tissues, uses a structurally similar receptor (CD200R), delivering immunoregulatory signals. There is an evidence that CD200/CD200R signaling suppresses anti-tumor responses in different types of malignancies. Little is known about CD200/CD200R pathway in GC.

Aim of the study: The aim of the study was to evaluate the frequencies of CD200+ and CD200R+ lymphocytes in patients with GC.

Material and methods: Forty male patients primarily diagnosed with GC and twenty age- and sex-matched healthy persons were enrolled. The viable peripheral blood lymphocytes underwent labeling with fluorochrome-conjugated monoclonal antibodies, and were analyzed using a flow cytometer.

Results: In GC group, the percentages of T CD3+/CD4+ and T CD3+/CD8+ cells expressing CD200 antigen were higher than in controls ($p < 0.0001$). In GC group, the frequencies of T CD3+/CD4+ and T CD3+/CD8+ cells expressing CD200R were lower than in controls ($p < 0.001$, $p < 0.004$, and $p < 0.002$, respectively). The percentage of B CD19+/CD200+ lymphocytes was higher in GC patients than in controls ($p < 0.00001$). Lower frequency of B CD19+/CD200R+ cells was observed in GC patients comparing to controls ($p < 0.00001$). The differences in the frequencies of CD200+ and CD200R+ lymphocytes were found neither in relation to Union for International Cancer Control (UICC) stage nor to histological grading of the tumors.

Conclusions: Deregulation of CD200/CD200R axis is important for GC pathogenesis. High percentages of lymphocytes with CD200 expression may contribute to the continuous T cells activation, development of chronic inflammation and influence gastric carcinogenesis.

Infectious Diseases

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[89]

Hepatocellular carcinoma after direct-acting antivirals – the unresolved problem – review of five cases

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Introduction: Direct-acting antivirals (DAA), the new interferon-free therapy, was revolutionary in the treatment of hepatitis C. The sustained virological response – the measure of the effectiveness of the therapy, grew from 50% when using pegylated interferon combined with ribavirin to over 90% with DAAs. However, many studies report the increased risk of emerging hepatocellular carcinoma (HCC) after the treatment. On the contrary, much research shows no impact of DAA on developing HCC. The mechanism of HCC emerging after DAAs is still unknown, however, there are signs of NK cells and T-cells attending in the process.

Aim of the study: The aim of the study was to present the problem of HCC emerging in patients treated with direct-acting antiviral agents and to draw attention to the fact that the HCC may develop even after the successful therapy and in patients who were not previously di

Material and methods: Inclusion criteria was successful DAA treatment prior to HCC confirmation among HCV-infected patients with liver cirrhosis. We analysed records of n=5 patients.

Results: In three patients the emerging of hepatocellular carcinoma was very rapid. They developed sudden decompensation of liver function with its symptoms – ascites, oedema, coagulation dysfunction. Furthermore, they had liver encephalopathy and renal failure. One of the patients had cancer cells thrombosis. Two patients status was stable, however, they were disqualified from liver surgery due to large size of the focal lesions and their plurality. One patient was during the direct-acting antiviral therapy, with undetectable viraemia, the remainder of them finished the treatment from 6 months to 2 years before the study.

Conclusions: DAA, despite their high effectiveness in the elimination of HCV, do not prevent from developing HCC.

The patients after the DAA therapy should remain under medical control for the early detection and treatment of the presumptive cancer.

[90]

Species identification of nontuberculous mycobacteria isolates from culture-positive patients for Mycobacterium – five years study

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Introduction: Various nontuberculous mycobacteria (NTM) infections have been increasingly reported in the last decades. This could be attributed to several factors, including a greater clinician awareness, a rising number of susceptible hosts (old age, comorbidities, immunodeficiencies) and improved diagnostic sensitivity. To date, over 170 NTM species were identified (LPSN base) and almost 30 of these species may have been associated with pulmonary and extrapulmonary diseases.

Aim of the study: The aim of the study was to identify and evaluate the number of different species of Mycobacteria isolated from patients with positive cultures

Material and methods: The retrospective study included 3570 patients examined in the laboratory of the Department of Internal Medicine, Pulmonary Diseases and Allergy at the University Hospital in Warsaw. The medical records from a period of 5 years (2013-2017) were analyzed.

The specimens from patients were processed according to the method with sodium hydroxide in combination with N-acetyl-L-cysteine as the standard procedure of decontamination (Guidelines of Polish Respiratory Society, 2013). All isolates were cultured on Löwenstein-Jensen and Stonebrink medium. Genomic DNA was extracted with the AMPLICOR Respiratory Specimen Preparation Kit (Roche, Switzerland) in order to identify isolates as specific species using the GenoType Mycobacterium CM/AS assay (Hain Lifescience, Germany).

Results: Out of 3570 patients, 285 had positive culture results. 134 of them were identified as *Mycobacterium tuberculosis* complex and 151 as nontuberculous mycobacteria. Among NTM isolates, the results were: 53 *M. xenopi*, 48 *M. kansasii*, 24 *M. avium*, 6 *M. intracellulare*, 6 *M. fortuitum* and 5 other species (*M. abscessus*, *M. goodii*, *M. peregrinum*). Moreover, 9 cases could not be precisely pinpointed to any group (5 cases out of spectrum and 4 cases with coexistence of two NTM species).

Conclusions: Over 50% (151/285) of isolates from positive cultures were classified as NTM. Among them, *M. xenopi* was the most prevalent species isolated from patients. Although most NTM strains are classified as the environmental mycobacteria, in diagnostic procedure they should be considered as clinically relevant. Further investigation including clinical and radiological criteria is needed to classify these cases as mycobacteriosis.

[91]

Direct-acting antiviral therapy - a breakthrough in the treatment of hepatitis C virus-infected patients after liver transplantation?

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Introduction: Liver cirrhosis associated with HCV (hepatitis C virus) infection is the most common cause of liver transplantation in the world. The relapse of infection after transplantation is usually immediate and its frequency is 95%. Previous treatment of HCV infection after liver transplantation with interferon-based regimens was ineffective in most cases.

Aim of the study: The aim of the study was to evaluate the effectiveness of DAA (new direct-acting antiviral) therapy in a large group of patients with HCV recurrence after liver transplantation.

Material and methods: 43 women and 77 men were included into a prospective study; with genotype 1 – 110, genotype 3 – 7 and genotype 4 - 4 patients. Mean age of the patients was 54 (19-72) years, and mean time from liver transplantation was 97 (36-315) months. Before treatment patients underwent liver biopsy and elastography. Biochemical tests and HCV viremia tested by reverse transcriptase-polymerase chain reaction (RT-PCR) were performed before, during and 4, 12 and 24 weeks after completion of treatment. In the group with genotype 1, treatment with sofosbuvir/ledipasvir (SOF/LED) and ribavirin (RBV) received 102 patients, paritaprevir/ritonavir/ombitasvir (PTV/r/OMV) with dasabuvir (DSV) and RBV 8 patients. All patients with genotype 3 were treated with SOF and RBV, and with genotype 4 PTV/r/OMV and RBV.

Results: The efficacy of treatment (sustained virologic response – SVR12) in the group with genotype 1 was 98%, and in the group with genotype 4 - 100%. In the group with genotype 3, 2 patients had a recurrence of viremia after treatment. The most common complication during treatment was RBV dose-dependent hemolytic anemia, in some cases requiring blood transfusion. 3 patients treated with 3D (PTV/r/OMV with DSV) and RBV experienced worsening of renal function requiring dialysis in 2 of them. Hepatocellular carcinoma (HCC) relapsed in 4 patients with HCC history.

Conclusions: The effectiveness of HCV treatment after liver transplantation with the presented drug regimens is very high for genotypes 1 and 4, however, in case of genotype 3, treatment with sofosbuvir and ribavirin is ineffective and should not be used. The advancement of liver fibrosis and the moment of achieving a negative viremia during treatment does not affect the efficacy of therapy. Treatment is very well tolerated and free from serious side effects.

[92]

The clinical characteristics of adult patients with bacterial meningitis and with neoplasm in comparison to patients without any immunodeficiency

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Introduction: Patients with immunodeficiency such as neoplasm are more susceptible to meningeal pathogens due to an immunosuppressive chemotherapy and malnutrition. That is why the clinical picture of bacterial meningitis (BM) may vary in such patients in comparison to healthy ones.

Aim of the study: The aim of the study was to evaluate the clinical features and laboratory test results in patients with neoplasm compared to the patients without any immunodeficiency admitted to the hospital due to BM.

Material and methods: We retrospectively analyzed the clinical records of 395 patients with BM hospitalized in Hospital for Infectious Diseases in Warsaw from 2010 to 2017. We enrolled in the study patients with diagnosed neoplasm (leukemias, lymphomas, solid tumors) as the only immunosuppressive factor. Patients with the history of neurosurgical procedures were excluded. The chi-square and U Mann-Whitney tests were used in statistical analysis. We acknowledged the statistically significant differences ($p < 0.05$).

Results: 205 patients: 29 with neoplasm (10 women, 19 men, mean age 75 years) and 176 without immunodeficiency (74 women, 102 men, age 52 years) were analyzed.

There was a significant difference in blood laboratory tests results between patients with neoplasm vs without immunodeficiency: WBC (median 10.6 IQR 9,3 vs 16.1 IQR 10,1 G/L),

PLT (median 139.5 IQR 115 vs 192 IQR 91 G/L), urea concentration (median 7,3 IQR 8,2 vs 5.7 IQR 4 mmol/L) respectively. Patients with neoplasm were less likely to have headache (40.74% vs 62.21%) and fever (67.86% vs 86.21%) and more likely to present convulsion (27.59% vs 8.00%).

G negative etiology of BM was more frequent in patients with neoplasm (10.34% vs 1.70%). CNS bleeding was more frequent in patients with neoplasm (7.69% vs 1.33%). Patients with cancer scored higher in SOFA (median was 3,5 IQR 5 vs 2 IQR 4 pts), lower Glasgow Outcome Score (median 3.5 IQR 4 vs 5 IQR 2) and have higher mortality rate (34.48% vs 12.64%).

Conclusions: Our analysis revealed that patients with BM and neoplasm have increased risk of death during admission, higher mortality rate and poorer outcome compared to patients without immunodeficiency. Multicomponent analysis of clinical features revealed that patients with BM and neoplasm are more likely to present convulsion and less likely to present pyrexia and headache. We should consider G negative etiology of BM to be more likely in the group of patients with neoplasm.

[93]

Etiological structure of infective endocarditis in local hospitals

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Introduction: Infective endocarditis remains one of the cardiac emergencies of modern medicine worldwide. More than 10,000 cases of infective endocarditis are recorded every year in Russia. In other countries the prevalence of the disease ranges from 2.3-2.5% to 3.8-9.3% per 100,000 population per year and it is also high. Infective endocarditis mortality rate is 24-30%, in the elderly population - more than 40%. In untreated cases mortality rate can reach 100%.

Aim of the study: The aim of the study was to identify causative agents of infective endocarditis in the tissues of autopsy material from people who died in the city of Smolensk, Russia to confirm clinical and postmortem diagnoses.

Material and methods: Microbiological investigation of autopsy material obtained from the Department of Infectious Pathology (Smolensk Regional Institute of Pathology) was performed according to a Standard Protocol of the study (blood cultures and tissue in brain-heart broth, brain-heart agar, Mac-Conkey agar plating, the selective agar for Streptococcus, Staphylococcus, Enterococcus and fungi, their type of gram and the Ziehl-Neelsen staining). Identification of allocated cultures was performed with MALDI-TOFF analyzer.

Results: Clinical and pathological diagnosis "infective endocarditis" was confirmed with the microbiological examination of 21 cases. In 11 cases (52.3%) the disease was caused by a monoculture of *S. aureus*, in 3 cases (14,2%) – *Staphylococcus aureus* was revealed in association with *S. anginosus*, *S. agalactiae* and *K. pneumoniae*. One case of endocarditis (the child of 11 years old) was caused by the Streptococcus-like causative agent *Granulacutella adiacens*, developed after a viral infection. In 4 cases in adult patients with fulminant forms of endocarditis (19%) *E. faecalis* was identified. In two cases (9,5%) coagulase-negative *Staphylococcus* (*S. lugdunensis*) in association with *S. constellatus* and *S. anginosus* was revealed.

Conclusions: The main cause of infective endocarditis with a fatal outcome is pathogenic *Staphylococcus*. Among causative agents of the disease normal bacterial flora agents, particularly microbiota of the oral cavity, dominate.

[94]

Molecular and epidemiological characteristics of methicillin-resistant Staphylococcus aureus (MRSA) isolated from students of medicine of Medical University of Warsaw

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Introduction: Methicillin-resistant Staphylococcus aureus (MRSA) is a common pathogen, which causes increased morbidity and mortality especially in hospitalized patients. Molecular and phenotyping characteristics may provide a useful data, allowing to determine strains source (healthcare associated HA- or community-associated CA-MRSA) , and it's epidemiological potential.

Aim of the study: Molecular and epidemiological characteristic of MRSA isolated from students of medicine from Medical University of Warsaw, providing information whether they were victims of hospital negligence or by being CA-MRSA carriers, a source of danger for hospital

Material and methods: The initial material were 238 strains of SA, isolated from 3rd year medical students, who were screened for SA carriage in 2015/16 and 2016/17.

Susceptibility to cefoxitin (FOX) was performed with disk diffusion method, according to EUCAST. For each FOX-positive isolate, PCR was performed to define the mechanism of resistance to beta-lactams. Sensitivity to 17 other antibiotics were tested by VITEK2 AST P644 cards.

For confirmed as MRSA strains the staphylococcal chromosomal cassettes SCCmec types were determined by multiplex-PCR with the use 12 pairs of primers. Multilocus sequence typing (MLST) was conducted with evaluation of seven housekeeping genes sequences (arcC, aroE, glpF, gmk, pta, tpi, yqiL). The amplicons were sequenced with modified method of chain termination DNA, with the use of fluorescently labeled dideoxynucleotides. The sequence types (STs) and clonal complexes (CCs) were determined according to the database available at . The evaluated isolates were classified as representatives of individual MRSA clones based on the results of SCCmec, ST, and CC typing.

Results: Out of 238 tested strains, 5 (0,02%) isolates expressed the MR-phenotype, which was determined by mecA gene. All MRSA isolates were also multidrug resistant, MDR. Four of strains, which became from students from the common division, carried SCCmec cassette type III, and belonged to sequence type ST338, clonal complex CC59, and was probably derived from Taiwan clone. There was a carriage of one strain with SCCmec type IVc, but it was undefined for ST/CC type, because it had the arcC allele, which hasn't been described in the MLST database so far.

Conclusions: Four students were colonized with the identical MRSA-ST338-CC59-SCCmec III/Taiwan MDR clone. It was probably HA-MRSA, which suggests that students had acquired colonization while performing medical procedures within hospital wards.

[95]

Lyme disease: features of diagnostic and treatment strategies among family doctors in Latvia

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Introduction: Lyme disease (LD) – an infectious disease caused by bacteria and spread by ticks. The most common sign of it is an erythema chronicum migrans that begins at the site of a tick bite about a week or two after it has occurred. According to ECDC, more than 360 000 cases having been reported over the last two decades. LD has been treated by antibiotics (1. place in Latvia is given to Doxycyclinum).

Aim of the study: To figure out the most common LD diagnostic and treatment strategies among family doctors (FD) in Latvia and evaluate it basing on worldwide guidelines.

Material and methods: Quantitative cross-sectional study. The main material: FD of different gender and age, who participate in conferences. Respondents (R) completed the survey voluntarily, anonymously. Data compilation and analysis is done by using Microsoft Office Excel 2010 and SPSS 22.0 (Crosstabulation, Chi-Square Test, Fisher's Exact Test).

Results: In total, 126 R were included. 32 – Riga, 54 – other cities and 40 – rural areas. Analysis has shown dependence between percent of using guidelines and location of FD's practice ($p=0.016$). 70% of FD in Riga use LD guidelines in their practice, 20% use lecture materials and 10% use their previous experience. Among FD in other cities of Latvia 46.4% use guidelines, 50% use lecture materials and only 3.6% use their previous experience. 70.6% of FD who work in rural areas base on lecture materials, 18.5% on guidelines and 11.1% on their previous experience.

Analysis of knowledge about early symptoms and management of LD has shown that 30-45 years old doctors orient themselves in it better, then the elder colleagues.

Acrodermatitis chronica is one of disease's late stage symptoms. Analysis of the results among age groups and their knowledge ($p=0.002$) has shown the following: 64.3% of FD in age group 30-45 years have chosen acrodermatitis as one of the symptoms in multichoice question of survey, 35.7% of them haven't chosen it. In age group 46-60 years 100% of respondents haven't chosen the correct answer as well as in age group 61-75 years.

Conclusions: Family doctors in cities use guidelines more often than the rural doctors. Elder colleagues much worse orient themselves in theoretical information, then the younger ones. I am looking forward to creation of united LD diagnostics and management guidelines for Latvian (or Baltic) FD, because knowledge and strategies of every FD are very different and not always sufficient.

[96]

Influence of extracorporeal haemocorrection with antioxidants on cytokine genesis in abdominal sepsis patients

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Introduction: Abdominal sepsis demonstrates high incidence and mortality rates. Therefore, it remains to be an important medical and economical problem. There is evidence that pro-inflammatory cytokines and other endogenous substances can take part in systemic inflammatory reactions. Active detoxication has become widely spread. We can use extracorporeal haemocorrection (EH) with antioxidant therapy as a potential solution.

Aim of the study: The aim of the study was to assess the influence of combined extracorporeal haemocorrection with succinate antioxidants on cytokine genesis in abdominal sepsis.

Material and methods: The study involved 56 patients at the age 45- 92 years. All of the patients were divided into 2 groups. In Group 1 (control group) ($n = 30$) routine intensive therapy and EH were carried out. In Group 2 (study group) ($n = 26$) metabolic therapy with succinate containing antioxidants in addition was given. The study had four stages: before the EH, 1 day, 3 days and 5 days after the 1st session of EH during which concentration of IL-6, IL-8, and TNF- α were evaluated.

Results: Patients had a high level of pro-inflammatory cytokines. There were no significant differences between the study and control groups at the 2nd stage: IL-6 $255,3 \pm 14,5$ to $230,3 \pm 10,2$; IL-8 $291,7 \pm 21,4$ to $274,4 \pm 34,4$; TNF- α $26,8 \pm 3,8$ to $27,5 \pm 2,4$. The mean value didn't significantly differ from baseline indicators. There was a significant decrease in study group parameters 3 days after (IL-6 $149,8 \pm 13,1$ to $226,1 \pm 15,6$; IL-8 $97,4 \pm 20,7$ to $181,9 \pm 24,3$; TNF- α $18,4 \pm 1,6$ to $25,2 \pm 2,8$). At the same time there were no significant changes in these parameters in study group. The concentration of pro-inflammatory cytokines continued to decrease 5 days after: IL-6 $134,1 \pm 14,1$ to $158,4 \pm 24,8$; IL-8 $59,9 \pm 16,8$ to $146 \pm 24,1$; TNF- α $12,4 \pm 3,4$ to $19,1 \pm 2,9$. Group 1 showed a significant decrease in the mean value of cytokines concentration. At the final stage the parameters in Group 2 reached normal values (IL-6 $17,3 \pm 17,7 \pm 0,3$ to $107,9 \pm 18,5$; IL-8 $27,5 \pm 5,2$ to $125,3 \pm 12,2$; TNF- α $3,7 \pm 1,1$ to $12,9 \pm 2,2$). There was a decrease in cytokines concentration in Group 1 but the mean value exceeded the normal range at the stage.

Conclusions: Application of traditional therapy for severe sepsis and EH demonstrate poor efficiency abdominal sepsis. Combination of traditional therapy, EH and metabolic protective therapy with succinate antioxidants can result in proper concentration of pro-inflammatory cytokines and recovery of patients.

[97]

The main coinfections connected with Hepatitis A outbreak in Poland

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Introduction: The amount of reported HAV cases in Europe has significantly increased in 2017. Although Poland is considered as a country of low incidence of infection, the number of hospitalised patients is still (January 2018) so high. The main reason of the latest outbreak is transmitting the infection by fecal-oral contact during the sexual activity, mostly among men who have sex with men (MSM).

Aim of the study: The aim of the study was to analyze the main coinfections and route of transmission among the patients with confirmed HAV infection.

Material and methods: We analyzed records of 55 patients admitted to the Department of Infectious and Tropical Diseases and Hepatology, Medical University of Warsaw from May to December 2017. The evaluated baseline characteristics contained: gender, age, duration of hospitalization, blood count (RBC, WBC, PLT), ALT, AST, GGT, ALP, bilirubin, INR, testing for HIV, HBV, HCV and syphilis.

Results: From 55 analyzed patients 95% were male with almost 70% of MSM. The age median was 31 years. The median duration of hospitalisation was 6 days. Testing for other infections showed 11 patients positive with HIV (53 tested), 3 with HBV (53 tested), 2 with syphilis (33 tested). None of 52 tested patients was positive with HCV. The median for RBC was 5,1 M/ μ l; WBC 5,2 K/ μ l; PLT 227,5 K/ μ l; ALT 2609,0 U/l; AST 907,0 U/l; GGT 227,0 U/l; ALP 174,5 U/l; bilirubin 116,2 μ mol/l; INR 1,27.

Conclusions: The study showed the high prevalence of hepatitis A among the young MSM patients is often connected with sexually transmitted diseases: syphilis, hepatitis B and HIV infection. We suggest the necessity of vaccination against HAV and HBV in this group.

[98]

Testing for tuberculosis among patients with positive acid-fast bacilli (AFB) in direct specimen

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Introduction: According to the statistics published by the National Institute of Tuberculosis and Lung Diseases in Warsaw, there were approximately 16,7 cases per 100 000 people in Poland in 2015, what classifies Poland as a country with the low occurrence of tuberculosis. However, the incidence of nontuberculous mycobacteria (NTM) has become a significant problem in terms of differentiating between tuberculosis and NTM infection. Unfortunately, until 2017 there was no legal obligation to report cases of NTM infections. First step of laboratory methods is Ziehl-Neelsen staining for acid-fast bacilli (AFB), which detects all species of mycobacteria, not only *M. tuberculosis* complex. Since microbiological diagnostic methods might take up to 3 months, it is very important to assess by using molecular methods, which AFB-positive patients have tuberculosis.

Aim of the study: The aim of the study was to evaluate how many AFB positive staining patients were confirmed as tuberculosis in further diagnostic procedure.

Material and methods: The retrospective study included the medical records of 3570 patients from a period of 5 years (2013-2017). The standard method with sodium hydroxide in combination with N-acetyl-L-cysteine was performed as the standard procedure of decontamination. A Ziehl-Neelsen staining method for acid-fast bacilli (AFB) was used in every respiratory specimen. GeneXpert MTB/Rif was applied in AFB positive cases in order to identify or exclude *M. tuberculosis* infection. All isolates were cultured on Löwenstein-Jensen and Stonebrink medium. Genomic DNA was extracted with the AMPLICOR Respiratory Specimen Preparation Kit (Roche, Switzerland) in order to identify isolates as specific species using the GenoType Mycobacterium CM/AS assay (Hain Lifescience, Germany).

Results: Out of 144 patients, who were AFB positive, 136 had PCR test carried out. 72 patients were positive for tuberculosis, out of them 64 cases were later confirmed by cultivation. 8 patients had negative result of the

cultivation process. Among 61 PCR negative patients: 40 subjects showed growth of NTM on cultivation medium, 1 growth of *M. tuberculosis* complex and in 20 cases no growth was observed. Three PCR tests (2%) were inhibited.

Conclusions: Comparing the results of PCR testing, *M. tuberculosis* detection occurs at roughly the same rate as NTM. Additionally, the outcome of this statistic revealed that a single method is not sufficient to make a final diagnosis. The identification of mycobacterium should be performed using several laboratory methods.

[99]

Tuberculosis infection management in General Hospitals

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Introduction: The problem of tuberculosis infection (TB) diagnostics and treatment is really urgent in the Russian Federation as well as in many EU countries. Smolensk region is characterized by a poor epidemiological situation. High incidence of tuberculosis among the population and poor diagnostics facilities often result in hospitalization of patients with bacterial discharge to General Hospitals putting other patients and medical staff at risk.

Aim of the study: The aim of the study was to investigate cases of TB patients admitted to Internal Diseases Units to improve anti-epidemic and preventive measures.

Material and methods: The study included 147 patients' cases treated in 2014-2017 at the Internal Disease Units with suspected and confirmed TB infection with various localization.

Results: The highest number of TB patients was detected in the Pulmonology Department (134), 12 patients were at the Neurology and one TB case was detected in the Department of Surgery. The number of TB patients at the Pulmonology Department by the end of the 4-year period reached up to 4.5% of total 3208 hospitalization cases and included 120 male and 27 female patients aged 18 – 81 with average age 44 ± 1.24 years.

Infiltrative and disseminated forms of TB prevailed among pulmonary forms and amounted to 63 and 25 cases, relatively. There were 6 focal TB forms and 30 cases of tuberculous pleuritis. Tuberculous meningitis, lesion of bones and sepsis were identified in extrapulmonary forms.

Total number of TB-HIV patients was 18 that had increased from 3% to 29% during the 4 years of study. Acid-fast bacteria were revealed in 36 cases using the method of sputum bacterioscopy with the rise in the number of patients with bacterial excretion from 15% to 48% ($p < 0.01$) during 4-year term. During the 4-year period 15 patients died from different causes, five of them were HIV-infected, 7 patients left the clinic having refused to be treated, 3 patients were discharged from the hospital for breaking of the hospital regulation, and 25 patients stopped their treatment. Thus, there were 35 patients with bacterial discharge who can infect other people.

Conclusions: Severe forms of TB (infiltrative and disseminated) prevail in pulmonary forms. A great number of extrapulmonary forms were revealed requiring longer period and efforts for differential diagnostics. Bacterioscopy of the sputum is a routine, but highly informative method of TB identification and should be applied to all the patients before hospitalization.

[100]

Herpes zoster in immunocompetent and immunocompromised pediatric patients

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Introduction: Herpes zoster (HZ) is an infectious disease caused by reactivation of latent varicella-zoster virus infection. It manifests with vesicular eruption in an affected dermatome. It is usually a disease of adult/elderly persons but may also occur in children. The main risk factor for HZ is immunodeficiency.

Aim of the study: The aim of the study was to compare clinical manifestation of HZ in immunocompetent and immunocompromised children.

Material and methods: Medical charts of all children with HZ diagnosed in Department of Children's Infectious Diseases (Pediatric Ward of Infectious Diseases Hospital in Warsaw) between 1.06.2013 and 31.08.2017 were analyzed. There were 101 immunocompetent patients (Group A) and 32 immunocompromised (Group B). Age, history of varicella, time interval between varicella and HZ, underlying diseases, immunosuppressive therapy, dermatome involvement and HZ complications were studied in both groups.

Results: The median age in Group A and Group B was 9 years 5 months. Group B consisted mainly of patients with oncologic disorders (21/32). The mean time interval between varicella and HZ was similar: 4 years 10 months in the Group A and 4 years 11 months in the Group B. In two children from the Group B recurrent HZ was reported. In both groups thoracic dermatomes were affected the most frequently (59,4% and 44%, $p=0,12$). There were not statistically significant differences between involvement of cervical, lumbar dermatomes and of regions served by trigeminal nerve in both groups, but dermatomes S1-S2 were affected in 5 patients from the Group B and in no patient from the Group A ($p<0,005$). In both groups there were single cases of herpes zoster duplex (with involvement of noncontiguous dermatomes). Complications occurred in 27/101 (27%) patients from the Group A and in 8/32 (25%) from the Group B. In both groups bacterial infections (including sepsis) and disseminated HZ were diagnosed but neurologic complications were observed only in the Group A.

Conclusions: Herpes zoster occurs in both immunocompetent and immunocompromised children. Clinical manifestations usually are similar. Serious complications, although uncommon, affect not only immunocompromised patients but also otherwise healthy children.

[101]

Infectious Diseases in Children after International Trips

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Introduction: In 2016, Russian citizens made 31.6 million trips abroad. Official Russian statistics do not divide travelers by age. A number of factors can lead to differences in infectious morbidity in children compared with adults.

Aim of the study: To research the epidemiological and etiological features of infectious diseases in children after international travel.

Material and methods: We analyzed medical records of 2138 patients (417 children) who were hospitalized in Infectious Clinical Hospital No.1 from 2009 to 2017 after international travel. Seasonality, geography of trips, nosological forms of diseases were investigated.

Results: Annually, from 184 to 397 people were hospitalized, of which the share of children ranged from 12% in 2013 to 34% in 2009. The maximum number of hospitalizations was in 2009 during the pandemic period of influenza H1N1. Children under the age of 1 year were 8.6%, 1-3 (39.3%), 4-6 (17.5%), 7-14 (28.5%), 15-17 (6%). Significant gender differences were not revealed (57% of boys). The destination of trips included 130 countries. Mostly, children were hospitalized after visiting Turkey (15%), Egypt (12%), Central Asia (11%), Thailand (9%). In the adult group, diseases were most often associated with a trip to Thailand (21%), India (10%), Indonesia (7%). Among the children, seasonality was with the maximum number of hospitalizations in summer (37.9%) and in the adult group there were no statistically significant differences during the year. Among children and adults, acute respiratory tract infections were most often reported. Compared with adults, children were more likely to have acute intestinal infections (22.3% vs 10.6%). In adults, vector-borne diseases were more often detected and included dengue fever (242 cases) as well as non-infection pathology as the cause of febrile illness. Among the non-endemic infectious diseases for Russia, children were diagnosed with 8 dengue fever, 1 typhoid fever, 1 malaria, 1 wild-poliovirus's excretion. In 2016, 11 imported cases of hepatitis A from Central Asia were registered.

Conclusions: Compared with adults, children were mainly hospitalized in the summer and there were differences in the geography of visited countries. Intensity of hospitalizations depended on the epidemiological situation in the world. Among the hospitalized children, almost half were young children. In children, compared with adults, intestinal infections predominated, while in adults, vector-borne diseases were more observed.

[102]

Investigation of PD-1 and CTLA-4 expression within T cells and their contribution to the immune status of HIV-infected and HIV/HCV-coinfected patients

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Introduction: In recent years there has been a growing interest in the development of therapy allowing for complete eradication of HIV virus. A relatively new but promising treatment approach is immunotherapy targeting immune checkpoint molecules (ICM) such as programmed cell death protein 1 (PD-1) and cytotoxic T lymphocyte antigen 4 (CTLA-4), which are associated with antiviral effector T-cell dysfunction, T-cell exhaustion and persistent viral infection. Immune checkpoint blockade has been successfully applied in cancer therapy and current studies show that it may also be considered as possible therapeutic approach of various infectious diseases.

Aim of the study: We aimed to evaluate PD-1 and CTLA-4 expression within lymphocyte subpopulations in the peripheral blood mononuclear cells (PBMC) isolated from HIV-infected, HIV/HCV-coinfected patients and uninfected control group.

Material and methods: A total of 26 subjects were included in this study (9 HIV patients, 9 HIV/HCV patients and 8 controls). All HIV and HIV/HCV patients were prior treatment at the time of blood sample collection. Percentage of CD4+ and CD8+ T-lymphocytes and ICM expression within lymphocyte subpopulations in the PBMC were evaluated using flow cytometry. GraphPad Prism was used for statistical analysis and p value <0.05 was considered statistically significant.

Results: CD4+/CD8+ ratio and CD4+ percentages were significantly lower in both HIV and HIV/HCV patients when compared with healthy donors. Frequency of PD-1+ within CD8+ T-cells was significantly higher in HIV and HIV/HCV patients. A tendency for lower expression of PD-1 in HIV/HCV patients compared to HIV patients in reference to percentage of PD-1-expressing CD8+ T cells was observed. Interestingly, PD-1 expression within CD4+ T cells demonstrated strong negative correlation with CD4/CD8 ratio in HIV and HIV/HCV patients. We found no significant differences in CTLA-4 expression between studied groups.

Conclusions: In our study, higher values of PD-1 expression in HIV-infected individuals and its correlation with CD4/CD8 ratio suggest crucial role of that molecule in the course of infection. In contrary to previous studies, we did not find significant differences in CTLA-4 expression between studied groups. Further investigation is required to comprehensively establish role of PD-1 and CTLA-4 in HIV infection, and moreover to evaluate the effect of HCV-coinfection. Identifying and targeting ICM may be one of the key elements for development of novel therapies for complete HIV eradication.

Internal Case Report

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Date:

Sunday, May 13th, 2018

Location:

Room 231/232, Didactics Center

Case Report:

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[103]

Case of pulmonary aluminosis – it is important to think about patient’s workplace

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Background: Taking history, especially the part about patient’s occupation is an important element of diagnostic process. Occupational hazards are the cause of many serious diseases, so it is extremely important to identify them correctly and protect the patient from them. The lungs are particularly sensitive to small particles, such as heavy metal dust. Such exposure is notably high among tinsmiths and locksmiths.

Case: The case report is about a 51-year-old female working as a locksmith-tinsmith in the aircraft industry between 1984 - 2014. During that time, she was exposed to metal-containing dust, including smoke and powder from an adjacent station. Dust measurements of aforementioned workplace showed exceeded hygienic standards, especially in the first years of her employment. The patient's symptoms started in 2008 when she reported increased fatigue. On the basis of a lung biopsy performed in the same year, the diagnosis of idiopathic pulmonary fibrosis was made. In the workplace, patient was transferred to a position associated with less contamination. Between 2009 and 2010, she was treated with azathioprine and methylprednisolone. Due to the lack of results, the treatment was discontinued. In 2010, pulmonary function tests revealed moderate restriction and moderate CO diffusion impairment. In the following years, these parameters deteriorated. In 2012, the patient's working time was shortened. The diagnosis was verified as a fibrosis probably caused by allergic alveolitis. With this diagnosis in 2014, the patient reported to the Silesian Center for Heart Disease in order to qualify for a lung transplant. Due to her work, the suspicion of the aluminum etiology of pulmonary fibrosis was suspected. The patient was placed in the observation group for lung transplantation. In 2016, Hospitalization at the Institute of Occupational Health and Environmental Medicine in Sosnowiec confirmed the assumptions about the etiology of fibrosis associated with metal dust and enabled the first diagnosis of pulmonary aluminosis in Poland. Due to the progression of the disease, in March 2017, the patient was registered on the national waiting list for lung transplantation. She died 5 months later without such treatment implemented.

Conclusions: Literature indicates that aluminum is not included among the factors causing allergic alveolitis. However, occupational exposure to aluminum dust during its processing may cause a collagen type of lung fibrosis.

[104]

Secondary hypertension in woman at childbearing age - diagnostic and therapeutic dilemma with long, difficult way to blood pressure control

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Background: Fibromuscular dysplasia (FMD) of renal artery is an infrequent cause of arterial hypertension (HT) that affects mostly young females. Percutaneous renal angioplasty (PTRA) is a mainstay of treatment for patients with FMD who meet the criteria for interventions and usually leads to improvement or resolution of hypertension. We present a case of FMD young female in whom treatment procedures were compromised by non-compliance and unplanned pregnancy.

Case: A 21-year-old woman was admitted urgently to the hospital because of nausea, vomiting and extremely elevated blood pressure (BP) - 230/120 mmHg. Antihypertensive treatment was implemented and diagnostic procedures were planned. Finally, renovascular hypertension (RVHT) in the course of FMD was detected. PTRA of the upper branch of right renal artery was successfully performed, pharmacological treatment reduced BP to <140/90 mmHg. Despite suggestion of frequent control visits, the patient reported to the hypertensive clinic 2 years afterwards at 8 weeks of gestation. In the meantime she withdrawn antihypertensive medication and was not aware about BP values. Office BP was elevated, pharmacological treatment was resumed. However, at 16 weeks of gestation she was admitted to the hospital due to uncontrolled BP values. Control renal doppler ultrasound revealed restenosis of the right renal artery. Risk of re-PTRA during pregnancy was considered to be

too high and patient continued in-hospital 4-drug pharmacotherapy. Pregnancy was terminated by caesarian section in the 28th week (infant 790 g). In CT-angiography restenosis of the renal artery was confirmed, but PTRAs had to be postponed due to early period after delivery. One year later PTRAs had to be put off again because of bleeding from upper gastrointestinal tract. Unfortunately, patient stopped medication and was lost for follow-up. In few months she was admitted to the Neurology Department with hypertensive crisis and intracerebral hemorrhage (ICH) of the left hemisphere (vascular malformation were excluded) - PTRAs were postponed for the third time. During combined 5-drug pharmacotherapy BP control was suboptimal. Re-qualification to PTRAs was scheduled for 6 months after ICH.

Conclusions: The therapy of RVHT due to FMD is not always easy especially when contraindications to PTRAs occur. In this case the procedure was postponed three times due to HT complications and state of gestation. This case shows a complexity of PTRAs qualification and the problem of poor patient compliance.

[105]

Dermoscopy as a useful tool in assisting the noninvasive diagnosis of Darier's disease

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Background: Darier's disease is an autosomal dominant genodermatosis characterised by hyperkeratotic papules occasionally accompanied by pruritus. This condition is usually diagnosed on the basis of clinical picture and histopathological examination. We present a case of Darier's disease along with dermoscopic findings to show the usefulness of this method in non-invasive diagnosis of this condition.

Case: A 20-year-old man presented with a 5-year history of keratotic follicular papules localized on the upper chest and the neck. Nail abnormalities, such as split and thinning of the distal parts of the finger nail plates were observed.

Dermoscopy of the skin lesions revealed polygonal, starlike or roundish-oval-shaped, yellowish-brownish areas surrounded by a whitish halo localized on a pinkish homogeneous background.

The onychoscopy showed red and white longitudinal bands and characteristic "V-shaped notch".

The histopathology of the skin lesion showed acantholysis, parakeratosis and dyskeratosis with characteristic corps ronds and grains which was consistent with Darier's disease.

The patient was initially treated with systemic acitretin which was substituted with oral isotretinoin due to increased hair loss and skin dryness. A major improvement of skin lesions was observed after one month.

Conclusions: Our case report illustrates the importance of dermoscopy in the early diagnosis of Darier's disease. Its dermoscopic picture differs from bacterial folliculitis and seborrheic dermatitis, which are main differential diagnoses of Darier's disease. Furthermore, Darier's disease has also specific onychoscopic picture. To conclude, gaining further scientific education and new clinical experience by dermatologists together with an increasing quality of dermoscopes create an opportunity to make dermoscopy and onychoscopy excellent tools for diagnosing Darier's disease even before receiving histopathological findings, which might lead to earlier treatment of patients with this condition in the future.

[106]

Mind the alarm! A patient with cardiac resynchronization therapy-defibrillator and an overzealous physiotherapist

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Background: Cardiac resynchronization therapy (CRT) is a crucial device-based approach that improves the outcome in selected patients with chronic heart failure (HF). Most patients with left ventricle dysfunction have an indication for both CRT and an implantable cardioverter-defibrillator (ICD). Cardiac resynchronization therapy-

defibrillators (CRT-D) are life-saving devices that involve the synchronization of both ventricles in order to maintain sufficient ventricular contraction as well as provide antitachycardia pacing or high-energy shocks to terminate potentially lethal ventricular arrhythmias. However, some electrical equipment has the potential to interfere with the implanted device, thus to mimic the electrical activity of the heart leading to inhibition or unnecessary delivery of an antitachyarrhythmic therapy.

Case: A 84-year-old man with a history of chronic HF (NYHA class II) with CRT-D implanted for primary prevention of sudden cardiac death in January 2017, coronary artery disease and symptomatic degenerative spine disease, reported to his Implanted Devices Control Station at the Central Teaching Hospital of Medical University of Warsaw at the beginning of 2018. The reason was a sound alarm generated by his CRT-D he had heard at home the day before. Although the patient did not present any disturbing signs or symptoms, a routine device check revealed a non-sustained high rate episode between 10:36 and 10:37 the day before. A suspicion of a device failure was made. A detailed medical interview was performed and the patient admitted to having undergone a transcutaneous electrical nerve stimulation (TENS) on his cervical and lumbar areas due to degenerative spine disease producing episodes of acute pain. The man was told to cease the therapy that presumably interfered with the device. The following day, however, he repeated the TENS on the lumbar area alone. It led to redetection of a non-sustained high rate episode and a characteristic audible alarm. That confirmed our assumptions and convinced the patient to discontinue the risky therapy.

Conclusions: Some of the CRT-Ds are equipped with sound or vibration alerts notifying the patient of possible critical conditions such as lead or device defect or fluid congestion due to exacerbation of heart failure. Electromagnetic Interference should be avoided if possible, hence the audible notifications to inform the patient to seek immediate medical attention to prevent delivery of an inappropriate shock.

[107]

The importance of the cooperation between clinicians and radiologists in rare diseases. Susac's syndrome case report

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Background: Susac's syndrome (SS) is a rare (>300 reported cases) disorder characterized by the triad of encephalopathy, sensorineural hearing loss and branch retinal artery occlusions. Its wide spectrum of symptoms (headaches, confusion, behavioral changes, memory loss, visual disturbances, hearing loss) is rarely present at initial presentation. However, as the neuroimaging tool of choice in this syndrome, MRI is able to detect characteristic radiographic features even if all components of the clinical triad have not yet manifested, which underlines the importance of medical imaging in the early detection of this disease and thus proper management.

Case: A 31-year-old woman presented to the doctor with a severe headache (2014). In spite of the prescribed painkillers, the pain increased and the patient was admitted to the hospital with other symptoms including balance problems, confusion, hearing problems, and memory loss. An MRI showed multiple, small bilateral white matter lesions (involving the corpus callosum), hiperintense in T2 weighted images/FLAIR; enhancement of internal carotid arteries walls (suggestive of vasculitis), and abnormal membranous labyrinth signal. High dosage of glucocorticosteroids and mycophenolate mofetil treatment was started. In 2016, the patient exhibited sudden hearing loss on right side with no response to treatment. During the last hospitalization (early 2018), the patient complained of partial visual loss in the left eye and progression of the hearing deficiency. A recent MRI showed multiple bilateral T2-hiperintense lesions of the white matter, particularly in the frontal lobes and corpus callosum, which was consistent with previous MRIs (2014, 2016, 2017). During this admission, the patient was treated with methylprednisolone and immunoglobulins. On 13.02.18, she left the hospital in a stable state.

Conclusions: Accurate diagnosis in patients suffering from rare diseases requires a cooperation of multiple specialists. In SS, the radiographic features are considered pathognomic and can precede some of the clinical symptoms. In light of possible underestimation of the population currently suffering from this disease (comparable to multiple sclerosis or systemic lupus erythematosus in some cases), the role of radiologists and their ability to correlate the radiographic findings with the clinical symptoms seems crucial. We believe that a wider awareness of the disorder will lead to earlier detection and more favorable outcomes in SS patients.

[108]

The curious incident of heart tumor

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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.

Case: The 45-yo patient was submitted to the cardiology department due to suspected chronic ischemic heart disease appearing with the progressing decrease in exercise capacity, tachycardia, dyspnea, feverishness and chest pain radiating to two upper limbs. ECHO revealed suspicious tumor mass infiltrating and affecting mobility of right atrium's wall. Thorax and abdomen CT revealed infiltration in whole wall of right ventricle, ostium of the upper vena cava and right atrium's lumen but no changes in abdomen. Due to CT, TEE, TTE results, cardiac surgeons removed pathologies in right atrium and partially reconstructed its wall. Post-surgery ECHO showed right atrium's wall and tricuspid valve were still infiltrated by the tumor but the valve was not stenosed. Histopathology revealed a surprising result, the Burkitt lymphoma (c-myc+; CD20+; CD10+, Bcl2; Bcl16+; TdT-; MIB+ 100% cells). Shortly after, patient developed infective endocarditis and was submitted to the hematology department with ECOG scale 4. He was treated with life- saving GMALL chemotherapy protocol which was continued for following six months. During cytostatic therapy, heart function significantly improved rising to 60% of LV EF. The PET/CT valuation after C1 cycle and after ending the GMALL protocol proved a complete metabolic remission. Now, almost 3 years after the dreadful diagnosis patient is in a very good condition (ECOG 0/1) and professionally active.

Conclusions: The case shows that adequate tactic of multimodal treatment can save a fatal condition. The malignancy and bad localization required both, surgery and chemotherapy. If only one of them was chosen, this would have been insufficient for complete remission. Although difficult decision making pathway, a great cooperation of different health centers saved patient's life.

[109]

Primary-pigmented nodular adrenocortical disease (PPNAD) not associated with Carney Complex (CC) as an underlying cause of Cushing Syndrome (CS) in a young woman

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Background: ACTH-independent Cushing Syndrome(CS) is in 1% of patients due to primary pigmented nodular adrenocortical disease(PPNAD). This condition occurs as slightly expressed CS, with young women preponderance, manifests often as weigh gain, growth failure, hypertension, menstrual disturbances and hyperandrogenism. Specific histopathological changes in adrenals and paradoxical rise in cortisol in 24-hour urine-free cortisol (UFC) excretion after high-dose dexamethasone suppression test(HDDT) are characteristic. PPNAD exists mainly as familial condition, usually a part of Carney complex (CC), which is a multiple neoplasm condition. Here we present a unique case of non-familial PPNAD not associated with CC.

Case: A 18-year-old patient was diagnosed due to weight gain, secondary amenorrhea and acne for the last 6 months. She was slightly hypertensive, otherwise healthy and declined any medication intake. In laboratory tests morning serum cortisol was 441 nmol/l(normal: 172-497), midnight serum cortisol 465 nmol/l(normal: <50). The morning ACTH concentration was 1.85 and 2.08 respectively(normal: 7.2-63). After 1 mg and 8 mg dexamethasone administration plasma cortisol concentration at 8:00 AM was 526 nmol/l and 586 nmol/l respectively. Urine cortisol in UFC was 258 nmol/24h at baseline(normal: 12-486), 455 and 1545 nmol/24h after 1 mg and 8 mg dexamethasone intake accordingly. DHEA-S was 49 mcg/dl(normal: 65-368). Normal image of adrenal glands was found in CT. SPECT-CT with the use of I-131 showed symmetrically increased uptake in both glands, but without tumor. The histopathological examination revealed PPNAD. No mutation in genetic screening

was found. Family history was unaffected. The patient was prepared with 200 mg/24h of ketoconazole before two step bilateral adrenalectomy. Following the surgery, her clinical status rapidly improved with amelioration of hypertension, facial acne, hirsutism and weight loss over 4 weeks. Menstrual cycle became again regular.

Conclusions: PPNAD has to be taken into consideration in patient with weight gain, growth failure, hypertension, mild CS and menstrual disturbances, where adrenal glands are normal in CT and paradoxical rise in cortisol level in HDDT is observed. PPNAD is frequently associated with CC. Therefore, these patients and their first-degree relatives should be always screened for symptoms of PPNAD, CC and genetic mutations of PRKAR1A, PDE11A, PDE8B genes. PPNAD might also appear as an isolated and non-familial feature.

[110]

Uveitis in Juvenile Rheumatoid Arthritis

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Background: The connection between ocular and articular pathology currently is not studied, the extent of influence of individual types of ophthalmopathy on the progressing of the disease remains unexplained, there is no information on their prognostic significance. But in 15-20% of the cases of juvenile rheumatoid arthritis the disease is accompanied by the development of inflammation of eye choroid layer among those younger than 16 years old. Chronical child uveitis is typically non-symptomatic, but possible complications include dystrophy of the iris, posterior synechia formation, cataracts, eye hypotension or glaucoma, that can lead to total loss of vision.

Case: 14-year-old girl with juvenile rheumatoid arthritis has ophthalmologic problems for 10 years. At the age of 4 she was diagnosed with anterior chronical uveitis. The ANA test was positive, the diagnostics with the slit lamp showed signs of uveitis. MTX therapy was prescribed, but due to recedives of uveitis several times in a year period the dose of MTX was being increased every year. In 2012 Humira was prescribed by rheumatologist and after there was achieved clinical remission till 2016. Due to the fact that the girl had no ophthalmological and rheumatological pathologies Humira therapy was canceled what led to vision worsening in 6 months period. The therapy was renewed for indefinite time.

Conclusions: Regular eye examinations should be performed starting with the moment of setting diagnosis "Juvenile rheumatoid arthritis". Ophthalmopathy participates in the pathogenetic constructs of rheumatoid arthritis, determining the extent of progression of uveitis. Local corticosteroids should be prescribed as primary treatment. If irritation persists, systematic immunosuppression is necessary despite topical corticosteroids if new complications arise, or if steroids should be given in excessively high doses or if unacceptable side effects persist. If therapy does not help, ordinary or biological immunomodulators can be prescribed as an additional therapy. Treatment reduces the risk of uveitis and its complications this improving the prognosis for a good vision function.

[111]

Locked-in syndrome - case report

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Background: Locked-in syndrome is a very rare clinical condition in which a patient suffers from paralysis of all the skeletal muscles in the body except for the extraocular muscles that control movement of the eye and one muscle that controls eyelid elevation. The patient stays conscious and aware. Locked-in syndrome is usually result from stroke at the level of the basilar artery denying blood to the pons.

Case: This case describes 54-years-old patient with the history of diabetes and hypertension, who was admitted to Department of Neurology (Medical University of Białystok) because of sudden weakness in both arms and legs, forced position of eyeballs and disturbances of contact without loss of consciousness. Performed angio-CT revealed a blood clot in the basilar artery. Thrombectomy procedure was performed but the clinical condition of the patient did not improve. Magnetic resonance indicated fresh ischemia in the ventral part of the pons. There

were no abnormalities in the EEG. Taking into consideration clinical symptoms and results of performed medical tests locked-in syndrome as a result of the ischemic stroke in the brainstem was diagnosed. In further observation the patient's neurological state was not improved. Physical examination showed persistence of tetraplegia and facial muscle paralysis. The possibility of logical contact with the patient has been preserved, thanks to the ability to blink and move the eyeballs in response to asked questions.

Conclusions: In locked-in syndrome we deal with a poor prognosis as 90% of the patients die within 4 months after the brain damage was made. As locked-in syndrome is difficult to diagnose the key seems to be recognize and distinguish it from the vegetative state. It's extremely important as one of the steps in the treatment of locked-in syndrome is to help the patient communicate with the outside world.

[112]

Pleomorphic sarcoma diagnosed in pregnant patient

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Background: Concerns about the administration of cytotoxic chemotherapy during pregnancy arise because chemotherapy preferentially kills rapidly proliferating cells, and the fetus represents a rapidly proliferating cell mass. All chemotherapy agents used in the treatment of cancers are pregnancy category D, meaning that fetal exposure to individual chemotherapeutic agents have resulted in adverse effects including intrauterine growth restriction, prematurity, and low birth weight in the infants. Chemotherapy may also cause fetal toxicities similar to those observed in the mother (eg, bone marrow suppression).

Case: 44-year old pregnant patient with persistent cough and upper respiratory tract infections underwent chest X-ray, which showed a suspicious mass in the left lung. Patient was admitted to hospital in 15th gestational week for further diagnosis. Physical examination showed reddish tumor, 1.5 cm in diameter in the scalp. Histological examination of bronchoscopic biopsy showed pleomorphic sarcoma, most probably originating from lungs. Patient was transferred to the oncologic center for chemotherapy treatment. After 3 courses of first line chemotherapy progression of disease was stated in the MRI examination with numerous metastases in the central nervous system, lungs and one kidney. Patient received steroid course and elective cesarean section was planned at 30th gestational week.

Conclusions: The risks of spontaneous abortion, fetal death, and major malformations vary depending on the agent used and the trimester of pregnancy. These risks must be weighed against the benefits of immediate versus delayed chemotherapy for the mother. Ethical considerations of treatment during pregnancy have emphasized the role of patient autonomy and the concept of beneficence for both the mother and fetus. Administration of chemotherapy within three weeks of anticipated delivery or beyond 35 weeks of gestation may induce neonatal myelosuppression and complicate delivery due to adverse effects of treatment on bone marrow reserves. Management of patients with neoplasm in pregnancy requires multispecialist team including oncologist, perinatologist, and neonatologist.

[113]

Is carefree consumption of energy drinks responsible behaviour in terms of liver condition?

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Background: Following the research data of TGI Millward Brown - the questionnaire conducted between 04.2010-03.2011, which revealed that over 21% of Polish population aged from 15 to 75 admitted to drink energy drinks/isotonic drinks. This year by year rising statistics combined with constantly expanding market of such beverages, are alarming especially considering health consequences it may bring at any age. Thus, we are

honoured to present the case report of a patient diagnosed with acute hepatitis secondary to the energy drinks consumption.

Case: A previously healthy man aged 35 was admitted to the Gastroenterology Department after consultation in Hospital Emergency Department. He presented with jaundice (AST – 213,6 U/l; ALT – 526.0 U/l; ALP – 203 U/l; GGTP – 824 U/l; Bilirubin – 21.3 $\mu\text{mol/l}$), severe abdominal pain and flatulence lasting for 4 days prior to the admission. Pain appeared unexpectedly and was not due to dietary habits such as heavy food or alcohol (patient took couple of tablets of ibuprofen). Patient did not suffer from nausea, vomiting nor diarrhoea. He denied being treated for any other chronic disease. On extensive examination he admitted excessive energy drinks intake, which was strictly connected with his hectic lifestyle. The patient was treated supportively with complete resolution of his symptoms after medical and dietary intervention. He also suffered from a fairly similar episode 2 years before.

Conclusions: Energy drinks intake may play a vast role in the liver injury in the presented case, since none other contributing factors has been found. It is crucial to mention, that such drinks contain many additives such as niacin, taurine, isoglucose as well as caffeine in excessive quantities (multiple times exceeding recommended daily intake) posing a risk of hepatotoxicity.

Having that in mind, we have tried to analyse and explain in details relation between these ingredients and our patient past condition.

[114]

A rare case of triploid Placental Mesenchymal Dysplasia complicated by eclampsia

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Background: Placental mesenchymal dysplasia (PMD) is a very rare condition, with an estimated incidence of 0.02%. The essence of the disease is placentomegaly and grape-like placental vesicles. It can be associated with fetal defects, mostly with Beckwith–Wiedemann syndrome and intrauterine fetal growth restriction. As the similarity of the ultrasound image between PMD and molar pregnancy is substantial, it is vital to properly differentiate those two conditions.

Case: We present a case of 25 years old woman in second pregnancy who was admitted to hospital due to intrauterine fetal growth restriction and abnormal ultrasound image of the placenta.

No abnormalities were detected on first trimester ultrasound scan and the calculated risk of trisomy was low. The next ultrasound scan at 19 weeks revealed a single female fetus with no anatomical abnormalities. Abnormal, "jelly like placenta" together with the occurrence of numerous cysts, was observed. At 25 weeks intrauterine growth restriction with abnormal Doppler was diagnosed and the patient was referred to the hospital. The patient was administered intramuscular betamethasone. Her blood pressure was normal.

During hospitalization deterioration in Doppler scan was observed. Additionally, at 27 weeks abnormal cardiocography record was found. Due to imminent asphyxia of the fetus, female newborn weighting 740 grams was promptly delivered via cesarean section (5-7 points according to Apgar Scale). Placenta contained numerous cysts with diameter up to 4 cm. The placenta karyotype was triploid (69 XXY), while the newborn karyotype was diploid (46 XX). Histopathological examination indicated PMD. Maternal serum βHCG level was not elevated (5 mIU/mL).

Early postoperative period was complicated by hypertension of 200/100 mmHg and two eclampsia attacks. The patient received hypotensive and anticonvulsive treatment and magnesium sulfate infusion. Computer tomography examination revealed 12x14mm big, hypodense change in frontal lobe. The patient was transferred to neurological intensive care unit, where she was diagnosed with posterior reversible encephalopathy syndrome (PRES) on MRI.

Conclusions: Abnormal placentation, including PMD is related to a higher risk of preeclampsia and eclampsia. It should be borne in mind that pregnant women with pregnancies complicated with PMD are at increased risk of eclampsia and pulmonary embolism and, therefore, they ought to be provided with adequate information and more intensive pregnancy course monitoring.

[115]

Patient with recurrent hypercalcaemia: a case of sarcoidosis with initial diagnostic difficulties

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Background: Increased level of calcium in blood serum may cause both burdensome and life-threatening symptoms. The most frequent causes of hypercalcaemia include primary hyperparathyroidism and malignancy, however impact of chronic granulomatous diseases (e.g. sarcoidosis) is also in the front rank. Although the mechanism of hypercalcaemia is commonly known, diagnostic process may be challenging.

Case: We report a case of 78-year-old female hospitalized 14 times over the course of 3 years due to moderate hypercalcaemia of unknown origin treated with rehydrations and multiple bisphosphonates infusions. She was admitted to our department due to sarcoidosis suspicion.

Her past medical history revealed: chronic renal failure, hypertension and osteoporosis. Due to hypercalcaemia the patient had undergone detailed diagnostic prior current admission. First of all, primary hyperparathyroidism was excluded based on PTH level and irrelevant 99mTc scintigraphy results. Furthermore, multiple myeloma was also excluded. No signs nor symptoms of other malignancies were detected. Thoracic CT scans showed no signs of hilar lymphadenopathy nor pulmonary infiltrates thus sarcoidosis was not suspected. Nevertheless, high calcitriol level, in the setting of very low 25(OH)vitamin D, pointed to the presence of ectopic secretion of parathormone-related peptide or excessive 1 α -hydroxylase activity. Thus PET/CT(68Ga) was preformed, indicating high expression of somatostatin receptors in hilar lymph nodes suggesting sarcoidosis.

On admission the patient reported fatigue and joints' pain. Physical examination revealed no significant abnormalities. Therefore, bronchoscopy was performed with transbronchial lymph nodes biopsy revealing normal lymph nodes structure. However, noncaseating granulomas were found in bronchial biopsy samples. After exclusion of infection and malignancy sarcoidosis was recognized. Therefore prednisone was administered resulting in significant symptoms and calcium level improvement.

Conclusions: Among main causes of hypercalcaemia sarcoidosis should be seriously concerned. The diagnostic process may be particularly difficult in case of none typical sarcoidosis picture. Therefore, knowledge of other diagnostic tests as presented in our case, may result in early proper diagnosis, potentially preventing some complications and reducing costs of recurrent hospitalization and treatment.

[116]

Point-Of-Care Lung Ultrasound as a brand new technique for detecting pneumonia

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Background: Point-of-care ultrasound is a bedside ultrasonography examination performed by an attending physician. It is treated as another step of a physical examination carried out in order to solve a particular clinical issue quickly. One of the elements of point-of-care examination in patients with dyspnea is transthoracic lung ultrasound.

Case: A 70-year old patient was admitted to the Department of Internal Medicine, Connective Tissue Diseases and Geriatrics with shortness of breath and increasing peripheral edema. On admission, the patient's general condition was moderate-severe. The skin was pale, cold and wet. The vital signs were as follows: oxygen saturation 85%, BP 170/110 mmHg, irregular heart beat 130 per minute. While auscultating, bilateral crackles were noticed. ECG showed atrial fibrillation and laboratory tests proved the following abnormalities: hyponatremia, elevated inflammatory markers. We performed a bedside lung ultrasound and found multiple B-line artifacts forming alveolar-interstitial syndrome in lower and middle parts of both lungs – typical for pulmonary edema and a consolidation of lower lobe of the left lung with a dynamic airbronchogram, what indicates an inflammatory process. Chest X-ray and sputum culture were ordered. The treatment with the use of oxygen therapy, nitroglycerin, furosemide, low-molecular-weight heparin and empirical antibiotic therapy was introduced. After 4 hours since the admission, the general patients condition significantly improved. In a follow-

up lung ultrasound, a gradual regression of pulmonary edema was noticed. In a bedside chest X-ray description obtained 3 hours after the admission, only bilateral lung congestion and cor bovinum were found. After 2 days *S. aureus* was cultivated in sputum culture.

Conclusions: In a described case, thanks to the use of ultrasonography, we could diagnose pulmonary edema and pneumonia within several minutes after the admission of the patient and implement the appropriate treatment. Any sign of inflammation in chest X-ray were not found due to their location behind the enlarged of the cardiac silhouette. In the latest research, Lung Ultrasound has a better sensitivity than X-ray, 92% and 47% respectively. Bedside ultrasound is performed more and more often by the internal medicine specialists owing to their high diagnostic accuracy, general availability of ultrasound machines, ease of learning and lack of harmful radiation.

[117]

Pulmonary alveolar microlithiasis - case report

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Background: Pulmonary microlithiasis is a rare genetic disorder, in which microstones made of calcium salts, phosphorus, magnesium and aluminium are forming in alveoli. Guidelines in treatment still remain unclear and patients' prognosis is difficult to assess.

Case: The case study treats about a 45-year old patient diagnosed with pulmonary microlithiasis at the age of 7. In the first stages of the disease patient was probably treated with corticosteroids (lacks of documentation). In 2017 due to worsened respiratory function the patient has had full examination done. The CT image was characteristic for the disease, moreover low grade gas diffusion impairment and moderate restrictions were diagnosed basing on functional lung tests. X-ray image showed bilateral reticular and linear opacification and characteristic „sand storm“ image. Due to the tests results and incomplete history patient was not qualified for the lung transplantation, but remains under control of the Transplantology Department in Silesian Center for Heart Diseases in Zabrze.

Conclusions: Long asymptomatic period is characteristic for pulmonary microlithiasis, it can be found on the accidental X-ray. Current publications remain contradictory as to the treatment methods so the only effective one is lung transplantation. In any transplant recipient the recurrence of the disease was not noted.

[118]

Therapeutic problems and pregnancy in a patient with juvenile nephropathic cystinosis

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Background: Cystinosis is a rare genetic disorder classified as a lysosomal storage disease. It is characterized by the abnormal accumulation of the amino acid cysteine in the lysosomes of various tissues and organs, which leads to their dysfunction. The cause of the disease is the mutation of the CTNS gene that codes for the lysosomal membrane-specific transporter – cystinosin. The inheritance is autosomal recessive. The most common type of cystinosis is the juvenile nephropathic form which without treatment leads to renal failure and before the introduction of cysteamine was the cause of death before puberty.

Case: A 26-year-old female patient with cystinosis diagnosed in the first year of life developed secondary end-stage renal failure diagnosed at the age of 10. Following 2-year period of repeated hemodialysis, two kidney transplantations were performed. The first kidney transplantation from a living related donor (father) was carried out at the age of 12. The recurrent urinary tract infections led to the graft failure after 6 years. The patient continued hemodialysis for one more year, during which two operations were performed: the removal of pelvic hematoma and right appendages due to ovarian tumor. At the age of 19, the patient underwent second living related donor kidney transplantation (from mother) with simultaneous removal of the first graft. The operation

was complicated by the hemorrhagic cystitis. After the transplantation, the patient was irregularly treated with cysteamine due to limited availability of the medicine, which led to high blood concentration of cysteine (7 nmol/mg; norm <0.25 nmol/mg) detected 7 years after transplantation. In 2017, the cysteamine treatment became regular again, yet the patient did not tolerate full doses (abdominal pain). Therefore, the dose was reduced by half. Despite elevated blood levels of cysteine and the removal of right appendages, the patient became pregnant in August 2017. Until now, the pregnancy proceeds without complications (25 Hbd).

Conclusions: Due to the possibility of treatment with cysteamine and kidney transplantations, patients with juvenile nephropathic cystinosis live longer and the quality of their life improves. The presented case further demonstrates that even in the absence of full control of the disease, female patients can naturally become pregnant.

[119]

The combination of severe dengue fever and Wilson's disease

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Background: Dengue fever is an acute vector-borne infectious disease characterized by fever, rash, intoxication, hemoconcentration, thrombocytopenia and hepatotoxic effects. Wilson disease is a rare autosomal recessive inherited disorder of copper metabolism, which leads to liver cirrhosis, hemolysis and neurological lesions. The combination of two hepatotropic diseases can lead to severe hepatitis.

Case: A 26-year-old woman without previously diagnosed chronic diseases 14 days was in Thailand in August. Noted mosquito bites. In 9 days after her return she became acutely ill with fever, headache and arthralgia. On the 3rd day of illness she was hospitalized with suspected pneumonia, but it was not confirmed. At admission, there was febrile fever, PLT 59x103/mL. On the 6th day there was an abdominal pain, on laparoscopy: hemorrhagic fluid in the abdominal cavity, compaction and pallor of the liver. Later - bleeding of the mucous membranes, petechial rash on the skin, bleeding from peritoneal drainage, PLT 48x103/mL. She was transferred to the Infectious Hospital with the diagnosis "hemorrhagic fever" in the severe condition. Lab test: WBC 13.4x103/mL, PLT 83x103/mL, AST 2816, ALT 788 IU/L, total bilirubin 70 (direct 46) mmol/L. Coagulogram: APTT 65 sec, PI 48%, TT 76 sec, INR 2.2, fibrinogen 0.6 g/L. She received infusion, hemostatic, antibacterial therapy. On the 7th day she was transferred to the intensive care unit because of liver failure development. Transfusion of fresh frozen plasma was performed. On the 10th day, AST 597, ALT 221, total bilirubin 284 (direct 184), LDH 4000 mmol/L/min, creatinine 170 mmol/L. Ultrasound showed signs of multiple organ failure. IgM against the dengue virus was detected in blood in a titre of 1:3200. On the 17th day Wilson's disease was suspected. Levels of ceruloplasmin and copper in serum were normal. The daily urine secretion of copper was in 5 times above normal. The diagnosis was confirmed by detection of mutation c3207C>A. Therapy with D-penicillamine has been started. On the 50th day she was discharged home in a satisfactory condition.

Conclusions: Hemorrhagic fever and Wilson's disease were suspected very late despite the epidemiological history, fever, leukopenia, thrombocytopenia, early symptoms of liver damage. The combination of two rare diseases led to difficulties in diagnosis and late treatment.

[120]

Visual disorders in the course of lung cancer

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Background: The most common intraocular tumors are metastases. They usually come from breast (40-50%) and lung cancer, where the spreading is early and count for 20% of the ocular metastases. It is estimated that 8-10% of patient with multiple metastases have them located in the eye. They are usually located in the choroid, between the macula and the equator of the eye fundus, in an upper and lateral quadrants. More than twice as

often occur in women and manifest in uncharacteristic symptoms such as blurred vision, eye redness or pain. It can be even the first symptom of the neoplastic disease.

Case: A 69-year old woman has been referred to the Department of Ophthalmology of the Medical University of Warsaw with the suspicion of neuritis of the left eye . She reported visual disorders that manifested in flashes and visual field defects, that had been occurred since 7 days. The patient had been suffered from adenocarcinoma lung cancer with bone metastases. She also had a Chronic Obstructive Pulmonary Disease, Hypertension and had undergone a stroke. An ophthalmological examination (AF, OCT, USG) showed abnormality that indicated the possibility of presence of metastases to the eyeball.

Conclusions: Nowadays, along with the increase of diagnostic possibilities, there is a higher effectiveness of early detection of the metastases into the eye . Unfortunately, because of uncharacteristic symptoms from visual system, it is rarely diagnosed on early stages. This case showed, that we should keep in mind, especially in patient with cancer, that every visual disorder may be the sign of metastases of the primary location of the cancer. This case should also indicate, that every patient with medical history of cancer should undergo a regular ophthalmological examination to prevent omission of the metastases.

[121]

Metastases of laryngeal cancer to cervical lymph nodes treated as actinomycosis – causes and consequences of the lack of oncological alertness

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Background: Laryngeal cancer is the most common of all head and neck neoplasms. It usually occurs in middle-aged men addicted to alcohol or cigarettes. Metastases occur most frequently in regional cervical lymph nodes. Actinomycosis caused by *Actinomyces israelii*, usually involves cervicofacial area and is characterized by abscesses, draining sinus tracts, fistulae or tissue fibrosis.

Case: A 52-year-old male, heavy-smoker, was referred to the Department of Dermatology with 6 months history of skin lesions treated by surgeon in an ambulatory care. In January 2016 the nodule on the left side of the neck was diagnosed as a sebaceous cyst and removed surgically. A month later the lesion recurred and suspicion of actinomycosis arose. Patient was treated with empiric antibiotics and multiple incision procedures without any improvement. In April the lesions were enlarging, infiltrating, hoarseness and 20 kg weight loss occurred. In July 2016 the patient fainted and was admitted to the Emergency Department where head CT did not reveal any abnormalities and due to the history of actinomycosis given by the patient he was transferred to the Department of Dermatology. During hospitalization laboratory examinations revealed anemia and elevated inflammatory markers. Methicillin-resistant *Staphylococcus aureus* was found in the swab from the lesion on the neck. Neck CT scan showed tumor on the left side of the neck with central focus of necrosis and laryngeal tumor infiltrating epiglottis, thyroid lobe, laryngeal part of the pharynx, jugular vein and nuchal muscles, as well as bilaterally enlarged lymph nodes. Patient refused histopathological examination of larynx and tracheotomy. Histopathological examination of the lesion on the neck revealed squamous cell carcinoma. He was disqualified from the surgery. Patient was transferred to palliative care and received two courses of chemotherapy, he died 5 months later.

Conclusions: Among various causes of head and neck tumors actinomycosis as well as metastases to cervical lymph nodes can be found. It is crucial to take patient's history carefully, perform physical examination thoroughly and treat every patient as an individual, not falling into routine to never miss cases like described above, especially considering laryngeal cancer is very likely fatal and actinomycosis totally curable.

[122]

Difficult decision - A case of first pediatric lung transplantation and retransplantation in Poland due to idiopathic pulmonary arterial hypertension

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Background: Idiopathic pulmonary arterial hypertension (IPAH) is a severe disease, which causes the deterioration of patient's health. Available conservative treatment has the ability to slow down the progress of IPAH, yet it is not always enough. In some cases, lung transplantation is the only therapeutic option for patients with that kind of end-stage lung disease. Such decisions have to be made not only in the course of treatment of adult IPAH patients, but also in case of pediatric ones.

Case: This case report is about 21 years old female patient, who was diagnosed with IPAH and underwent two lung transplantations when she was 15 years old. Before the proper diagnosis of IPAH in 2009, patient was diagnosed with asthma due to her symptoms. Patient was treated with Bosentan, then Sildenafil was also added. It is required for the potential IPAH lung transplant candidate to be treated with analogue of prostacyclin before qualification process. This condition has been met, as patient was treated with Iloprost. Due to further deterioration of her health, she was eventually qualified for the lung transplantation in 2012 and was transplanted for the first time 20 days after qualification. Posttransplant period was eventful with such complications like cellular rejection, humoral rejection and infections. Ultimately, patient developed Post-transplant lymphoproliferative disorder, which worsened her condition to the point of being qualified for retransplantation. Second transplantation took place on Christmas Eve of 2012 and is officially the first retransplantation of a pediatric patient done in Poland. 5 years after this procedure, patient is alive and well.

Conclusions: Lung transplantation in this case was a life saving procedure, but it should be mentioned that the procedure itself and the therapeutic management afterwards is difficult. According to ISHLT statistics, median survival of a patient after lung transplantation is 5.8 years. Knowing that, the decision to apply this treatment, especially in patients so young must be well-thought-out.

[123]

A very rare origin of a metastatic tumor in the right atrium

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Background: The primary cardiac tumors are extremely uncommon, but metastases occur a few times more often. In theory, tumor of every organ can spread to distant sites, including the heart, yet there is no malignant tumor with preferential metastases to the heart but there are some with more frequent cardiac involvement, usually via transvenous route. The study presents a case of a very rare origin of a metastatic tumor in the right atrium.

Case: A 37-year-old male with no previous history of chronic diseases, contacted a physician due to non-specific chest discomfort, non-productive cough and weakness lasting for several weeks. On physical, except single rales over lung bases, there were no other abnormalities. Chest radiogram showed multiple pulmonary lesions suggesting metastases. Searching for the origin, abdominal ultrasound and CT scan were performed and mass in the right adrenal gland was found. The biopsy of the tumor revealed the adrenocortical cancer and treatment with mitotane was started.

On repeated CT scan, pathological lesion in inferior vena cava was present with a suspicion of migration of the mass into the right atrium. Subsequent echocardiography revealed pedunculated mass measuring 2,3 x 1,5 cm located in the right atrium, which originated in the inferior vena cava. During the systole it migrated to the right ventricle, but did not affect the blood flow through the tricuspid valve.

After an epileptic attack, brain MRI was done showing right parietal metastases surrounded by edema. Due to severe general condition and progression of the disease during chemotherapy, the treatment was stopped and the patient referred for the hospice care where he died after 2 months.

Conclusions: Adrenocortical cancer is a rare malignant neoplasm with estimated annual incidence of 2-4 cases per 1 000 000. It displays a great tendency for local invasion and multiple metastases to the lungs, liver and bones. In the literature there are only a few cases of adrenocortical cancer directly extending from the inferior vena cava to the right atrium.

[124]

Successful treatment of severe CMV pneumonia and hemophagocytic lymphohistiocytosis by HLH-2004 protocol, ganciclovir and plasmaphereses

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Background: Hemophagocytic lymphohistiocytosis (HLH) is a rare, life-threatening disorder resulting in a hyperinflammatory response of improperly activated immunological cells. The clinical features of the disease include: fever, splenomegaly, cytopenia, hypertriglyceridemia, hypofibrinogenemia and hyperferritinemia. Secondary HLH is usually caused by infections (especially EBV), cancers and autoimmune diseases. CMV associated-HLH is generally rare. It is treated with HLH-2004 protocol (etoposide, dexamethasone, cyclosporine A).

Case: A 31-years-old woman was admitted to the hospital with respiratory and liver failure. She was transferred from another hospital, where she had stayed for 7 days due to 40°C fever and suspicion of pneumonia. 3 years earlier she was diagnosed with ulcerative colitis. Laboratory tests indicated pancytopenia and multiple organ dysfunction. Despite the treatment her condition did not improve and doctors decided to perform plasmaphereses. During plasmaphereses saturation and blood pressure increased and her state improved. The next day, the bone marrow biopsy confirmed the HLH syndrome, secondary to infection of unknown origin, and the appropriate treatment was inducted. Virological tests detected CMV. At first, antiviral treatment was not included, because the patient was treated according to HLH-2004 protocol. 2 weeks later apart from the treatment with HLH-2004 protocol, ganciclovir was inducted due to the high viremia and exacerbating condition of the patient. At the same time, plasmaphereses were performed. The treatment with ganciclovir progressively led to decrease of the level of CMV and the patient started feeling better. During the treatment complications such as pneumothorax and urosepsis occurred, but were successfully treated. Three years after the treatment the patient is alive and a mother to a newborn child.

Conclusions: Since many features of HLH are nonspecific and are seen in conditions such as sepsis and respiratory failure from multiple causes, it is important that physicians and intensive care specialists take HLH under consideration in differential diagnostics. CMV-related HLH and CMV pneumonia should be suspected among immunocompromised patients. Considering the described case, positive effect of additional treatment with ganciclovir to standard therapy with HLH-2004 protocol can be seen. What is more, adjunctive plasmapheresis could be helpful in respiratory failure caused by CMV pneumonia.

[125]

Are PCSK9 inhibitors a chance for familial hypercholesterolemia patients with coexisting liver disabilities?

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Background: The familial hypercholesterolemia (FH) leads to an increased risk of premature cardiovascular disease. It is treated either with statins or statins/ezetimibe combination. However, patients with liver impairment are unable of tolerating most of anti-cholesterol drugs, as most of them have hepatic metabolism. One of the effective treatments is LDL apheresis, but it cannot become a routine treatment for everybody. Lately introduced PCSK9 inhibitor is the effective treatment hope. The proprotein convertase subtilisin/kexin type 9 enzyme destroys LDL receptors. The drug allows more LDL receptors to stay on the hepatocyte surface. The metabolism of PCSK9 inhibitor is based on the endogenous IgG degradation pathway so it seems to be safe for patients with hepatic impairment, but there are no findings regarding this drug usefulness in hepatic disabled patients.

Case: A 65 years-old woman needed a cardiac consultation due to liver transplantation because of primary biliary cirrhosis. Besides this disease, she had hypertension, steroid-induced diabetes, chronic ischemic heart disease and positive cardiovascular disease family history. She underwent coronary angioplasty of two vessels. Her blood tests showed total cholesterol(TC) level of 748 mg/dL and LDL-C 680 mg/dL. She was diagnosed with FH (Dutch score: 17). Standard treatment was impossible in this patient as she was statin intolerant thus she was given evolocumab (PCSK9 inhibitor). Six months later, control blood tests indicated TC 259 mg/dL and LDL-C 204 mg/dL, without liver impairment progression. The LDL-C reduction was more than 60%, which is consistent with the guidelines regarding use of statins and ezetimibe in reduction of absolute cardiovascular risk.

Conclusions: As the rate of diagnoses of co-existing liver and cardiovascular disorders increases, finding and implementing a therapy which can treat both is an important issue. The PCSK-9 inhibitor, used for PBC patient was a good decision, although no guidelines for such a procedure.

Thus, the safety and efficacy of such therapy suggest a need of further research in the field of hepatic and congenital lipid metabolism disorders.

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[126]

Modern directions in diagnostics of aggravation Chronic Kidney Disease (CKD) in patients with Rheumatoid Arthritis (RA)

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Introduction: Renal damage in RA occurs in 70-80% of cases. Pathological changes in the kidneys that are detected during life, in patients with RA, occur in 52%, the rest changes are manifesting during sectional examination. Nowadays, the main place in the diagnosis of diseases of rheumatic and nephrological diseases is occupied by immunodiagnostic methods, which are sufficiently available and fast.

Aim of the study: Aim of our study was to determine the features of the content of pro- and anti-inflammatory cytokines in the blood at different stages of CKD in patients with RA.

Material and methods: 113 patients were examined. The average age of the patients was 46.92 ± 7.13 years. The average duration of the disease is 10.59 ± 4.17 years. The patients with RA were divided into four groups by presence of CKD and its stages: group I-patients with RA without CKD ($n=20$), group II-patients with RA and CKD of the I st ($n=34$), III group-patients with RA and CKD of the II st ($n=31$), IV group-patients with RA and CKD III st ($n=28$). We determined the levels of IL-1 β , IL-10, TGF- β 1 and TNF- α were determined by enzyme immunoassay. The studies were carried out in respecting with the main provisions of the Helsinki Declaration of the WMA on the ethical principles of scientific medical research involving human subjects.

Results: We were found the indices of pro- and anti-inflammatory cytokines in the serum of patients in the studied groups (pg/ml) the content of: IL-1 β : I- 83.93 ± 2.03 ; II- 124.04 ± 2.06 ; III- 143.06 ± 2.03 ; IV- 169.31 ± 3.58 ; TNF- α : I- 74.25 ± 6.23 ; II- 74.25 ± 6.23 ; III- 111.25 ± 5.35 ; IV- 129.35 ± 3.26 ; IL-10: I- 127.89 ± 3.02 ; II- 93.09 ± 2.88 ; III- 81.33 ± 3.08 ; IV- 63.52 ± 4.48 ; TGF- β 1: I- 72.18 ± 1.99 ; II- 98.82 ± 2.31 ; III- 111.03 ± 3.29 ; IV- 141.12 ± 7.21 .

In patients with RA with involvement kidneys in the pathological process, there is a significant decrease in IL-10 and an increase in the content of IL-1 β and TGF- β 1 in the blood, significantly differs from the corresponding data in patients with RA without kidney damage. The most pronounced changes were in the indices of TGF- β 1 blood in patients with stage III CKD.

Conclusions: The results of our study revealed the active involvement of pro- and anti-inflammatory cytokines in the development of immune inflammation in RA patients, as well as the great prognostic significance of the growth of the level of TGF- β 1, in the progression of kidney damage in RA patients. At early detection of these changes, it becomes possible to prevent the occurrence of menacing complications in patients with RA with kidney damage.

[127]

Lung Allocation Score (LAS) among polish lung transplant candidates – a single center pilot study

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Introduction: Lung Allocation Score (LAS) is used to estimate each lung transplant candidate's medical urgency and expected post-transplant survival rate relative to other patients on the waiting list for a lung transplant. System based on this value is used in USA, but it is not implemented in Poland.

Aim of the study: Aim of the study was to assess LAS among lung transplant candidates and to analyze how it reflects the survival of such patients according to data.

Material and methods: Study group consisted of 34 patients (11 women, 23 men, mean age at qualification: 51 years old), who were qualified for lung transplantation in Silesian Center for Heart Diseases (SCCS) between 2008-2017. 14 patients became lung transplant recipients and 20 died waiting for the transplantation. Patients suffered from following lung diseases: 52.9% Idiopathic Pulmonary fibrosis (IPF), 23.5% Chronic Obstructive Pulmonary Disease (COPD), 8.9% idiopathic Pulmonary Arterial Hypertension (IPAH) and 14.7% Interstitial Lung Diseases (ILD). Data was obtained from medical records at the time of qualification.

Results: Mean LAS among studied group was 39,8964±5,5. Highest average LAS score was observed among lung transplant candidates diagnosed with IPAH (41,687). Mean estimated number of days lung transplant candidate was expected to live in the next year without a transplant was 298,15 days in case of deceased patients and 325,86 days for transplanted patients. Mean number of days spent on the national lung transplant waiting list (NLTWL) was 351,91 days for the deceased and 153,47 days for transplanted patients. 92.86% of transplanted patients lived longer during the first year after transplant than it was estimated by LAS. Mean LAS score among deceased patients was 41.6164. Median of real time spent on NLTWL was 172 days for patients with LAS higher than mean and 344 days for patients with LAS lower than mean.

Conclusions: IPAH patients seem to have the highest medical urgency for the lung transplantation. Deceased lung transplant candidates' real time spent on NLTWL may inversely correlate with LAS score. Results encourage further research on a larger study group.

[128]

Pulmonary embolism in patients hospitalized in the pneumonology department

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Introduction: The most common symptoms of pulmonary embolism (PE) (especially non-high-risk PE) including dyspnea, chest pain and cough are similar to symptoms of lower respiratory tract infection and chronic respiratory diseases, such as chronic obstructive pulmonary disease (COPD), asthma or interstitial lung diseases. Acute infection is associated with an increased risk of deep venous thrombosis (DVT) and infections are considered a moderate risk factor for DVT. Although PE is relatively frequent in patients with COPD and asthma, chronic respiratory diseases are not enlisted among the most common risk factors for PE. The similarity of clinical symptoms can lead to exorbitant suspicion or underestimation of PE.

Aim of the study: To evaluate the incidence of PE confirmed in computed tomography pulmonary angiography (CTPA) in patients hospitalized in the Department of Pulmonary Diseases and to assess the symptoms and coexistence of PE with chronic respiratory diseases and lower res

Material and methods: We retrospectively analyzed the incidence of PE confirmed in CTPA in patients hospitalized in the Department of Pulmonary Diseases of the Medical University of Warsaw between 2014 and 2015.

Results: 118 patients underwent CTPA due to suspected PE and PE was confirmed in 48% (40.7%) patients. In addition, 7 patients were diagnosed with incidental PE. Overall, this accounted for 1.1% of all patients hospitalized in 2014 and 2015.

High risk PE was diagnosed in 4 (7%) cases, while intermediate and low risk PE was diagnosed in 42 (76.4%) and 9 patients (16.4%), respectively.

The most frequent symptoms of PE were dyspnea (28%), venous thrombosis (17%), pleural pain (15%) and cough (15%). The most common comorbidities included arterial hypertension (42%), heart failure (42%), coronary arterial disease (24%), arrhythmia (18%), pneumonia (18%), malignancy (18%) and COPD (16%).

Patients with confirmed PE were immobilized in previous 6 months more frequently than patients without PE (25% vs 6%, p=0.01). This group was also characterized by more frequent symptoms of DVT (31% vs 9%, p<0.001), higher serum NTproBNP (954 vs 309 pg/ml, p=0.009) and D-dimer (4272 vs 3033 ng/ml, p=0.012).

Conclusions: PE incidence in our department was higher than the estimated general hospital incidence. Signs and symptoms of PE in patients hospitalized in the pulmonology department are similar to those reported in other groups of patients. Cardiovascular diseases, pneumonia, malignancies and COPD were the most common comorbidities of PE.

[129]

Comparison of formulas estimating GFR with scintigraphy-measured GFR in living kidney donor candidates

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Introduction: Estimation of kidney function is crucial in appropriate and safe qualification living kidney donors. Glomerular filtration rate (GFR) measurement with exogenous substances is an invasive and expensive procedure. Alternatively, kidney function can also be assessed by GFR estimation formulas, which base on serum creatinine and other novel markers such as cystatin C and beta trace protein (BTP).

Aim of the study: The aim of the study was to compare accuracy of different formulas estimating GFR with reference scintigraphy-measured GFR in population of living kidney donor candidates.

Material and methods: There were 30 living kidney donor candidates (aged 26-68, median 47) enrolled into the study. GFR was measured using following formulas: Cockcroft-Gault, MDRD, CKD-EPI creatinine, CKD-EPI cystatin C, CKD-EPI creatinine-cystatin, Poge, Mayo QF, Nankivell, Larson, Taan, BTP-White. For reference GFR was assessed using ^{99m}Tc-DTPA. Statistical analysis was performed using STATISTICA 12 software.

Results: 20% margin of reference was held in about 50% of cases in most formulas. Almost all formulas (besides Cockcroft-Gault, Mayo QF and BTP-White) had a statistically significant positive correlation with reference. However, among patients with BMI>25 kg/m² BTP-White formula had the strongest correlation with reference (r=0.59; p=0.016). Among older patients formulas based on cystatin C, such as Larson and Taan had the strongest correlations (r=0,59; p=0,02 for both formulas).

Conclusions: In living kidney donor candidates GFR estimation formulas should be chosen individually. The strongest correlation with scintigraphy-measured GFR among overweight patients has BTP- White formula and among older patients formulas based on cystatin C.

[130]

Solid organ transplantation and the use of non-steroidal anti-inflammatory drugs (NSAIDs) and/or painkillersAnna Jędrzejczak¹, Agnieszka Szymańska¹, Wioletta Szczurek³, Kamila Kurkiewicz³, Aleksandra Bobrowska³, Alicja Gospodarczyk³, Bartosz Foroniewicz¹, Michał Zakliczyński², Leszek Pączek^{1,4}, Krzysztof Mucha^{1,4}

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Introduction: Solid organ transplantation (SOT) has become the therapy of choice for the treatment of end-stage organ failure. The non-steroidal anti-inflammatory drugs (NSAIDs) and/or painkillers are used by transplant recipients, but their co-morbidities and immunosuppression interactions significantly increase the risk side effects.

Aim of the study: The aim of the study was to analyze the frequency and reasons of the NSAIDs and/or painkillers use by renal (RTRs) and heart transplant recipients (HTRs).

Material and methods: A cross-sectional study was performed between July 2017 and January 2018 in randomly selected SOT recipients aged from 18 to 72 years. The original questionnaire consisting of 32 questions related to health status and NSAIDs and/or analgesics use was applied. Statistica v. 10.0 was used for statistical analysis and p-value < 0.05 was considered significant.

Results: We surveyed 447 patients: 338 RTRs and 109 HTRs. 38,9% (n=174) women and 61,1% (n=273) men with the mean age of 62.27 years. 67%(n=298) of respondents declared using NSAIDs and/or analgesics.

74,3% of HTRs and 53,8% of RTRs usually ask their doctor before taking analgesics. 67,7% of SOT recipients declared that they were informed by their doctor about consequences of other drugs used with

immunosuppression. Nevertheless, the survey also showed that every third patient (36,1%) is not sufficiently informed.

Acetaminophen is the first-choice drug taken by 39,1% of patients. Other drugs that are also often taken are: ibuprofen (16,1%), diclofenac (4,9%) or metamizole (4%). However, every third patient in our study (29%) declared not using NSAIDs and/or analgesics at all.

It is statistically significant that the group of patients <65 years old, takes these drugs more often than patients >65 y. Our study has not revealed the correlation between the graft function (eGFR in RTRs and NYHA score in HTRs) and the usage of NSAIDs and/or analgesics.

Conclusions: The NSAIDs and/or analgesics abuse may have potentially harmful influence on patient's graft. Considering the costs of SOT and the fact that it is the only way to save or prolong life, the through medical care of SOT recipients is so important. We highlight the role of compliance and awareness of drug-related side effects in this group of patients.

[131]

Correlation between the occurrence of arterial hypertension and progressive loss of renal function in patients with biopsy-proven IgA nephropathy

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Introduction: IgA nephropathy is the most common form of glomerulonephritis worldwide. Based on data from many countries, it is assumed that the incidence of IgA nephropathy is at least. 2.5 / 100,000 people. The disease has a genetic as well as environmental origin. It is characterized by heterogeneous clinical course and one of the co-occurring factors that may contribute to the progression of the disease is hypertension.

Aim of the study: Assessment of the significance of hypertension in patients with confirmed diagnose of IgA nephropathy on the disease's progression, compared to the patients without hypertension. The second aspect is to estimate propriety of treatment of the hypertension

Material and methods: Analysis of a group of 46 patients (32 males,14 females, mean age 40,33±12,70) with biopsy-confirmed IgA Nephropathy, treated in the Nephrology, Hypertensiology and Internal Medicine Clinic in Olsztyn, based on data from medical records.

The control group N0 consisted of patients with no arterial hypertension and without intake of hypotensive drugs n=9

N1 group consisted of patients with hypertension, which was not treated or was treated unsuccessfully (systolic blood pressure ≥140 or diastolic ≥90) n=19

N2 group consisted of patients with hypertension (based on medical records), taking hypotensive drugs and with normometric blood pressure (systolic<140 and diastolic<90) n=18

Results: The study was conducted for 12 months. Patients' GFR by admission to the Department and after 12 months has been compared.

In the N0 group the average GFR by admission amounted 83,92ml/min/1,73m² and after 12 months 82,68 ml/min/1,73m²

In the N1 group the average GFR by admission amounted 53,26/ml/min/1,73m² and after 12 months 40,88 ml/min/1,73m²

In the N2 group the average GFR by admission amounted 62,71ml/min/1,73m² and after 12 months 57,46 ml/min/1,73m²

Conclusions: The results of our studies unambiguously confirm, that arterial hypertension is one of the factors, that induce faster progression of the IgA nephropathy.

The patients who are successfully treated for arterial hypertension can benefit from it in a form of slowed progression of IgA nephropathy.

[132]

Comparison of metabolic syndrome rates in living-donor and deceased-donor kidney recipients – a three-year follow-up

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Trustee of the paper: Jolanta Gozdowska**Introduction:** Metabolic syndrome (MS) is characterized by coexistent pro-atherogenic disorders and insulin resistance. MS also increases cardiovascular risk.**Aim of the study:** The aim of the study was to evaluate metabolic syndrome rates in kidney recipients.**Material and methods:** A total of 112 living-donor (n=54) and deceased-donor (n=58) kidney transplant recipients were evaluated for metabolic syndrome (MS) in months 6, 12, and 36. The National Cholesterol Education Program – Adult Treatment Panel III (NCEP-ATP III) criteria were used. Both groups were compared in terms of MS rates. Moreover, correlations between MS and other parameters (age, gender, dialysis type and duration, donor type, immunosuppressant drugs, acute rejection episodes, smoking, levels of triglycerides, uric acid, creatinine, MDRD eGFR, and proteinuria) were evaluated. The chi-square, McNemar's test, Student's t test, Welch's t test, Mann-Whitney U test, Fisher's test, and Shapiro-Wilk test were used in the statistical analysis.**Results:** MS rates following living-donor (LD) and deceased-donor (DD) kidney transplantation (KTx) in months 6, 12, and 36 were 0.148 vs 0.276; 0.173 vs 0.316; 0.235 vs 0.182, respectively. MS rates in LD KTx recipients were lower than those in DD KTx recipients in months 6 and 12, especially in males (0.14 vs 0.379; $p=0.0251$), but they increased systematically in subsequent months of follow-up. MS was more commonly diagnosed in older recipients ($p=0.019$), with lower MDRD eGFR values ($p=0.009$), who received more anti-hypertensive drugs ($p=0.046$). The dialysis type, donor type and the number of transplantations had no effect. The logistic regression model indicated that the factors contributing to MS were elevated uric acid levels and proteinuria.**Conclusions:** MS rates in LD KTx recipients in month 6 and 12 following transplantation are lower than those in DD KTx recipients. MS rates in LD KTx recipients tended to progressively increase during follow-up. MS was more common in older patients with poorer kidney function, higher uric acid levels and proteinuria

[133]

Risk factors of death among patients qualified for Lung Transplantation – a single center study

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Medical University of Silesia in Katowice, Silesia**Trustee of the paper:** Marek Ochman MD PhD Bogumiła Król MSc**Introduction:** For many patients with end-stage lung disease Lung Transplantation (LT) is the only therapeutic option. Qualification process for such treatment is complicated and requires many tests in order to make sure that patient will benefit from LT. Due to significant deterioration of health, not every qualified patient lives long enough to be transplanted. Aim of the study was to identify risk factors of death among qualified lung transplant candidates.**Aim of the study:** Aim of the study was to identify risk factors of death among qualified lung transplant candidates.**Material and methods:** Study group consisted of 172 lung transplant candidates of Silesian Center for Heart Diseases (SCCS) in Zabrze (73 women, 99 men; mean age at qualification: 43,56 years old). Patients were diagnosed with following diseases: 29,7% Interstitial Lung Diseases (ILD), 27,9% Idiopathic Pulmonary Fibrosis (IPF), 18% Chronic Obstructive Pulmonary Disease (COPD), 12,8% Cystic Fibrosis (CF) and 11,6% Idiopathic Pulmonary Arterial Hypertension (IPAH). Analysis includes 81 patients, who died while waiting for the LT and 91 finally transplanted patients. Data was obtained from medical records at the time of qualification. Statistical analysis was performed by means of i.a. U Mann-Whitney test.**Results:** Mean time spent on the National Lung Transplantation Waiting List (NLTW) was 207,5 ±198,8 days for deceased patients and 163 ±166 days for transplanted patients. Mean EF% was 55 ±5,0% in case of deceased patients and 55±4,3% in case of transplanted ones. Mean age on the day of lung transplantation was 44,4 ±11,8

years for transplanted patients. Mean age on the day of death was 50,8 ±8,4 years for the deceased patients. Mean Body Mass Index (BMI) was 23,0 ±2,6 for deceased patients and 20,1 ±3,4 for transplanted ones. Right Ventricular Systolic Pressure (RVSP) exceeded 35 mmHg among 61% of deceased patients and 35,2% of transplanted patients.

Conclusions: Study of described population statistically proved that age and RVSP exceeding 35 mmHg are risk factors of death while being qualified for Lung Transplantation. Further research in this matter is encouraged.

[134]

The duration of COPD exacerbation-related hospitalization mainly depends the degree of hypoxemia on admission – an observational study

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Introduction: Chronic obstructive pulmonary disease (COPD) exacerbations are one of the most important factors affecting COPD progression and the main contributing factor to the economic and social burden of the disease.

Aim of the study: The aim of the study was to analyze the characteristics of patients hospitalized due to COPD exacerbation and to identify the main disease-related determinants of the duration of hospital stay.

Material and methods: This prospective observational study included consecutive patients with COPD hospitalized due to disease exacerbation in the Department of Internal Medicine, Pulmonary Diseases and Allergy of the Medical University of Warsaw between October 2015 and March 2016. COPD exacerbation management was at the discretion of the attending physician. Basic anthropometric data, as well as results of blood investigations (including arterial blood gases while breathing room air), chest radiogram (CXR) and spirometry at discharge were analyzed. Relationships between these variables and the length of hospital stay were sought.

Results: Thirty one patients agreed to participate in the study. Of these, two patients were excluded due to the absence of airway obstruction in spirometry at discharge, and, therefore 29 patients (17M, 12F, mean age 70.5 ± 10.3 years, post-bronchodilator FEV1 at discharge 37.7 ± 13.6 of predicted value) were considered in the final analysis. The mean duration of hospital stay was 9.5 ± 3.7 days. The majority of the patients were current smokers (19/29, 65.6%). One patient (3.5%) was diagnosed with pulmonary embolism; in 4 patients CXR revealed heart congestion (13.8%) and in 3 (10.4%) patients radiological signs of pneumonia were seen. Ten (34.5%) patients received antibiotic treatment, virtually all patients received systemic glucocorticosteroids. The duration of hospitalization correlated inversely with PaO₂ on admission ($r = -0.48$, $p = 0.01$); no correlations were found between the length of hospital stay and age, number of packyears smoked, serum C-reactive protein and BNP level, peripheral blood leukocyte, neutrophil and eosinophil count on admission and post-bronchodilator FEV1 at discharge. There was no statistically significant difference in the duration of hospital stay between patients who had received an antibiotic and those who had not.

Conclusions: Our results showed that the duration of COPD-related hospitalization depended mainly on the degree of hypoxemia on admission.

[135]

Model for End-Stage Liver Disease (MELD) score among patients qualified for lung transplantation with end-stage lung diseases involving pulmonary hypertension – a single center study

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Introduction: Model for End-Stage Liver Disease (MELD) score is used all over the world to assess the severity of chronic liver disease. It is implemented in transplantology, particularly in the process of qualification for urgent liver transplantation.

Aim of the study: The aim of our study was to assess the liver function of patients qualified for lung transplantation due to end-stage lung disease using MELD score, especially among those with pulmonary arterial hypertension (PAH).

Material and methods: Study group consisted of 138 patients who were qualified for lung transplantation in Silesian Center for Heart Diseases (SCCS) between 2004-2016. Patients were diagnosed with following lung diseases: Idiopathic Pulmonary Fibrosis (31,2%), Interstitial Lung Disease (23,9%), Chronic Obstructive Airway Disease (19,6%), cystic fibrosis (13%) and Idiopathic Pulmonary Arterial Hypertension (12,3%). PAH was observed among 56 patients (40,6%). Primary PAH was noticed among 30,4% (n=17). Other 39 patients (69.9%) suffered from secondary PAH. Data relevant for MELD score calculations were acquired from medical records. MELD score was calculated for every patient individually.

Results: The average MELD score among patients qualified for lung transplantation was 8,2 points. Those, who were diagnosed with IPAH acquired the highest results (mean MELD score =14,7 points). Patients qualified for lungs transplantation due to cystic fibrosis obtained MELD score of 7,5 points on average. What is more, it was observed that mean MELD score of PAH patients was 9,2 points. However, in this group there was a significant difference between primary (MELD=14) and secondary(MELD=7,5) pulmonary hypertension.

Conclusions: Patients qualified for lung transplantation due to IPAH should remain under special supervision for liver insufficiency. Due to MELD result above 10 points in this group (mean MELD=14), patients with IPAH have increased mortality due to liver failure in comparison to patients with secondary PAH. Lung transplant candidates with cystic fibrosis have acquired MELD scores, which are not connected to such risk. Nor do patients qualified for lung transplantation due to interstitial lung diseases, COPD and IPF.

[136]

Patients with Idiopathic Pulmonary Fibrosis at the qualification for lung transplantation – single center study

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Introduction: Idiopathic Pulmonary Fibrosis (IPF) is a distinctive, chronic, progressive interstitial lung disease that leads to oxygen dependence, decreasing quality of life and eventually death within 3-5 years from diagnosis. IPF is the second most common indication for lung transplantation.

Aim of the study: The aim of the study was to compare 2 groups of IPF lung transplant (LT) candidates: deceased and transplanted ones based on their status during the time of qualification to Lung Transplantation Programme of Silesian Center for Heart Diseases (SCCS).

Material and methods: Study group consisted of 56 patients qualified to LT in SCCS between 2004-2017 (group 1 - 38 deceased patients -18 women and 20 men, mean time on waiting list: 11,8 months, mean age at qualification: 52,24 yo.; group 2–18 patients, who later underwent lung transplantation –3 women and 15 men, mean time on waiting list: 25,7 months, mean age at qualification: 47,5 yo.). Medical records including biochemistry, spirometry, lung plethysmography, 6-minute walk test (6MWT), echocardiography, pulmonary artery catheterization, arterial blood gas test and potential lung transplant recipient questionnaire were analyzed. Those were the data used during qualification process for lung transplantation.

Results: Total protein level was elevated among patients from group 1 (N=33, TP avg.=8,97) compared to group 2 patients (N=11, TP avg.=7,25). In both groups CRP level was increased (>5 mg/l). Lung function tests (lung plethysmography and spirometry) showed severe restriction – 87,1% amongst patients in group 1 (N=27) and 76,92% in group 2 (N=10). Average 6MWT distance was 193,15m among deceased patients (N=32). Patients after LT acquired 334,31m (N=15) on average. EFLV% was below 55% among 67,64% of the group 1 patients (N=23). Most of them also had pulmonary hypertension, based on mean pulmonary artery pressure results.

Conclusions: Time on the national lung transplant waiting list was significantly longer in case of the patients, who underwent LT in comparison to the deceased ones. Patients who later underwent LT demonstrated better results in functional tests of lung and heart at qualification, but also there were tests (e.g. AcT, cholesterol level, gasometry-pO₂ and pCO₂), during which their average result was worse in comparison to deceased group. These results encourage further research on larger study group.

[137]

Efficiency of using mebeverine hydrochloride during treatment of irritable bowel syndrome

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Introduction: Irritable bowel syndrome (IBS) is a frequent functional disorder of gastrointestinal tract. Spasmolytic drugs are usually included in the scheme of treatment of IBS and mebeverine hydrochloride is one of the most common.

Aim of the study: to evaluate the effects of mebeverine hydrochloride during treatment of IBS with constipation and diarrhea.

Material and methods: 125 patients, suffering from IBS with constipation (IBS-C) and diarrhea (IBS-D) were included in the research. The patients were statistically similar in sex and age and divided in 4 groups (IBS-C with mebeverine hydrochloride intake (42 patients) , IBS-C without mebeverine hydrochloride intake (control group, 21 patients), IBS-D with mebeverine hydrochloride intake (41 patients) and IBS-D-control group (21 patients)). Evaluation of efficiency of the treatment was performed on the 3rd day, 2nd and 4th week of the research, using such clinical scales as Gastrointestinal symptom rating scale (GSRS), Likert scale, and Hospital anxiety and depression scale (HADS). In the beginning of research and on the 4th week fecal microflora was also tested.

Results: Statistically proved decreasing of diarrhea and constipation was found on the 4th week of the research in the groups with mebeverine hydrochloride intake, comparing to control groups (82,9% vs 19,8%; 88,1% vs 23,8%). Also on the 4th week anxiety and depression was found decreased in patients with constipation and diarrhea, who got mebeverine hydrochloride, comparing to control groups (90% vs 22% ; 89,7% vs 10,6%).

Increasing the rate of bifido- and lactobacteria and decreasing of the pathogenic and opportunistic microflora was revealed on the 4th week in patients with constipation and diarrhea and mebeverine hydrochloride intake, comparing to control groups(92,6% vs 12,3%; 95,1% vs 33%).

Conclusions: Mebeverine hydrochloride effects positively on relieving symptoms of IBS with constipation and diarrhea, rate of obligate intestinal microflora and psychological condition of patients

[138]

Utility of Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) in the evaluation of one-year outcomes of omalizumab treatment in severe allergic asthma

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Introduction: Asthma symptoms are usually assessed by the Asthma Control Questionnaire (ACQ) and quality of life may be evaluated in the Asthma Quality of Life Questionnaire (AQLQ). Allergic rhinitis (AR) and asthma frequently coexist and are mediated by similar mechanisms. They represent two manifestations of the same united airway disease. Symptoms associated with AR impact asthma control. Omalizumab, an anti-IgE monoclonal antibody, has been approved as add-on therapy in uncontrolled severe allergic asthma. RQLQ comprises of 28 questions concerning 7 domains : nasal symptoms and non-nasal symptoms, every day activities, sleep, practical problems, eye symptoms, emotional function. The minimally important difference is set at a change in score greater than 0.5.

Aim of the study: Assessment of the utility of the Rhinoconjunctivitis Quality of Life Questionnaire (RQLQ) in the evaluation of the effectiveness of omalizumab treatment.

Material and methods: 12 severe allergic asthma patients were qualified for anty-IgE treatment. The patients completed three questionnaires: ACQ , AQLQ and RQLQ every four-week during follow-up visits. Three control points were selected : 1/ at baseline, prior to the treatment onset, 2/ after 16 weeks of treatment, and 3/ after one year of treatment with omalizumab. Differences were evaluated using the t-test. Differences were considered statistically significant at $p < 0.05$. RQLQ was analyzed in detail with special attention to the changes in the specific domains.

Results: Omalizumab treatment was clinically effective in all patients what was reflected in improvement in the ACQ, AQLQ and RQLQ scores. The mean score difference in RQLQ between the first and the third time point was 1.08175. The biggest change in RQLQ was observed in the activity and emotional function domains, difference

1,388889 and 1,354167. Particularly in questions on outdoor activities, concentration, sneezing, tiredness and irritability.

Conclusions: RQLQ is an additional useful marker of clinical effectiveness of treatment with omalizumab in patients with severe allergic asthma.

[139]

Usefulness of serum uromodulin and BTP in evaluation of glomerular filtration rate in living kidney donor candidates

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Introduction: One of the major points of living kidney donor qualification is renal function examination. According to KDIGO, GFR should be estimated using CKD-EPI creatinine-cystatin C formula (CKD-EPIcrea/cys). It is supposed that novel markers such as BTP and uromodulin may be useful in estimating renal function.

Aim of the study: The aim of the study was to compare eGFR measured using CKD-EPI creatinine-cystatin C with serum uromodulin, BTP and BTP-based eGFR in living kidney donor candidates.

Material and methods: 51 living kidney donor candidates were enrolled into the study. Clinical and laboratory data were collected including serum uromodulin, BTP, cystatin C and creatinine concentrations. eGFR was calculated using CKD-EPIcrea/cys, White and Poge formula.

Results: Serum BTP had a positive correlation with serum cystatin C ($R=-0.54$; $p<0.001$) and a negative correlation with eGFR CKD-EPIcrea/cys ($R=-0.57$; $p<0.001$). Serum BTP had much stronger correlation with eGFR CKD-EPIcrea/cys in the subgroup of patients with normal BMI (versus BMI >25 kg/m²) ($R=-0.68$; $p<0.001$ vs. -0.38 ; $p=0.06$ respectively). Both BTP-based eGFR equations had a positive correlation with eGFR CKD-EPIcrea/cys ($R=0.62$; $p<0.001$; $R=0.54$; $p<0.001$ for White and Poge formulas respectively). Uromodulin did not reveal statistically significant correlation with cystatin C, creatinine, BTP and eGFR CKD-EPIcrea/cys.

Conclusions: BTP is a useful tool in estimating renal function in living kidney donor candidates. Both serum BTP and BTP-based formulas had a strong correlation with eGFR CKD-EPIcrea/cys. Uromodulin does not seem to be useful in qualification of living kidney donor.

[140]

Adverse effects of home oxygen therapy and difficulties in usage of the home oxygen concentrator in patients with chronic respiratory distress – preliminary study

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Introduction: Respiratory distress may occur in patients with chronic respiratory diseases (COPD, IPF). The main indication for oxygen therapy is PaO₂ below 55 mmHg (with or without hypercapnia). Oxygen therapy in patients with respiratory distress results in better tolerance of effort and may prolong the overall survival. Nevertheless, there is a risk of side effects and the difficulties in using the home oxygen concentrator.

Aim of the study: The aim of the study is to identify the main adverse effects, which may occur in patients with chronic respiratory distress during the therapy with oxygen and logistic difficulties in using the home oxygen concentrator.

Material and methods: 15 patients (10 males, 5 females) aged 60-92 with COPD stage C and D took part in the research. All of the surveyed use nasal cannula, one of them uses the facial mask. The survey was based on COPD Assessment Test (CAT) and a questionnaire, which consisted of 16 questions. Participation was voluntary and anonymous.

Results: An average CAT score in the study group was 22. The patients spend approximately 15 hours per day with oxygen. 73% complain of symptoms, such as cough, rhinitis, dryness in mouth and throat, out of which 67% claims that these symptoms occurred for the first time during the home oxygen therapy. 27% finds the nasal cannula inconvenient. Every three months there is a medical assessment. Most of the patients find the consultations necessary (87%), but 40% admits, that the visits are inconvenient. 57% claim that their cost of living had risen (bills for electricity). For 50% this rise was significant. 60% complain of the noise made by home oxygen concentrator.

Conclusions: Home oxygen concentrator was the main source of problems. Excessive noise and the costs of electricity are difficulties, which may affect compliance. Those difficulties may be diminished by changing the devices regularly or using alternative sources of oxygen (oxygen cylinders). High level of mistrust and negative attitude to medical care among the patients with chronic respiratory distress requires a systemic verification and coordination of health service in these patients.

[141]

Clinical and microbiological characteristics of pneumonia in the medical hospital environment

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Introduction: Pneumonia is one of the most common infectious diseases in the inpatient therapy department.

Aim of the study: Determine special characteristics of the course of pneumonia and microflora composition in the inpatient therapy department.

Material and methods: In total 100 subjects with "pneumonia" in 2016-2017 were divided into 2 groups: 92 patients had community-acquired pneumonia (Group I) and 8 patients had hospital-acquired pneumonia (Group II). Anamnestic, clinical and microbiological data have been assessed. Statistical analysis was made using Statistica 10.0.

Results: In Group I the average duration of hospitalization - 15(7;34) days. The average age of patients was 58(24;88) years. Preceding events that led to the development of pneumonia - in 29 patients (32%): hypothermia (41%) and acute respiratory viral infection (28%) were the most common. Concurrent non-pulmonary diseases - in 82 patients; cardiac complications were the most common complications in the elderly patients (31%), ENT pathologies - in the young patients (32%). Pulmonary complications - in 40% of patients. Sputum culture was performed for 86 patients (93%), 114 microorganisms were isolated, among which opportunistic (89%) and gram-positive (65%) microorganisms were prevalent. Typical causative agents of pneumonia - in 11 cases; the most common - Haemophilus influenzae et parainfluenzae (4 cases), Streptococcus pneumoniae (3 cases). In Group II the average duration of hospitalization - 23(4;82) days. All patients (N=8) were elderly people (the average age - 79(66;91) years). As to the factors preceding the disease, in 50% of cases the patients stayed in the Resuscitation and Intensive Care Unit. 6 patients had concurrent non-pulmonary diseases in the anamnesis, among which cardiovascular diseases (5 cases) were prevalent. Pulmonary complications were found in 4 patients (50%). Sputum culture was performed for all of the patients; among isolated causative agents (8 microorganisms), representatives of gram-negative (62%) and opportunistic (62%) flora were prevalent. In 50% of cases these were rare agents of pneumonia, among which Klebsiella pneumonia predominated (2 cases).

Conclusions: Community-acquired pneumonia occurs in people of different age groups, the most common causative agents include representatives of gram-positive opportunistic flora. Elderly patients with concurrent somatic diseases are most vulnerable to hospital-acquired pneumonia, the main causative agents of which include representatives of gram-negative opportunistic flora.

[142]

Pulmonary functional tests among patients with Interstitial Lung Diseases at the qualification for lung transplantation – a single center study

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Introduction: Interstitial Lung Diseases (ILD) are heterogenic group of more than 200 diseases, which are manifested by progressive exercise dyspnea, radiological lung changes and ventilation restrictive disorders. ILD also are the second most common indication for lung transplantation.

Aim of the study: The aim of the study was to compare pulmonary functional tests of 2 groups of ILD lung transplant (LT) candidates according to ILD classification by Ryu from 2007, based on their status during the time of qualification to Lung Transplantation Programme of

Material and methods: Study group consisted of 92 patients qualified to LT in SCCS in years 1999-2017. Group 1 consisted of 23 patients (15 deceased and 8 transplanted): 12 with hypersensitivity pneumonitis, 4 with Langerhans's cells histiocytosis, 7 with pneumoconiosis. Mean age at qualification was 44,7 years old. Group 2 included 69 patients (42 deceased and 22 transplanted): 9 with sarcoidosis, 56 with idiopathic pulmonary fibrosis. Mean age at qualification: 50,26 years old. Medical records analyzed included spirometry, plethysmography and 6-minute walk test (6MWT).

Results: Mean time on lung transplantation waiting list among patients from group 1 was: 391,5 days (deceased patients 384 days, 405 days transplanted ones). The same parameter among group 2 was 323,3 days (358,3 days deceased and 263,1 days transplanted). Lung functional tests (body plethysmography and spirometry) showed severe restriction in both groups. Group 1's average spirometry indicators in patients were FVC% 38,3%, FEV1 39,25%. Same parameters among group 2: FVC% 43,26%, FEV1 45,06%. Average 6MWT distance of deceased patients of group 1 was 212 m with average Borg scale result of 4. Deceased patients of group 2 acquired 175,26m with average Borg scale result of 7. Body plethysmography revealed the average RV% value to be 114,18% and 62,53% respectively for deceased patients of group 1 and 2.

Conclusions: Even though all of the patients suffer from different kinds of pulmonary fibrosis, there are some differences in pulmonary function tests regarding whether the cause of the diseases is known or not. Particularly, among the 6MWT and RV results. Obtained results encourage further research on larger study group.

[143]

Diseases of the esophagus in out- patients of different age groups according to sophagogastroduodenoscopy data

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Introduction: Gastroesophageal reflux disease (GERD) has come into focus over the last years because its frequency and severity were increasing in many countries, including Russia.

Aim of the study: The aim of the study was to assess the dynamics of GERD prevalence and its complications for the last 10 years in outpatients of different age groups.

Material and methods: We used a retrospective analysis of endoscopic findings in outpatients of different age groups. The severity of GERD, incidence of hiatal hernia, Barrett's esophagus and adenocarcinoma of distal esophagus were assessed. The study involved 298 patients, 37.9% were males. The average age of respondents was 50.5±14.61 years. All the patients were divided into the 2 groups: the first included subjects under 45 years old inclusively (n=144) and the second over 45 years old (n=184).

Results: The obtained results demonstrate that over the last 5 years the number of patients with newly diagnosed forms of GERD significantly increased from 44.7% (2006-2010) to 59.1% (2011-2016), $p < 0.05$. There was an increase in reflux disease connected with age: in men it was 52.21%, in women - 67.57% ($p < 0.05$ compared with the first group). In 72% of all examined patients, non-erosive forms of esophagitis were detected, in 28% - erosive forms. Mild forms of GERD were more often detected in women (14.2%), while erosive forms predominated in males - 69.4% ($p < 0.05$). Hiatal hernia was more common in women of both ages compared with men (73.5% and 20.5%, $p < 0.05$). The results of biopsies from the distal esophagus in 98.2% coincided with endoscopic findings. Barrett's esophagus from 2006 to 2010 was detected in 6 (4%) patients, from 2011 to 2016 - in 8 (5%), $p > 0.05$. Adenocarcinoma of distal esophagus for the first five years was detected in 2 patients (1.3%), for the next five - in 3 (2%), $p > 0.05$

Conclusions: 1. Over the past 5 years, outpatients with age experienced an increase in GERD among both genders, which corresponded to the existed epidemiological indicators.

2. More severe forms of GERD were more common in males and in older age.

3. Hiatal hernia was significantly more common in women of both ages.

4. Despite the growth of gastroesophageal reflux disease among the urban population, there was no significant increase in such complications as Barrett's esophagus and adenocarcinoma of the esophagus, which indicated timely and adequate treatment of such patients in the municipal polyclinic.

[144]

What is the etiology of mediastinal lymphadenopathy?

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Introduction: The main indication for bronchoscopy combined with endobronchial ultrasound (EBUS) is diagnostic evaluation of enlarged mediastinal lymph nodes. Mediastinal lymphadenopathy (ML) may result from neoplastic diseases, granulomatous disorders (the most frequently sarcoidosis), infections or chronic pulmonary diseases. Heart failure (HF) is rarely mentioned as a reason of ML.

Aim of the study: The aim of this study was to determine the etiology of ML among patients who underwent EBUS.

Material and methods: A retrospective analysis of EBUS results gathered between 2009-2014 was performed. Among patients with neoplastic diseases diagnosis was established based on pathologic examination or clinical, radiological results suggesting neoplasm and documented progression of the disease, if pathologic diagnosis was absent. Sarcoidosis was diagnosed based on clinical symptoms, computed tomography and pathologic results. Infection was diagnosed based on clinical symptoms and pathologic or microbiologic results. ML associated with HF was identified if neoplastic, granulomatous or infective diseases were excluded and when HF was diagnosed based on presence of HF symptoms and typical findings in chest radiograms or cardiac echocardiography or elevated concentration of NT-proBNP.

Results: 701 (392 male and 309 female) patients who underwent EBUS were included in the analysis. The most common causes of ML were neoplastic diseases, which were diagnosed in 382 (54.5%) patients. In 328 (47%) patients lung cancer was diagnosed. Fifty one (7.3%) patients had other neoplasms. In 3 cases benign tumor was confirmed.

Non-neoplastic diseases were diagnosed in 231 (32.9%) patients. In this group the most common diagnosis was sarcoidosis -162 patients (23.1%).

Infectious diseases were documented in 10 cases (1.4%) and included: node tuberculosis (7), pulmonary invasive mycosis (2) and mononucleosis (1).

Heart failure was found in the group of 44 (6.3%) patients.

15 patients (2.1%) had other diseases that could have been the cause of ML: interstitial lung diseases (6), bronchiectasis (3), pneumoconiosis (1), amyloidosis (1), mediastinal cyst (2), pulmonary embolism (1), granulomatosis with polyangiitis (1).

In 88 (12.6%) etiology of ML could not have been determined due to the lack of follow-up.

Conclusions: Majority of ML was caused by neoplastic diseases. Among non-neoplastic reasons of ML sarcoidosis was the most common, followed by ML associated with HF.

[145]

Actigraphic assessment of night sleep quality among short-term and long-term dialysis patients

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Introduction: Sleep disorders play an important role in overall health and quality of life. Prevalence of sleep disturbances is more frequent in patients with end-stage renal disease (ESRD) compared with general population.

Despite many studies, which evaluate night time sleep of hemodialysis (HD) patients, there is still lack of objective data, in revealing, what triggers sleep disturbances in HD patients.

Aim of the study: To compare night sleep quality variables between short-term and long-term HD patients, and explore possible clinical impact factors on sleep quality using wrist actigraphy.

Material and methods: A cross-sectional study enrolled 18 patients with ESRD undergoing thrice-weekly in-center 4-h conventional HD. 13 of 18 patients (72%) were involved into study, 5 patients (28%) were excluded due to inappropriate wearing of actigraph. All patients in the study were men. Patients were asked to wear an actigraph for 2 nights. Measurements of total sleep time (TST), sleep efficiency (SE), sleep onset latency (SOL), wake after sleep onset (WASO) and fragmentation index (FI) were derived from wrist-worn actigraph after 2 nights of wearing it. Patients dialyzed less than 1 year (46%) were classified in short-term dialysis group, and the rest dialyzed more than 1 year (54%) in long-term dialysis group. Comparisons between groups were done using an unpaired Student's t test. Spearman's correlation was used to assess relationships between laboratory parameters and sleep quality variables.

Results: Sleep quality assessment was performed in 13 patients (mean age 59.7 ± 14.35 years). We have found that total sleep time (TST) was statistically significantly different between short-term dialysis group and long-term dialysis group ($p=0,031$). Other sleep quality variables (SOL, WASO, SE, FI) did not statistically significantly differ between these groups. In Spearman's correlation, serum calcium concentration correlated negatively with TST ($r=-0.558$, $p=0.047$), serum potassium concentration before dialysis correlated positively with FI ($r=0.650$, $p=0.016$) also serum potassium concentration after dialysis correlated positively with FI ($r=0.637$, $p=0.019$).

Conclusions: Total sleep time of ESRD patients was related to the time of how long the patient was dialyzed, and also TST was associated with serum calcium concentration. Potassium concentration before and after dialysis was related to FI of sleep.

[146]

Blood eosinophilia in chronic obstructive pulmonary disease and its relation to clinical features and sputum eosinophilia

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Introduction: High sputum eosinophil count in chronic obstructive pulmonary disease (COPD) patients is associated with a greater exacerbation risk and a better response to oral and inhaled corticosteroids. Good correlation between blood and induced sputum eosinophil count could facilitate selection of patients who would benefit from corticosteroid treatment.

Aim of the study: The aim of the study was to investigate whether peripheral blood eosinophil count correlates with induced sputum eosinophil count in stable COPD and control subjects and to compare demographics and lung function in eosinophilic (cut-off points: ≥ 300 cells

Material and methods: We analysed eosinophil count in peripheral blood and induced sputum in 90 patients with COPD and 20 control subjects without respiratory diseases. Also the following data were collected: demographics, lung function tests and allergy skin prick test results.

Results: COPD patients were significantly older: 64.5 (IQR 58-72) vs 48 (IQR 32-61) years old ($p<0.001$), had lower BMI: 26.64 (IQR 23.57-29.54) vs 29.03 (IQR 25.50-31.97) ($p<0.05$), had a significantly higher tobacco smoke exposure 42.5 (IQR 30-50) pack-years vs 5 (IQR 0-30) pack-years ($p<0.001$) and were characterized by a more severe airflow limitation than control subjects. There were no significant differences between blood and sputum eosinophil count: 180 (IQR 90-270) cells/ μL and 150 (70-240) cells/ μL and positive allergy prick test (31% vs 30%) in COPD and control subjects, respectively. We found no correlation between sputum and blood eosinophil count in both COPD and control subjects. Eosinophilic COPD patients were older and had higher BMI (cut-off $\geq 2\%$), were longer ex-smokers (cut-off ≥ 300 cells/ μL and $\geq 2\%$). There was no difference in airflow obstruction severity, smoking pack-years and exacerbation rate between eosinophilic and non-eosinophilic COPD patients.

Conclusions: In our study there was no correlation between blood and sputum eosinophil count. Eosinophilic and non-eosinophilic COPD patients did not show any difference in illness severity and tobacco smoke exposure. Our research suggests that peripheral eosinophil count might not be a reliable tool in screening for corticosteroid good-responders among COPD patients.

Laryngology

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Friday, May 11th, 2018

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Joanna Marciniak

Alina Ratajczak

Kamila Renke

[147]

Are parents aware of hearing problems in their children? Results of hearing screening program in the Malopolskie voivodshipKunz K.¹, Ludwikowski M.², Skarżyński P.H.^{1,2,3}

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Introduction: In Poland, only newborns are covered by the universal hearing screening program. However, for many years, the Institute of Physiology and Pathology of Hearing has been conducting such evaluation also among school-aged children. This group is at particular risk of being misidentified as having learning disabilities instead of hearing loss, especially in the unilateral cases. Early detection of hearing loss allows implementation of the most appropriate intervention, and in case of children, their parents are responsible for reporting to the audiologist to examine the child's hearing.

Aim of the study: The objective of the study was to compare the parents' opinion on the child's hearing problems with the hearing screening test results.

Material and methods: Every parent was asked to complete a survey consisting of questions about their child's hearing. One of them was "Do you think your child has hearing problems?" with two possible answers "Yes" or "No". Sensory Examination Platform was used for hearing screening in Malopolskie in 2015. The study included results of 10364 children (50,5% boys) attending the first class of the primary schools from Malopolskie voivodship, whose parents answer a question about hearing problems.

Results: Based on the hearing screening test, 18,1% of children had a positive result of hearing screening and 7,8 were assigned to the "control" group requiring further observation. Only 6,6% of parents felt that their children had hearing problems, and such assumption was confirmed in almost 40% of cases. Among parents who did not notice any hearing problems in their children, as many as 25% children had a positive result of hearing screening or required further observation.

Conclusions: In the light of our findings, the general parents' awareness of their child's problems with hearing seems rather low; however, parents' indicating the possible hearing loss existence in their child seem to seem to have reasonable suspicions. The results support the legitimacy of conducting hearing screening also in school-aged children, whose parents often do not even suspect the possibility of hearing loss occurrence.

[148]

Previous ear infections based on parents report and the result of hearing screening program in Podlaskie voivodshipNykiel K.¹, Ludwikowski M.², Skarżyński P.H.^{1,2,3,4}

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Introduction: Hearing is very important for the proper development of children. Early detection of hearing disorders is possible due to hearing screening programs. If the hearing defects are detected quickly they can be treated successfully and enable proper development of the child's speech.

Aim of the study: The aim was to research on the frequency of the positive results of hearing screening program and the relationship between previous ear infections and present hearing defects in a child.

Material and methods: This study refers to the results of the hearing screening program in Podlaskie in 2015 in the first-grade pupils from primary schools in Podlaskie voivodship, where 2912 children were subjected to the

hearing screening. Among 2912 children, there were 1408 girls and 1504 boys. Procedure involved pure tone screening audiometry and a short questionnaire dedicated to parents with the substantial question: "Has your child been treated due to ear infections?" The results of hearing screening were considered to be positive when pure tone audiometry was 25 dB HL or higher for at least one frequency in one ear.

Results: On the basis of the audiogram, hearing problem was identified in 300 (10,3%) children from 2912 pupils who took part in this test. Based on parents report, 862 were treated against ear infections and 2050 were not. No conspicuous difference between boys and girls ear infections history was reported – 440 boys out of 1504, which is 29,3%, and 422 girls out of 1408, which is 30%. 19,2% of children who did not have ear infections were reported to have hearing dysfunction and 14,1% of children who did not suffer from this disease.

Conclusions: The results of this study indicate that hearing problem is a frequent problem among school-age children, which concerns both boys and girls. The data also suggests that one reason of this defect could possibly be previous ear infection, therefore, quick diagnosis and effective treatment is as important as parents' awareness of the consequences of past ear infections on the hearing development of the child.

[149]

Tinnitus handicap and psychological factors

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Trustee of the paper: Ass. Prof. Piotr Henryk Skarżyński

Introduction: Tinnitus is a phantom auditory perception which can have a considerable impact on daily functioning and psychological well-being in some patients. Studies on relevance and applicability of psychological questionnaires during a routine patient's visit in a tinnitus clinic revealed that they can be indicative of psychological problems requiring referral for possible treatment. However, the majority of these tools are not validated and routinely used in most Polish clinics.

Aim of the study: The objective of the current study was to evaluate if the results of self-reported tinnitus severity measuring tinnitus handicap can be a significant predictor of patient's quality of life and depressive symptoms.

Material and methods: The study included 142 consecutive patients reporting to the Audiology and Phoniatics Department over a year due to their tinnitus complaint. The main eligibility criteria were: age ≥ 18 years, bothersome tinnitus lasting minimum of 3 months and no previous diagnosis of mental or physical disorders. The participants were asked to complete a set of questionnaires: Polish Tinnitus Handicap Inventory (THI-POL), Beck Depression Inventory (BDI) and World Health Organisation Quality of Life – 26 item version (WHOQOL-BREF).

Results: Statistically significant, moderate positive correlations were observed between THI-POL and BDI ($r=0.632$; $p<0.01$) and significant, moderate negative correlations were observed between THI-POL and WHO-QOL BREF total and subscale scores (from $r=-0.42$ for Social subscale to $r=-0.595$ for total score; $p<0.01$). THI-POL results explained 40% of BDI variance ($F(1,140)=13.36$; $p<0.001$) and 35% of the WHO-QOL BREF variance ($F(1,140)=76.87$; $p<0.001$). A regression model revealed that patients age, gender, tinnitus duration were not a significant predictors of the psychological symptoms.

Conclusions: Tinnitus handicap seems to be considerably related to reduced quality of life and depressive symptoms. It seems that THI-POL can help physician in evaluating the risk of comorbid depressive symptoms and reduced quality of life in patients with tinnitus, being a useful tool in assessing the legitimacy of referring a patient to a psychological consultation.

[150]

Assessment of patients taste ability before and after stapedotomyK.Bieńkowska¹, M.Wojciechowski², B.Król², P.H.Skarżyński^{1,2,3,4}

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Irritation of chorda tympani nerve during middle ear surgery, for instance stapedotomy or tympanoplasty, can affect in taste disorders.

Aim of the study: The aim of this study was to assess pre- and postoperative taste ability of patients undergoing primary stapedotomy.**Material and methods:** Forty four (14 men, 30 women) adult patients from Institute of Physiology and Pathology of Hearing were included. Patients were examined with taste test (Taste Strips, Burghart Messtechnik) at 1st day preoperatively (T0), at 1 day (T1), 7 days (T2) and 6 months (T3) postoperatively.**Results:** According to the taste test protocol 4 patients had preoperative taste disorders. Taste test results were lower in nearly 36 percent (16/44) of patients at T1 comparing to T0 but 14 of them remained within the normal range. At T2 eleven patients had lower taste test score than in T0 and only two of them was below the range. At T3, six patients had lower score than in T0 and 1 of them was below the range.**Conclusions:** Taste disorders may be one of the minor complications after stapedotomy but they are mostly temporary. Severe taste disorders after stapedotomy are very rare.

[151]

Comparison of voice quality results after phonosurgery of Reinke's edema and polyps of vocal folds with cold instruments and CO2 laser microsurgery

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Trustee of the paper: Anna Rzepakowska MD, PhD**Introduction:** Phonosurgery is a group of procedures on the vocal folds and adjacent tissue intended to maintain or improve the voice's timbre, tone and quality. Classic microsurgery and CO2 laser surgery are two major techniques for treatment of vocal folds benign lesions. Reinke's edema is a polypoid degeneration presenting with collection of fluid underneath the vocal folds mucosa layer. Polyps are presenting as an abnormal growth of vocal fold epithelium, usually proceeded by trauma. Phonosurgery is indicated for both diseases if conventional methods failed.**Aim of the study:** Comparison of voice quality after phonosurgery with cold instruments and CO2 laser in patients with Reinke's edema and vocal folds polyps.**Material and methods:** 28 patients with Reinke's edema and 15 patients with vocal folds polyps were included into the study. Patients, who had history of previously performed laryngeal procedures were excluded from the analysis. A videolaryngostroboscopy (VLS) and voice quality analysis were performed in all patients before laryngeal microsurgery and in 3th and 12th months after the procedure. Phonosurgery was performed using cold instruments (microscissors and microforceps) or using a CO2 laser. Patients were randomly assigned to both methods of phonosurgery. In each period, patients' voice was evaluated perceptually with the GRBAS scale. Additionally, the acoustic analysis was carried out using the Multi-Dimensional Voice Program (MDVP) with the assessment of the fundamental frequency, jitter, shimmer and the noise to harmonic ratio. The maximum

phonation time (MPT) was also evaluated. The Voice Handicap Index (VHI) and Voice-Related Quality of Life (VRQoL) questionnaires were used to measure the self-assessment of the voice quality.

Results: Analysis of VLS results and voice quality parameters showed in both groups significant functional improvement of vocal folds mucosa, normalization of voice perception as well as normalization of the acoustic parameters and MPT. There was observed improvement of VHI after the treatment. The comparative analysis of the results of voice quality and VLS did not show statistically significant differences depending on the performed phonosurgery method both in patients with Reinke's edema and vocal folds polyps.

Conclusions: In patients with Reinke's edema and vocal folds polyps, classical methods of laryngeal microsurgery and treatment with the CO2 laser gave a comparable result of voice quality.

[152]

Results of hearing screening program in the Lubelskie voivodship – are there any gender differences?

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Introduction: Hearing disorders among school-age children are more and more frequent nowadays. Early hearing-problems diagnosis can lead to more efficient treatment and rehabilitation, which is extremely important to children's ability of learning at school. According to the recent research slightly more boys than girls had a positive results in hearing screening program, although this difference was less than 1%.

Aim of the study: The aim of the study was to evaluate the differences in the frequency and the type of hearing loss between boys' and girls' results of hearing screening program in the Lubelskie voivodship.

Material and methods: Screening in Lubelskie in 2015 was performed using the Sense Examination Platform in selected primary schools in the voivodship including 8671 children in first grade. The percentage of girls and boys taking part in screening research was similar – 4320 boys and 4351 girls. The positive result of research was stated when the audiogram result was 25 dB and more at least on the one frequency.

Results: On the basis of screening research it was stated that 14,5% of children in Lubelskie voivodship had a positive screening result. Less than half of this number was subjected to the later control of hearing. According to the gender of children, 13,3% of boys and 15,6 % of girls has got the hearing problems. One-sided hearing loss concerned 58,5% of boys and 56,4% of girls. Bilateral hearing loss was stated in 41,5% of boys and 43,6% of girls. The left ear disorder is presented by 28,1% of boys and 28,4% of girls and the right ear disorder 30,4% and 28% accordingly. In the research the type of hearing loss was also shown. Low frequency hearing loss (LFHL) was more often among girls in the left ear (56,6%, boys – 50,3%) and high frequency hearing loss (HFHL) was a boys problem in the right ear (11,7%, girls – 8,1%). It was no differences in HFHL in the left ear and in LFHL in the right ear between boys and girls.

Conclusions: The hearing loss was slightly more frequent among school-aged girls according to the results of screening program. However, the percentages of audiogram results in most part of analysis were very similar, the differences were usually up to 2%. It could be stated that hearing loss among children in first grade in Lubelskie voivodship is not different in boys and girls.

[153]

Evaluation of bone-conduction implantation benefits in adult patients with Single Sided DeafnessMaria Gocel^{1,2}, Joanna J. Rajchel^{1,2}, Beata Dziendziel², Piotr H. Skarżyński^{1,2,3,4}, Henryk Skarżyński²

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Introduction: Single Sided Deafness (SSD) is a hearing loss that only appears in one ear, while the other ear has normal hearing or only mild hearing loss. Patients with SSD have not only difficulties with hearing from their deaf side, but also with sound localization. Those inabilities can have a relevant impact on their daily functioning. One of the most effective ways to improve the disturbed functions when binaural hearing is missing are bone conduction implants (BCI).

Aim of the study: The aim of this retrospective study was to evaluate benefits obtained by Polish patients suffering from SSD, with BCI, using self-report measures assessing health-related quality of life and hearing in different acoustic situations.

Material and methods: The participants were asked to complete two sets of questionnaires (one referring to the preoperative period and one relating to the actual patient's situation) consisting of APHAB (Abbreviated Profile of Hearing Aid Benefit), AQoL-8D (Assessment of Quality of Life) and a self-constructed survey on implant use. Questionnaires were sent to 32 adults with SSD, implanted with BCI, with the response rate of 56.25%. Due to the incomplete datasets, 8 participants were excluded. Eventually the results of 10 patients included in the final analysis.

Results: According to self-constructed survey on implant use, all patients used their implants regularly, on average $M=9.6$; $SD=4.5$ hours a day (range 3-18). The mean pure tone average from octaves in the frequency range 125-8000 Hz was $M=12.1$ dB HL; $SD=6.8$ for the normally hearing ear and $M=111$ dB HL; $SD=16.5$ for the operated ear. Statistically significant improvement was observed in the APHAB subscales: Ease of communication ($t(9)=3.954$; $p=0.003$), Background noise ($t(9)=4.626$; $p=0.001$) and Reverberation ($t(9)=3.384$; $p=0.008$). No statistical differences was noted in the APHAB Aversiveness scale, as well as in all of the AQoL-8D domains.

Conclusions: General health-related quality of life questionnaires, (AQoL-8D) seem to be less adequate tools to evaluate postoperative benefits in Polish patients than questionnaires assessing the disease-specific aspects such as hearing ability such as APHAB.

[154]

The frequency of co-occurring symptoms and comorbidities in adult patients with sudden sensorineural hearing loss and their relationship with hearing recoveryMarciniak J.¹, Krawczyńska A.¹, Skarżyński P. H.^{1,2,3,4}

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Introduction: Sudden sensorineural hearing loss (SSNHL) is defined as a rapid onset, occurring over 72-hour period, subjective sensation of hearing impairment usually in one ear. In almost all patients hearing loss is accompanied by tinnitus. In some individuals, the co-occurring symptoms of SSNHL are also an ear fullness and dizziness. Several authors have demonstrated the relationship between SSNHL and some comorbidities such as hypertension, diabetes mellitus or stress. Those patients showed lower response to treatment, and worse prognosis when compared to patients without those associations.

Aim of the study: The purpose of the study was to evaluate the frequency of co-occurring symptoms and comorbidities in patients with SSNHL and their relationship with hearing recovery.

Material and methods: 67 patients admitted to the Department of Audiology and Phoniatics of the Institute of Physiology and Pathology of Hearing between 2013-15, due to SSNHL were retrospectively reviewed and the results of pure tone audiometry were collected and analyzed. The inclusion criteria were: age \geq 18 years, unilateral hearing loss, complete pre- and posttreatment audiometric results' records, and treatment consisting of intravenous corticosteroids and HBOT. Participants were evaluated regarding to presence of tinnitus, dizziness and ear fullness sensation. Additionally, they were classified into two groups, one of them with comorbid diseases (hypertension, thyroid disorders, systemic autoimmune diseases, hypercholesterolemia, stress) and another one, without co-occurrence of such diseases. Pure tone thresholds were estimated at 250, 500, 1000, 2000 and 4000 Hz.

Results: In the evaluation of the patients, 89,6% had tinnitus, 35,8% had dizziness and 34,3% had ear fullness. The study reveals that participants who experienced fullness in the ear had statistically significant hearing improvement of $M=19,4$ ($SD=18,76$) based on mean difference ($U=353$, $p=0,043$). Presence of tinnitus and dizziness did not influence on hearing recovery significantly. Among the examined group, there were 17 patients without any comorbidities and 50 had at least 1 of them. In both groups, the outcomes were statistically insignificant regarding to hearing improvement.

Conclusions: The most common co-occurring symptom with SSNHL is tinnitus. However, fullness in the ear seems to have a significant impact on hearing improvement. Although the majority of patients reported at least one comorbidity (74,6%), no statistical difference was noted in comparison to a group without comorbidities.

[155]

The assesment of the auditory benefits after stapedotomy using audiometric tests and self-report questionnaire

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Introduction: The evaluation of the success of stapes surgery in otosclerosis is measured by audiologists on the basis of a decrease in air conduction threshold and a reduction in the size of air-bone gap. But whether the results of audiometric test correspond to the change perceived by patients?

Aim of the study: The aim of the study was to assess the auditory benefits based on audiometric tests and self-report questionnaires after stapedotomy.

Material and methods: The research was conducted among 66 adults patients aged from 25 to 70 years who were qualified to first – time stapedotomy in the second half of 2017. The number of women predominated in the surveyed group - about 73%. All patients underwent pure-tone audiometry before and after stapedotomy. In addition, patients were asked to complete the Abbreviated Profile of Hearing Aid Benefit (APHAB) questionnaire for the self-assessment of communication ability.

Results: The difference in average hearing thresholds (for frequency from 0.5 to 4 kHz) for the air conduction in the operated ear before and after stapedotomy showed an improvement in hearing. A significant reduction in the air-bone gap was also noted. The correlation between results of three subscales of the APHAB questionnaire and the results of pure tone audiometry was evidenced - an increase in the hearing threshold for air conduction and a decrease in the air-bone gap resulted in an improvement of the subjective hearing of patients.

Conclusions: Success of stapedotomy demonstrated on the basis of audiometric results correspond to auditory benefits perceived by patients, which was measured using the APHAB questionnaire. The APHAB questionnaire is a great complementary tool to audiometric tests, because it provides valuable information how big problem is hearing loss for the patient.

[156]

Audiological evaluation of the novel bone conduction hearing device ADHEAR in patients with different hearing lossRenke K.¹, Ratuszniak A.¹, Kozieł M.¹, Skarżyński H.¹, Cywka K.¹, Skarżyński P.H.^{1,2,3}

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Introduction: The ADHEAR is a new non-implantable bone conduction hearing system, in which audio processor is connected directly to the skin via a special Adhesive Adapter that is placed behind the ear. It is dedicated for treatment of patients with conductive hearing loss or single-sided deafness. With ADHEAR neither surgery, nor high pressure is needed like in case of an intact-skin implant system or a passive system, which was only able to transmit the sound to the bone by applying high pressure into the skin.

Aim of the study: The aim of the study was to assess the audiological efficacy with this hearing in patients with different hearing loss.

Material and methods: Material of this study consists of twenty native Polish adults with uni- or bilateral conductive hearing loss. Unaided and two aided conditions (with the ADHEAR and the BC device on softband) will be compared using the following tests: (1) Sound field audiometry with warble tones. (2) Speech in quiet by determining the word recognition score and speech reception threshold (SRT50) in sound field with Polish monosyllables. (3) Speech in noise by determining the SRT50 in sound field using the Polish Matrix Test with speech and noise coming from the front.

Results: Initial results of pilot tests showed comparable performance between the ADHEAR and a bone conduction hearing device on a softband. The sound quality was also evaluated as natural.

Conclusions: ADHEAR - the new bone conduction hearing device, as a non-implantable solution could be a good alternative to other bone conduction hearing devices. It shows comparable audiological benefit in patients with pure conductive hearing loss. It seems that ADHEAR will be appropriate for patients with small mastoids, especially for babies and children, who are waiting for surgical procedure. ADHEAR can be considered as a good and effortless solution for patients who are not suitable, or denied a surgical solution.

Neurology

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[157]

Variants of the CNR1 gene in patients with Gilles de la Tourette syndrome

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Trustee of the paper: Piotr Janik

Introduction: Gilles de la Tourette syndrome (GTS) is a neuropsychiatric disease of unknown etiology, although major role of genetic factors has been established. Variants of CNR1 gene encoding the central cannabinoid receptor (CB1) are supposed to be the risk factor for the developing of some neurodevelopmental diseases. Moreover, usage of cannabinoid drugs may alleviate tics.

Aim of the study: To test the association of selected CNR1 gene variants with GTS.

Material and methods: The study group comprised 247 patients aged 6-59 (mean: 24.3 ± 11.8 years; 191 males, 77.3%). The control group consisted of 279 healthy persons aged 13-54 (mean: 22.6 ± 3.4 years; 213 males, 76.3%). Three single nucleotide polymorphisms (SNPs) in CNR1 were selected: rs2023239, rs2180619, rs806379 based on minor allele frequency in general population (MAF > 15%). These variants were genotyped using a real-time quantitative polymerase chain reaction system (TaqMan SNP genotyping assay).

Results: We found significant association of GTS clinical phenotype with rs2023239 variant. Minor allele C and genotype CT frequency were found significantly more often in GTS patients compared to controls ($p=0.003$ and $p=0.001$, respectively). There were no statistically significant results for rs806379 and rs2180619 variants.

Conclusions: Our findings suggest that rs2023239 polymorphism of the CNR1 gene is a risk factor of GTS in Polish population. Abnormal endocannabinoid transmission is suspected to be one of the causes in pathogenesis of GTS. The research was funded by Medical University of Warsaw (code: 1WC/NM1/17/17)

[158]

Peculiarities of clinical presentation and cognitive impairments in patients with toxic encephalopathy, resulting from use of opiates and surrogates of manganese

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Introduction: During the last 20 years, the problem of the usage of drugs made at home as a result of processing of medicinal preparation with potassium permanganate appeared in Ukraine. Toxic effect on central and peripheral nervous system take place within few months of taking a psychoactive drug containing Manganese.

Aim of the study: To describe the symptomatology and features of cognitive impairments of ten patients.

Material and methods: Complex neurological and neuropsychological examination was performed on 20 patients with diagnosis "Toxic encephalopathy, resulting from usage of opiates and surrogates of manganese". Among them were: 10 men aged from 25 to 46 years old with the duration of disease from 2 to 10 years. The Montreal Cognitive Assessment (MoCA) was used for assessment of cognitive impairments.

Results: By the results of the research, presence of subcortical reflexes was detected in 10 patients (100%), pseudo bulbar syndrome, which was manifested by violent laughter or crying (90%), dysphagia (10%), dysphonia (70%), dysarthria (50%); akinetic-rigid syndrome: increased muscle tone by the plastic type (100%), postural instability (80%), bradykinesia (70%), lateropulsions (60%), propulsions (70%). Hyperkinesia in the muscles of the face and extremities, a positive symptom of "tongue and eyes" was observed in 20% of events (2 patients) besides abovementioned symptoms. Sensation disorders by polyneuritic type were detected in 9 patients. According to the MoCA results, the average score number was 15 ± 2.8 . Expressed changes in the form of the decrease in thinking, attention, and memory were observed. Atrophic changes of cerebrum were detected in 90% of patients on computer tomography.

Conclusions: Surrogate drugs, containing manganese, are highly-toxic substances, causing persistent organic lesions of the central and peripheral nervous system. The complex examination of patients with toxic encephalopathy, appearing on the background of usage of surrogate drugs, allowed detection of a characteristic symptom complex, which includes a combination of extrapyramidal, pseudo bulbar, vegetative syndromes, as

well as pronounced cognitive impairments with cerebral atrophy. Lesions of the peripheral nervous system manifest as vegetative-sensory polyneuropathy.

[159]

Association between EDSS and COMPASS-31 score in patients with multiple sclerosis

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Introduction: Autonomic nervous system dysfunction is very common in patients with multiple sclerosis (MS) and significantly reduces quality of life and normal functioning. Expanded disability status scale (EDSS) is widely used for evaluation and monitoring disability in MS patients, however COMPASS-31 (Composite Autonomic Symptom Score) allows more specifically calculate autonomic dysfunction. Early detection of autonomic symptoms gives opportunity to induce appropriate treatment and provide better quality of life.

Aim of the study: The aim of the study was to compare autonomic nervous system dysfunction (ANS) symptoms in patients with MS and in healthy individuals using COMPASS-31 scale and to evaluate its correlation with EDSS score.

Material and methods: This study includes 35 patients with MS (14 male, 21 females; mean age 37,66±9.5; mean EDSS 2.23±1.6) and 35 individuals without known chronic illnesses (9 male, 26 females; mean age 32,06±11,4). Respondents was asked to fulfill COMPASS-31 scale to evaluate presence and severity of ANSD symptoms. The results was analyzed using IBM SPSS Statistics.

Results: 30 of 35 respondents with MS and 32 of 35 healthy individuals reported presence of autonomic dysfunction symptoms. Statistical analysis revealed significant correlation between COMPASS-31 and EDSS score ($p=0.04$). Relevance is far more important if severity of urogenital involvement is evaluated ($p=0.001$). Also, a relationship between presence of gastrointestinal system involvement and secretomotor symptoms ($p=0.036$) as well as orthostatic intolerance ($p=0.007$) was found in MS patient group. Statistically reliable difference between MS and control group were observed only if urogenital symptoms were evaluated ($p=0,002$).

Conclusions: Patients with higher EDSS score are expected to suffer from autonomic nervous system dysfunction, especially from urogenital tract disturbances. Even if EDSS score is not taken in account, patients with MS have more pronounce urogenital disturbances comparing to healthy individuals. Respondents reported gastrointestinal system dysfunction more often had also dry mouth or dry eye syndrome as well as sweating alterations. It is highly suggestive for neurologists to use in clinical practice not only EDSS scale but also COMPASS-31 scale for providing better analysis of patient's condition and starting an appropriate treatment.

[160]

Living with Myotonia Congenita

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Introduction: Myotonia Congenita (MC) is a rare muscle disorder caused by mutation in the CLCN1 (7q34) gene encoding chloride channel of skeletal muscle. MC may be transmitted as either an autosomal-dominant (Thomsen type) or recessive (Becker type) trait. CM is characterized by myotonia (delayed muscle relaxation) with warm-up phenomenon, percussion myotonia, muscle hypertrophy, in some cases also with muscle pain and weakness. Clinical manifestation of CM and its severity differ between patients and influence their life on unequal level.

Aim of the study: To characterize clinical picture of CM and to asses its influence on the quality of life in a cohort of Polish patients with genetically confirmed CM.

Material and methods: 27 patients with mutations in CLCN1 gene underwent clinical assessment including: neurological examination, MRC test, CK-serum level and EMG. Severity of myotonia was assessed by 'stair test' (time of climbing stairs after 10 min of rest and continuing after 30s of rest) and time up and go (TUG) test. All

patients were asked to use visual assessment scale (VAS) for subjective description of myotonia. SF-36 form was completed by each patient for estimating of patients' quality of life.

Results: In total of 27 (18 male) patients, 19 (70%) were diagnosed with Becker CM and 8 (30%) with Thomsen CM. Relaxation of grip hand test showed that in 67% of patients myotonia had moderate intensity, in 7% was assessed as severe, in 19% as mild and in 7% was not detectable. MRC test showed in upper limb an average for proximal muscles 4,2 and for distal muscles 3,7; in lower limbs an average both for proximal and distal muscles amounted to 4,4. The CK level was elevated in 41% of patients. EMG showed: myotonic discharges in all patients and myopathic changes in 26% of patients. Stairs test resulted in an average of 13,4s (n. 3s) which decreased to 7,8s after warm-up. TUG test showed an average of 11,4s, 7,6s and 6,5s in the first, second and third measurement, respectively. In VAS scale, 48,2% of patients indicated values not less than 60. SF-36 form showed: in 'physical functioning' average of 65,7, in 'role limitations due to physical health' - 61,1 and in 'general health' - 50,9.

Conclusions: We present the first description of cohort of Polish patients with genetically confirmed CM. A broad variability of CM phenotype was observed. Patients' quality of life, according to SF-36, was generally declined, however spectrum of this decline was broad in every parameter.

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[161]

Structural components of anosognosia in patients with acute cerebrovascular lesions

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Introduction: Investigation of neuropsychological symptoms that result from focal brain lesions anosognosia is of great importance. The problem of acute cerebral lesions is of most interest because of high morbidity and mortality reaching up to 13% annually and subsequent disability.

Aim of the study: The aim of the study was to investigate anosognosia with characteristics of cognitive and emotional processes in ischemic stroke.

Material and methods: The study involved 60 patients aged 31-80; 30 had ischemic stroke (IS) and 30 with brain ischemia (CBI). Assessment of impaired motor and cognitive abilities in patients with brain damage (2014) was used as well as "10 words"; "Correction test"; "Exception of superfluous"; "Sequence of events"; questionnaire "SAN".

Results: Motor anosognosia: in the IS group was not detected, in the CBI group - in 3.3% cases. Cognitive anosognosia: IS group - in 20% cases was revaluation, in 7% - underestimation; CBI - 13% cases (revaluation). Memory: IS - 5 ± 1.8 points, CBI - 4.9 ± 1.5 points. Delayed reproduction: IS - 5.4 ± 2.7 points, CBI - 5.1 ± 3.2 points. Stability of attention: IS - 11.6 ± 4.2 points, CBI - $11, 1 \pm 4,1$ points (average level). Efficiency of attention: IS - 20.1 ± 3.4 points, CBI 18.4 ± 6 points. Accuracy of attention: IS - 13.4 ± 10.9 points, CBI - 14.3 ± 8.4 points. Ability to generalize: in IS a group 4.3 point, CBI - 3.8 points, (average level). Logical thinking: IS - 3.7 ± 1.5 points, CBI - 3.5 ± 1.5 (average level). Self-assessment of health: IS - 3.9 ± 1 points, CBI - 4.3 ± 1.2 points; activity in IS - 4 ± 1.1 , CBI - 4.1 ± 1.3 , the mood of the IS - 3.4 ± 1 , CBI - 4.9 ± 0.9 . In IS moderate correlation was revealed between: cognitive anosognosia and efficiency of attention (correlation coefficient -0.67), attention stability (-0.64), patient activity (-0.68), success of delayed reproduction (- 0.39); motor anosognosia and generalization level (0.38).

Conclusions: There are significant differences in the structure of anosognosia in patients with IS and CBI which should be taken into account in treatment and rehabilitation.

[162]

The association of foramen arcuale with headaches and migraines: the insight into a relevant anatomical variant

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Introduction: The foramen arcuale (FA) is an osseous bridge that can be formed on the posterior arch of the atlas, often observed on lateral radiographs of the cervical spine. Currently, there is a lack of studies that systematically analyse the FA and its role in headaches and migraines.

Aim of the study: The aim of this study was to determine true prevalence of FA and assess its role in headaches and migraines through an evidence-based approach.

Material and methods: We conducted an extensive search of the major electronic databases to identify all studies that reported relevant data on patients with versus without FA and prevalence of headaches or migraines. No date or language restrictions were applied. Data on the prevalence, type (complete and incomplete), and laterality of the FA and relationship with headaches or migraines were extracted and pooled into a meta-analysis.

Results: A total of 127 studies (n=55,985 subjects) were included into the quantitative analysis on the prevalence of FA. The overall pooled prevalence of a complete FA was 9.1% (95%CI:8.2-10.1), while the overall pooled prevalence of an incomplete FA was 13.6% (95%CI:11.2-16.2). There were a total of 168/412 (40.8%) patients with headaches in the FA group compared to 368/1691 (21.8%) patients with headaches in the no FA group (OR 4.68; P=0.002). The proportion of headaches for complete FA was 73/125 (58.4%) compared with 80/413 (19.4%) for incomplete FA (OR 5.04; P=0.04). When comparing incomplete FA to no FA, the proportion of headaches was 36/85 (42.3%) vs 65/560 (11.6%), and this was significantly different (OR 6.13; P=0.009). The proportion of headaches in patients with bilateral FA was 67/132 (50.8%) compared to 80/140 (57.1%) in the unilateral group (OR 1.36; P=0.72).

Conclusions: We performed the first meta-analysis that demonstrated relatively high prevalence of FA in general population and showed the significant association between FA and headaches, and provided further support for the notion of the clinical relevance of this anatomical variant.

[163]

Side effects of botulinum toxin injections as a treatment for hemifacial spasm

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Introduction: Hemifacial spasm (HFS) is a rare neurological movement disorder characterized by involuntary contractions of muscles on one side of the face innervated by the facial nerve. Although the disorder does not have life-threatening consequences, it decreases the quality of patients' life. The main ways of treatment are medication, botulinum toxin A injections (BTI) and microvascular decompression of the facial nerve. In the majority of cases BTI is the treatment of first choice. There are three commercially available forms of botulinum toxin: onabotulinumtoxinA, abobotulinumtoxinA and incobotulinumtoxinA. Considering long-term therapy, knowledge about side effects of BTI (SE) is important for successful treatment.

Aim of the study: The aim of our study was to estimate the frequency of SE in treatment with BTI and its dependency on patients' sex, age, duration of treatment, number of injections and type of toxin.

Material and methods: An observational retrospective study was performed on medical records of 261 patients with HFS treated with BTI at the outpatient clinic of the University Hospital in Cracow. Collected data was analysed using U Mann-Whitney test and chi-squared test as appropriate.

Results: SE occurred in 10,73% patients (28 of 261). The most common SE were ptosis presented by 14 patients (5,36%) and temporary facial palsy presented by 11 patients (4,2%). 19 patients had SE after onabotulinumtoxinA and 9 patients after abobotulinumtoxinA (67,86% and 32,14% respectively). There was correlation between the frequency of SE and the total number of injections (p<0,01) and duration of treatment (p<0,01). We did not find statistically significant correlation between SE and sex (p=0,16) and age of patients (p=0,14).

Conclusions: Outcomes of our study suggest that major factors affecting incidence of SE of BTI are total number of botulinum toxin A injections and duration of the therapy. This study provides only preliminary data which need to be confirmed by prospective studies on this topic.

[164]

Antiepileptic drugs using during pregnancy

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Introduction: Epilepsy is one of the most common neurological conditions in women of reproductive age, that needs a continuous treatment during pregnancy and antiepileptic drugs (AEDs) considered to be one of the most frequent chronic teratogenic exposures. Prescription of AEDs to women with epilepsy and other neurological disturbances requires to maintaining a balance between controlling seizures frequency and minimizing fetal exposure to harmful effects of the medications.

Aim of the study: To evaluate the compliance and the most common used AEDs during pregnancy in women with epilepsy.

Material and methods: This was a retrospective study carried by Pauls Stradins Clinical University Hospital from January 2015 till September 2017. Out of 104 pregnant women with different neurological conditions, who were admitted to the tertiary referral perinatal care center, 40 women had epilepsy.

Results: Mean age of patients with epilepsy was $29,3 \pm 5,9$ (20-41). All patients with epilepsy ($n=40$) received AEDs before pregnancy, however only 62,5 ($n=25$) of women continued to use AEDs during first trimester, and 40% ($n=16$) during second and third trimester. During 1st trimester, 68% ($n=17$) received monotherapy and 32% ($n=8$) polytherapy. The most common AEDs, which were used as monotherapy in 1st trimester, were lamotrigin (58,8%, $n=10$) with average dosage of 100mg and valproic acid (23.5%, $n=4$) with average dosage of 500mg. The most frequent drug combinations in polytherapy group were lamotrigin (LTG) and valproic acid ($n=2$); LTG and carbamazepine ($n=1$); LTG and topiramate ($n=2$); LTG and oxcarbazepine ($n=1$); LTG and clonazepam ($n=1$); LTG and haloperidole ($n=1$). Four patients (16%) had seizure during pregnancy period and one patient (1%) had seizure during delivery. Three of those four patients, who had seizure, did not use AEDs in the 2nd and 3rd trimester. There were no major malformations detected, only in one newborn had minor malformation whose mother did not use AEDs during 2nd and 3rd trimester and had seizure during pregnancy.

Conclusions: Despite the well-know information about teratogenic AEDs they are still used. Compliance of pregnant women is poor. Therefore the education about the importance of prepregnancy planning and the effect of teratogenic AEDs or non-compliance is needed not only for women with epilepsy in childbearing age, but also for neurologists and primary care medical doctors.

[165]

Assesment of factors contributing to inefficiency of stroke treatment

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Introduction: Mortality rates resulting from cardiovascular diseases are really high all over the world. Stroke cases take the 2nd place in the structure of mortality because of the circulatory system diseases (39%). This index was 48.7% all causes of death in Russia in 2016. It continues to be high, significantly exceeding the rates in Europe.

Aim of the study: the aim of the study was to analyze medical care in fatal stroke cases in the city of Smolensk and the Smolensk region in 2016-2017.

Material and methods: In the study included 5855 cases of stroke registered in 2017 and 5580 recorded in 2016, 1056 had a lethal outcome (with 1215 in 2016). All cases of death resulting from acute cerebrovascular accidents were divided into 4 groups: patients with ischemic stroke, intracerebral hemorrhage, unspecified stroke (ischemic or hemorrhagic) and subarachnoid hemorrhage. Annual reports on stroke cases and their treatment formed our databases processed with Microsoft Excel 2007 software.

Results: Ischemic stroke was a cause of death in 72.94% cases; 25.46% – intracerebral hemorrhage; and only in 1.6% - subarachnoid hemorrhage was registered. The average patients' age at death was 72.51 ± 12.62 .

The youngest was the group of the intracerebral hemorrhage patients: their average age at death was 68.35 ± 14.33 . The mean age of the ischemic stroke patients was 73.71 ± 11.94 years. The oldest was the group of unspecified ischemic or hemorrhagic stroke - 74.19 ± 11.98 years. There were more stroke female patients in every group: 60.51% of lethal cases. Male patients with intracerebral hemorrhage had the youngest age at death

(62.4±11.57 years); the oldest group consisted of female patients with ischemic stroke (76.52±10.51 years). Analysis of the concomitant conditions of the lethal stroke cases disclosed that 44.17% patients had atrial fibrillation, 21.74% - diabetes mellitus, 93.74% - arterial hypertension, which caused such a ratio of ischemic strokes to hemorrhagic as 3:1, not 5:1 as in Russia. Low rates of ischemic stroke patient's delivery to hospitals within the therapeutic regimen were issued (17.63% of the total number of patients with ischemic stroke).

Conclusions: Morbidity and mortality rates related the stroke in the Smolensk region significantly exceed general indexes for Russia and Western Europe. Efficient education of population on risk factors and intensification of outpatient control for primary and secondary prevention of stroke could improve the situation.

[166]

Assessment of neurological and cognitive status in epileptic and non-epileptic children with cerebral palsy

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Introduction: The presence of epilepsy in children with cerebral palsy (CP) complicates course of disease by deterioration motor and cognitive impairment.

Aim of the study: To analyze the differences of cognitive and motor development in epileptic and non-epileptic children with similar types of CP.

Material and methods: Our study included 77 children (57 boys, 20 girls) with spastic forms of CP with (n=41; 31 boys, 10 girls) and without (n=36; 26 boys, 10 girls) epilepsy treated at the Department of Psychoneurology #2 RCCH since the last quarter of 2016 to the first quarter of 2017 year. Age median is 22 months.

Despite analysis of anamnesis and electroencephalography (EEG) data all patients were interviewed by Developmental Profile 3 (by GD Alpern, 2009) questionnaire which provided 5 scales: physical, adaptive behavior, social-emotional, cognitive and communication.

Results: No significant difference was evolved between epileptic and non-epileptic children with CP in perinatal anamnesis data and neurological focal signs, except prevalence of central facial nerve palsy in patients with epilepsy ($p<0,05$). More significant lag of expressive ($p<0,01$) and impressive ($p<0,01$) speech, socialization ($p<0,01$) and the average gap in cognitive development ($p<0,05$) was obtained in epileptic children.

In all epileptic children epileptiform activity was noted: in 22% - in sleep state, in 78% - in awake and in sleep state. In 58.3% of children without seizures epileptiform discharges were absent, in 11.1% - were noted only during sleep, in 30.6% - in awake and in sleep state. The index of epileptiform activity during sleep state in the group of patients with CP and epilepsy was statistically significantly higher in group of patients with CP and epilepsy ($p<0,01$).

Based on the selection of significant variables a prognostic model with high sensitivity and specificity was constructed, AUC = 0.943. The predictive power of the model is 89.6%.

Conclusions: Presence of epileptic seizures and epileptiform discharges with high index predominantly causes progression of cognitive deficit and decline level of socialization. Thus, such negative influence violates core criterion of CP – its non-progression nature.

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[167]

The impact of modern hemostasis methods on ovarian reserve after the enucleation of ovarian endometriomas

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Trustee of the paper: A.A. Solomatina**Introduction:** There is no common standard determining the method of hemostasis in ovarian surgery that maximally allows to retain ovarian reserve (OR).**Aim of the study:** To evaluate OR status in patients with unilateral ovarian endometriomas (OE) using bipolar (BPC), argon-plasma (APC) coagulation and suturing hemostasis (SH).**Material and methods:** 95 patients with OE were examined. The mean age was 28.07 ± 4.8 ($p > 0.05$). All patients underwent laparoscopic cystectomy. BPC (Autcon II 350) was applied to 32 patients, SH - to 34 and APC (PlasmaJet System) - to 29. Ligature hemostasis was performed with absorbable polyglycolic suture №2/0. The volume of healthy ovarian tissue (Vcm³) on the 5-7 day of the cycle, antral follicle count (AFC), their site and diameter were evaluated by the ultrasound (Toshiba Aplio 500, 3.6-8.8 MHz) before and 6-12 months after surgery.**Results:** There were no statistically significant differences between the estimated indices in all groups prior to surgery: $V = 5.5 \pm 0.8$ cm³; $AFC = 4.9 \pm 2.4$.Six months after enucleation using BPC, Vcm³ increased by 1.3 times compared with the preoperative values, deformed follicles were found. One year later, Vcm³ (3.5 ± 0.2 cm³) reduced by 2 times concerning the previous study due to remodeling of intra-organ hemodynamics and decline of transient edema. AFC remained consistently low (2.6 ± 0.5).Six months after surgery in the SH group there was a 1.2 times increase (6.5 ± 0.6 cm³) of healthy ovarian tissue compared with the preoperative levels, the antral follicles were regularly round-shaped, AFC declined by 1.3 times (3.7 ± 0.7) in comparison with the parameters before surgery. One year later, there was an improvement of OR criteria; no statistically significant differences from pre-surgical values were observed: $AFC = 4.7 \pm 0.4$; $V = 5.7 \pm 0.4$ cm³.Estimating the reproductive potential of patients in the APC group 6 months after cystectomy, the ovary volume rose, apparently, due to edema and impaired intra-ovarian perfusion ($V = 7.0 \pm 0.7$ cm³, $AFC = 3.3 \pm 0.5$). A year later Vcm³ reduced by 1.5 times compared with the previous research; AFC did not decrease significantly. Round-shaped small follicles (2-5 mm) were found.**Conclusions:** BPC leads to diminished OR in a greater degree than during APC and suturing hemostasis. SH allows to decline the loss of healthy ovarian tissue as much as possible, thus preserving women's reproductive potential. It is highly important to minimize any kind of hemostasis on the tissues, particularly in patients with non-fulfilled reproductive function.

[168]

New approaches in management of Hypotonic Postpartum Hemorrhage

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Trustee of the paper: Gaidai Nataliya Viktorovna**Introduction:** Recent statistics from WHO suggests massive obstetric bleeding stands in second place in the list of causes for maternal mortality in Ukraine and is evident that, more than 25% of maternal deaths are related to it. Volume of blood loss up to 0.5 % of body weight is regarded as physiologically normal for a woman in labor. But Further increase in the volume of blood loss leads to pathological postpartum bleeding and blood loss exceeding 1 % of body weight is considered as massive, larger amount is critical, where critical bleeding leads to hemorrhagic shock and disseminated intravascular coagulation syndrome with irreversible changes in vitals.**Aim of the study:** Our project aims to evaluate effectiveness of the use of controlled uterine balloon tamponade (UBTM) to prevent hypotonic postpartum haemorrhage.

Material and methods: The analysis of 11 primipara women with hypotonic postpartum hemorrhage using Uterine Balloon tamponade catheter and their results were processed in Microsoft Office Excel program - 2007, STATISTICA 6.0 (USA). In our study Buckley type UBTM catheter was used. The study was conducted at "Maternity hospital №3 »Zaporozhye state medical university, Zaporozhye from the period of 2014 to 2017.

Results: Mean time to use the balloon after manual examination with massaging of uterus in this study was $7.13 \pm 8,18$ min. The volume of liquid introduced into the balloon ranged from 200 ml to 400, the average was 302.72 ± 64.51 ml. The mean time since the introduction of the balloon until complete cease of bleeding and normalization uterine activity was $2.8 \text{ min} \pm 1.2 \text{ min}$. Minimum amount of total blood loss was 750 ml. Average total length of time with UBTM in uterine cavity until its removal was $18,43 \text{ h} \pm 5,35 \text{ h}$. Antibiotic therapy with 1.5 g of cefuroxime was administered during UBTM procedure. The efficacy of UBTM in our study was found to be 100%.

Conclusions: UBTM conducted in early stages of PPH, is crucial to cease the bleeding, preventing massive blood loss, which justifies its use as a mandatory step in the protocol of conservative measures to combat PPH. UBTM is efficient and cost-effective method in dealing postpartum bleeding as well allowing to preserve the reproductive function of women. As a solution, application of uterine balloon tamponade (UBTM) is suggestive, on its application the Postpartum hemorrhage (PPH) diminishes by 2.5 times.

[169]

Women's knowledge on advantages and risks related to the way of labour

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Introduction: Adequate knowledge of parturition physiology allows women to prepare for labor. The rate of cesarean deliveries in Poland is currently about 40%. Cesarean section on demand is widely discussed on social media. This problem may be related to lack of knowledge about the benefits and advantages of vaginal birth.

Aim of the study: The aim of the study was to assess the knowledge on labor, its possible complications and ways to prepare for vaginal delivery among Polish women.

Material and methods: A cross-sectional study was performed among Polish women, who were pregnant or at least have after one delivery. A self-composed questionnaire consisting of 29 questions was distributed via internet between November and December 2017. In statistical analysis the Fisher exact test was used with p value <0.05 considered significant.

Results: 4721 women filled the questionnaire. 656 of the respondents were pregnant (13.9%), 2322 women gave birth vaginally (49.2%), 1454 had caesarean delivery (30.8%) and 283 vaginal and cesarean delivery (6.1%). Most of the respondents were afraid of the pain associated with the labour (75% of pregnant women, 63.4% of women after vaginal birth, 59.1% of women after caesarean section). 57.8% of respondents would like to avoid episiotomy, but only 27,5% of them used any methods of perineal protection for vaginal delivery. 55.5% of women believe that newborns are at higher risk of hypoxia during vaginal delivery than cesarean section. 43.4 % of respondents believe that vaginal delivery may have a negative impact on the satisfaction of their sexual life. 26% of respondents think that the caesarean section scar has no impact on subsequent pregnancies. 41% of the women claim that women who had caesarean delivery feel discriminated as cesarean section is considered as a labor failure in society.

Conclusions: Women's knowledge on advantages and risks related to the way of labour is insufficient which may affect their preferences regarding vaginal or cesarean delivery.

[170]

Childbirth after undergoing a cesarean section — what factors affect women's decisions regarding the delivery method during subsequent pregnancies?

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Introduction: Natural delivery after cesarean section is an important issue since undertaking such an attempt can make a significant contribution to reducing the number of c-sections. According to the Polish Gynecological Society recommendations, a pregnant woman who has had one C-section should give her informed consent for a next natural delivery. At the Department of Perinatology, Obstetrics and Gynecology PMU in the period from 01/10/2015 to 30/09/2016 53% of deliveries were completed by c-section, 19% of them were performed due to the lack of consent for a natural deliver. This is why it is important to identify the motivation of women in selecting the delivery method during subsequent pregnancies.

Aim of the study: The aim of the study was to analyze women's motivation and knowledge regarding delivery methods after undergoing a c-section and the role of the physician in making the decision.

Material and methods: The study was conducted in 84 pregnant women, aged 19-46, who has had one c-section before. Surveys, anonymous, retrospective were based on an original questionnaire consisting of 34 questions.

Results: On the basis of statistical analysis, there were significant relations between the desire to choose c-section, and:

- 1) delivery in the past - women who only had c-section would make that decision again, women who also had a natural delivery would choose it again [X^2 (df=1) =3.794; p=0.05];
- 2) the believe that c-section is better for the mother [X^2 (df=2) = 7.619, p=0.022] and the child [X^2 (df=2)=22,800, p=0.001];
- 3) fear of pain [X^2 (df=1)=12.888; p<0.001];
- 4) fear of body damage affecting sexuality [X^2 (df=1)=9.203, p=0.003];
- 5) bad experiences from the first delivery [X^2 (df=1)=14.520, p<0.001];
- 6) the desire for a planned, predictable delivery [X^2 (df=1)=9.635, p=0.002].

Women who were informed by the physician to undertake a natural delivery after c-section, were more likely to express such desire [X^2 (df=1)=6.453; p=0.02). Respondents who did not agree to attempt natural delivery after C-section, were not afraid of postoperative complications [X^2 (df=1)=14.112; p<0.001], longer convalescence [X^2 (df=1)=31.398; p<0.001], physical difficulties in caring for a newborn just after C-section [X^2 (df=1)=31.438; p<0.001], delayed lactation [X^2 (df=1)=11.040; p<0.001].

Conclusions: The results emphasize the role of patients education. The knowledge provided by the ob/gyn physician is a factor determining the patient's choice. Women who are aware of the benefits and risks are more likely to choose a vaginal birth attempt.

[171]

Prevalence of low birth weight babies and study of various maternal risk factors for low birth weight in a rural referral hospital : A cross sectional study

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Introduction: Low birth weight (LBW) is defined by the WHO as a birth weight of an infant of 2,499 g or less, regardless of gestational age. In India, nearly 20% of new borns have LBW. Decrease in life expectancy, increase in infectious and respiratory diseases, anaemia, hypothermia, chromosomal abnormalities & nutritional & health care problems are among the LBW consequences. LBW plays a direct or indirect role in 60-80% of infant mortalities & hence is a major contributor to perinatal mortality in India. Due to the importance of this subject and the paucity of studies investigating LBW-related risk factors in India, the study was carried out to determine the prevalence of LBW and associated maternal risk factors for LBW in a rural referral hospital in Maharashtra.

Aim of the study: To find the prevalence of low birth weight babies in a rural referral hospital. To classify the maternal high risk factors as modifiable and non modifiable factors. To suggest possible strategy/intervention for modifiable risk factors so as to reduce t

Material and methods: This was a retrospective cross-sectional study using hospital records of years 2014 and 2015. Patient information such as age, parity, mode of delivery, antenatal care information, history of bad obstetrics, any other non-gestational illness was collected. Patients delivering stillborns, neonates with congenital abnormalities and with incomplete hospital records were excluded. With a confidence limit of 95%

and $\alpha=0.5$, the minimum sample size required for the study was 126, while studied sample was $n=201$. Collected data was analysed with suitable software.

Results: The prevalence of LBW babies was 26%. Median age of mothers=23yrs; mothers of age less than 20yrs were 1.7 times more likely to deliver LBW babies than mothers aged 20–34yrs. 43% babies had poor APGAR score. Abortion history was 2.4 times more likely to cause LBW babies. Mothers who took iron with folic acid were 99% less likely to have LBW babies than those who did not take IFA. 53% babies had <4 antenatal visits & this was strongly correlated with an LBW outcome with other modifiable risk factors.

Conclusions: The factors associated with term low birth weight are maternal age, history of abortion, hemoglobin status, iron folic acid. This study identified maternal high risk factors (modifiable & non-modifiable) which will also help indirectly to reduce the neonatal mortality rate, & to improve the national indicators of health services.

[172]

The impact of the Hashimoto's disease on the course of the pregnancy and the general condition of the newborn

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Introduction: Chronic lymphocytic thyroiditis is a painless thyroidal inflammation connected with an antithyroidperoxidase and antithyroglobulin antibodies and also with lymphocytic infiltrate. The autoimmune process lead to a slow development of hypothyroidism.

The Hashimoto's disease increasingly affects many young women who are reproductive age, so it may create complications during pregnancy.

Aim of the study: The aim of this research is to reveal how Hashimoto's thyroiditis influence the health of the pregnant woman and the health indicators of her newborn child. The data collected during this study may contribute to the improvement of medical care for pregnant women.

Material and methods: The research was conducted in the form of an anonymous survey on two groups of pregnant women: suffering from Hashimoto's thyroiditis and healthy women. In the questionnaire women answered for questions about e.g. difficulties with conceiving a baby, pregnancy, treatment of diseases during pregnancy, postpartum complications, newborn's condition, newborn's diseases.

Results: • In the group of women suffering from the Hashimoto disease miscarriages are more common.

- Preterm delivery occurs more often among patients suffering from the Hashimoto disease rather than a control group.
- Women suffering from chronic lymphocytic thyroiditis had more difficulties to conceive a baby comparing to healthy women.
- The study has shown that newborns born by women suffering from Hashimoto's disease were in worse general condition than newborns born by healthy women.
- The incidence of postpartum depression was more common in group of the patients suffering from Hashimoto's disease comparing to healthy patients.
- Children of mothers suffering from the thyroiditis were more likely to be delivered by Caesarean section compared to the control group.
- In the screening test of newborns, more children born by women suffering from Hashimoto's disease has had increased TSH level comparing to children born by healthy mothers.

Conclusions: The Hashimoto's disease in women is associated with an increased risk of developing obstetric and perinatal complications and also affects increased risk of newborn diseases. The study indicates the need to prepare woman with Hashimoto's disease, planning pregnancy, to provide her appropriate medical supervision, which will reduce the obstetric and postpartum complications.

[173]

Nutritional status impact on early gestosis severity

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(headed by MD., Professor V. Benyuk), Kyiv, Ukraine**Trustee of the paper:** Professor V. Benyuk MD**Introduction:** About 80% of pregnant women suffer from early gestosis (nausea and vomiting of pregnancy, NVP). That significantly impairs the quality of a pregnant woman's life, reduces labor efficiency, increases the number of days of disability and promotes the emergence of other forms of obstetric and perinatal pathology.**Aim of the study:** To evaluate the trophological status of pregnant women with varying severity degrees of NVP**Material and methods:** 120 pregnant women with manifestations of NVP in the first trimester of pregnancy were examined, among them: 54 - with a mild, 36 - moderate and 30 - with severe NVP. The trophological status was assessed according to the WHO recommendations based on the body mass index (BMI) before pregnancy.**Results:** Among pregnant women with a mild degree of NVP, 59.3±2.2% had an eutrophy according to BMI, 20.4±1.4% were malnutrition, 12.9±1.2% were overweight and 1 stage of obesity were found in 7.4±1.0% of pregnant women.

38.9±2.6% of patients with a moderate NVP were overweight, 16.7±1.5% had I stage of obesity, 8.3±1.0% had II stage of obesity, 30.5±2.3% - malnutrition, 5.6±1.5% - normal BMI.

In the group with hyperemesis gravidarum, overweight was found in 26.7±1.8% of pregnant women, reduced nutrition - 36.7±2.1%, malnutrition I stage - 26.7±1.2%, hypotrophy II stage - 6.6 ±1.0%, eutrophy - 3.3±0.5% of women.

Conclusions: Consequently, an moderate and severe NVP is more often occurs in pregnant women with a changed trophological status than in pregnant women with eutrophy.

[174]

Long term result after transobturator tape in female stress urinary incontinence

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Trustee of the paper: Ester Illiano**Introduction:** The growth of the elderly population in western countries highlights the importance of studying the long-term outcomes of the various treatments of chronic conditions, including urinary incontinence.**Aim of the study:** Assess the outcomes in incontinent patients who underwent transobturator tape (TOT) with a 10-year minimum follow-up. The primary outcome was the SUI cure rate. Secondary outcomes included improvement in QoL, effect on urinary symptoms and late adverse events**Material and methods:** This is a single-center prospective study on women who underwent TOT for stress urinary incontinence (SUI) or stress predominant mixed urinary incontinence.

The pre-operative evaluation included: history; urogynaecological examination; cough stress test; urodynamics; UDI-6 and IIQ questionnaires for symptoms; the KHQ questionnaire for QoL. In Sept.-Oct. 2017 all patients who had undergone TOT before 2007 were recalled for follow-up. They completed the same pre-op questionnaires and the PGI-I scale: success was defined as 'very much better' or 'much better'. Institutional Review Board Committees approved this study; participants gave informed consent. Statistical analysis: McNemar chi-square test; Fisher's exact test.

Results: From January 2003 to December 2007, 136 consecutive patients underwent TOT. Thirteen patients were lost to follow-up, so we report data on 123 patients.

Mean age was 58.3±9.94; median parity was 2; mean BMI 27.22±2.76; 87 patients (70.2%) were menopausal.

At a mean follow-up of 145 months, 77 patients (62.6%) were subjectively cured for SUI. Of the 46 failed patients only 10 underwent further SUI surgery: 8 underwent TVT and 2 underwent bulking agent therapy.

Urgency reduced statistically significantly (from 67.5% to 38.3%), as did urgency urinary incontinence (from 56.9% to 31.7%). De novo urgency occurred in 7.3% of cases.

Voiding symptoms increased from 8.9% to 18.7%. De novo voiding symptoms appeared in 14.6% of patients.

All domains of the KHQ except general health and sleep saw statistically significant improvements.

We had 5 cases of partial mesh extrusion, requiring tape revision; none became incontinent.

Conclusions: Our study demonstrates that in the period of ten or more years after TOT surgery, cure rates are lower than in shorter-term studies, however, at 62.6%, they may still be considered satisfactory. It is difficult to ascertain if a patient's dissatisfaction 10 years or more after surgery is due to long-term treatment failure or to general factors like age or another pathology.

[175]

Survey of gynaecology knowledge among Polish secondary school students

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Introduction: Basic knowledge of gynaecology is important for the health of young adults. Awareness of how the reproductive system works allows for early identification of worrying symptoms, while knowledge about sexually transmitted diseases allows for preventative behaviours.

Aim of the study: This study aimed to survey secondary school students about their knowledge about the menstrual cycle, contraception, and prophylaxis for a number of diseases of the woman's reproductive system and sexually transmitted diseases.

Material and methods: An authored questionnaire consisting of 38 questions was performed among 1078 secondary students from Warsaw, Ostrołęka, Tomaszów Mazowiecki and Parczew from June to September 2017. Statistical analysis was performed using Statistica 13.0 and Microsoft Excel.

Results: 703 women and 375 men were surveyed. The average age was 17.49 (15-21). The largest number of respondents were from the countryside (52%, n=561) and students from lyceum (53%, n=572)

Correct response rate from physiology was 4.86 (SD=1.33) out of 7 correct answers and was higher among women (M=5.20, SD=1.17).

68% of women had visited a gynaecologist (n=223), and 54.7% had a follow up visit once a year (n=122). Only 24% of women which declared themselves as sexually active had a cytological test (n=52). More than a half of women claimed that they know how to perform a self-evaluation of their breasts (52%, n=351), while 77% of them didn't know how often they should test themselves (n=271).

35.5% of surveyed declared themselves as sexually active (n=381). The most common contraceptive method was a condom (74%, n=282). More than a half of the respondents believe that condoms protect against all sexually transmitted diseases (55.6%, n=598). The most common source for information about contraception among the surveyed was the internet (70.9%, n=765).

Only 16.6% (n=179) of the surveyed were aware that hepatitis C can be sexually transmitted.

Conclusions: Secondary students should be educated about diseases of the reproductive systems and those that are sexually transmitted. Gynaecologists should emphasize preventative methods in their practices and ensure to perform cytological tests in sexually active young women.

[176]

Success rate and outcomes of trial of labor after two previous caesarean sections at St. Sophie Medical Centre in years 2010-2017

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Introduction: Caesarean section rate shows a growing tendency worldwide. Since many patients continue to become pregnant after caesarean section, the question of mode of subsequent delivery arises. As a result, vaginal delivery after two caesarean sections is an emerging problem of today's obstetrics. Although both American College of Obstetric and Gynaecology and Royal College of Obstetric and Gynaecology recommend trial of labour after two previous caesarean sections it is still quite rare in Poland. St. Sophie Medical Centre policy allows trial of labour after two caesareans for highly motivated patients.

Aim of the study: The aim of the study was to analyse success rate of vaginal deliveries after two caesareans in St. Sophie medical Centre between 2010-2017.

Material and methods: Electronic database of all deliveries after two caesareans was built from both electronic and paper records. Patients who took trial of labour were identified. Outcomes analysed where: successful vaginal delivery and indications for operative delivery if occurred, maternal haemorrhage and neonatal outcome.

Results: Approximately 95% of patients with history of two previous caesarean sections had elective caesarean delivery. Success rate and outcomes in trial of labour group was comparable to already published data.

Conclusions: Vaginal delivery after two caesareans could be considered a reasonable alternative to repeated caesarean section.

[177]

Blood loss reduction in placenta accreta: comparison of modern methods

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Introduction: A number of pregnancies are complicated by the placental invasion into the postoperative uterine scar. During the delivery, additional methods of hemostasis and/or blood components reinfusion are required to reduce blood loss. Sometimes the only way to stop bleeding is to remove the uterus.

Aim of the study: To justify the effectiveness of modern intraoperative hemostasis methods in placenta accreta.

Material and methods: 39 patients were selected and divided into three statistically equal groups. Inclusion criteria: singleton spontaneous pregnancy, placental invasion (within the limits of uterine serosa) into postoperative (after CS) uterine scar. Laparotomy and fundus CS were done to all the patients. During the operation Cell Saver®5+ Haemonetics® (USA) was applied. Blood substitutes were used according to indications: thrombocytopenia, total blood loss more than 1500 ml, massive bleeding. In the group I (n=17) additional modern methods of intraoperative hemostasis were not used. In the group II (n=17) the method of selective uterine artery embolization (UAE) was additionally used. In the group III (n=5) – temporary balloon occlusion (TBO) of the internal iliac arteries on both sides.

Results: The average blood loss volume was 1720 ml, 2070 ml, 1040 ml in three groups, respectively. The autologous blood was collected/transfused intraoperative using the apparatus reinfusion – 1520/880 ml, 1900/1060 ml, 890/600 ml. It allowed returning 51%, 51%, 58% of blood loss to the patient, respectively in three groups. The increase of the average blood loss volume by 20% using UAE (II) in comparison with control group (I) may suggest that this method is ineffective when the placenta is located in the lower uterine segment or there is placenta previa. Ineffectiveness can be explained by the diverse blood supply of the lower uterine segment. Intraoperative injection of blood substitutes was not used in group III (TBO group) due to this all risks associated with the transfer of blood infections and immune response of the recipient were excluded.

Conclusions: 1) TBO of the internal iliac arteries is more effective for intraoperative hemostasis in patients with the placenta accreta than UAE. The average volume of blood loss using TBO of the internal iliac arteries is 2 times lower for the same duration of the operation. 2) Apparatus reinfusion of autologous blood is mandatory in patients with high risk of intraoperative bleeding. It allows returning to half volume of streamed blood back to the patient.

[178]

Papanicolaou smear during pregnancy

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Introduction: Pap smear is a method of screening used in order to detect pre-cancerous and cancerous conditions of the cervix. According to the Regulation of the Polish Minister of Health, Pap smear should be performed in every woman in pregnancy as a part of perinatal care.

Aim of the study: The aim of the study was to assess the prevalence of performing Pap smear in women, especially during pregnancy, as well as the aspects that affect it.

Material and methods: A cross-sectional study was performed by means of online and paper self-composed questionnaire distributed among 638 pregnant women or those who gave birth within last month. The survey included 33 questions regarding the performance of cytology, its frequency and results, reasons for not performing, vaccination against HPV, cervical cancer in the family, performance of colposcopy or histopathological examination. The statistical analysis was performed with the use of Statistica 13.3 and Microsoft Excel.

Results: The average age of surveyed women was 25.87 (± 4.89). The vast majority of respondents (96.9%; n=618) had ever performed Pap smear, yet definitely less (80.6%; n=497) did it during pregnancy. Almost half of the women (47.4%; n=293) perform Pap smear every 1 year, 22.7% (n=140) every 2 years, 7.8% (n=47) every 3 years and 7.9% (n=49) even less often. For 11.5% (n=71) women Pap smear in pregnancy was the first in their life and 1% (n=6) do the test mainly in pregnancies.

The most common reasons for not performing Pap smear were: no need to perform it (40.9%; n=83), no doctor's suggestion (28.6%; n=58) and lack of gynecological care (16.3%; n=33).

The study also revealed that vaccination against HPV was not widespread among respondents (6.1%; n=39).

8.8% of the women (n=56) admitted to having relatives with cervical cancer. Yet the majority of them (67.9%; n=38) did indicate no impact of this fact on the frequency of performing Pap smear. Also the hormonal contraception, which was used before pregnancy by 50.9% (n=324) women, was not claimed to be such a reason, provided by 85.4% (n=274).

Conclusions: Although the frequency of performing Pap smear is quite high, the large group of women who perform their first cytology during pregnancy is disturbing. Therefore, the performance of Pap smear should remain an important element of perinatal care, combined with increasing the awareness of women about the test and more frequent doctors' proposal for it.

[179]

Kidney remodeling in pregnant women

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Introduction: Involvement of the urinary system and, first of all, the kidneys in the pathogenesis of the somatic pathology of pregnant women leading ultimately to disability and death is undeniable. The problem of spotting early markers of kidney damage is urgent.

Aim of the study: The aim of the study was to identify the kidneys structural features in pregnant women with somatic pathology and without it.

Material and methods: Clinical examination of 473 pregnant women at the age from 18 to 46 years with somatic pathology was performed. Group 1 with gestational hypertension; Group 2 with chronic arterial hypertension, group 3 - with obesity. The control group consisted of 153 pregnant women same age without somatic pathology in history. All patients were examined as in- and out-patients, in accordance with diagnostic standards.

Results: Echographic picture of the kidneys in pregnant women in the first and third trimester of pregnancy in the control group for most indicators met the norm. The maximum values of the biometric parameters of the kidneys were revealed in group 3: the volume of the right and left kidneys in comparison with the groups "control" and number 2. In group 2: the diameter of the calyx and the right kidney was increased, the volume of the left kidney and the cortical layer of the right kidney were decreased in comparison with the control group. The index of the form of the right and left kidneys is less in patients of the 3rd group, in comparison with the control. There is a significant increase in the coefficient of asymmetry, the ratio of the volume of the right kidney to the surface area of the body in pregnant women with obesity in comparison with other groups and control.

Conclusions: Functional and structural changes of the kidneys can be detected with ultrasonic biometrics and anthropometric parameters which are significantly interrelated and reflect kidneys remodeling in the gestation stages in healthy women, obesity, pregnancy, chronic hypertension, and structural kidneys changes.

[180]

The importance of individual clinical and laboratory indicators in the differential diagnosis of postpartum septic complications

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Introduction: According to data, infectious complications occupy third place in the structure of maternal mortality and is approximately 10%. The diagnosis of sepsis (SIRS) is formulated in the presence of 2 criteria from the initial 4 criteria for sepsis requiring more investigation and interpretation.

Aim of the study: Comparative analysis of individual clinical and laboratory indicators in the differential diagnosis of conditionally restricted and generalized forms of postpartum septic complications.

Material and methods: The study included 34 patients at Gynecology Department of the Zaporizhzhia Regional Clinical Hospital from 2013 to 2016 with postpartum (postabortive) purulent-septic diseases. Patients were divided into 2 groups. The I group consisted of 15 women who were diagnosed with a conditionally limited postpartum (purulent) purulent-inflammatory disease (endometritis). The II group included 19 women with generalized forms of postpartum (postabortion) purulent-inflammatory diseases (peritonitis, sepsis). For the diagnosis of Multiple Organ Failure due to sepsis, we used the SOFA (Sequential [Sepsis-Related] Organ Failure Assessment) and qSOFA (quick SOFA). We assessed the likelihood difference using the Mann-Whitney test and STATISTICA Version 10.

Results: Body temperature was increased in all 34 patients, in group I- $38.19 \pm 0.52^\circ\text{C}$, in group II- $38.15 \pm 1.1^\circ\text{C}$. Heart rate in group I was 91.6 ± 8.35 /min and in group II- 102.26 ± 16.42 /min ($P < 0.05$). The respiratory rate in group I - 19.07 ± 2.49 /min and group II was 24.16 ± 5.09 /min ($P < 0.05$). In group I the level of leukocytes was $9.08 \pm 5.1.109$, in group II was - $10.6 \pm 7.4.109$ ($P > 0.05$). In comparative assessment of the patients status in both groups on the qSOFA and SOFA scales, the absence of a probable difference across all parameters ($p > 0.05$) was noted. In group I, none of the patients scored a total of two or more points on the qSOFA and SOFA scales; in group II, there were 5 patients who had scored 2 points or more on the SOFA scale (26.32%). In this case, 2 patients (10.53%) had 7 points on the SOFA scale (the patients with 2 points on the scale qSOFA) and 3 patients (15.79%) had 2 points, allowing the combination with other indicators to evaluate their condition as sepsis.

Conclusions: All clinical cases of postpartum period with inflammation of uterus and signs of multiple organ failure should be regarded as a septic state, assessed by the SOFA scale and require urgent medical help.

[181]

Reproductive life planning and contraceptive counseling in women after delivery

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Introduction: Dissemination among women of the need for pregnancy planning and the promotion of the use of effective contraception is currently one of the most important goals for obstetricians-gynecologists and other health care providers.

Aim of the study: To assess the reproductive life planning as well as the use of effective birth control methods in women up to one year after delivery.

Material and methods: A web-based survey on the issues of family planning and methods of birth control was available via the Internet in the Feb 2018. We interviewed 19170 women, who filled in the anonymous questionnaire, consisting of 47 single- and multiple-choice questions. We also tried to determine the factors affecting women's preferences regarding the selection of effective birth control after childbirth. Data were summarized using descriptive statistics.

Results: Among respondents, 41% (8989) believe that an interpregnancy interval of more than 12 months between childbearing and conceiving again is safe, while 11% think that the interpregnancy interval is of little importance. Forty-four percent (7773) of women plan another pregnancy over 12 months from the previous labor, but only 21% (3551) uses effective contraceptives. Nearly every second respondent (47%, 8884) declare a desire to have two children and 33% (6203) of women would like to have three children. Every third woman (31%, 5874) declares that the medical consultation had a significant impact on the choice of the postpartum birth control. Of the women, who had sexual intercourse during the puerperium, 16% did not use any birth control, 43% (1628) used mechanical methods and 20% (756) - coitus interruptus. Sixty six percent (12720) of women reported that during the puerperal visit, the doctor asked her about the need for contraception, of which only in every second case (47%, 8543) the woman was asked about her preferences. Among the surveyed women, 44% (8240) declared that they would use an effective contraception, if it would be completely refunded and more than a half (54%, 4464) of them would choose the long-acting contraception.

Conclusions: Majority of women, who are up to one year after childbirth, plan next pregnancy, but most of them currently do not use an effective contraception. The improvement in the frequency of effective contraception use can be obtained through more frequent physician-woman talks about family planning and reimbursement of the cost of effective birth control.

[182]

Development of confirmatory methods in diagnosing uterine leiomyomas

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Introduction: Leiomyomas of the uterus (or uterine fibroids) are benign tumours that arise from the overgrowth of smooth muscle and connective tissue. About 20% to 80% of women develop fibroids by the age of 50. Until now, in most cases of leiomyoma the most common approach is radical hysterectomy. One of the significant problems is to preserve and restore the reproductive health of women in fertile age.

Aim of the study: To develop a scoring system for predicting outcomes of uterine artery embolization in patients with uterine leiomyoma by conducting a step-by-step discriminating analysis.

Material and methods: The study involved 57 women aged 25 to 52 years. All patients passed the following tests: medical history analysis, uterine hemodynamics study with ultrasonic Doppler by Voluson E8 device (Austria). Ultrasonography and Doppler were used for the size, localization, number of nodes determination, type of blood circulation in the node assessment (peak systolic blood flow velocity and resistance index in the vessels of the myoma node), as well as the type of angioarchitecture estimation. Analysis of data was performed using "Statistica 6.0". The analysis was considered statistically significant when the differences level was $p < 0.05$.

Results: Step-by-step linear discriminant Fisher's analysis allowed to choose 3 most important factors influencing the course of the disease: age, maximum speed of circulation and the number of nodes. Based on these data further discriminant analysis classification equations were derived, that allowed to predict the effectiveness of uterine artery embolisation. The obtained results should be interpreted by arithmetical calculation of this indicator. Classified value was the maximum order of the equation, which described the intended outcome of uterine artery embolisation. According to the data obtained from the studied characteristics (location, number and size of nodes, MSFR (maximal systolic blood flow rate), IR (Index of resistance), complaints, patient age, type of circulation) the greatest influence on the "birth" of fibroids has angioarchitectonics of the node, namely a mixed type of blood vessels net ($p = 0.003$).

Conclusions: Based on the obtained data, a new predictive method was determined which can adequately and reliably allow to assess the indications for uterine artery embolisation in patients with uterine leiomyoma.

[183]

Should we treat colonization of the vagina with a pathological microbiological flora in a pregnant woman before delivery?

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Introduction: The pathological microbiological flora of a woman's vagina may be associated with colonization of the vagina or clinically over infection. Vaginal infection can have a negative impact on many health aspects, including pregnancy and delivery. A sterile amniotic fluid environment is necessary for proper development of the baby during pregnancy. The entry of pathogens into the amniotic fluid may result in adverse impact for the development of both pre- and post-natal children. One of the complications resulting from infection of the amniotic fluid is premature delivery, which can be a direct threat to the health and life of both mother and baby.

Aim of the study: The aim of the study was to evaluate the effect of vaginal colonization with pathological microbiological flora on the frequency of infection of amniotic fluid.

Material and methods: The study was conducted in 390 pregnant women, aged 17-45, resolved by caesarean section at the Department of Perinatology, Obstetrics and Gynecology Pomeranian Medical University. Only women without PROM were qualified to this study. Immediately prior to caesarean section biological material was obtained from the vagina, and right after the cutting of the uterus, amniotic fluid was obtained for microbiological examination. The material were obtained for traditional microbiological cultures by a doctors. The patients did not have clinically evident vaginal infections.

Results: The results clearly indicate a low correlation between vaginal infection and the possibility of any microorganisms in the amniotic fluid. Of the 390 women examined for the presence of yeasts, in 71 they were found in the vagina, and only in 2 of them the presence of yeasts was found in the amniotic fluid. Performing an analogous test for the presence of pathological aerobic microorganisms - *Staphylococcus aureus*, *Streptococcus agalactiae*, *Acinetobacter baumannii*, *Enterococcus faecalis*, they were positive in the vagina in 33 subjects, and only in 2 of them the presence of these microorganisms was detected in the amniotic fluid. Additionally, in one of the women bacteria were detected in the amniotic fluid, despite a negative result of the vaginal microbiological examination.

Conclusions: Colonization with pathological microbiological flora of the vagina is associated with a low risk of infection of the amniotic fluid. Pathological colonization with microbial flora - yeasts and vaginal oxygen microorganisms, does not have to be an indication of the treatment of this condition.

Oncology & Hematology

Jury:

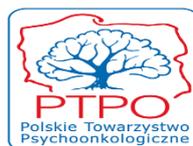
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Date:

Saturday, May 12th, 2018

Location:

Room 233/234, Didactics Center

Regular:

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Aleksandra Sobiborowicz

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Sandra Cipkina

Sebastian Holm

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Anastasiia Saliuk

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Krzysztof Bartnik

Petr Nikiforovich

Rafał Staros

Zuzanna Handziuk

Adam IL

Steven Hamati

Patrycja Potyrała

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[184]

Has the change from the pear-shaped dose distribution to 3D image-guided adaptive intracavitary brachytherapy been a good move in a cervical cancer treatment? A dosimetric comparison

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in the Greater Poland Cancer Centre**Trustee of the paper:** dr n. med. Bartosz Urbański**Introduction:** The treatment of patients with cervical cancer is multidisciplinary, combining methods such as: surgery, EBRT, CTH and brachytherapy (BTH). Brachytherapy is concerned with the application of a radioactive source close to the tumor and plays a crucial role in locally advanced cervical carcinoma.**Aim of the study:** The main aim of the study was to compare two methods of BTH for cervical cancer patients treated in the Greater Poland Cancer Centre in Poznań between April and December 2017: contemporary 3D image-guided adaptive BTH based on CT and MR where target volume**Material and methods:** Sixty 3D BTH high dose rate (HDR) treatment plans of 15 female patients (7Gy x 4 fractions) were analysed. The study involved patients (aged 42-76) with FIGO stage IB-IVA of cervical cancer (IB: 1 patient, IIB: 8 patients, IIIB: 5 patients, IVA: 1 patient). MicroSelectron HDR and tandem ovoid applicators were used. The 3D DVH parameters for CTVs and OARs (organs at risk: bladder, sigmoid colon and rectum) had been computed in accordance with GYN GEC-ESTRO recommendations. The dose volume parameters noted in 3D method were: Dmax. to the OARs received at 0,1 cm³, 1 cm³ and 2 cm³; D90 GTV, D90 HRCTV, doses to left and right point A and the irradiated volume (ml). Dmax. to the OARs at each volume and the irradiated volume (ml) in 3D were later normalized to the equivalent doses in 2D and compared.**Results:** In 3D the mean (0,1; 1; 2) cm³ doses were, respectively: (6,18; 5,23; 4,77) Gy for bladder; (4,85; 3,96; 3,59) Gy for sigmoid colon; (5,84; 4,73; 4,21) Gy for rectum. In 2D the mean (0,1; 1; 2) cm³ doses were, respectively: (7,53; 6,35; 5,83) Gy for bladder; (5,88; 4,79; 4,33) Gy for sigmoid colon; (7,13; 5,75; 5,12) Gy for rectum.The mean doses received by (0,1; 1; 2) cm³ of the OARs in 3D were all statistically significantly lower (p<0,001) than in 2D.

The mean irradiated volume in 3D (92,5 ml) was significantly lower (p=0,0001) than when applied in 2D (111,4 ml).

The mean dose to point A was 5,87 Gy, while in traditional point A it was always 7 Gy (p<0,05).

Conclusions: Undoubtedly, 3D treatment planning is superior to 2D treatment planning. The conventional point A in 2D was significantly overdosed. Moreover, the results in this group of patients demonstrate overestimation of the OARs doses in 2D method. 3D guidance allows treatment to be optimized to tumor volumes while sparing organs at risk.

[185]

Mobilization with G-CSF and harvest of hematopoietic stem cells in unrelated donors with history of blood donations

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Trustee of the paper: Emilian Snarski**Introduction:** Many of the volunteer blood donors register as unrelated hematopoietic stem cell (HSC) donors. Blood donor's hematopoiesis has to compensate regularly for blood losses caused by blood donation. 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:** The aim of our study was to compare the outcome of HSC mobilization in unrelated donors with history of blood donation with donors without such history.

Material and methods: We conducted a prospective study on 287 consecutive donors admitted to the Department of Hematology since 01.2016. The donors were asked to fill out a study questionnaire during the final qualification for donation. The final analysis included 154 donors who agreed to take part in the study and had undergone stem cell mobilization with G-CSF. Median age of all donors was 28.5 years (range 18-55). 101 (66%) were male and 53 (34%) were female. Median BMI was 24.84 (range 17.02-36.25). 56 (36%) used to donate blood in the past. 36 (23.4%) were smokers, 57 (37%) regularly practiced sport, 43 (27.9%) reported at least one infection with fever in the previous year.

Results: Multiple blood donations during the 2-5 years prior to hematopoietic stem cell mobilization with G-CSF do not have significant impact on number of collected CD34+ cells (516.2 (169.8-1148) in blood donors vs 496.3 (101-1154) in non-blood donors) ($p=0.41$). In all donors in this study mobilization of hematopoietic stem cells was successful – 87.5% of blood donors and 86.6% of non-blood donors collected requested cell number with one apheresis. In blood donors the higher number of blood donations correlated with successful donation within one leukapheresis (within 2 and 5 years prior to PBSC mobilization ($p=0.0128$ and $p=0.0215$ respectively).

Conclusions: Multiple blood donations do not influence significantly the outcome of HSC collection in unrelated donors. The blood donors and non-blood donors have similar results of HSC collection, so there is no reason to favor any group.

[186]

Osteopontin as a new marker in the diagnostics of triple negative breast cancer

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Introduction: Triple-negative breast cancer (TNBC) is a heterogeneous group of cancers associated with lack of expression of estrogen and progesterone receptors and HER2. It represents 12-20% of all breast cancers and it's the worst promising subgroup of breast cancers.

Osteopontin is a phosphorylated glycoprotein which has been implicated as an important factor in bone mineralization and remodeling, chemotaxis and apoptosis. Its overexpression also occurs in pathological states such as cancers.

Aim of the study: The aim of this study was to evaluate the relationship between histological grade, tumor size, lymph node status and immunohistochemical expression of osteopontin in patients with TNBC.

Material and methods: The material consisted of 35 histological preparations derived from women with triple-negative breast cancer, which were chosen from the group of 726 patients. Samples came from the excisional biopsies of primary breast cancers and total mastectomies. Examined samples were stained using standard methods and classified and graded according to the WHO systems. Expression of osteopontin was assessed by immunohistochemical staining with proper monoclonal antibodies. Statistical analysis included the Chi-square test; Spearman's correlation coefficients were calculated, and their significance was evaluated using the Student's t-test. Differences were considered statistically significant at $P < 0.05$.

Results: All patients showed expression of osteopontin, in most cases the expression of osteopontin rated at [+] (57.1%) and [++] (42.9%). We found a strong relationship only between the expression of osteopontin and the presence of lymph node metastases ($p<0,0001$). 93% of patients for whom the expression of osteopontin was determined at [++] had metastasis to lymph nodes, for comparison, only 15% of women for whom the expression of osteopontin was rated at [+] showed the presence of metastases in the lymphatic nodes.

Conclusions: There is a correlation between osteopontin and the presence of lymph node metastases, suggesting that osteopontin may play an important role in the invasiveness of triple-negative breast cancer.

[187]

Cost analysis of autologous haematopoietic stem cell transplantation (AH SCT) among multiple sclerosis patients in PolandKatarzyna Orlewska¹, Krzysztof Bogusz¹, Monika Nojszewska², Mirosław Markiewicz³, Robert Liwoch³, Grzegorz Helbig³, Andrzej Śliwczyński^{4,5}, Emilian Snarski¹

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¹ Department of Hematology, Oncology and Internal Diseases, Medical University of Warsaw, Warsaw, Poland² Department of Neurology, Medical University of Warsaw, Warsaw, Poland³ Department of Hematology and Bone Marrow Transplantation, School of Medicine in Katowice, Medical University of Silesia, Katowice, Poland⁴ Department of Quality Benefits, Procedures and Standards, Faculty of Health Sciences, Medical University of Lodz, Łódź, Poland⁵ Central Office of the National Health Fund, Warsaw, Poland**Trustee of the paper:** Emilian Snarski**Introduction:** Autologous haematopoietic stem cell transplantation is considered a costly procedure, however, there is a growing number of studies supporting the benefits of AH SCT as a therapeutic possibility for patients with multiple sclerosis (MS).**Aim of the study:** To assess the economic benefits of AH SCT among MS patients.**Material and methods:** This is a retrospective observational study based on healthcare administrative data from the National Health Fund (NHF), covering an entire Polish population of about 38 million inhabitants. Statistical analysis was performed using paired t-test in MedCalc. The costs were calculated from public payers' perspective in Polish złoty and are presented in Euro (1 EUR = 4.2 PLN). According to data from the NHF the prevalence of MS in Poland was 103.06 and 113.06 per a population of 100,000 in 2008 and 2016, respectively. During the years 2008-2016, 102 patients suffering from MS underwent AH SCT in Poland.**Results:** We have performed two analyses. 102 patients were analysed comprehensively, taking into consideration all available data before and after AH SCT. According to our analysis, before the transplantation every patient cost the NHF on average about 4 520 EUR per year, whereas after the procedure – on average 810 EUR per year ($p < 0.0001$). 48 patients were studied explicitly one year before and one year after the procedure in terms of overall costs produced. One year before the procedure generated on average 2 430 EUR per patient. During the following year, one patient cost the public payer on average 880 EUR ($p = 0.0008$). AH SCT is a one-time cost of about 12 380 EUR. Out of 102 patients, only 3 patients were given medication after AH SCT – two patients were given Dimethyl fumarate (1mg, orally) approximately 2 years after the procedure (one dose and two doses within a month, respectively), one patient was given Interferon beta-1b (0.001 mg, parenterally) within a month after the procedure.**Conclusions:** Although AH SCT appears to be a highly effective treatment for suppressing the disease activity in MS, the long-term effects on disability progression still need to be proven. In our study we have tried to estimate how much multiple sclerosis patients who undergo AH SCT cost the public payer. According to our results, the payback period is about 3 years. Our results provide evidence that AH SCT plays a role in reducing the use of medication among multiple sclerosis patients, as well as significantly lowers the economic burden of the disease.

[188]

C-reactive protein as biomarker in surgically treated colorectal carcinoma

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Trustee of the paper: Dr.med., prof. Ilze Štrumfa**Introduction:** Colorectal cancer (CRC) is the 3rd most prevalent cancer in males and 2nd in females (Torre et al. 2015). Novel biomarkers are necessary to improve the preoperative evaluation of CRC patients. Recent publications in oncology have highlighted systemic inflammatory reaction (SIR) that might be studied by C-reactive protein (CRP) which is an acute phase protein.**Aim of the study:** The aim of the present study was to assess relation between preoperative CRP and extent spread and invasion of CRC in surgically treated patients.

Material and methods: We performed retrospective analysis of consecutive, surgically treated patients who were diagnosed with morphologically confirmed primary CRC in a single university hospital (2011-2015). The data were collected by archive search. Patients who lacked preoperative C-reactive protein level or were affected by multiple tumors were excluded. Protocol approach was applied to assess pTNM, tumor grade (G), manifestations of invasive growth. Descriptive and analytical statistics (Mann-Whitney test, Spearman's rank correlation) were performed with SPSS Statistics software package. Statistical significance was considered with probability value $p < 0.05$.

Results: The study group comprised 104 cases with mean age 67.7 [95% confidence interval: [65.6-69.8]. Gender distribution: females, 53.8% [46.4-61.6], males: 46.2% [39.0-53.0]. The study group showed predominance of adenocarcinomas 94.2% [87.9-96.4] versus mucinous cancers 5.8% [2.1-20.2] and high predominance of pT3-T4 87.5% [82.0-92.3] versus pT1-T2 12.5% [7.1-18.0]. Metastases in lymph nodes (pN+) were found in 50.0% [42.1.-58.0] of patients. The mean CRP was 32.31 [19.4-45.2]. There was a statistically significant difference in CRP between pT1-2 versus pT3-4 [$p=0.013$], N0 versus N+ [$p=0.027$], grade G1 versus G2-3 [$p=0.039$], presence versus absence of vascular invasion [$p=0.002$] as well as a statistically significant correlation between CRP and the extent of tumor necrosis, % [Spearman's $r=0.23$; $p=0.027$]. There were no statistically significant differences in CRP regarding perineural and lymphatic invasions.

Conclusions: In surgically treated CRC patients, preoperative CRP shows statistically significant association with deep local cancer invasion, presence of metastases in regional lymph nodes and tumor necrosis, therefore we highly recommend including CRP in preoperative evaluation.

[189]

Myocardial amyloidosis – single institution experience with clinical, immunohistological and molecular aspects

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Trustee of the paper: Patrik Flodr, M.D.

Introduction: The Cardiac amyloidosis, is characterized by extracellular accumulation of insoluble amyloid deposits which leads to alteration of the myocardial tissue and can cause an impairment of organ function/organ failure. The heart involvement is concurrently the most important prognostic factor in patients with systemic amyloidosis. Cardiac amyloidosis could be of AL (Immunoglobulin light chains), ATTR (transthyretin) or rarely other type.

Aim of the study: Our aim of the study is to make an overall compare using the chosen diagnostic methods.

Material and methods: In this pilot study we included twenty-one patients – autopsy cases. In the studied group we had thirteen men and eight women aged 49 to 93. The diagnostic process encompassed histological and immunohistochemical examination and proteomic analysis (which is based on laser-microdissection and liquid chromatography/mass spectrometry method).

Results: In our studied group - ten patients (five men and five women aged 68 to 93) were diagnosed with transthyretin amyloidosis (ATTR) – senile type. In eleven of examined patients a diagnosis of AL amyloidosis was described, three women and eight men aged 49 to 84, in ten of those patients the diagnosis of monoclonal gammopathy was previously known. In the immunohistochemical examination, we observed difficulties with false positivity and negativity in individual antibodies. Nine false positive staining in anti-amyloid A antibody and six cases among ATTR patient, where two of them with clinical diagnosis not-avoiding AA. We could observe that there were only two false negative staining anti-Ig kappa in patients with known AL kappa amyloidosis. Likewise, anti-transthyretin showed common false positivity (in seven cases). The success rate in diagnosis was 100% using proteomic analysis and the results agreed with clinical information in known monoclonal gammopathy patients and with immunohistochemistry in ATTR patients.

Conclusions: Our study surprisingly showed the difficulties with AA-false positive staining in comparison with light-chain staining, which is widely reported to be the most problematic. The most beneficial and profitable diagnostic approach in amyloidosis is using immunohistochemistry supplied by mass-spectrometry based proteomic analysis in complicated cases. Supported by grants from the Ministry of Health of the Czech Republic (15-31156A) and the Faculty of Medicine and Dentistry Palacky University Olomouc (IGA_LF_2017_021).

[190]

Differential diagnostic signs of intraductal proliferation of the mammary gland

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Trustee of the paper: Prof. Liliya Volos MD, PhD Oleh Vasylenko, Senior Lecturer at the Department of Latin and Foreign Languages**Introduction:** Intraductal proliferation of the mammary gland is characterized by signs of tissue and cellular atypism and a disruption and decrease in the differentiation of cells. Those changes are associated to precancerous condition. It's very important to distinguish between atypical duct hyperplasia and duct carcinoma in situ with a low-grade malignancy in a limited biopsy, because of the fact that proliferative types with severe epithelial dysplasia are characterized by a high risk of developing breast cancer, ranging from 30 to 50%.**Aim of the study:** To analyse the differential diagnostic signs of morphology of intraductal proliferation of the mammary gland**Material and methods:** Seventeen women, aged 25 to 43 years old with intraductal breast proliferations, underwent morphological analysis, with the following results: 5 typical, 7 atypical and 5 duct carcinomas in situ of low-grade malignancy (G1). Histologic preparations stained with hematoxylin and eosin, ER, PR, HER2/neu, Ki-67, SC 5/6, p63 were evaluated immunohistochemically**Results:** A typical ductal hyperplasia is characterized by an increase in the number of cell layers in a heterogeneous population, which filled the lumen of the duct until its full obliteration. There are papillary, solid, cribriform and festoon types of typical proliferation. Atypical ductal hyperplasia is characterized by an increasing number of cell layers characterized by cellular atypia, a diffuse positive reaction with ER and PgR, negative expression of Her2/neu protein, low proliferative Ki-67 activity, but higher than in unchanged terminal ducts. Reactivity to CK5/6 is detected at typical ductal hyperplasia, whereas it does not exist at atypical hyperplasia and duct carcinomas in situ. The cell population and architectonics are the same in cases of ductal carcinoma in situ with low-grade malignancy and atypical duct hyperplasia, the difference is only in prevalence. The lesion less than 2mm can reveal atypical duct hyperplasia, and if it is more than 2mm, it reveals carcinoma in situ. The most important distinguishing feature of any form of duct proliferation is the presence of a continuous basement membrane and a layer of myoepithelial cells**Conclusions:** The proliferative activity of Ki-67, reactivity to CK5/6, Her2/neu expression, the reaction with the myoepithelial marker p63 and the prevalence of the lesion are differential diagnostic features of intraductal proliferation of the mammary gland

[191]

Prognostic significance of receptor tumor status in invasive ductal carcinoma

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Trustee of the paper: Professor Liliya Volos. Lyubov Manyuk, PhD**Introduction:** The sex hormone receptors, markers of proliferation (Ki 67, PCNA), apoptosis (p53, bcl-2), angiogenesis (VEGF), growth factors Her-2/neu are studied to predict the course and individualized therapy in breast carcinoma cases. Comparison of receptor expression to sex hormones in various structures of invasive ductal carcinoma (IDC) has an important prognostic significance.**Aim of the study:** To determine the expression features and the distribution character of sex hormone receptors inside the tumor in IDC.**Material and methods:** We have studied the samples of breast cancer tissue of 15 women with invasive ductal carcinoma and determined the histological type of tumor, degree of malignancy, receptor status (ER), PR, oncoproteins (HER2/neu), Ki-67 protein.**Results:** The receptor phenotype of the tumor has not changed in the presence or absence of the trabecular, crooked structures in the tumor. However, there was a correlation between the presence of the tubular, alveolar, solid structures and the expression of ER and PR in the tumor. The presence of tubular structures was accompanied by positive expression to ER + PR + (n = 9), and in one case (ER-PR +) the tumor status was observed.

The receptor status of the tumor with alveolar structures was characterized by ER + PR- (n = 3). The presence of solid tumors in the tumor mainly coincided with negative receptor status (ER-PR-) (n = 2). High expression of the HER2neu tumor protein in tumor cells has been associated with high metastatic potential and characterized the hormone-negative breast cancer phenotypes. The expression of the sex hormone receptors in the central and peripheral tumor regions has not neither differed nor not depended on the presence or absence of trabecular, alveolar, and crooked structural cell groups.

Conclusions: There is a connection between the morphological type of tumor structure and the ability to express receptors. A large number of tubular structures, combined with low mitosis and polymorphism, determine the low degree of tumor cells malignancy. Solid structures are observed more often with the negative status of breast cancer. Therefore, ER + PR + status in the presence of tubular structures is characterized by a favorable prognosis. Phenotypes of breast cancer with ER-PR- or ER-PR +, HER2neu +++, Ki-67 more than 50%, with moderate to low differentiation of the tumor are aggressive and unfavorable in terms of the clinical course prognosis and response to specific treatment.

[192]

Immunohistochemical analysis of cyclooxygenase 2 expression in triple negative breast cancer

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Introduction: Breast Cancer is the most common type of cancer in women in Poland. Triple negative breast cancer (TNBC) is a rare histological type of breast cancer characterized with lack of presence of estrogen and progesterone receptors and HER-2 neu protein, which is associated with poor outcome, low 5 year survival rate, chemotherapy resistance and co-existence with younger patients' age.

Cyclooxygenase is an enzyme responsible for prostaglandin and thromboxan synthesis. It occurs in two forms of isoenzymes. Inhibition of those result in anti-inflammatory effect, widely used in human pharmacotherapy. In neoplastic cells it enhances cellular proliferation, tissue invasion and angiogenesis, in addition to apoptosis arrest.

Aim of the study: The aim of the study is an immunohistochemical analysis of COX-2 expression profile in TNBC patients in relation with histological grade and TNM classification.

Material and methods: Studies were conducted in a group of 35 female patients diagnosed with TNBC. The paraffin sections originated from the excisional biopsies of primary breast cancers and total mastectomies. Examined samples were first stained using H&E method and secondly, using immunohistochemical assays with mouse monoclonal antibodies, in order to establish histological grade, TNM classification and level of expression of COX-2. Statistical analysis included the Chi-square test and Fisher's exact test. Statistical significance was set to $p < 0,05$ and for some analysis $p < 0,0125$ as Bonferroni correction was used.

Results: The most common types of TNBC were IDC and IDC-NST with 89% of cases. Most patients were diagnosed with G2 histological grade (51%), tumor size T2 (57%) and lymph node status N1 (51%). There was no evaluation metastases status. Our study showed correlations between histological grade and tumor size ($p = 0,044$); also tumor size and lymph node status ($p = 0,049$). All of patients showed positive expression of COX-2, from which 48,58% demonstrated strong stain intensity. There was a relation between moderate and strong expression of COX-2 and histological grade ($p = 0,002$).

Conclusions: TNBC presents itself with positive expression of cyclooxygenase-2, which, considering biological influence of COX-2 on neoplastic cells, may be one of reasons of poor clinical outcome in patients with TNBC.

[193]

Bone marrow harvest in donors with anemia

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Trustee of the paper: Emilian Snarski

Introduction: Bone marrow harvest (BMH) for hematopoietic stem cell transplantation is a well-established procedure. The guidelines of World Marrow Donor Association provide information on donor selection. However, some of the guidelines regarding donors with anemia prior to harvest lack in supporting data from clinical studies. With this study we provide such data.

Aim of the study: The study aimed at evaluation of safety and efficiency of BMH procedure in donors with mild anemia.

Material and methods: In this retrospective, single center-study we analyzed the interplay between hemoglobin levels and BMH and BMH impact on hemoglobin levels in a cohort of 149 unrelated BM donors, including 13 subjects with mild anemia. The anemia was specified as hemoglobin concentration under 13.5 g/dl in men and under 12 g/dl in women. We also evaluated the need for blood transfusions in groups of anemic and non-anemic BM donors.

Results: The BMH led to significantly lower decrease of hemoglobin levels in donors with anemia than in control group (1.79 g/dl vs 2.56 g/dl, $p < 0.0001$). The following parameters: BMH volume (ml), BMH volume/donor body weight (ml/kg), total nucleated cells (TNC) in product ($\times 10^8$) and TNC/kg recipient body weight in product ($\times 10^8/\text{kg}$) did not differ significantly between those two analyzed groups ($p > 0.05$). Median BM volume harvested from anemic donors was 16.34 ml/kg; none of them required blood transfusion after BMH.

Conclusions: Mild anemia prior to BMH does not significantly impact the collection results. The BMH is safe and feasible in donors with mild anemia.

[194]

Zoledronic acid as a part of complex treatment of thyroid cancer bone metastasis

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Introduction: Distant metastasis of thyroid cancer are founded in 10% of all metastases. Bone metastasis are founded in 23% of distant metastasis. Surgery or RT are followed after SRE complications. It decreases the QoL. Surgical treatment, chemotherapy are less effective, provide a higher injury rate and toxicity. This is a reason of increasing of cost of treatment. Bisphosphonates (Zoledronic acid) is a class of drugs that prevent the loss of bone mass, which can prolong the time to releasing bone complications: bone fracture, spine column fracture with spinal medulla compression, which decrease the QoL. Bisphosphonates decrease the level of pain syndrome.

Aim of the study: was to decrease the pain syndrome in patients with bone metastasis of thyroid cancer

Material and methods: 22 patients with bone metastasis were treated since 2016 to 2017. Median age was 57 years. 14 patients with T3N1bM1, 6 patients with T3N1aM1, 2 patient with T2N1bM1. Pain syndrome was assessed by 5 grade score by Frank A. J. M., Moll J. M. H., Hort J. F., 1982. QoL was assessed by ECOQ. The management included: 1) pre-operative injection of zoledronic acid 2) surgical management, which includes thyroidectomy, LN dissection and bone metastasis resection if it's possible. 3) Injection of zoledronic acid every 4 weeks before radioiodine therapy with I 131 and after it. Average number of injections was 5.

Results: Pain syndrome score before treatment was 3 - in 20 patients and 4 in 2 patient 18 patients noticed decreasing of pain syndrome score from 3 to 1 after 3 injections (before radiotherapy and analgesic treatment. 2 patient had same pain syndrome score before and after treatment. Increasing of pain syndrome score was noticed in 2 cases. Median QoL before treatment was 2 and 1 after treatment.

Conclusions: Zoledronic acid could be used in supportive treatment of pain syndrome in metastatic thyroid cancer (bone metastasis). Pre-operative, post-operative and after radioiodine injections of zoledronic acid decreases the pain syndrome score and improve the quality of life.

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Post transplant lymphoproliferative disorder risk and prognostic factors for kidney transplant recipients which set them apart from liver transplant recipients

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Introduction: Post transplant lymphoproliferative disorder (PTLD) remains one of the major life-threatening complications in the field of solid organ transplantation [SOT]. Its development risk varies among different organ graft recipients, with kidney transplant recipients [KTRs] possessing the lowest and liver transplant recipients [LTRs] intermediate risk.

Aim of the study: In this study we attempt to describe the characteristics of a group of KTRs, LTRs and both graft type recipients, who have developed PTLD, analyse the dynamics of the disease and treatment outcomes.

Material and methods: We have conducted a database search for histopathologically verified cases of PTLD diagnosed [Dx] in a time period spanning from 2002 to 2017. The collected data consisted of the information on SOT recipients (i.e. sex or age at SOT), immunosuppression [IS] (induction, acute rejection), virological status (EBV, CMV, HBV, HCV), PTLD (type, distribution, treatment and outcomes).

Results: 39 cases matched our criteria, 24 (61,5%) male, and 15 (38,5%) female, of which 22 (56,4%) were LTRs, 15 (38,5%) KTRs and 2 (5,1%) received both graft types. The mean age at SOT was 40,69 years (range 6-70). 21 (53,9%) patients remain alive and attend follow up visits, 15 (38,5%) died, of which 9 (23,1%) due to PTLD related causes. For a total of 15 patients their treatment resulted in complete remission [CR] with a mean duration of 76,9 months. LTRs were significantly more likely to achieve CR, and its duration was positively associated with surgical treatment of PTLD, and negatively with chemotherapy, and the presence of HBV DNA at Dx. The interval between SOT and PTLD Dx averaged at 85,1 months and was significantly shorter in LTRs, individuals younger than 45 years of age at SOT and those who received tacrolimus (TAC) at the time of Dx. Within the group of KTRs it was linked with age at SOT, patient's sex and TAC as IS at Dx, whereas in LTRs only with the presence of CMV IgG. Patient survival time was significantly higher in subjects receiving mycophenolate mofetil at Dx and among KTRs alone it correlated with the presence of anti-HCV IgG.

Conclusions: Our results suggest that the factors affecting the development and course of PTLD differ between KTRs and LTRs, with patient's sex, age at SOT, TAC at Dx as potential predictors, and anti-HCV IgG as a possible prognostic factor for KTRs.

[196]

The role of statins in inhibition the growth of prostate cells by activating the function of E-cadherin

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Introduction: Prostate cancer (PC) tissue is regulated by androgens, which are engaged in the regulation of cell proliferation by androgen receptor (AR). PC tissue next progresses to metastatic, androgen-independent stage for which is currently no satisfactory treatment. Cadherin switch is specific for epithelial-mesenchymal transition (EMT) and is associated with PC invasion. Increased expression of N-cadherin in the absence of androgens indicate a possible role of the AR in the regulation of cadherins. The regulation of androgen synthesis correlates

with the synthesis of cholesterol, therefore statins, inhibitors of 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase, restrain the cholesterol and androgen biosynthesis pathway.

Aim of the study: The aim of the study is to analyze the effect of statins on the regulation of PC cell proliferation pathway by attempting to restore the normal phenotype of a prostate cell after using statin as an inhibitor of HMG-CoA reductase.

Material and methods: The study was carried out on human prostate cell lines treated with statins (Fluvastatin, Simvastatin) or siRNA transfection for AR and N-cadherin (Ambion). Expression of cell signaling proteins (AKT, AR, PTEN, E-, N-CADHERINS, BCL, BAX, BAD, HMGCoAR) was analyzed using Western Blot, RT-PCR.

Results: The results of our study suggest that in PC cells, either AR or Akt signaling prevails, depending on their initial androgen sensitivity and its availability. In androgen-independent PC cells, the role of regulators goes to AKT and more efficiently works through regulatory molecule, β -catenin, which shows a relationship with cadherin expression. Silencing N-cadherin by siRNA suppressed Akt expression and increased re-expression of E-cadherin and AR in cytoplasm in PC cells as well as concealed invasion of androgen-independent cells. Comprehensive analysis indicated that expression of AR correlated with E-cadherin expression and decreased phospho-GSK-3 β Ser9, β -catenin, N-cadherin, vimentin, MMP-9, MMP-13, Snail.

Conclusions: We suggest the close relationship between AR and N-cadherin expression. Both of them are critical mediators in the signaling pathway and/or participate in development of aggressive forms of PC. It is vital to elucidate the molecular mechanism of AR / EMT relation in aim to possibly use it in development of new therapeutic strategies.

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[197]

Peripheral blood stem cell collection outcomes in related and unrelated donors – single center study

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Introduction: Leukapheresis is the most common way to collect hematopoietic stem cells (HSC) for transplantation from both: related and unrelated donors. The procedure is carried out after HSC mobilization from the bone marrow into the bloodstream by granulocyte colony stimulating factors (G-CSF). Searching for a donor begins with the patient's family. However, it is rare to find a suitable donor among the relatives. Since there are no studies that compare the results of related and unrelated donors, we decided to analyze the collection outcomes in those two groups.

Aim of the study: To compare the results of peripheral blood stem cell collection (PBSC) in related and unrelated donors undergoing leukapheresis after mobilization with different GCS-F.

Material and methods: In this retrospective, single-center study there were included medical records of 156 unrelated and 31 related hematopoietic stem cell donors. PBSC were performed during the period from January 2014 to January 2018 at the Clinical Hospital of the Medical University of Warsaw. Donors in both groups underwent different mobilization regimens which consisted of original GCS-F in unrelated and biosimilar generic in related donors.

Results: Pre- and post-procedure laboratory values (WBC, HGB and platelet count) did not differ significantly between those two analyzed groups ($p > 0,05$). Both groups of donors had similar pre-apheresis CD34+ ($\times 10^3/\mu\text{L}$) ($114 \times 10^3/\mu\text{L}$ vs $113 \times 10^3/\mu\text{L}$ in related and unrelated group, respectively [$p=0.5$]). The mean number of collected CD34+ cells: were $6.46 \times 10^6/\text{kg}$ of donor body mass $8.18 \times 10^6/\text{kg}$ for related and unrelated donors, respectively ($p=0.007$). The platelet loss ratio (PLR) was: 32.7% for unrelated donors, 36.9% for related donors ($p=0.08$). Only one apheresis was needed for collection of requested cell number in 89.7% individuals in unrelated donors group and in 87.9% in related donors group ($p=0.79$).

Conclusions: The efficiency of the leukapheresis in both groups was at a similar level. Type of G-CSF had no influence on the collection results. Both donor groups were discharged with satisfactory, non-endangering blood test results – which leads to conclusion, that the procedure is a safe and effective way to obtain stem cells from both related and unrelated donors.

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Quantitative Analysis of Salivary Biomarkers in Healthy Patients and Patients with Pancreatic Cancer

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Introduction: Pancreatic ductal adenocarcinoma (PDAC), the predominant type of pancreatic cancer (PC), leads to 227,000 annual deaths globally. Like most cancers, symptoms usually do not manifest until tumor metastasis has begun. In PC, this is particularly dangerous as only the earliest forms of the disease are curable. In the asymptomatic phase, majority of patients with PC progress to locally advanced or metastatic disease, with as many as 80% presenting metastasis at diagnosis. Early detection can typically lead to a better prognosis, yet the lack of non-invasive and accurate methods as well as specific biomarkers is staggering. Therefore, developing a rapid, precise, and non-invasive strategy for early detection is of high priority. The possibilities of saliva as a potential diagnostic tool have been thoroughly studied over the past 10 years. Saliva possesses several properties that make it ideal for detecting diseases. Like serum, saliva contains antibodies, proteins, microorganisms, and hormones, all while being fundamentally non-invasive to collect

Aim of the study: The objective of this study was to determine the viability of salivary protein biomarkers for the detection and diagnosis of PDAC.

Material and methods: Unstimulated saliva samples were collected from 25 healthy patients and 25 patients diagnosed with PDAC at the Central Clinical Hospital of Internal Affairs and Administration in Warsaw, Poland. Human IL-8, IL-1 β , IL-6, and TNF-alpha Fluorokine MultiAnalyte Profiling systems (Fluorokine MAP) were performed according to R&D systems protocol (R&D systems, Minneapolis, MN, USA). Multiplex raw data were converted by natural logarithm to obtain normal distribution.

Results: IL-1 β average levels were 1493.3 pg ml⁻¹ (Pancreatic ductal adenocarcinoma (PDAC), n=25) and 397.2 pg ml⁻¹ (control, n=25). The IL-6 average levels from the Luminex assay were 340.0 pg ml⁻¹ (PDAC, n=25) and 39.8 pg ml⁻¹ (control, n=25). The average levels of interleukin-8 (IL-8) from the Luminex assay were 3084.3 pg ml⁻¹ (PDAC, n=25) and 1250.1 pg ml⁻¹ (control, n=25). The TNF-alpha average levels from the Luminex assay were 67.3 pg ml⁻¹ (PDAC, n=25) and 38.1 pg ml⁻¹ (control, n=25).

Conclusions: All potential biomarkers (IL-1 β , IL-6, IL-8, TNF-alpha) were expressed at significantly higher levels in PDAC patients compared to healthy control patients. Further studies may confirm salivary biomarkers as a viable tool in early diagnosis of pancreatic cancer.

[199]

Complementary and alternative medicine among oncological patients: a cross-sectional study

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Introduction: Despite growing efficiency of anticancer treatment, patients (in view of the diagnosis) tend to search for alternative solutions. A sizeable percentage of patients receiving conventional medical treatment use complementary and alternative medicine (CAM) simultaneously. The combination of its various forms with standard treatment continues to be controversial. They should be recognized in a caring patient-physician communication.

Aim of the study: To establish the extent of use, types of therapies, and the reasons for choosing CAM by cancer patients.

Material and methods: Our study is based on a survey involving 85 cancer patients aged between 20–70 years (mean 63) carried out in Greater Poland Cancer Center in Poznan in the years 2015–2017.

Results: 35.3% of patients admitted using at least one type of CAM whereas 47.1% did not consider using any CAM. The most frequently applied CAM were herbal medicines and vitamins, especially L-ascorbic acid. The share of respondents who have acknowledged using a special antitumor diet accounts to 18.8%. The percentage of patients using CAM for cancer recurrence or progression was higher than in primary tumors, however above the border of statistical significance (46.8% vs. 27.1%, p = 0.069). The emerging trends of correlation between the

use of alternative medicine and education status as well as the prognosis of the disease were statistically insignificant. Despite patients placing a high level of trust in their physicians (over 90% assessed doctors as trustworthy) applied conventional therapies, more than a half (52,9%) considered additional treatment with unconventional therapies.

Conclusions: The prevalence of CAM use by oncology patients is high and tends to increase. Oncologists should have a sufficient knowledge to discuss the topic of CAM with their patients and assess its potential influence on the mainstay treatment.

[200]

Streptococcus Pneumoniae Colonisation In Patients With Chronic Lymphocytic Leukaemia: Impact Of The Thirteen-Valent Pneumococcal Conjugate Vaccine

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Introduction: Infectious complications are one of the major causes of morbidity and mortality in patients with chronic lymphocytic leukaemia (CLL). Pneumococcal colonization is a precursor to development of invasive disease.

Aim of the study: The aim of this study was to assess the frequency and predisposing factors of colonization of upper respiratory tract by *Streptococcus pneumoniae* (*S. pneumoniae*) in previously untreated CLL patients and the potential protective efficacy of the 13-valent p

Material and methods: Oropharyngeal and nasopharyngeal samples were obtained from 150 patients with CLL and 50 age- and sex-matched healthy individuals. Clinical, microbiological and immunological parameters were analyzed.

Results: *S. pneumoniae* was identified in the swabs of 42 CLL patients (28%) and 2 healthy donors (4%, $p < 0.001$). Carriage was significantly less frequent among patients who had received recent antibiotic therapy (OR 0.41; 95%CI 0.22-0.76). Serotypes 19F, 4 and 9V were the most frequently identified serotypes in vaccinated subjects. Colonization rate was higher among CLL patients with lower level of IgG in serum ($p = 0.003$). Multivariate analysis showed importance of the Rai stage as an independent predictor of *S. pneumoniae* colonization in CLL patients. No association between carriage and vaccination status (OR 0.76; 95%CI 0.45-1.28) for carriers of any of the serotypes included in PCV13 was observed.

Conclusions: These results showed that carriage of *S. pneumoniae* is relatively common in CLL patients, regardless of the administration of PCV13. However, only among the unvaccinated patients the high colonization rate resulted in shorter time to treatment. Awareness of risk factors predisposing to *S. pneumoniae* colonization allows to identify group of patients which should be considered for Ig or antibiotic prophylaxis. We do not recommend antibiotic prophylaxis based only on colonization rates in vaccinated patients.

Pediatric Case Report

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Date:

Sunday, May 13th, 2018

Location:

Room 8, Library - CBI

Case Report:

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[201]

Fulminant form of meningococcal and pneumococcal infection in a child

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Background: *S.pneumonia* and *N.meningitidis* are the most common pathogens in infectious diseases that can result in a lethal outcome in children. Fulminant forms of such diseases are gravely dangerous, secondary infection being able to aggravate the course.

Case: A 2-year old boy felt ill in the evening 25.03.17, the body temperature elevated up to 38.3° (decreased after Nurofen intake). At night there was a single vomiting. In the morning the temperature increased up to 38.5°, the boy became lethargic with low appetite. 26.03.17 18.30 t=39.7°. The mother called in their pediatrician. The boy was hospitalized to the Infectious Diseases Department. Upon admission his condition was severe because of neurological symptoms with rash over the buttocks and lower limbs. Antibacterial, antihypoxic, hormonal therapies were administered as well as detoxification. Spinal fluid was turbid, ran out under pressure, protein - 1,65 g/l; Pandy reaction: +++; cytosin - 5300/mm³ (87% neutrophils, 13% lymphocytes). The disease proceeded with negative dynamics: respiratory failure increased, and then tachycardia joined with the transition to asystole. Resuscitation procedures did not give any positive results. In a day after hospitalization, his biological death was stated. Patient's CSF and blood were sent for microbiological studies before death. In his blood *S.pneumoniae* serogroup 6BA and *N.meningitidis* serogroup C were revealed. In CSF DNA of microorganisms was not detected. Latex fixation test: in CSF antigens of *N. meningitidis* group C were detected. Final diagnosis: meningococcal disease caused by *N. meningitidis* group C, generalized form, severe course, meningococemia, purulent meningitis. Postmortem diagnosis: acute serous meningitis with coccoid flora in exudates; acute serofibrinous ependymitis; cerebral edema. In microbiological examination *N. meningitidis* group C and *S. pneumoniae* serotype 6BA were also isolated from the tissues of autopsy material and blood.

Conclusions: Fulminant forms of co-infection can be characterized by both difficulties in the clinical and laboratory diagnostics. Antigens of *N. meningitidis* in CSF can be detected only in the latex-agglutination test. Negative result obtained in the study of liquor with PCR and bacteriological method can presumably be explained by autolysis of microbes. Proper diagnostics and choice of adequate tactics of patients' treatment can be a challenge.

[202]

Three different manifestations of Kawasaki Disease

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Background: Kawasaki disease (KD) is observed more often in populations nowadays than a few years ago. Untreated KD can lead to serious complications. It commonly affects children <5 years old. KD is a cause of acquired heart disease in children in developed countries.

Case: The cases of three patient presenting a course of KD were described. Case No 1 - 3-year-old boy was admitted to the hospital with fever, a polymorphic rash, an edema of limbs, a unilateral cervical lymphadenitis, conjunctivitis without exudate and cracking lips. At the beginning, patient was treated symptomatically without expected improvement. On the seventh day of illness, KD was diagnosed. IVIG and acetylsalicylic acid were started with good response.

Case No 2 - A 7-month-old boy with the history of 10 days of fever, diarrhea, elevated levels of inflammatory markers, was transferred from the other hospital with suspicion of epididymitis. After performing precise interview the boy's mother reported a rash, flushed lips and conjunctivitis a few days before. The echocardiography revealed an aneurysm of RCA and dilatation of LCA. After analysis all of the results the KD was diagnosed and patient was treated according to the guidelines.

Case No 3 - 17-year-old girl complained of a recurrent fever poorly responsive to antipyretics, an edema and reddening of hands and feet, a generalized rash and conjunctivitis. She reported a weakness, abdominal and cervical pain. The patient's condition was deteriorating during first days of hospitalization; blood pressure was

low (70/50 mmHg), patient did not response to fluid therapy, markers of inflammation had been elevated, laboratory tests were showing a progressive anemia and thrombocytopenia. ECHO and heart MRI showed lesions typical to myocarditis and pericarditis. Despite of nontypical age of patient the KD complicated by myocarditis was diagnosed. After starting treatment with acetylsalicylic acid, IVIG and steroids a significant improvement in the general condition was obtained.

Conclusions: KD affects mostly children between 1 to 3 years old, yet it is important to remember that it could affect older children too. It is essential to recognize disease and start treatment as soon as possible which could help to avoid serious complications. The KD should be always taken into consideration as a differential diagnosis to patients with symptoms like prolonged high fever, rash, lymphadenopathy.

[203]

Role of prenatal diagnosis in prevention of futile medical care – case study of a newborn with Patau syndrome

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Background: Patau syndrome is a rare, congenital disease caused by trisomy 13. It is a plurimalformative syndrome with median life expectancy 7 to 10 days. Due to phenotypic variability, genetic testing is necessary to confirm the diagnosis. This case report underlines the importance of prenatal testing in avoiding futile medical care in lethally ill newborns.

Case: The mother was a 31-year-old woman in her second pregnancy. An ultrasound performed in the 2nd trimester showed fetal heart abnormalities -incorrect portal vein, incorrect flow through foramen ovale to the left atrium, suspicion of coarctation of the aorta and additional vena cava, but no genetic tests were conducted at the time. Due to incorrect CTG, the child was delivered by C-section in the 40+2 week of gestation. The child was male, showed signs of central cyanosis, no breathing activity and low muscle tone. He displayed multiple dysmorphic features: nuchal fold, prominent tuber occipitalis, low-set ears, cloudy cornea, polydactyly, hypogenitalism, anorchidism, underdeveloped scrotum, skin fold between scrotum and anus, multiple visible petechiae and bruises. He required breathing support and received infusion of Prostin. ECHO confirmed the heart defect, transcranial USG showed massive heamorage with expansion of right ventricle, vasculopathy and traits of hypoxia. Multiple USG exams showed abnormal abdominal vessels, incorrectly turned intestines, large and abnormal kidneys. The child suffered from mucosal and injection site bleeds. He required FFP and platelet concentrate. Antibiotics were discontinued after infectious results proved negative. He suffered from seizures and received Phenobarbital. Significant jaundice appeared on the 1st day of life, qualification to exchange transfusion on the 3rd day. The procedure was delayed till the 4th day due to problems with venous access and resulted in reduction of bilirubin level. The results of genetic testing were delivered on the 5th day of life – trisomy of the 13 chromosome. Decision was made to withdraw treatment and implement palliative care. After gradual deterioration of vital signs the child died two days later.

Conclusions: In addition to the clinical image, chromosome analysis plays a crucial role in the process of medical decision making. Genetic testing may be helpful in determining treatment strategy in patients with T13 before the birth, resulting in reduction of invasive procedures and early introduction of palliative care.

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Monochorionic monoamniotic twin pregnancy with acrania in one of the twins

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Background: Monochorionic monoamniotic twin pregnancies carry extremely high risk of potential complications. They account for 1-2% of all twin pregnancies and 3-4% of monochorionic ones. They may be complicated by conditions specific for monochorionic twin pregnancies, like twin to twin transfusion syndrome or twin reversed arterial perfusion sequence, but also umbilical cord entanglement. Monochorionic

monoamniotic twin pregnancies carry a high risk of congenital anomalies. Acrania is a lethal diagnosis. It can be diagnosed during 1st trimester of pregnancy on ultrasound scan.

Case: A 29-year-old primigravida with monochorionic monoamniotic twin pregnancy was referred to the 1st Department of Obstetrics and Gynaecology MUW at 17 weeks of gestation due to acrania in one of the twins. After obstetric counseling a decision of selective fetal reduction was made. Due of close location of placental cord attachment sites and umbilical cords entanglement intrafetal laser ablation of umbilical vessels in abnormal twin was performed. The procedure was uncomplicated. The afterwards course of pregnancy was uneventful.

The patient was admitted to the Clinic at 40 weeks of gestation for labour induction. Due to cervical dystocia during the first stage of labour caesarean section was performed. Healthy female baby weighting 3670g was delivered in good general condition. A papyraceus fetus with acrania weighted 40g. There were no congenital anomalies diagnosed in the first twin. Five days latter the woman with the child were discharged from the hospital.

Conclusions: 1. In monochorionic monoamniotic twin pregnancies the risk of complications is substantially higher.

2. Major fetal abnormalities can be detected during the first trimester of pregnancy, which allow to choose an optimal intrauterine therapy and therefore increase the chances of healthy child's delivery.

[205]

Septic arthritis in a 4 year old patient - a true orthopedic emergency caused by upper respiratory tract infection, case report

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Background: Septic arthritis is a joint infection mostly caused by hematogenous seeding. All joints can be affected, but most frequently involved are knee and hip joints. Main symptoms are acute onset of pain, non-weight bearing and fever. Septic arthritis in children is an orthopedic emergency which requires immediate recognition and proper treatment. Delayed or inappropriate treatment may lead to serious adverse outcomes such as chondrolysis, growth plate damage, severe sepsis and even death.

Case: A 4 year old girl was admitted to Emergency Department due to non-traumatic severe pain of the left knee and high fever. Patient was unable to bear weight, the knee was slightly flexed. The child was in an average general state. The symptoms started few days ago, gradually getting worse. Two weeks prior to admission she had infection of the upper respiratory tract, treated without antibiotics. On admission the patient had mild fever and the left knee was swollen, warm, tender on palpation with decreased range of motion. Laboratory tests showed increased CRP and WBC. Blood culture was positive for *Staphylococcus aureus* (MSSA). Ultrasound scan revealed slightly increased level of fluid in the joint cavity. The stated working diagnosis was septic arthritis. In emergency procedure the patient was prepared for surgery, in order to collect the synovial fluid in aseptic conditions for further laboratory analysis and fluid culture. Septic arthritis was confirmed by macroscopic evaluation of the joint fluid – it was purulent. Arthroscopy of the left knee revealed congestion of intra-articular structures, synovial membrane hyperplasia and thinning of the anterior cruciate ligament (ACL). The knee joint was washed out with normal saline and partial synovectomy was performed. During hospital stay antibiotics were given intravenously and on discharge switched into orals. Inflammation markers lowered, fever subsided and physiological range of motion was recovered.

Conclusions: Although uncommon, septic arthritis must be considered in a child with non-traumatic joint pain (especially knee or hip joint). Early diagnosis and treatment is crucial for patient's health and safety. Arthroscopic wash out procedure combined with antibiotic therapy is an effective treatment in septic arthritis.

[206]

Rare clinical manifestation of tuberculosis in 15-years old patient with Turner syndrome

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Background: Tuberculosis (TB) is an infectious disease caused by the bacteria *Mycobacterium tuberculosis*, which most often affects the lungs, although it may also less frequently infect other organs. Diagnostic tests' results and clinical manifestation of tuberculosis in children differ significantly from those of the adults. Polish database shows that morbidity rate for TB decreased recently, but it is still significant (>12 cases in 100000 people). Pericardial tuberculosis is the advance of about 1% of all cases of the TB infection. Moreover, in the developed countries TB pericarditis in 7% incidents leads to cardiac tamponade whereas in the regions of high morbidity WHO reports up to 70%.

Case: 15-years old girl with Turner syndrome and VII clotting factor deficiency, referred to her GP with a history of stinging pain, chest discomfort, coughing and dyspnea over the previous two months. The patient also complained of the episodes of fever up to 38 degrees. Physical examination revealed tachycardia and silent heart tones. Chest X-ray showed cardiomegaly. The echocardiographic study demonstrated appreciable pericardial effusion and threatening cardiac tamponade. A pericardial drainage was urgently performed decompressing 1.5 liters of serous fluid which underwent microbiological, biochemical and cytological analysis. The Polymerase Chain Reaction (PCR) detected the presence of *Mycobacterium tuberculosis* complex's in the fluid. The tuberculin skin test and interferon- γ release assays were negative. A deepened family history revealed that the patient's grandmother had TB lung infection in the previous year. The patient was admitted to the pulmonology department for 9-month anti-tuberculosis treatment.

Conclusions: The diagnosis of TB infection in adult patients is based on the microbiological studies whereas in the children the epidemiological factors are fundamental. The literature data imply that the submission of the pericardial tissue for culture is the diagnostic method of most sensitivity, unfortunately not performed in the case. The results of the PCR done on the pericardial fluid have lower sensitivity, but the history and the clinical manifestation allowed to diagnose and successfully treat TB pericarditis in our patient. Presented case imply the need of the profound diagnostic approach especially towards patients of higher epidemiological risk. Inappreciable symptoms can sometimes be an indicator of a rare, life-threatening disease.

[207]

Severe hemophilia A in the newborn masked by subgaleal hematoma

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Background: Hemophilia A is a rare X-linked recessively inherited bleeding disorder caused by deficiency of coagulation factor VIII. Despite being a hereditary condition it has a significant rate of de novo mutations. Depending on the plasma levels of FVIII, which usually correlate with the degree of bleeding symptoms, it is classified into three forms. The most common is severe hemophilia. Usually, diagnosis is made in early childhood, but the first clinical manifestations may occur in newborns. Neonatal intracranial hemorrhage is relatively rare, but it is one of the most dangerous and life-threatening sites of bleeding.

Case: A full-term male infant was born after an uneventful pregnancy by cesarean section due to prolonged delivery. The Apgar score was 10. Family history was negative for coagulation disorders. At the end of the 1st day of life and at the beginning of the 2nd day of life a growing edema of head's soft tissue was observed with increasing head circumference and significant anemia. Cranial ultrasonography was performed, and on the 2nd day of life diagnostics was expanded by CNS-CT, in which a subgaleal hematoma and brain edema were confirmed. On the 3rd day of life the newborn was transferred to Children's Memorial Health Institute. Physical examination on admission showed good general condition, significantly increased head circumference (46,5 cm vs 34 cm at delivery), pallor and bulging anterior fontanelle. During the following hours a deterioration of neurological state was observed. Due to abnormal coagulation parameters and subgaleal hematoma in the newborn with non-traumatic delivery, further hemostasis analyses were performed. Severe hemophilia A was diagnosed. The newborn was immediately treated with a recombinant FVIII. After discharge he had follow-up visits in the Department of Pediatric Hematology, Medical University of Warsaw.

Conclusions: Although hemophilia is not commonly seen in the newborn period, neonates with massive hemorrhage should be evaluated for congenital bleeding disorders, even if there is no positive family history.

[208]

Mysterious case of HLH in an infant

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Background: Hemophagocytic lymphohistiocytosis (HLH) is a severe inflammatory disease, caused by ineffective, prolonged immune response. Congenital HLH can occur due to genetic disorder, however secondary HLH may arise in the course of several infections, autoimmune diseases or neoplasms. It is most common in infants and young children, but can affect patients at any age. Making diagnosis of HLH is a complex process. Lack of proper treatment can be lethal.

Case: A ten-month-old boy was admitted to the hospital with symptoms: fever over 39 degrees Celsius, splenomegaly, hepatomegaly and cervical lymphadenopathy. He was given antibiotics for 3 weeks, but without improvement. On admission laboratory results revealed low platelet count, anemia, elevated inflammatory marker CRP, raised lactate dehydrogenase, hyperferritinaemia, hypofibrinogenaemia, hipertriglyceridemia, raised alanine transaminase and aspartate transaminase. Based on the information about the family's stay in Malta a few months ago, tests for infectious diseases were carried out. The results were negative, including leishmaniasis test. The bone marrow biopsy revealed hemophagocytosis. According to Histiocyte Society HLH-2004 the patient met 5 of 8 diagnostic criteria and clinical diagnosis of HLH was made. The genetic basis of the disease has been excluded. The boy received treatment with corticosteroids and etoposide, but without clinical improvement. This forced the medical team to widen the diagnostics, take worldwide consultations and to make more specific tests like bone marrow PCR towards leishmaniasis, which is a parasitic disease transmitted by a bite of an infected female phlebotomus sand fly in developing countries. It manifests with malaise, fever, weight loss and splenomegaly, which can suspect HLH. The parasite replicates in the reticuloendothelial system, so diagnostics include bone marrow investigation and, in this case, bone marrow PCR were positive. Patient received treatment with amphotericin B and improvement was observed.

Conclusions: An unrecognized cause of HLH could lead to a life-threatening condition, therefore it is also important to take into consideration non-endemic infections, as we progressively face increased population migration level. In this situation doctors should consider to widen the spectrum of diagnostic test and also to repeat them. Diseases like leishmaniasis may require pathogen-specific tests and the bone marrow PCR test is highly recommended for this parasite detection.

[209]

How identical are identical twins? A monozygotic monochorionic diamniotic pregnancy with sirenomelia in one of the twins: a case report

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Background: In comparison to singleton pregnancies, twin pregnancies carry a higher risk of congenital anomalies occurrence, with risk in monochorionic pregnancies being over twice the risk in singletons. Sirenomelia, also called „mermaid syndrome”, is a rare congenital deformity in which legs are fused together, giving them the characteristic appearance of a mermaid's tail. Found in approximately 1 out of 100 000 live births, sirenomelia is often accompanied by other serious malformations, most often of the kidneys and genitourinary system.

Case: A 34-year old patient was referred to the Clinic at 18 weeks of monochorionic diamniotic gestation after a diagnosis of multiple malformations in one of the fetuses was made. An ultrasound scan confirmed presence of multiple structural abnormalities- sirenomelia with accompanying lack of external sex organs, cardiac malformations (VSD and ARSA) and bilateral renal agenesis with bladder and stomach impossible to visualize. Fetal karyotype from amniocytes derived from amniotic fluid was normal (46,XX). Adequate fetal growth of the anatomically normal twin was confirmed in subsequent ultrasonograms, while the twin with abnormalities was growth restricted and developed oligohydramnios.

At 37 weeks of gestation the patient went into spontaneous labour. First twin was born in good general condition, weighing 2880 g. The second twin, weighing 1560 g, with Apgar scores of 3-5-5-7, was under palliative care due

to lethal malformations. Newborn examination confirmed sirenomelia as well as the presence of facial deformities, esophageal atresia, imperforate anus, bilateral renal agenesis, VSD and ARSA. Both parenteral nutrition and respiratory assistance (CPAP) were applied. The child died 6 days postpartum. The mother, in good general condition, was discharged from hospital with the second healthy daughter.

Conclusions: Sirenomelia is a lethal deformity due to co-occurring renal abnormalities and usually results in either stillbirth or death within days after birth.

Although monochorionic twins are monozygotic ones and share the same genotype, they may be discordant for anatomical anomalies.

[210]

Midgut malrotation due to Ladd's bands

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Background: Many different pathological processes can cause intestinal obstruction in pediatric patients. It may be elicited by conditions such as adhesions, volvulus, intussusceptions or other common causes. However, intestinal obstruction may be caused by rare conditions such as midgut malrotation due to Ladd's bands. The frequency of intestinal malrotation is very rare and its incidence has been reported between 0.2% and 0.5%. The incidence of intestinal malrotation is presented in childhood and occurs in around 1 out of 200 - 500 newborns. Malrotation is usually diagnosed within first years of life, however sometimes older children or adults appear to have abdominal pain, nausea due to malrotation of intestines. Future intestinal obstruction or intestinal ischemia could lead to intestinal failure. Timing and urgent surgical treatment should be done.

Case: A ten-year-old boy was hospitalized in Vilnius University Children's Hospital due to abdomen pain, nausea and vomiting. The patient was dull, abdomen soft and sensitive under the chest and around umbilicus. He was referred to abdominal organs sonoscopy and projectional radiography. Complete blood count was made. Abdominal projectional radiography showed dilated, gas filled small and large intestines. Ultrasound revealed dilated fluid-filled bowel loops with hyperechoic spots of gas moving within the fluid. Complete blood count showed neutrophilic leukocytosis. Intestinal obstruction was diagnosed and the decision was taken to make a surgical intervention. Duodenum obstruction and small intestine malrotation due to Ladd's band was found. Division of Ladd's bands, widening small intestine's mesentery, appendectomy and Meckel's diverticulum resection was made. Small intestine was rotated clockwise and reorientation of the small bowel on the right and the cecum and colon on the left. Furthermore, after the procedures, two ileum's diverticula were found and ileum resection was performed. Post-operative diagnosis, Ladd's band, Meckel's diverticula, multiple ileum diverticula, was made. The boy was sent to postoperative care.

Conclusions: Even though 85% of malrotation cases is more common in newborns, it could also occur to any age group. It is difficult to identify specific symptoms for the diagnosis and every acute abdomen pain should be considered. This condition may lead to intestinal infarction or perforation of intestine and patient's death. Having diagnosed malrotation surgical intervention should follow immediately.

[211]

13-year old boy with foreign body in urethra and bladder

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Background: Foreign bodies in urinary tract are not common in pediatric patients. They occur in 0,7% cases of foreign bodies injuries in kids <16 years old . It is most often as a consequence of play, experimenting with own body or masturbation. Children with a suspected foreign body needs a immediate examination and removal procedure. Complications if not treated may include infection, bleeding and perforation of bladder or urethra.

Case: In 2017 13-year old male patient was admitted to Department of Pediatric Surgery and Urology of Medical University of Warsaw with foreign body in urethra and oliguria. Patient reported that he put magnetic balls in urethra. Physical examination and laboratory tests were unremarkable. X-ray imaging revealed chain of shading, spherical foreign bodies in projection of urethra and loops over pubic symphysis. Patient was classified urgently to removal procedure. Method of choice was cystoscopy which disclosed all of balls in bladder. It turned out that balls may not be removed in the course of cystoscopy so the surgeons decided to make a conversion to cystostomy. The incision was performed on the front wall of bladder and all foreign bodies were cleared out of the urinary tract. In post-operative period boy was treated with irrigation, paracetamol, nalbuphine and amoxicillin with clavulanic acid. After week of hospitalization patient was released home in good condition with no complications.

Conclusions: Despite the fact that foreign bodies in urinary tract are rare cases it is very important to know the way of proceeding in this situations. Quick implementation of diagnostics and treatment leads to earlier relief and lower risk of complications.

[212]

Diagnostic challenge of B-Lymphoblastic lymphoma (B-LBL) of distal femur in 11-year-old boy

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Background: B cell Lymphoblastic lymphoma (B-LBL) is infrequent diagnosis. This tumour is often extra-nodal in presentation. The skin is the most common site of extra-nodal involvement, followed by bone. Disease manifest itself typically with localized pain and no general symptoms; imaging studies may suggest other common bone diseases in paediatric population.

Case: 11-year-old boy, previously healthy.

From 01/2016 he complains about left knee pain, unrelated to physical activity, worsening at night. There was no history of any constitutional symptoms.

05/2016 orthopaedic consultation; based on the clinical picture and ultrasound of the knee - diagnosis of avascular necrosis of the left femur.

10 / 2016 hospitalization at the rheumatology department; exclusion of juvenile idiopathic arthritis.

11 / 2016 hospitalization in orthopaedics, imaging examinations, bone biopsy-histopathological image that may indicate avascular necrosis.

04 / 2017 hospitalization in orthopaedics. Imaging studies show increase of the lesion diameter and increased bone metabolism in bone scintigraphy. A slightly elevated CRP and OB.

07/2017 hospitalization in orthopaedics. Imaging studies show progression of the lesion size. A slightly elevated CRP and OB. Repeated bone biopsy. Suspicion of malignant tumour by pathologists.

08/2017 Admission to the paediatric haematology department. No abnormalities in physical examination and blood morphology; gentle increase of inflammatory parameters; LDH within norm. Repeated bone biopsy and histopathological examination proved diagnosis of B-LBL. Full body CT scan and scintigraphy excluded other localisations of tumour; bone marrow involvement in myelogram was excluded.

The diagnosis of solitary bone B-LBL was made. Chemotherapy was implemented, resulting in significant improvement in local pain and lesion size.

Conclusions: B-LBL is rare and can frequently manifest as solitary bone tumour. Very often the unique symptom of disease is localized pain. Symptoms, signs, imaging examinations often suggest other more common bone and joint diseases in children. This can lead to misdiagnosis and delay in final diagnosis which can be fatal. Early and accurate diagnosis of this entity is very important due to its high cure rates. From these reasons above, increasing awareness about the disease is important.

[213]

Meningitis and Ramsay-Hunt syndrome in a 17-year old girl

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Background: Herpes zoster oticus or Ramsay Hunt syndrome (RHS) is a rare manifestation of varicella zoster virus (VZV) reactivation in geniculate ganglion. It usually occurs with a characteristic triad of ipsilateral ear pain, vesicles in the auditory canal/auricle and facial nerve palsy. Involvement of other cranial nerves (V, VIII, IX, X) can develop.

Case: A 17-years old girl was admitted to the Neurology Department because of headache and nausea. She was in good general condition; horizontal nystagmus and dysmetria of upper limbs were found. Laboratory tests and imaging (CT, MRI, MRI angiography and venography, transcranial ultrasound with Doppler) showed no abnormalities. Two days later meningeal signs appeared. CSF examination displayed lymphocytic pleocytosis and slightly elevated protein level. Viral meningitis was diagnosed and the patient was transferred to the Department of Children's Infectious Diseases. Supportive treatment was used. The next day intravenous acyclovir was added because of positive result VZV DNA PCR test in CSF. The same day an earache, hypoacusis, vesicles in the ear canal and facial palsy on the left side occurred. RHS was diagnosed. Dexamethasone was administered. Symptoms of meningitis and vesicles disappeared, hypoacusis and left facial palsy persisted. The patient was discharged, oral prednisone was recommended. Two days later she returned because of severe vertigo and vomiting. Physical examination revealed left facial palsy, nystagmus and positive Romberg test. She was diagnosed with dysfunction of cranial nerve VIII in the course of RHS, intravenous acyclovir and dexamethasone were administered again. Three days later antiviral therapy was withdrawn because of acute kidney injury due to acyclovir. During the hospitalisation the girl started getting better; after 17 days she was discharged with normal kidney function and trace dysfunction of left cranial nerves VII and VIII. After a month she presented complete recovery.

Conclusions: The reported case presents both rare complications of herpes zoster (meningitis, RHS) and rare complication of acyclovir therapy (acute kidney injury). Management of such a patient is a clinical challenge because requires multidisciplinary approach. Although prognosis for normal function of cranial nerves VII and VIII in RHS is uncertain, complete recovery can be achieved.

[214]

Mid-term observations after emergency mitral valve replacement with the use of innovative Melody surgical-hybrid implantation in pediatric patient – a case report

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Background: Acute endocarditis (AE) is rare condition in pediatric population, while heart valve repair or replacement are often predictable therapeutic challenges. Surgical treatment of irreparable valves is troublesome due to a limited amount of prostheses adjusted to small-sized hearts of pediatric patients. Medtronic Melody valve was reported to have well defined and expectable results after pulmonary implantation, while mid-term results after mitral Melody valve replacement are promising. The main advantages of Melody prosthesis are perfect hemodynamics with favorable effective orifice area (EOA) index, low transannular gradient, and finally – a unique potential for percutaneous transcatheter balloon dilatation following the growth of the pediatric patient.

Case: 2-year-old female patient with a history of a two-weeks antibiotics therapy during AE, diagnosed with severe mitral valve regurgitation and cardiogenic shock was urgently admitted to Pediatric Cardiac Surgery Dept. The associated symptoms included pyrexia up to 40°C and clinical signs of sepsis. The transthoracic echocardiography (TTE) revealed massive mitral valve insufficiency (MVI) with fixed vegetations over posterior and anterior leaflets with disrupted chordae. With means of extracorporeal circulation (ECC) damaged MV was exposed with massive vegetations on both leaflets, precluding valve repair. All infected tissues were dissected and the Melody was implanted in mitral position. Finally, a dilatation to adjust the diameter of the valve was

achieved with TyShak ballooning. Postoperative TEE confirmed perfect Melody function and hemodynamics. Although repeated blood tests and vegetation cultures were performed, no etiological factor was found. In control echocardiography after 1,5-years the Melody valve was found to operate correctly.

Conclusions: As AE in children is still a very rare case there are still not enough literature data concerning optimal treatment. Nevertheless, repair of the valve is always prior to its replacement, especially in the pediatric patients with expected long-life survival, growth potential and contraindications to anticoagulation. The innovative hybrid method of mitral valve replacement (MVR), to the best of our knowledge- the first case in the mid-east Europe, appeared to be safe and effective treatment for pediatric patient with rapid AE. Presented case implies the need of further investigations in the field of development of modern pediatric valvular prostheses.

[215]

The case of vaccine-associated paralytic poliomyelitis in Russian Federation in 2017

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Background: The last cases of wild poliomyelitis were registered in Russia in 2010. They were associated with the importation of infection from the Republic of Tajikistan. The majority of patients were migrant laborers, but also cases arose in unvaccinated Russians. Due to the high level of immunization, it was possible to prevent the spread of this infection. The Russian Immunization Schedule includes vaccination against polio using the combined scheme: V1, V2 by inactivated polio vaccine (IPV), and then by bivalent live attenuated oral polio vaccine (bOPV). Three cases of vaccine-associated paralytic poliomyelitis (VAPP) were registered in Russia in 2017, which arose as a result of a mistaken application of bOPV for primary immunization.

Case: A 19-month-old boy was born prematurely at week 36 (birth weight 2070g, length 45cm). Psychomotor development was delayed. As a result, he wasn't vaccinated in the first year of life. 20/07/17 he was primary immunized against DTP, Hepatitis B and polio by bOPV.

On the 14th day after vaccination, the boy was acutely sick suffering fever for two days. On 05/08 he became restless and stopped walking in the evening. On 06/08 weakness grew; he could not sit down, turn over from side to side and crawl. On 07/08 he was hospitalized.

The condition was severe at admission. There were no general cerebral signs. A meningo-radicular syndrome was expressed. Cranial nerves were without pathology. There was flaccid paresis of the right leg (2/5) and tendon reflexes absent. Pelvic function disorders and sensitivity were absent.

Routine analysis of blood and urine (07/08) were without inflammatory changes. There were not immunodeficiency syndromes. In CSF (08/08): 42 cells/mm³, lymphocytes 61%, protein 0.36 g/L, glucose 2.7 mmol/L. PCR (throat swab): RNA of enterovirus was detected. Vaccine poliovirus type 3 was isolated in feces samples.

On the needle EMG of the right thigh – bioelectric silence, spontaneous activity. On ENMG of the right leg, the amplitude of the M-wave was decreased.

He received symptomatic therapy, physiotherapy, exercise therapy and massage.

At day 68 of illness, there was an incomplete recovery with preservation of residual motor deficiency in the right leg. There was hypotrophy of the right hip per 2 cm; shin per 1 cm.

Conclusions: In the presented case, the anamnesis, clinical picture and data of complex laboratory and instrumental examination allowed the diagnosis of «vaccine-associated paralytic poliomyelitis in bOPV recipient».

[216]

Case report of Dravet syndrome caused by novel SCN1A mutation

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Background: Dravet syndrome (OMIM # 607208) is caused by autosomal dominant mutation in SCN1A gene, which encodes the α 1-subunit of sodium channel. Atypical febrile seizures start in the first year of life, but the diagnosis may be unrecognized until 18-60 months when other seizure types (myoclonias, atypical absences) and psychomotor delay (mainly expressive language) are noted.

Case: A girl was born in term and was discharged from hospital after treatment for mild hypoxic-ischemic encephalopathy (HIE), Sarnat grade 1.

At 6 months of age in the setting of high grade fever she developed first two seizure episodes: left-sided versive head convulsions with subsequent diffuse hypotonia and a case of prolonged tonic-clonic seizures. There was only mild disorganization of EEG background and no data for neuroinfection, so in consideration of HIE in anamnesis "symptomatic febrile seizures" were diagnosed.

At 10 months of age she developed status epilepticus and was receiving Valproic acid 200 mg/day. Muscle hypotonia and moderate delay of speech development were noted. MRI was normal. Two months later afebrile tonic-clonic convulsions returned with frequency 1 per month and EEG worsened (moderate disorganization of background, sharp-slow waves in the right temporo-occipital and left frontal areas). So Topiramate 56.25 mg/day was added to the therapy with positive effects on seizures and EEG. But at the age of 25 months new seizure type (myoclonias with a vegetative component) and frontal ataxia added. Dravet syndrome was suspected. Direct Sanger sequencing revealed heterozygous mutation in exon 6 of SCNA1 gene (chr2:166908238GAAT>G). In parents were not found the same one, signifying a de novo mutation as pathogenic.

A continuation Topiramate monotherapy, as a drug of choice for Dravet syndrome, with dose increasing up 75 mg/day has resulted in seizure-free period for three 3 months already.

Conclusions: The onset of atypical febrile seizures in previously healthy child requires differentiation with Dravet syndrome, generalized epilepsy with febrile seizures plus, febrile debut of symptomatic focal temporal epilepsy. The exact establishment of seizure etiology contributes proper drug choice and avoiding agents, such as carbamazepines and lamotrigine, which causes a dramatic aggravation of seizures in the spectrum of SCN1A-related epilepsies.

[217]

Autoimmune hemolytic anemia, autoimmune hepatitis and severe aplastic anemia associated with CMV infection – coincidence or implication?

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Background: Autoimmune hemolytic anemia (AIHA) and autoimmune hepatitis (AIH) are associated with the presence of autoantibodies, which leads to erythrocytes and liver destruction. However, in some cases the specific antibodies remain undetected. The causes of AIHA and AIH are still unknown. It is thought that, e.g., some drugs and viruses could cause autoimmune reaction. Also, the pathophysiology of severe aplastic anemia (SAA) is believed to be immune-mediated. All 3 diseases are treated by immunosuppressive therapy (IST) and aplastic anemia can be cured by stem-cell transplantation, when IST treatment is not effective.

Case: 12-year-old boy was admitted to the hospital because of fever, fatigue and musculoskeletal pain. The clinical examination showed paleness, jaundice and splenomegaly. Based on clinical and laboratory features, doctors suspected AIHA without the presence of specific antibodies. Interestingly, CMV Ab IgM was positive at 0,77 AU/ml as well as CMV Ab IgG – 208,6 AU/ml. Also, liver enzymes were increased: ALT 64 U/L, AST 201 U/L. The patient has been treated with corticosteroids for 2 years with improvement. During that time the low level

of CMV antibodies and elevation of transaminases persisted. At the age of 14 he was diagnosed with AIH and azathioprine therapy was included with improvement. For the next two years there was no features of haemolysis in laboratory tests, but RBC, PLT and WBC were insignificantly decreased. At the age of 16 he was admitted to the hospital because of fever and pancytopenia. Based on bone marrow biopsy SAA was confirmed. Due to the previous treatment, IST therapy was omitted and the patient was qualified for hematopoietic stem cell transplantation (HSCT). 3 months later he had HSCT from unrelated donor. After transplantation the patient had reactivation of CMV infection twice. He was treated with ganciclovir and valganciclovir. 3 months after transplantation pancytopenia returned. There was almost none reticulocytes in the blood. The patient did not respond to G-CSF growth factor, nor corticosteroids. The bone marrow biopsy showed empty bone marrow. The graft failure was recognized. The patient died of sepsis caused by *Pseudomonas aeruginosa* MBL+.

Conclusions: AIHA, AIH and SAA are rare diseases. The presence of 3 autoimmunological illnesses in one patient suggests common cause. Viruses are suggested to play role in developing autoimmunological reaction. In this case CMV infection may be correlated with the pathogenesis of all 3 diseases.

[218]

Asymptomatic microscopic erythrocyturia as a first symptom of severe nephropathy leading to end-stage renal disease

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Background: Accidentally found microscopic erythrocyturia may be a first abnormality of a severe, insidious disease leading to end-stage renal disease (ESRD).

Case: 16.5-year-old boy was admitted to hospital with normocytic anemia – complete blood count was performed due to 8 kilogram weight loss within last 2 months with vomiting, weakness, somnolence, and headaches. In the age of 3 years the boy was hospitalized in the department of nephrology due to microscopic erythrocyturia. At that time he was found to have isolated erythrocyturia, normal renal function (creatinine 0.3 mg/dL, GFR 135mL/min/1.73m², urea 18.4mg/dl). Afterwards, the parents did not present to nephrology clinic. Currently, the boy presented with paleness, without peripheral edema, height: 166cm (<3c.), weight: 51.9kg (3c.), blood pressure: 120/70mmHg; blood tests: hemoglobin 5.8g/dl, MCV 82.9fl, increased mean platelet volume – 12.1fl (n: 7.4–11.0fl), creatinine 26.7mg/dL (GFR 2.6mL/min/1.73m²), urea 446mg/dL, sodium 142mmol/L, potassium 3.8mmol/L, calcium 6.3 mg/dL (n: 8.9–10.7mg/dL), phosphorus 11.4mg/dL (n: 2.8 – 4.6mg/dL), parathormone 2662pg/mL, iron 66 µg/dL, TIBC 241 µg/dL, Tsat% 27.4%, ferritin 356 ng/mL, capillary gasometry: pH 7.247, HCO₃ 13.8mmol/L, BE -13.5mmol/L; ultrasonography – small kidneys with increased echogenicity and blurred corticomedullary differentiation, collecting systems were not dilated. The boy was diagnosed with ESRD, and the treatment with: chronic hemodialysis therapy, alpha-darboepoetin, calcium carbonate, alphacalcidol, folic acid vitamin B6 was started. The renal biopsy suggested glomerulosclerosis in the course of Alport syndrome. In addition, microscopic erythrocyturia and proteinuria in patient's 13-year-old brother, and intermittent erythrocyturia in patient's mother were found. Differential diagnosis included: Alport syndrome, HANAC (Hereditary angiopathy with nephropathy, aneurysms, and muscle cramps) syndrome and nephropathies related to MYH9 and CFHR5 mutations. No pathologic mutation was found in collagen IV genes (COL4A3, COL4A4, COL4A5), the results of further genetic tests are still pending.

Conclusions: 1. Children with microscopic erythrocyturia must be under regular nephrologic care, as erythrocyturia may be a first symptom of a severe nephropathy leading to ESRD.

2. Chronic kidney disease must be always considered as a possible cause of normocytic anemia.

[219]

Nephronophthisis as a cause of end-stage renal disease in a child

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Background: Nephronophthisis is a ciliopathy (defect of cellular cilia or cilia anchoring structures) inherited in autosomal recessive fashion. Nephronophthisis is characterized by fibrosis and formation of cysts at cortico-medullary junction and leads eventually to end-stage renal disease. Some children with nephronophthisis show extra renal manifestations (retinal degeneration, cerebellar hypoplasia, liver fibrosis, and intellectual disability).

Case: A girl in the age of 9.5 years was admitted to the hospital with a one-week history of weakness, fever, and lack of appetite. Parents reported nocturnal enuresis until the age of seven. Also a decrease in growth rate was found – the patient's height decreased from 75th to 3th percentile of growth chart. On admission she presented with visible features of dehydration: dry mouth mucosa, sunken eyeballs, together with pale skin. In laboratory test: Hgb 9.8 g/dL, serum creatinine 4.4 mg/dL (GFR 11.8 mL/min/1.73m²), urea 438 mg/dL, uric acid 15.2 mg/dL, Na⁺ 113 mmol/L, K⁺ 5.4 mmol/L, pH 7.44, pCO₂ 18 mmHg, HCO₃⁻ 12.2 mmol/L, BE: -12 mmol/L, in urine test urine specific gravity <1,005 was the only abnormality. In ultrasonography kidneys had increased echogenicity, blurred corticomedullary differentiation and small cysts. During hospitalization polyuria up to 5 L/24h was observed. The girl was hydrated intravenously also she got oral and intravenous sodium supplementation. The decrease of serum creatinine to 3.0 mg/dL (GFR 17.3 mL/min/1.73m²) and urine to 172 mg/dL was achieved. Renal biopsy revealed "end-stage kidney". The girl was diagnosed with nephronophthisis on the basis of symptoms and performed tests. The diagnosis was confirmed by genetic tests. In following years the patient required constant sodium supplementation (requirements: 10-12 mmol/kg/24h) and was also treated with: phosphate binders, vitamin D, and recombinant human growth hormone. At the age of 12 years 7 months renal replacement therapy with automated peritoneal dialysis was started, and at the age of 13 years 2 months the patient received kidney transplantation from a deceased donor.

Conclusions: 1. Chronic kidney disease may have a long oligosymptomatic course and should always be suspected in children with nocturnal enuresis and growth retardation.

2. Severe polyuria with salt wasting and normal urine sediment suggest nephronophthisis as a cause of chronic kidney disease.

[220]

A case of cowpox virus infection after cat scratch in a 16-year old boy

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Background: Human cowpox is rare zoonotic infection, usually producing localized skin lesions. It can be acquired by implantation of a virus by broken skin or mucous membranes, after contact with animal vector, mostly cats or rats. Infection usually begins as macula, which progress to popular or vesicular lesion, followed by ulcer and eschar stage and heals with scar formation.

The number of reported cases has been increasing in the last years. It is probably connected with withdrawal of smallpox vaccination and wider range of vector animals being keeping as pets.

Case: A 16-year-old boy was admitted to the hospital due to painful skin lesion on a lateral surface of his right hand with localized edema. 12 days prior the admission he was scratched by a domestic cat. Three days after the injury he noticed a vesicular lesion, that evolved into necrotic ulcer with black eschar. After consultation with a general practitioner he was empirically treated with doxycycline, but with no improvement. On admission physical examination displayed a black necrotic eschar of 2cm in diameter surrounded by roller-shaped margin and cellulitis on the right hand, lymphangitis on the right forearm and arm and right axillary lymphadenitis. Laboratory tests revealed slightly elevated C-reactive protein, other parameters were normal. Ultrasound scan showed edema of subcutaneous tissue in dorsal area of right hand and enlarged, inflamed axillary lymph nodes.

The results of serological tests for Bartonella henselae and Francisella tularensis were negative. PCR test of the material from skin lesions detected cowpox virus-specific DNA sequences. Microbial swab from the lesion revealed growth of a methicillin-sensitive Staphylococcus aureus strain. Ceftriaxone was administered as a therapy of bacterial superinfection, but there is no specific treatment for cowpox virus.

Patient was discharged from the hospital with declined edema and erythema. After ten weeks spontaneous healing of lesion was observed with a remaining slight scar.

Conclusions: The diagnosis of cowpox infection is difficult because the disease is rare, clinical course is complicated and differential diagnosis includes broad spectrum of infectious diseases. Although cowpox is seldom, it seems to be re-emerging, so it is important to present illustrative cases in order to increase physicians awareness.

[221]

Synchronous hepatoblastoma and neuroblastoma in a child – case report

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Background: The coexistence of two childhood malignancies is a rare occurrence. It is characterized by simultaneous presence of two different primary neoplasms. The most common primary liver cancer in children - hepatoblastoma (HBL) and the most common children's extracranial solid tumor - neuroblastoma (NBL) belong to a group of malignant small round cells tumors. Synchronous HBL and NBL have been rarely reported, with few cases described in the literature.

Case: A 9-month-old male was referred to Pediatric Hematology&Oncology Department with hepatic tumor present on ultrasound imaging and symptoms of enlarged abdominal circumference. No abdominal pain or gastrointestinal disorders were reported.

Physical examination revealed a palpable epigastric mass and the imaging techniques showed a tumor of the left hepatic lobe measuring 111x65x89mm with pancreas infiltration, distant metastases in both lungs and abnormal lesion in the left adrenal gland. Basing on histopathological examination, after a core-needle biopsy, HBL (mixed epithelial-mesenchymal subtype) was diagnosed. The α -fetoprotein level was 112 993 ng/ml. There were no abnormalities in urinary excretion of catecholamines and their metabolites as well as in serum neuron-specific enolase levels. Due to the clinical picture and diagnosis, the patient was qualified to preoperative chemotherapy according to the SIOPEL-3 protocol, followed by SIOPEL-4 protocol for the high-risk patients. After undergoing preoperative chemotherapy, imaging tests revealed regression of hepatic tumor and no focal pulmonary masses, while regression of adrenal gland mass was not completed.

The patient was qualified for right hemihepatectomy with left adrenalectomy. Histopathological examination of liver specimen confirmed the HBL diagnosis. However, in left adrenal gland and paraaortic lymph nodes the residual NBL cells were detected.

Actually the patient is in good general condition and continue the chemotherapy according to the SIOPEL-4 protocol.

Conclusions: The coexistence of two different primary childhood malignancies, including HBL and NBL, is extremely rare and difficult, due to similar and non-specific symptoms, clinical issue. Genetic background (i.e. Beckwith-Wiedemann syndrome) may be a predisposing factor to synchronous HBL and NBL occurrence. Specific mutation has not been found in described case, however. After introduction of chemotherapy, regression of intercurrent NBL was attained. Nonetheless, spontaneous remission of NBL cannot be excluded.

Pediatrics

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[222]

Myocardial changes in children with arterial hypertension

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Introduction: Myocardial hypertrophy in children with hypertension is known to be the main marker of the severity of the disease. Its development is important, along with the degree of hypertension effects both of short-term and long-term vegetative imbalance and sympathetic and autonomic nervous system activation. Recent diagnostics of myocardial hypertrophy and adequate therapy of hypertension in children involves prevention of complications of hypertensive disease in adults.

Aim of the study: The aim of the study was to evaluate myocardial changes in children with arterial hypertension and impairment of target organs

Material and methods: Comprehensive assessment of the cardiovascular system of 50 adolescents with confirmed arterial hypertension and 15 children with autonomic dysfunction (Control group) was carried out. The examination procedure included electrocardiography and Holter monitoring of the cardiac functional characteristics; echocardiography-evaluation of morphological and functional characteristics and a vegetative status. To assess the state of the myocardium the following echographic parameters were used: the mass of the myocardium and the mass index of the myocardium, calculated according to the formula of the American Society of Echocardiography; the ratio of the relative thickness of the posterior wall of the left ventricle to the mass index of the myocardium, for evaluation of the myocardium geometry.

Results: All children with arterial hypertension had manifestations of autonomic dysfunction, sinus arrhythmia, tachycardia and activation of the left heart. Children with the 2nd degree of arterial hypertension had significant increase in the duration of the shortened PQ interval indirectly indicating the prevalence of sympathetic influences in the children of the group. Absence of myocardial hypertrophy of the left ventricle is an evidence of the myocardial mass and the myocardial mass index was significantly higher in children with arterial hypertension than children with autonomic dysfunction. These figures increased with increasing hypertension severity. At the same time ¼ of the children had concentric myocardial remodeling even at borderline values of the thickness of the posterior wall of the left ventricle. Complex therapy normalization of myocardial geometry was noted. The high correlation was found between the posterior wall thickness and the myocardium mass ($r=0.98$).

Conclusions: The obtained data in morphofunctional characteristics indicate the necessity of their use for early detection of the structural and functional heart reconstruction in children with arterial hypertension and for the prevention of complications.

[223]

Comparative characteristic of food behavior in children of early age depending on body weight at birth

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Introduction: In recent years a special interest of researchers is focused on questions related to the early stages of the formation of food behavior (FB), considering their close connection with socially significant problems of the present - obesity, metabolic syndrome, cardiovascular pathology, etc.

Aim of the study: To evaluate the features of FB in 1-3 year-old children, depending on the body weight (BW) at birth.

Material and methods: A research of 111 mothers of young children was conducted using the Child Eating Behavior Questionnaire (CEBQ) questionnaire (Wardle, 2001). Analyzing the results of answers of 35 questions, the grouping was carried out on 8 scales: food responsiveness (FR), enjoyment of food (EF), satiety responsiveness (SR), slowness in eating (SE), food fussiness (FF), emotional over-eating (EOE), emotional under-eating (EUE), desire to drink (DD). There were 66 boys and 45 girls among the children. The average age of the children at the time of questioning was 1.67 ± 0.47 years. According to the weight at birth children were divided into 3 groups of observation: group 1 – children large for gestational age ($n=47$, BW 4323.0 ± 269.6 g, length

55.6±1.5 cm), group 2 – small for gestational age (n=33, BW 2469.7±196.5 g, length 47.6±2.1 cm), group 3 – children with anthropometric parameters corresponding to the term of gestation (n=31, BW 3357.7±212.6 g, length 52.2±1.4 cm). Statistical processing of data was carried out in the program STATISTICA 10.

Results: Comparative analysis of mean values according to the scales of the CEBQ questionnaire showed statistically significant differences ($p<0.05$) in the age of 1 to 3 years for DD for children group 1 (2.27±0.84) with children group 2 (2.76±1.10). In infants group 2, a negative correlation between BW ($r_2=-0.388$, $p<0.05$) and z-score BW ($r_2=-0.375$, $p<0.05$) with EF was found. The correlation between FR and EOE was stronger among infants group 1 in comparison with other children ($r_1=0.682$, $r_2=0.616$, $r_3=0.410$, $p<0.05$). Infants group 1 were characterized by a negative correlation between EOE and SR ($r_1=-0.404$, $p<0.05$). Children of group 1 had stronger negative correlation between FF and EF than children other groups ($r_1=-0.659$, $r_2=-0.540$, $r_3=-0.571$, $p<0.05$).

Conclusions: Specific features of PP formation among large and small for gestational age have been established. The possibility of identification of infants with features of FB, which determine the risk of developing excessive BW and obesity has been identified.

[224]

Physicians' perspective on preschool wheeze

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Introduction: Episodes of preschool wheezing are common, and the existing guidelines on this topic appear to be too incomplete. Therefore, European Academy of Allergy and Clinical Immunology (EAACI) established a Task Force on Clinical Practice Recommendation for Preschool Wheeze. Our task is to identify the most troublesome problems and to provide clinical practice recommendations in preschool wheezers.

Aim of the study: The key objective of this study was to better understand the issues concerning the diagnosis and management of those patients.

Material and methods: An online survey was conducted among the members of the EAACI Pediatric Section in November and December 2017. The survey consisted of 5 open questions covering following areas: "Diagnosis", "Tests", "Recurrent Wheezers", "Management", and "Other Issues".

Results: The survey was distributed among all 2132 members of the EAACI Pediatric Section. 55 members completed the survey (2,6%). In the area of diagnosis, the most common problem was: lack of reliable diagnostic tools (35,7%) and definition (28,6%). Usefulness of skin prick tests (20,0%) and other allergy tests (18,2%) were identified as challenging problem in these patients and the use allergy tests (26,2%) was proposed as important tool in diagnosis of recurrent wheezers. The proper use of inhaled corticosteroids was considered by 28,8% of responders as the main problem in the management of these patients.

Conclusions: This survey was the initiation of EAACI Clinical Practice Recommendation preparation. It is the first survey exploring the challenges that the diagnosis and management of preschool wheeze pose for physicians. The survey reveals an unmet clinical need for guidelines in management of preschool wheezers for pediatricians and allergy specialists.

[225]

Dehydration in children and the principles of hydrating - assessment of parents' knowledge

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Introduction: Dehydration of the organism is one of the most common reasons for reporting children to the outpatient clinics (according to the data of Institute of Medicine USA). A significant percentage of dehydration

cases result in a worse response to the treatment of the underlying disease and serious organ damage. Early actions preventing dehydration can effectively counteract these complications.

Aim of the study: Aim of the study was to assess the knowledge of parents and guardian of pre-school and school children about the symptoms of dehydration and the principles of effective children hydration in various medical conditions.

Material and methods: The survey was carried out using an anonymous questionnaire (with open and closed questions) addressed to parents of children aged 2 to 9 attending primary school and pre-schools. The survey was carried out in three cities - the capital city with 1.7 million inhabitants, big city with 120 thousand inhabitants and small city with 3 thousand inhabitants. 1213 questionnaires were distributed, the results are based on 1028 completely filled out forms. The management of each institution agreed to conduct a survey among parents.

Results: 1028 persons participated in the survey, 83.5 % constituted women. 65.4 % of surveyed parents were 31 to 40 years old. 20 % of the children were diagnosed at least once with dehydration. 85% of surveyed indicated diarrhea and vomiting as a cause of dehydration. Other causes of dehydration provided were fever (19.6%), high ambient temperature (6.8%) and physical effort (3%). 64% associated the state of dehydration with reduced urine output. 84% of respondents provided children with mineral water as the basic drinking fluid. 71% of respondents declared using oral rehydration salts (ORS). 25 % indicated doctor consultation as the reliable way to evaluate the degree of dehydration. There were no differences in survey results depending on the place of residence (big/small city). 76% of responders indicated medical personnel as a source of knowledge about dehydration and its management, while 52% of them declared using internet portals for this purpose.

Conclusions: In the parents' awareness, the state of dehydration is mainly associated with intestinal disorders.

Most of parents know how to assess the symptoms of children dehydration.

Most of parents know the use of ORS in children rehydration.

Despite the easy availability of information on the Internet, medical personnel is still considered as the main source of knowledge about proper treatment in the case of dehydration.

[226]

Health status of newborns from mothers with diabetes type 1 in modern conditions

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Introduction: Mother's diabetes mellitus leads to different fetus and neonatal complications. Inadequate diabetes compensation in the second half of pregnancy leads to diabetic fetopathy, manifested as macrosomia with a body disproportion and more frequent metabolic and haematological disorders. High carbohydrate metabolism compensation and use of pump insulin therapy are important for improving the outcomes.

Aim of the study: Analysis of health status of neonates from mothers with diabetes type 1, according to the HbA1c level and method of insulin therapy.

Material and methods: We have examined 245 newborns, who were born in 2015-2017. 170 were full-term (FTN) (37.6±0.6 weeks), 75 — preterm (34.2±2.6 weeks). All neonates were divided into two groups (Gr1 and Gr2) according to the mother's HbA1c level (6.5%). Average HbA1c level was 5.74; 5.73; 5.65, 5.63% (Gr1) and 7.84; 7.89; 6.89, 6.96% (Gr2) before, in the 1st, 2nd, 3rd trimesters of pregnancy. 33 newborns were born from mothers treated with continuous subcutaneous insulin infusion (CSII) (GrA) and 212 — with insulin delivery using multiple daily injections (GrB). Physical development (PD) was assessed with Fenton tables, 2013. Statistica 10.0 was used for statistical analysis.

Results: 30.4 and 49.7% neonates from Gr1 and Gr2 respectively were large for gestation age ($p=0.021$). FTNs from Gr1 had lower mass ($p=0.042$) (3453.4±566.1 and 3682.3±483.8 g) more often and glucose blood concentration lower than 1.5 mmol/l ($p=0.037$) (18.7 and 35.9%) more rare compared to Gr2. FTNs from Gr1 had lower total bilirubin concentration in the day 3-5 ($p=0.043$) (153.9±52.0 Umol/l in G1 and 183.8±40.7 Umol/l in G2) more often. A positive correlation between HbA1c level in the 2nd and 3rd trimester of pregnancy and FTNs total bilirubin concentration in the day 3-5 ($r=0.445$, $p=0.002$ and $r=0.524$, $p=0.001$ respectively) was found out. FTNs from GrA had lower mass ($p=0.033$) and body length ($p=0.024$) (3366.3±410.2 g and 51.0±2.8 cm in GrA and 3612.3±532.8 g and 52.5±2.5 cm in GrB) more often. FTNs from GrA had lower total bilirubin concentration in the day 3-5 ($p=0.007$) (155.1±57.7 and 185.0±47.1 Umol/l) and higher concentration of serum magnesium in the 1st day of life ($p=0.031$) (0.63±0.25 and 0.49±0.09 mmol/L) compared to GrB.

Conclusions: High carbohydrate metabolism compensation before and during pregnancy and use of CSII improves the prognosis for normal PD and early adaptation period of newborns.

[227]

Early diagnostics of impaired bone metabolism in newborns

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Introduction: Introduction. Calcium deficiency in pregnant women may cause bone disorders in infants. The main role in bone metabolism belongs to disorders in calcium and phosphorus metabolism in pregnant women and neonates. So, early diagnosis of impaired bone metabolism in newborns and infants is of great importance

Aim of the study: The aim of the study was to investigate early biochemical markers of impaired bone metabolism in newborns

Material and methods: The study involved 11 neonates without intrauterine growth retardation). Their first physical examination was within first 6 days of life. Cord serum total calcium, phosphorus, alkaline phosphatase (AP), 25(OH)-D3, osteocalcin, and mineral concentrations were measured. Neonates were divided into 2 groups depending on serum calcium in their mothers measured just before labour: Group 1 (n=42) neonates from mothers with normal calcium level (>2.25 mmol/L) Group 2 (n=71) neonates from mothers with low calcium level (<2.25 mmol/L).

Results: In Group 2 the number of smokers was 2 times higher than Group 1, and 1/5 of Group 2 mothers had smoking history >2 years. Group 2 mothers significantly used mineral supplements more rarely compared to Group 1. Along with low calcium level Group 2 mothers also had clinical signs of calcium metabolism disorders, such as convulsions of calf muscle (49.4%) and dental caries (42.3%) during pregnancy. Neonates had no significant differences in growth data and cord serum calcium concentrations. In both groups they had normal cord serum calcium and phosphorus concentrations. Although there were significant difference in AP (increased in Group 2) and 25(OH)-D3 (decreased in Group 2) levels between groups, all values were within the reference ranges. Most neonates in Group 2 had decreased osteocalcin levels which were significantly different from those in Group 1 (29.7 versus 60.5 ng/ml, respectively; there was significant direct correlation between cord serum osteocalcin level in neonates and serum calcium in their mothers ($r=0,37$))

Conclusions: Factors that may influence on metabolism in pregnant women are smoking before and during pregnancy, occupational factors, lack of minerals. Cord serum calcium and phosphorus concentrations were similar in all neonates. Although there were significant differences in AP and 25(OH) D3 levels between the two groups of neonates, all these values were within normal ranges. Group 2 neonates had abnormally low osteocalcin levels which were 2 times lower than in Group 1. Osteocalcin levels in neonates were correlated with serum calcium in their mothers ($r=0.37$). More neonates with low osteocalcin level in cord blood had autonomous nervous system and musculoskeletal system disorders. Osteocalcin can be an early biochemical marker of impaired bone metabolism.

[228]

Application of the CoMiSS™ questionnaire for the evaluation of cow's milk allergy symptoms among healthy Polish infants aged under 6 months

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Introduction: The Cow's Milk-related Symptom Score (CoMiSS™) was developed as an awareness tool that could be used for the evaluation of cow's milk-related symptoms, due to the high prevalence and the difficulty in diagnosing of cow's milk protein allergy (CMPA). CoMiSS™ scale considers general manifestations, dermatological, gastrointestinal and respiratory symptoms, as the most common symptoms of cow's milk protein allergy.

Aim of the study: The aim of the study is to evaluate the usability of the CoMiSS™ Scale for healthy Polish infants as well as the dissemination of the scale among pediatricians.

Material and methods: We performed a survey in pediatric outpatients clinics for healthy children. Our respondents were parents of healthy infants, aged from 24 to 196 days.

Parents were asked about symptoms of CMPA including different categories from the CoMiSS™ score (crying, regurgitation, stool composition, skin, respiratory symptoms). Infants had to be "healthy", meaning that parents did not consult because of any symptom or sign.

Exclusion criteria were: feeding with therapeutic or comfort formula, administration of any food supplement (except the recommended vitamin D3) or medication, preterm (<37 weeks), >6 months of age. The following information was acquired: gestational age, gender, age < 6 months, breast or formula feeding were also collected. The scores were registered anonymously. Results were compared with a cut-off point set of to 12 points. The maximum number of points equals 33.

Results: 84 parents of children aged 1-6 months old were interviewed using a CoMiSS™ questionnaire between January and February 2018. Children's mean age was 101 days. Most of the participants were females (46). 62 of the children were breast-fed, 13 of them only using formula, the rest were fed by both breast and formula. 6 children (4 females, 2 males) scored more or equal to the cut-off point recognised as 12 points, which is 7,14% of all respondents (84). However, the criterion defining the stool is domain in which we most often observed incorrect results, probably because Bristol's Scale is not adapted for children population.

Conclusions: The CoMiSS™ (Cow's Milk-related Symptom Score) is a fast and easy CMPA awareness tool for primary healthcare clinicians, which can be used also in Polish primary care institutes.

[229]

Urinary Neutrophil Gelatinase-associated Lipocalin (NGAL) predict existence of vesicoureteral reflux (VUR) in children with urinary tract infection (UTI)

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Introduction: The invasive, time-consuming and expensive radiological examination of vesicoureteral reflux (VUR) diagnosis has led researchers to explore new markers for predicting the existence of VUR and to guide which patients need radiological assessments. Neutrophil Gelatinase Associated Lipocalin (NGAL) is an iron transporter protein which is exerted from active neutrophils; and its serum and urinary level rise up in urinary tract infection.

Aim of the study: Investigating the role of urinary and serum level of NGAL in VUR diagnosis.

Material and methods: This cross-sectional study was performed on 40 children with febrile urinary tract infection at Ali Asghar children's hospital in Tehran. Each patient recorded during the study was under 8 years old having clinical symptoms of pyelonephritis and positive urine culture. Patients who included in the study divided into two groups of VUR and non-VUR ones. Existence of reflux was determined by radiological examination. Data including age, gender, Pyuria, leukocytosis, ESR (Erythrocyte Sedimentation Rate), urinary and serum level of NGAL are recorded. After importing all data into SPSS v.24, descriptive analysis was performed and the average levels of serum and urine NGAL are compared in each group by t-test. Then, ROC curve analysis performed to determine the cut-point of serum and urinary NGAL level for diagnosis the VUR. the p-value<0.05 was considered as significance level.

Results: Among registered 40 children in the study, 23 of them belonged to the VUR group. The median of age of children was 2.5 years old (range 0.3-8). 35 patients were female. Moreover, 18 patients had pyuria, 35 patients had high ESR and 32 patients had leukocytosis. Final analysis showed that between demographic variables, only gender type have significant relationship with existence of VUR (p =0.009). In different groups, only average urinary level of NGAL in patients with high ESR rates was significantly higher than patients with low ESR rates (p= 0.001). ROC Curve Analysis showed that only urinary NGAL level have significant relationship with existence of VUR (p= 0.029). There was not significant relationship between NGAL level of serum and existence of VUR (p= 0.816). According to ROC curve urinary NGAL level cut-point at 15 ng/ml can diagnosis the VUR with 82.6% in sensitivity and 58.8% in specificity.

Conclusions: Only urinary NGAL level, cut-point at 15 ng/ml can predict the existence of VUR at almost good specificity and sensitivity which needs further studies.

[230]

GFR estimation based on Cystatin C formulas in neonates

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Introduction: GFR measurement is difficult in neonates and it is measured by various methods. Serum creatinine is the most common GFR marker, but it has some problems; Serum creatinine level can be affected by other factors other than renal function. Cystatin C is another endogenous marker for GFR. Some study suggest that serum levels of cystatin C are more precise test of kidney function than serum creatinine levels. Some study also measured GFR in neonatal by cystatin C. but there are not enough studies comparing GFR estimated by cystatin C with creatinine in neonates.

Aim of the study: Estimating GFR by Cystatin C formulas in neonates and find the relationship between them and Schwartz formula.

Material and methods: Ninety-nine neonates at Ali Asghar children's hospital in Tehran were included in this study. Sampling method was Convenience sampling. The serum creatinine and cystatin C levels were measured in these neonates concurrently. The method of measurement of serum creatinine was Jaffe reaction. GFR was estimated by Schwartz and 14 cystatin C formulas separately. All data imported to SPSS v.24, The Spearman correlation was also used to evaluate the relationship between quantitative variables. All P-values were two-tailed, and $P < 0.05$ was considered to be statistically significant.

Results: The median age was 4.00 days (1-33 days). The mean birth weight was 2711 gram (SD; ± 736). The mean height was 47.78 cm (SD; ± 3.84). The median serum creatinine and cystatin C was 0.49 mg/dl (0.3-5.20 mg/dl) and 1.85 mg/l (0.75-4.70 mg/l) respectively. We determined the correlation between GFR estimated by Schwartz formula and GFR estimated by cystatin C equations. The GFR estimated by cystatin c formulas all were significantly correlated with each other ($P < 0.05$). But GFR based on cystatin C formulas were not correlated with Schwartz GFR ($P > 0.05$) except one of them, The only cystatin C equation correlated with Schwartz formula was CysCrEq in which serum cystatin C and creatinine was used concomitantly.

Conclusions: As all Cystatin C based GFR were correlated significantly, it is possible that Cystatin C reflects real GFR more precisely than serum creatinine. But because it is possible that Schwartz formula in neonates can be unreliable, it is needed to compare this marker with gold standard techniques to accept it as a new marker to determine the GFR.

[231]

Tablet and smartphone - new toys of the 21st century. The influence of the technology on the development and behaviour of children under the age of 4

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Introduction: In recent years, the popularity of electronic devices such as tablets and smartphones has been increasing among children under the age of four. Although they are at an early stage of development, the quick learning of modern technology does not make them much trouble. There is little published in the literature on the impact of electronic devices on children's health and development.

Aim of the study: The aim of the study was to assess parents' knowledge about the impact of using electronic devices (tablets and smartphones) on child development and to assess the frequency and circumstances in which children use these devices.

Material and methods: A questionnaire survey was conducted among randomly selected parents of 321 children aged 0,5 to 4 years. Surveys were anonymous, consisted of 23 questions, both single and multiple choice. The study was conducted in the Department of Peadiatric Propedeutics and Bone Metabolic Diseases Medical University of Lodz and also 6 nurseries, 2 outpatient clinics.

Results: In the study group, as many as 86,29% of the children surveyed used a tablet or smartphone. Moreover, the tendency is to make these devices available to younger children. 42,99% of parents believe that this type of electronic device has a positive impact on the development and health of children. Generally, parents share tablets or smartphones to watch fairy tales (84,8%), listen to music (37,2%) and play games (17%). They motivate their behavior by supporting intellectual development (31,4%), calming down their children (28,3%), child being asked and unable to refuse (29%). In 33% of cases, parents have seen an immediate calming effect upon receiving a tablet or smartphone. It has been observed that the more time a child spends with a tablet or smartphone, the greater the nervousness ($p = 0,00001$), the more frequent crying ($p = 0,0001$), and the more often the child uses the device by himself, the more nervous becomes ($p = 0,008$). Increasing the time spending in front of your tablet or smartphone not only increases the aggression ($p = 0,00001$) but also drowsiness and fatigue ($p = 0,005$).

Conclusions: Percentage of children aged 1 - 4 years using electronic devices is very high (86,29%) and there is a tendency to reduce the age of patients in this group. As many as 42,99% of parents think that tablets and smartphones have a positive impact on children's development, not guided by scientific evidence. The study indicates that children use electronic devices often without restriction, in order to calm down, and as a consequence, it causes increased nervousness, tingling, fatigue and increased aggression, and these symptoms aggravate with increasing frequency of use.

[232]

Prevalence of celiac disease in obese children - Tehran, Iran 2016-2017

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Introduction: Celiac disease (CD) has a prevalence of 1 to 2%. Studies have shown that CD could be seen in overweight and normal weight people. So obesity could also be detected among CD patients and there is insufficient data on the relationship between CD and obesity. we studied the prevalence of CD in obese children.

Aim of the study: the present study aimed to determine the prevalence of CD in obese children and evaluate the correlation between CD and obesity.

Material and methods: In this cross-sectional study, children with obesity (BMI Z score > 1) referred to gastrointestinal and endocrinology outpatient clinic in Ali Asghar Hospital, Tehran, Iran were included and written informed consent was obtained. Children with any metabolic abnormalities were excluded from study. To diagnose CD we performed anti-TTG antibody tests. Data were analyzed by using independent two sample t test and chi squared test.

Results: 62 children with obesity and the median age of 10 years and 5 months (IQR: 4 years) were assessed. 58% were girls and 42% were boys. The mean BMI of participants was 25.01 ± 4.35 . The median Z score of BMI for age was 2 (IQR: 0.63) and BMI for age percentile was 97.5% (IQR: 4.35%). The median IgA was 183 mg/dl (IQR: 124.5) and 2 patients had IgA deficiency. Anti TTG IgA and anti TTG IgG was weakly positive in 1.6% and 8.2% of patients, respectively. Based on the antibody screening test, 4.9% of participants diagnosed with celiac disease. The prevalence of celiac in obese children was significantly different with the prevalence of CD in normal population ($P < 0.001$).

Conclusions: The prevalence of celiac disease in obese children is higher than normal population. Thus it would be suggested that screening of this disease in obese children could be helpful to detect CD earlier.

[233]

Can we use smartphones to assess young patients' vitals? Evaluation of smartphone camera based photoplethysmography applications

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Introduction: Pulse oximetry is a standard, non-invasive method to monitor oxygen saturation which requires specific equipment. Mobile phones provide a good cost-effective option easy available for everyone. Smartphone apps using photoplethysmography (PPG), a simple optical technique based on the device's camera and LED

flashlight, can detect blood volume changes in the microvascular bed of tissues and give valuable information related to our cardiovascular system.

Aim of the study: A recent paper demonstrated that smartphone based pulse oxymetry apps have a good precision of measurement compared with medical class pulse oximeters for children in the emergency department, but this paper was small and only used one application for iOS

Material and methods: We tested 4 smartphones (3 android, 1 iOS) and 2 different apps (digiDoc, the app used in previous research and iCare Monitor) in the clinic and compared them to the readings of a professional cardiac monitor. Patients were between 6 months and 17 years old. The measurements were always performed by the same group of researchers.

Results: We demonstrated that the readings from the pulse oximeter, both oxygen saturation and pulse, are significantly different than those from all of the apps. We also demonstrated a lack of correlation both between the readings of the different apps, and between the readings of the apps and the pulse oximeter. The mean readings of the heart rate were different from the monitor's readings by up to 20BPM, and up to 71BPM for individual measurements. The mean difference for SpO2 was up to 3,3pp, and up to 7pp for individual readings.

Conclusions: Due to very inconsistent measurements, smartphone based apps should not be used for measuring children's oxygen saturation. For parents, professional grade pulse oximeters should be recommended instead to keep track of the child's cardiac health. Currently, the applications do not offer satisfactory precision of measurement in children. Perhaps dedicated apps for children could offer higher precision.

[234]

Analysis of the quality of life of children with systemic connective tissue diseases

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Introduction: Systemic connective tissue diseases (SCTD) are among the complex and urgent problems of medicine. This disease change all aspects of the child's life. Consequently, studying the role of psychological factors helps to carry out targeted psycho- prevention and psycho-corrective intervention in the system of treatment and rehabilitation of patients with SCTD.

Aim of the study: To investigate the level of psychological comfort of children suffering from SCTD

Material and methods: Research was performed in Gomel Regional Children's Clinical Hospital on 20 young patients. Projective psychodiagnostic techniques were chosen for research. Each child was asked to draw 3 drawings ("The Family in the Image of Animals", "The Picture of a Man", "Non-existent Animal"). For each figure, the children answered questions.

Results: During the study, it was revealed of 20 children: 1 child was diagnosed with systemic lupus erythematosus (SLE), 4 - scleroderma and 15 children - juvenile idiopathic arthritis (JIA). Average age 11.2 year, male 20% (n=4), female 80% (n=16).

Based on the results of the study, the following features are revealed: a high level of emotional and physical stress in all children; increased level of anxiety, fear of the future, fear of death, unmotivated fears are diagnosed in 95% of children. On the scale of social protection, 90% of children have increased the necessary for support, protection and support. On the scale of the biologization of emotions, 80% of children showed high rates of displacement of emotional problems, suppression of pent up emotions, leading to physiological disorders. In 70% of the children, tensions in the family are revealed, self-esteem is underestimated, 55% have an increased level of aggression, hostility, including protective, and 43% - increased demonstrativeness of their illness.

When analyzing children's drawings, depending on the pathology, the following features were revealed: children with scleroderma have a high level of physical stress, difficulties in social adaptation, need for protection, relationship problems in the family. A child with SLE has a high level of emotional stress, displacement of problems, rigidity, need for support and conflict relationship in the family. For patients with JIA there is a lack of active search for help with their emotional disorders, poor subjective complaints.

Conclusions: 80% of children with SCTD had a high level of emotional and physical stress, increased level of anxiety, decreased self-esteem, and relationship problems in the family.

[235]

The analysis of ambulatory blood pressure monitoring in children with chronic kidney disease

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Introduction: Children with chronic kidney disease (CKD) are among pediatric patients with highest cardiovascular risk. Ambulatory blood pressure monitoring (ABPM) enables precise analysis of blood pressure and shows stronger correlation with target-organ damage compared to office blood pressure.

Aim of the study: Analysis of ABPM results in pediatric patients with chronic kidney disease.

Material and methods: The study group included 27 pediatric patients (16 boys, 11 girls) aged from 4.83 to 17.92 mean: 14.23±3.57 years with chronic kidney disease; 18 children had previously recognized arterial hypertension. In all patients we evaluated ABPM (OSCAR 2, SunTech Medical), office blood pressure, height, weight and BMI Z-score, medications, complete blood count (CBC), GFR ac. to Schwartz formula, uric acid, lipids, and parameters of calcium-phosphorus metabolism.

Results: In the study group GFR was from 7.05 to 86.73 mean 40.88±25.82 mL/min/1.73m². Eight (29.7%) patients were in CKD stage II, 7 (25.9%) in stage III, 7 (25.9%) in stage IV, and 5 (18.5%) in stage V (among them 2 were treated with peritoneal dialysis and one with hemodialysis). All 9 children without hypertension had normal blood pressure in ABPM, but ABPM detected poor blood pressure control in 7 among 18 (38.9%) children with previously recognized and treated hypertension. Abnormal circadian profile of blood pressure (defined as blood pressure dipping <10%) was found in 12 (44.4%) children: 3/9 (33.3%) with normal BP and 9/18 (50.0%) with hypertension. Systolic, diastolic and mean blood pressure, as well as diastolic blood pressure load during 24 hours correlated positively ($r=0.40-0.49, p=0.10-0.42$) with inflammatory markers derived CBC: neutrophil count, neutrophil-to-lymphocyte ratio, and platelet-to-lymphocyte ratio. Diastolic and mean blood pressure and diastolic blood pressure load correlated also with level of parathyroid hormone ($r=0.48-0.57, p=0.005-0.023$).

Conclusions: 1. Ambulatory blood pressure monitoring should be used in children with chronic kidney disease on regular basis, especially in those with arterial hypertension.

2. Abnormal circadian blood pressure is a common phenomenon in pediatric patients with chronic kidney disease.

3. Blood pressure in children with chronic kidney disease may be related to subclinical inflammation and secondary hyperparathyroidism.

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Vitamin D and blood pressure parameters in children and adolescents with arterial hypertension

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Introduction: Recent evidence suggest that vitamin D plays role in reducing cardiovascular risk and hypovitaminosis D may be associated with arterial hypertension and atherosclerosis.

Aim of the study: Assessment of vitamin D status in children and adolescents with arterial hypertension.

Material and methods: The study group included 49 children aged 14.29±3.17 years with arterial hypertension. In all patients we evaluated vitamin D status, serum calcium, phosphorus, parathormone, alkaline phosphatase, urinary calcium and phosphorus loss, office blood pressure, ambulatory blood pressure monitoring, height, weight and BMI, GFR ac. to Schwartz formula, uric acid, lipids and albuminuria. None of the children were supplemented with vitamin D at the moment of the study. According to Central European Guidelines vitamin D status was defined as: deficiency (<20 ng/mL), suboptimal status (20-30 ng/ml), adequate status (>30 to 50 ng/mL), high supply (> 50 to 100 ng/mL).

Results: In the study group vitamin D level was from 6.1 to 55.3, mean 19.74±9.68 ng/mL. Vitamin D deficiency was found in 29 (59.2%), suboptimal status in 17 (34.7%), adequate status in 1 (2.0%) and high supply in 2 (4.1%) children. Vitamin D level was significantly higher in Spring-Summer months vs. Autumn-Winter months (21.79±10.19 vs. 15.53±7.08 ng/mL, $p=0.031$) and did not differ between treated and untreated children (20.72±12.71 vs. 18.80±5.53 ng/mL, $p=0.031$). All other parameters of calcium-phosphorus metabolism were

within normal limits in all the children. Vitamin D level correlated with height Z-score ($R=0.39$, $p=0.003$), BMI Z-score ($r=-0.34$, $p=0.016$), serum uric acid ($r=-0.31$, $p=0.044$) and serum triglycerides ($r=-0.37$, $p=0.014$). Vitamin D level correlated negatively with mean 24-hour heart rate ($r=-0.38$, $p=0.007$); whereas no relation was found between vitamin D and age ($r=-0.22$, $p=0.12$). In the subgroup of 24 children treated with antihypertensive medications vitamin D correlated with ambulatory arterial stiffness index ($r=0.50$, $p=0.036$).

Conclusions: 1. Inadequate supply (deficiency or suboptimal status) is ubiquitous in children with arterial hypertension.
2. Vitamin D deficiency should be suspected especially in Autumn-Winter period and among obese and short children.
3. The relation between vitamin D status and ambulatory arterial stiffness index suggests negative influence of vitamin D on arterial wall but requires further examinations.

[237]

Awareness of travel-associated diseases among parents traveling with children – a prospective questionnaire study

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Introduction: The number of Polish citizens participating in international travels is constantly increasing. Also a growing number of parents decide to travel with their children. In comparison to the adult travelers, children are potentially at higher risk of infectious diseases, because of immaturity of their immunological system and also greater exposure of fecal-oral infections, soil parasites and animal bites.

Aim of the study: The aim was to determine if parents are aware of that risk and where they are searching for information about infectious diseases and their protection.

Material and methods: Anonymous questionnaire survey was conducted among parents of children consulted or hospitalized in Department of Children's Infectious Diseases after international travel from May 2016 to January 2018. Statistical analysis of collected data was performed with Microsoft Excel 16.0.

Results: 95 questionnaires were collected. The average age of consulted children was 7.5 years ($SD=5.1$). Main regions of travel were South-Eastern Asia, Sub-Saharan Africa and Southern Europe. 44.2% of travels were organized by travel agencies, 46.3% were self-organized and 8.4% were friends or relatives visits. Mean duration of travel was 13 days. 72.6% of parents tried to search for information about infectious diseases in the region of travel. Only 46.4% began search three or more months before travel, as it is recommended. 65% of travel agency customers were not provided any recommendation for vaccinations from the agency.

The most common sources of information were: Internet forums, Websites and consultations in travel clinics. 53.6% of parents have not provided their children recommended vaccination.

Conclusions: A significant proportion of parents traveling with children are unaware of the risk of travel-associated illness. Potentially unreliable sources of information and lack of vaccine recommendations from travel agencies may result in inappropriate prevention of infectious diseases in children. Increasing awareness of parents and providing more reliable sources could be a crucial factor to increase safety among traveling children.

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[238]

Toxicity and Anti-Gastric Ulcer Activity of Taro Stem Extract (*Colocasia esculenta* L. Schott) in Acetylsalicylic Acid-Induced Gastric Mucosal Injuries in Rats

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Introduction: Peptic ulcer is one of the world's major gastrointestinal disorders and affecting 10% of the world population. However, taro (*Colocasia esculenta* L. Schott) can easily cultivated in Indonesia. Its stem have some chemical compounds that hypothesized have anti-gastric ulcer activity and low toxicity level.

Aim of the study: The aim of the present research is to determine the toxicity of taro stem extract and anti-ulcer activity based on phytochemical assays, antioxidant activity, and in vivo assays.

Material and methods: This study used maseration method with 70% ethanol to extract the taro stem. Brine Shrimp Lethality Test (BSLT) and acute oral toxicity assay (based on OECD 423) were done to determine toxicity value. Then, the anti-ulcer assay examined by phytochemical assays, antioxidant activity, and histopathological examination. The taro stem extract anti-gastric ulcer experiment in aspirin induced rats (*Rattus norvegicus*) is divided into 4 groups (50, 100, 200, and 400 mg/kgBW) with omeprazole and sucralfate as reference controls.

Results: The phytochemical test showed that taro stem extract positively contained flavonoid, terpenoid, saponin, and steroid. The extract had antioxidant activity measured 675.283 µg/ml which included to low value of antioxidant activity. Based on data, taro stem extract had no effect in toxicity assays. BSLT result showed LC50 of taro stem extract was 7311.39 ppm which have a very low toxicity. Acute toxicity showed no injury, abnormality, and mortality in rats. The histopathological examination revealed that aspirin shows severe damage in gastric mucosa. Taro stem extract of 50, 100, and 200 mg/kgBW doses did not show significant difference to negative control. The 400 mg/kg dose treatment significantly suppressed the mucosa disruption, inhibit edema the infiltration of leucocyte, and reduce the neutrophil infiltration into ulcerated tissue. Taro stem extract treatment also revealed increasing of surface mucosal glycoprotein accumulation at the dose of 100, 200, and 400 which can cover the gastric layer from damages.

Conclusions: Taro stem extract contained flavonoid, terpenoid, saponin, and steroid. It had low antioxidant activity. The extract also had low toxicity and the dose of 400 mg/kgBW had anti-gastric ulcer activity which can reduce mucosal damage. It increased the accumulation of glycoproteins on the mucosal surface with 100, 200, and 400 mg/kgBW doses.

[239]

In vitro study on *Arctium lappa* extract's cell protective and anti-inflammatory activity

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Introduction: *Arctium lappa*, widely known as greater burdock, is a biennial plant, spread across the Europe, Asia and both Americas. It occurs as a cultivated plant, for its edible root, as well as invasive weed, especially in America. Traditionally, *A. lappa* has been used both externally (eczema, dandruff, and mild skin irritations) as well as internally – as a diuretic, blood purifying and anti-rheumatic agent. First publication about *A. lappa* had been made in 1952. Since then, there were only a few studies about its cell-protective and anti-inflammatory activity. Some results show its potential antitumor activity.

Aim of the study: The aim is to find out and confirm whether aqueous or ethanolic extracts of root and herb of *Arctium lappa* can protect human fibroblasts and keratinocytes from exposure to damaging factors, such as UVA, UVB, and ROS, known also as proinflammatory and carc

Material and methods: The plant material was collected in Podkarpackie Voivodeship and authenticated by Dr. M. Ziaja and Dr. A. Bazyłko. The dried parts, divided to aerial and roots were milled, and extracted with 70% ethanolic solution, evaporated. Additionally, the aerial parts were extracted with CHCl₃ to free them from extensive pigments. After that, both parts were freeze-dried separately. A total amount of polyphenols was measured by Folina-Ciocalteu's reaction. In vitro testing procedures are followed on human fibroblasts and

keratinocytes cell lines. Methods used by now: NRU test to the establish toxicity of certain doses of extracts, MTT and LDH-level tests to check extract's ability to protect DNA from UV intense exposure.

Results: As expected, the extracts abound in polyphenols. Results from MTT and LDH-level in-vitro tests are ambiguous and need to be improved and repeated.

Conclusions: It is obvious, that extracts of *Arctium lappa* present many favorable activities, yet the identification of them is a subject of further studies. In the present study, the extracts of aerial and subterranean parts of *A. lappa* areas investigated from a different angle than other researchers had done, although it is too early for any more specific conclusion.

[240]

Theoretical evaluation of ADMET properties for 7-hydroxy-substituted coumarins with high affinity to 5HT1A and 5HT2A receptors

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Introduction: Nowadays in pharmacy computational chemistry plays a significant role in the research of new bioactive molecules. The source of possible future drugs could be derivatives of already well-known medicines or analogues of plant-originated substances. The group of compounds that unites both of these descriptions are coumarins. In this project we studied ADMET properties of selected 7-hydroxy-substituted coumarins which have confirmed high affinity to 5HT1A and 5HT2A receptors by using computational calculations based on chemical structure of compounds and molecular interaction ligand-receptor. We have especially examined their binding with human serum albumin (HSA) what is a key-factor for pharmacokinetics of these substances.

Aim of the study: The aim of the study was to evaluate in silico drug-likeness parameters of eight 7-hydroxy-substituted coumarins, with special concern of their binding to HSA, and to choose the ones with the most acceptable results for their further diagnose as possible

Material and methods: We tested compounds synthesized in our research group which belong to 7-hydroxy-substituted coumarins and HSA structure downloaded from RCSB. For ADMET properties evaluation ADMET Predictor™ software and for molecular docking AutoDock 4.2 program was used. The study of ligand-HSA interaction was based on examination of bond between compounds and Trp 214 in HSA.

Results: Lipinski's Rule of Five (which informs about substances' distribution in organism) is fulfilled except for logD parameter. All compounds interacts with potassium ion channel; none of them interacts at a toxic level with liver enzymes. Theoretical values of the percent of drug unbound to protein within blood plasma (%Unbnd) suggest that the tested coumarins are characterized by a significant plasma protein binding. Computational mapping of the binding of ligand - HSA complexes showed that the coumarin rings of selected compounds were similarly located within the hydrophobic binding pocket of HSA.

Conclusions: Examined coumarins with high affinity to 5HT1A and 5HT2A receptors bind strongly to HSA. Both of these characteristics are essential to induce biological effect. In case of almost all molecules drug-distribution parameters indicate the need to apply other than oral method of delivery. On the basis of received results, the tested coumarins could be considered as promising compounds for further development steps as novel therapeutic agents.

[241]

Antibacterial activity of selected plant extracts and essential oils against *S.aureus* and *P.acnes*

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Introduction: *Staphylococcus aureus* and *Propionibacterium acnes* are one of the most common pathogens colonising the skin which can cause a variety of infections. The development of antimicrobial resistance and

difficulty with choosing appropriate medications in local treatment encourages the search for the new antibacterial substances. Special attention is being paid to those isolated from plants.

Aim of the study: The aim of the study was to determine the antibacterial activity of selected plant extracts and essential oils against *S.aureus* and *P.acnes* in order to develop topical preparation for use in numerous skin diseases. MIC values were assessed in the presence

Material and methods: Various alcoholic and hydroalcoholic extracts obtained from: soapwort root (*Saponaria officinalis*), Iceland moss thallus (*Cetraria islandica*), black poplar bark (*Populus nigra*), heartsease herb (*Viola tricolor*), birch bark (*Betula sp.*) and two essential oils: frankincense and manuka were investigated. MIC (Minimal Inhibitory Concentration) was determined against *S. aureus* and *P. acnes* (type and clinical isolates) by broth dilution method. Because of incomplete solubility of extracts in broth, the influence of two emulsifiers: tween 80 and agar was tested. The active compounds were identified by performing bioassay-guided fractionation.

Results: All extracts and essential oils inhibited the growth of *S. aureus* and *P. acnes* whereas the lowest MIC values had alcoholic extracts of Iceland moss, black poplar bark, birch bark and manuka essential oil. In comparison with hydroalcoholic extracts, alcoholic extracts had predominantly higher antimicrobial efficacy. Addition of emulsifiers improved the clarity of solutions, nonetheless in most cases did not lower MIC values. In aforementioned bark extracts the growth of *P.acnes* was suppressed by nonpolar and highly polar fractions whilst in case of *S.aureus* only nonpolar compounds were efficacious.

Conclusions: Though all tested extracts and essential oils possess promising antibacterial activity, further investigations are required in order to find concentrations and forms most appropriate for topical treatment of skin diseases.

[242]

Neuroprotective action of amthizole and moderate hypoxia as combined preconditioning in cerebral ischemia

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Introduction: The use of preconditioning with a purpose of metabolic training and increase of an organism resistance to the subsequent severe hypoxia, including cerebral ischemia, has been often discussed in the scientific literature. The efficacy of combined preconditioning when the physical factor (hypoxic training, remote ischemic preconditioning) is potentiated by pharmacological agent is widely studied. Substances with potent antihypoxic action are quite promising in this regard. The antihypoxant amthizole was chosen for the investigation because in its mechanism of action there are components similar to effector stage of preconditioning development.

Aim of the study: The aim of this study was to investigate the effect of amthizole and moderate hypobaric hypoxia in their combined preconditioning use on the animals survival and neurological deficit in experimental cerebral ischemia.

Material and methods: All experiments were conducted with Wistar rats. Laboratory animals were undergone by combined preconditioning (PreC). On the first, third and fifth day of the experiment the animals were injected with amthizole. On the second, fourth, sixth day moderate hypobaric hypoxia was performed. Cerebral ischemia was modeled by bilateral common carotid artery occlusion. In the first series of experiments, brain ischemia was modeled after 1 h after the cessation of combined PreC (early period), in the second series – in 48 h (delayed period). As the control for ischemic animals the sham-operated rats were taken. Neurological deficits were registered with the Stroke Index McGraw scale.

Results: The survival in the control group of animals with ischemia was significantly lower in comparison with sham-operated animals. Thus, in 3 days after the operation 29% of the animals survived while among sham-operated animals the mortality was not observed. In ischemia in early period of the combined PreC rat survival increased up to 67% ($p=0,029$), in the delayed period - up to 58% ($p=0,078$). Neurological deficit in experimental animals surviving 24 hours after modeling of cerebral ischemia was significantly below the control ischemia group (by 55% in early and by 43% in late period of PreC).

Conclusions: The use of amthizole and moderate hypobaric hypoxia as combined PreC provides the neuroprotection in cerebral ischemia in rats, increases animal survival after surgery, reduces neurological deficit.

[243]

The effect of caffeine on tear secretion and symptoms of dry eye

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Introduction: Caffeine is the most widely used psychoactive substance in the world. On everyday basis, people consume a lot of products that contain caffeine, such as coffee, tea, soft drinks, energy drinks, cocoa-containing products and medications, therefore, the influence of caffeine on tear secretion is contradictory.

Aim of the study: To investigate tear production and tear film stability after oral dose of caffeine and to ascertain if symptoms of the dry eye depend on caffeine daily intake.

Material and methods: The pre-test, post-test experimental design was used in this study. All twenty-three young participants with symptoms of dry eye were informed about methodology of the research. After consent was obtained, participants filled out the questionnaire, that included questions about daily amount of caffeine consumption, usage of artificial tears, contact lenses and undertaken eye surgeries (if any). Based on the collected data, the ocular surface disease index was calculated. Schirmer 1 and tear breakup time tests were measured in both eyes, then each participant was given with the 200mg caffeine tablet and in 45minutes time tests were repeated. The results from data were collected and analyzed.

Results: 23 patients from 22 to 30 years old were divided in four groups depending on daily caffeine intake (<100mg; 100-200mg; 200-300mg, >300mg per day). The tear secretion and stability increase was noticed in each group. The greatest difference before and after in Schirmer 1 and TBUT was noticed in the 1st group of participants and it was 7.6mm and 9mm, 4.2s and 4.4s in the right and left eye respectively (2nd group - 2.2mm and 2.7mm, 2.8s and 3.0s; 3rd group - 4mm and 2.6mm, 0.8s and 0.4s, 4th group - 2.7mm and 4mm, 0.7s and 1s). There was no interrelation found between OSDI and daily caffeine intake amount (p=0.182).

Conclusions: The results demonstrated that caffeine tablet of 200mg increase tear secretion and tear stability in all test groups. However, effects of caffeine were less significant for those participants, whose daily consumption of the caffeine is above the average. There was no compelling correlation found between symptoms severity of the dry eye, that showed OSDI, and daily amount of caffeine intake. The results of this research might capture the interest for further studies.

[244]

Qualitative and quantitative analysis of energy drinks using spectroscopic methods

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Introduction: Energy drinks (EDs) are non-alcohol, sparkling beverages that are thought to stimulate both physically and psychically. This feature is achieved mainly thanks to high concentration of caffeine, taurine, niacin-complex and carbohydrates. However, there exists insufficient data on the exact qualitative and quantitative composition. Taking into account that in the recent years the consumption of EDs in Poland increased significantly, especially due to their supposed high antioxidative properties, we decided to make a thorough analysis of this so widely approachable food product.

Aim of the study: The aim of the study was to examine qualitative and quantitative composition and antioxidative activity of twelve selected, present on the Polish market EDs, using various analytical techniques with particular emphasis on NMR techniques.

Material and methods: The samples were twelve selected EDs of a different chemical composition and brands, present on the Polish market. Two of them contained sweeteners instead of sugar and four a fruit or tea concentrates. The composition and antioxidant activity in relation to the contents of total phenolics and total flavonoids has been determined by usage of DPPH/EPR and FRAP methods. For the research spectroscopic methods: ¹H NMR, EPR, HPLC, UV-Vis have been applied.

Results: The study describes the quantification of citric acid in EDs by ^1H NMR with external standard as an alternative to existing methods. Besides the highest concentration of polyphenols and flavonoids has been noted in EDs with extracts from green tea and fruits like acai, goji. The same EDs were characterised by the strongest antioxidative properties which were not correlated with citric acid present in the sample. The absence of sugar in „sugar-free“ EDs and its high concentration in the others has been confirmed. Not-exceeded level of caffeine in comparison to producers' official information has been reported.

Conclusions: Energy drinks are highly complex mixtures with still not clearly stated composition, and as the result: influence on a human body. Usage of various measurement techniques enhanced precision of the research and enabled to designate the most beneficial method for the analysis, namely NMR. The presence of green tea/fruit extracts in EDs considerably increases their antioxidative capacity but not to the level which would allow to classify EDs as strong antioxidative products. The project is still not closed as further research is needed to examine e.g. content of taurine and niacin using ^1H NMR.

[245]

Antihypertensive drugs in pregnant women

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Introduction: Beta-adrenergic blockers are the leaders among the hypotensive drugs for pregnant women. On the whole, pharmacotherapy of a high blood pressure of contingent under study corresponds to international recommendations.

Aim of the study: The aim of the study was to identify the features of the use of antihypertensive drugs in pregnant women with arterial hypertension

Material and methods: Semi-closed anonymous questioning of a continuous sample of pregnant women under clinical observation in polyclinics, antenatal clinics and in hospitals in the cities of Smolensk, Bryansk, and Kaluga (n = 232) was conducted.

Results: We analyzed the consumer parameters of pregnant women with arterial hypertension in relation to the group of β_1 -adrenergic blockers. The majority of the respondents - women aged 25-35 (59.1%), living in the city (75.8%), have incomplete higher education (45.5%), 47.7% are employees. In 20% and 26.2% of cases have the social status of the student and unemployed, respectively. Almost half of respondents prefer foreign medicines. When evaluating the formulation of the drug, 48,5% interrogated have noted, that they like the design of the packaging of the drug. To the question, what qualities they consider the most important drugs, most chose options "Efficiency" (34.1%), "security" (29.3%) and "quality" (25.8%). In half cases (48.3%), respondents noted the reason for buying the drug in a certain pharmacy, its proximity to the place of residence. There was a tendency to abolish drugs, underestimation of dosages, self-medication with the use of short-acting drugs: anaprilin, nifedipine, myotropic antispasmodics and, on the other hand, unreasonably rare use of standard regimens, irrational administration of diuretics. The overwhelming majority (69.7%) reported that they did not know about the arterial hypertension, fully informed about the disease, possible risks - 4.5%; informed in part - 25.8%.

Conclusions: Hypertensive drugs used in women in gestational and postgraduate periods are limited to four main group antihypertensive substances. The tendency of underestimation of dosages, widespread use of short-acting drugs of nifedipine myotropic antispasmodics.

PhD Basic & Preclinical Science

Jury:

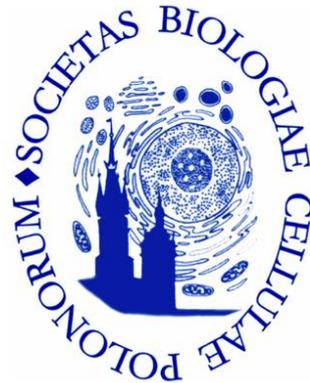
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[246]

The validity of novel dentin caries-arresting agent and mechanisms of its action on caries-affected primary teeth in vitro

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Introduction: Optimal method of caries treatment is a cavity preparation with subsequent restoration. This method is difficult to apply in case of non-contact children or/with parents who don't want to cooperate with a dentist. In this case dentists can use caries-arresting treatment. Many techniques of caries-arresting treatment have been proposed. The idea of one of them – bonding of the dentin (application of GIC with low viscosity) is to isolate dentin from oral cavity (M. Raadal, 2000). Moreover GICs are well-known for high fluorine emission that also helps to arrest caries. Vitrebond (3M ESPE) is considered to be one of the best GICs for this technique. The discomode of bonding dentin using Vitrebond is a necessity of monthly check-ups for control of coating's state. Some parents also mark poor esthetics of Vitrebond coatings as well as dentists need to reach the maximum remineralization not only by fluorine but also by calcium and phosphate ions.

Aim of the study: to determine the validity of a novel dentin caries-arresting agent and to detect mechanisms of its action on caries-affected primary teeth in vitro.

Material and methods: The research was conducted on the extracted (due to physiological replacement) deciduous teeth having cavitary carious lesions at the level of mantle dentin. The teeth were brushed with paste without fluorine, washed and dried. Then there was done an application of ClinPro XT Varnish ("3M ESPE") according to manufacture's instructions. Then the teeth were sawed in sagittal direction and analyzed on the X-ray energy dispersive spectrometer "INCA 350" ("Oxford Instruments", Great Britain). The results were statistically processed.

Results: In all the samples material showed homogeneous structure and good adaptation to bottom and walls of cavities due to its low viscosity. The content of fluorine in ClinPro XT Varnish has been varying from 7.6 up to 29.1%, the median value has been equal to 18.1% (12.3; 21.5). The release of fluorine well-known agent for caries arrest inside the dentin has been detected in all the samples. The penetration depth has been equal to 88 µm (36.5; 227.0). The fluorine content has been gradually decreasing in pulp direction. We have also detected the correlation between fluorine penetration depth and Ca/P ratio in the sample. highest concentration of fluorine in dentin contacting the fillings (2.0% (1.1-4.9)).

Conclusions: The obtained results show sufficient fluorine release and penetration into dentin from ClinPro XT Varnish as a novel caries arresting agent.

[247]

Next-generation sequencing as a tool to understand the genetic basis of myopathies

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Introduction: Myopathies are a group of diseases caused by dysfunctions of muscle fibers and usually manifested by muscle weakness due to genetic or environmental reasons. Depending on the type, myopathies progress in various pace and have different prognosis. They can be treated by causative or symptomatic treatment. Complete cure of myopathies with genetic basis is currently not possible. Thus, understanding the genetic basis of these diseases is essential in order to take steps towards developing the treatment.

Aim of the study: The aim of the study is to investigate and detect the genetic variants possibly underlying myopathies.

Material and methods: We analyzed DNA samples from 21 unrelated families with cases of different types of myopathies: Duchenne muscular dystrophy, nemaline myopathy but most of them with unspecified type of myopathy. DNA was obtained from peripheral blood. NGS libraries were prepared with TruSight One Sequencing Panel (Illumina), SureSelectXT Human All Exon V5 (Agilent) or SeqCap EZ MedExome (Roche) according to the manufacturers' instructions. The results were verified by Sanger or amplicon deep sequencing (ADS) (Nextera XT

DNA Library Preparation Kit (Illumina). All the sequencing was performed on the Illumina HiSeq1500 platform, pair-end (2 × 100 bp).

Results: We found variants considered as causative for the disease in 11 families. Variants were found in COL6A1 (de novo, autosomal dominant (AD)), COL6A3 (autosomal recessive, (AR)), RAPSN (AR), SEPN1 (de novo, AD), IGHMBP2 (AR), TTN (AR), SCL3A1 (AD), TMPRSS6 (AR) and DMD (x-linked, recessive). In 4 families we did not find variants considered as underlying the disease. Diagnosis of 6 families is still in progress.

Conclusions: Variants detected in families with myopathies are located both in genes related to myopathies in the literature as well as in genes not related to this type of disorders. In a few cases the cause still remains unclear possibly due to the environmental factors that contributed to the development of the disease or the cause in regulatory sequences remaining unrevealed. Studying the genetic reasons of myopathies is crucial in order to thoroughly understand the molecular basis of these diseases and possibly develop therapies. Description of mutations responsible for myopathies will also be a step towards developing better and lower-cost tools for diagnosis of these diseases.

[248]

Determinants of oxidative stress in the fibroblasts exposed to Helicobacter pylori components in the cell cultures in vitro

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Introduction: Helicobacter pylori causes in humans gastritis, gastric and duodenal ulcers and even gastric cancers. During H. pylori infection the interactions of H. pylori compounds with the gastric epithelial cells may result in upregulation of oxidative stress and deleterious effects in the gastric tissue.

Aim of the study: To determine the level of oxidative stress markers, including myeloperoxidase-(MPO), reactive oxygen species-(ROS) and 4-hydroxynonenal-(4HNE) in the cultures of fibroblasts exposed or not exposed to H. pylori antigens in vitro.

Material and methods: Fibroblasts from Cavia porcellus-(CRL-1405,ATCC) were incubated for 24h in the culture medium alone or in the milieu of H. pylori antigens: the glycine acid extract-(EG) 10µg/ml; cytotoxin-associated gene A (CagA) protein 1µg/ml; subunit A of urease (UreA) 5µg/ml; H. pylori and Escherichia coli lipopolysaccharide-(LPS) 25ng/ml. The production of MPO was determined colorimetrically using chromogenic substrate 3,3',5,5'-tetramethylbenzidine (TMB), whereas ROS were detected by redox indicator dihydroethidium (DHE) and 4HNE by fluorescence using the specific antibodies conjugated with FITC.

Results: Only in response to H. pylori and E. coli LPS the production of MPO was increased significantly as compared to untreated cells. By comparison all H. pylori compounds used in this study strongly increased the production of ROS and 4HNE.

Conclusions: In this study the oxidative stress markers: MPO, ROS, 4HNE were detected in the cultures of fibroblasts in response to various H. pylori compounds. In vivo during H. pylori infection the increased oxidative stress can promote gastric barrier damage and its dysfunction. Financing. NSC, Poland, DEC-2015/17/N/NZ6/03490.

[249]

Searching for a novel potential therapeutic path for the posttraumatic stress disorder (PTSD): assessment of bromocriptine, dihydroxidine and modafinil in a mouse PTSD model

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Introduction: Post-traumatic stress disorder is defined as a persistent re-experiencing of intrusive recollections of the traumatic event, hyper-arousal, avoidance of cues linked to trauma, hyper-arousal and numbing in

response to stressors that last for at least 1 month. Nowadays, the therapy comprises both psychotherapy and pharmacotherapy. Unfortunately, the effectiveness of these methods is low (30%).

Aim of the study: With a view to evaluate a novel therapeutic path in PTSD, we assessed the activity of bromocriptine, modafinil and dihydrexidine in PTSD model-exposed mice.

Material and methods: All tests were performed in Swiss Albino mice. The activity of bromocriptine (5 mg/kg, i.p.), modafinil (75 mg/kg i.p.) and dihydrexidine (10 mg/kg, s.c.) was assessed in a mouse model of PTSD, i.e. a single prolonged stress protocol (SPS). The following tests were performed: a forced swim test (FST), an elevated maze test (EPM), an auditory fear conditioning test (AFC) and a spontaneous locomotor activity test. Ultrasound vocalizations of mice were also analyzed.

Results: Modafinil and bromocriptine revealed activity in FST ($p < 0.0001$; $p < 0,05$, respectively). In EPM bromocriptine and dihydrexidine were active ($p < 0,01$; $p < 0,05$, respectively). No statistically significant differences were shown in AFC, however bromocriptine tended to reduce fear memory retrieval. Only modafinil pointwise increased locomotor activity of mice.

Conclusions: Our study revealed a potential antidepressant-like activity of modafinil and dihydrexidine, a potential anxiolytic-like activity of bromocriptine and dihydrexidine, if evaluated in an animal model of PTSD. Reported study corresponds with our previous results and confirms a far-reaching involvement of dopaminergic structures in PTSD pathologies and finds it worth further evaluation as a potential therapeutic path.

[250]

Skeletal muscle mitochondrial function in patients with normal and impaired fasting glucose

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Introduction: Impaired fasting glucose (IFG) represents the first stage of the development of type 2 diabetes (T2D), and it is one of the strongest predictor of the development of the disease. It was shown that T2D is associated with mitochondrial dysfunction in skeletal muscle, but consensus is not reached.

Aim of the study: The aim of our study was to examine whether or not the mitochondrial respiratory capacity in skeletal muscle is impaired in patients with IFG.

Material and methods: Mitochondrial respiratory capacity was measured in permeabilized muscle fibers by high-resolution respirometry in 28 male patients with IFG and 16 age-matched control subjects with normal fasting glucose (NFG). Body composition, VO₂max and glucose homeostasis (using an oral glucose tolerance test) was measured.

Results: Mitochondrial respiratory capacity was comparable between IFG and NFG patients, with complex I and complex I + II linked substrates, as well as uncoupled respiration. As expected fasting glucose concentration was different between IFG and NFG (109 mg/dl vs. 96 mg/dl; $p < 0,0001$). There were no differences in HbA_{1c} (5.46% vs. 5.23%; $p = 0,072$), BMI (29.61 kg/m² vs. 27,42 kg/m²; $p = 0.754$), fat tissue content (28293,61 g vs. 25874.19 g; $p = 0,175$) and VO₂max (30.38 ml/kg/min vs. 33,14 ml/kg/min; $p = 0.961$).

Conclusions: The present study demonstrates no difference in skeletal muscle mitochondrial respiratory capacity between subjects with IFG and NFG controls. Furthermore, in our cohort the only clinical parameter differentiating these two groups was fasting glucose. We did not observe differences in other parameters of glucose homeostasis and exercise capacity. The limitation of this study is small number of patients in each group but it suggests that early stages of development of T2D don't involve mitochondrial malfunctioning in skeletal muscles.

[251]

The role of the microRNA in pituitary adenomas invasiveness

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Introduction: Pituitary adenomas (PAs) are usually benign tumors, that originate from adenohypophysis, that is a central regulator of hormonal homeostasis. They account for 3rd most common intracranial neoplasms after gliomas and meningiomas. Nevertheless, aggressive and invasive forms are also found. However, up to date there is no perfect and specific molecular biomarker, that could help to distinguish malignant, invasive behavior of the PAs.

MicroRNAs (miRNAs, miRs) are small non-coding RNA polynucleotides, that regulate genes post-transcriptionally. Nowadays, various dysregulations of miRNA expression are considered to have an impact on the diagnosis, prognosis and overall survival in patients diagnosed with different types of cancers.

Aim of the study: The aim of the study was to evaluate and to compare the global microRNA expression profiles of invasive and non-invasive PAs. The second aim was to identify oncogenic microRNAs potentially involved in the tumorigenesis of PAs.

Material and methods: The preliminary study was performed on 6 invasive and 6 non-invasive human pituitary adenomas. Local bioethical committee agreement for the purpose of the study was received. We used the TaqMan Low Density Array cards to compare the expression pattern of 756 microRNAs (high-throughput method) among studied samples.. The confirmatory study was performed on 49 fresh frozen human PAs using real time PCR. Moreover, among the same tissue samples, we examined the level of expression of selected targeted genes: PTEN, BTG2, TGFBR1, TGFBR2, HIF1alpha, EPAS1. Next, we studied in vitro on the model cell line GH-3, influence of selected miRNA on proliferation after transfection with synthetic microRNAs. At the same time, we examined the expression of chosen genes in hypoxic condition (1%, 5%, 10% oxygen and control 21%) on GH-3 cell line. We considered P value < 0,05 as statistically significant.

Results: We found statistically significant dysregulation of microRNAs among invasive PAs compared to noninvasive tumors. Further, we confirmed upregulation of 9 microRNA in 49 human PA samples. Moreover, in vitro studies including transfection on a model pituitary adenoma cell line GH-3, revealed influence of selected miRs on cell proliferation as well as regulation of genes expression.

Conclusions: The results indicate that the invasiveness of PAs may be regulated by an aberrant miRNA expression. We also confirmed, that the cluster of miRNA106b~25 (recently described as a prognostic factor in invasive PAs) also was dysregulated among our samples.

[252]

Somatic mutations in genes associated with cancer as a possible cause of endometriosis

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Introduction: The pathophysiology of endometriosis still remains unclear although the very first diagnosis of this disease is dated to 19th century. There are a few hypotheses explaining the onset of endometriosis, nevertheless none of them was decisively proven to be true. One of the challenges in research on endometriosis is the inconsistency of micro and macroscopic evaluation of the tissue. Laser microdissection seems to be a great tool

to overcome this difficulty. Recently published data regarding mutations in cancer driver genes (ARID1A, PIK3CA, KRAS, PPP2R1A) in endometriosis without cancer emphasizes the possible role of recurrent KRAS mutations detected in 4 of 39 patients.

Aim of the study: The study aims to detect, compare and evaluate somatic mutations in ectopic endometrial tissue.

Material and methods: Laser microdissection was used in order to obtain particular glands of ectopic and eutopic endometrium of 13 patients with endometriosis. DNA was extracted and simultaneously amplified by whole-genome amplification (WGA) (Repli-G mini, QIAGEN). As a reference we used DNA obtained from peripheral blood of patients. NGS libraries were prepared using custom panel enrichment covering >1000 genes associated with cancer (Roche). The sequencing was performed on the Illumina HiSeq1500 platform, pair-end (2 × 100 bp). Detected variants differentiating the samples were visualized on Integrated Genomic Viewer (IGV).

Results: All the detected somatic variants were rare (allele frequency <0,03 in online databases (EXAC, GnomeAD) and in-house database containing >800 whole exome sequencing data). One patient harbored an ectopic somatic mutation in KRAS. Four other patients harbored ectopic somatic mutations in other ovarian and endometrial cancer driver genes (TP53, NSD1, ATRX and ERBB3).

Conclusions: The presence of mutations in cancer driving genes in the ectopic tissue was noticed in 5 patients. We did not observe recurrence of KRAS variants among patients, thus the results of our study do not support the hypothesis about its significant role in development of endometriosis. The chance of somatic variant occurrence in cancer driver genes in ectopic tissue is significantly higher than occurrence of a mutation in other genes associated with cancer in this tissue. The significance of other detected somatic mutations is unclear and cannot explain the onset of endometriosis.

[253]

Antibody production to ATVLA sequence present in *H. pylori* CagA/HspB proteins and human Hsp60 protein during experimental *H. pylori* infection in *Cavia porcellus*

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Introduction: *Helicobacter pylori* cause gastritis, peptic ulcer and gastric cancer in humans. Chronic exposure to *H. pylori* infection may potentially initiate autoimmune reactions due to molecular mimicry between *H. pylori* and hosts compounds, CagA (cytotoxin-associated gene A) antigen or Hsp (heat shock protein) B and human Hsp60, respectively.

Aim of the study: To confirm the production of antibodies towards the ATVLA sequence (P1) present in *H. pylori* CagA/HspB and human Hsp60 in guinea pigs experimentally infected with *H. pylori*.

Material and methods: Himalayan *Cavia porcellus* uninfected or inoculated with *H. pylori* CCUG17874 VacA+/CagA+ (1010CFU/ml) were euthanized 7 and 28 days after the challenge and blood was collected to evaluate the level of anti-*H. pylori* IgM/IgG antibodies and anti-P1 or anti- P2 IgG by ELISA using the complex of surface *H. pylori* antigens or synthetic peptides: P1 (common ATVLA sequence) or P2 (control peptide), respectively. The *H. pylori* status and inflammation were confirmed by histological examination of gastric tissue sections (Giemsa/Mayer's hematoxylin, eosin/silver staining) and detection of *H. pylori* cagA/ureC genes by PCR.

Results: In the gastric tissue from all *H. pylori* inoculated but not control animals the *Helicobacter*-like organisms, ureC/cagA genes, and the infiltration of eosinophils and lymphocytes were confirmed 7 and 28 days after the last challenge. Similarly anti- *H. pylori* IgM/IgG and anti-P1 IgG but not anti-P2 IgG antibodies were detected only in *H. pylori* infected animals.

Conclusions: The production of anti-P1 IgG was linked in guinea pigs with active *H. pylori* infection and deleterious inflammatory response. Financing. DEC-2015/17/N/NZ6/03490.

PhD Clinical Science

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OSOZ
OGÓLNOPOLSKI SYSTEM OCHRONY ZDROWIA

POLSKIE TOWARZYSTWO
DIABETOLOGICZNE



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Sunday, May 13th, 2018

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[254]

Predictors for relapse of atrial fibrillation in one year after sinus rhythm restoration with electrical cardioversion in patients with long acting atrial fibrillation

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Introduction: Atrial fibrillation (AF) is the most common type of arrhythmia which is associated with a wide range of potential complications and significantly increase morbidity and mortality. Electrical cardioversion (ECV) is an effective and widely used treatment method for the restoration of sinus rhythm in patients with persistent AF. Complete shock failure and immediate recurrence are estimated to occur in approximately 25% of patients undergoing ECV.

Aim of the study: The aim of this study is to evaluate the frequency of cardiovascular events one year after ECV and to detect possible predictors for relapse and complications.

Material and methods: The study enrolled 110 patients undergoing ECV due to AF in the Paul Stradins Clinical University Hospital in 2016 year. Data was collected based on personal by interview, medical records and phone interviews. Cardiovascular event frequency during one year after ECV was analyzed and predictors of recurrence and complications were assessed. Statistical analysis was conducted by using IBM SPSS 23.0 software.

Results: Relapse of AF was observed in 68 patients (62%). The incidence of other cardiovascular events in general was rather small. Hypertensive crisis occurred in only two patients (1.8%), one patient (0.9%) suffered from acute coronary syndrome and two patients were hospitalized due to decompensated chronic heart failure (1.8%), one patient suffered from ischemic stroke (0.9%). All adverse cardiovascular events that occurred were detected among individuals who had a relapse of AF but there was no statistical significance. Chronic heart failure was present in 75 patients (68%) and was significantly higher in the AF relapse group ($p = 0.001$) The odds of suffering from relapse of AF was 3.9 times higher in patients with chronic heart failure compared to those without (OR = 3.9; CI 95%; 1.7 - 9.0). Additionally there was a statistically significant difference between participants with left atrial enlargement (>45 mm) and patients without left atrial enlargement (<45 mm) there was a statistically significant difference in the incidence of AF relapse ($p < 0.001$). The Odds Ratio showed that for patients without LAE this was a protective feature (OR = 0.055; CI 95%; 0.12 – 0.259).

Conclusions: In general the incidence of cardiovascular complications related to AF was very small. However, relapse of atrial fibrillation was very common. Only 43% of patients remained in sinus rhythm one year after electrical cardioversion. Chronic heart failure, left atrial enlargement and increased age were found to be predictive for recurrence.

[255]

Stroke after Percutaneous Coronary Intervention for Treatment of Acute Myocardial Infarction. Experience from ORPKI Polish National Registry

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Introduction: Both hemorrhagic and ischemic cerebrovascular events are rare but serious complications after acute myocardial infarction (MI) and percutaneous coronary intervention (PCI). There are some ambiguous data on the higher rate of stroke associated with the radial access. In addition, an increased risk of stroke was suggested for primary PCI with the use of thrombectomy devices

Aim of the study: We sought to identify the predictors of periprocedural stroke in a large, unselected cohort of patients presenting with acute MI enrolled in the Polish National Registry of PCI (ORPKI) from 2014 to 2015

Material and methods: Data were collected from 2014 to 2015 in 151 invasive cardiology centers. For this analysis, data on 81,587 consecutive patients presenting with acute MI undergoing on-stage coronary angiography and PCI were retrieved from the database. Patients were stratified based on the occurrence of

periprocedural (<24 hours) stroke. Radial and total PCI operator volume was calculated as the overall number of PCIs for each operator performed during enrollment period regardless of diagnosis

Results: For two years, 44,388 patients with and 37,199 patients without segment elevation MI were enrolled. Of them, 17 patients experienced a periprocedural (<24 hours) stroke. Patients with stroke were older (74.0 (66.0, 78.0) vs. 66.0 (58.0, 76.0)[years]; $p=0.03$) and more frequently female (64.7% vs. 33.1%; $p=0.01$). The radial access was less common in patients with than without stroke (35.3% vs. 67.2%; $p=0.003$), but the need for access site crossover was higher in the stroke group (11.8% vs. 1.9%; $p=0.04$). No difference in the use of aspiration thrombectomy was observed ($p=0.99$). Patients with stroke had higher rate of periprocedural complications such as coronary artery dissection (0.2% vs. 5.9%; $p=0.03$), access site bleeding (0.1% vs. 5.9%; $p=0.01$) and cardiac arrest (0.7% vs. 11.8%; $p=0.006$). Interestingly, strokes were more commonly noted during PCIs performed by operators who have less experience with the radial approach (% of radial PCI per operator in two years period: 82.6% vs. 48.1%; $p=0.04$). In the logistic regression analysis chronic kidney disease (OR 3.768, 95%CI 1.082-13.124; $p=0.04$) and % of PCIs using the radial approach per operator (OR 0.981 per 1% increase, 95%CI 0.967-0.997; $p=0.02$) were identified as independent predictors of periprocedural stroke

Conclusions: Level of operator's experience with the radial approach has impact on the risk of periprocedural stroke during PCI

[256]

Hypobaric hypoxia acutely affects endothelial function and increases levels of the protective adipocytokine adiponectin in male aviators

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Introduction: Several reports have indicated that hypobaric hypoxia (HH) might increase the risk of high altitude related illnesses including pulmonary edema and cerebral edema. These HH derived complications seems to be due to altered endothelial function (EF). Adiponectin (ADP) is an adipocyte-derived substance able to modulate endothelial response. Aim of the study was to investigate the effects of acute HH on EF as well as on ADP levels in individuals usually exposed to HH such as male aviators

Aim of the study: a. evaluating the effect of acute hypobaric hypoxia on endothelial function in a sample of military pilots; b. investigate its effect on salivary adiponectin related to endothelial function

Material and methods: Fifteen male aviators were exposed to HH, by a simulated altitude of 25,000fts above sea level for 3 minutes in a hypobaric chamber. Hypoxia was induced by removing the oxygen masks until the onset of hypoxia symptoms. EF was "acutely" measured by the EndoPAT test immediately before and after HH. ADP levels were measured by ELISA-test in serum and salivary (before and at 24hrs after HH)

Results: HH caused acute significant variation in EF. On the contrary, ADP levels measured in serum as well as in salivary significantly increased 24hrs after HH exposure (64 vs 29 ng/ml in serum and 57 vs 15 ng/ml in saliva; $p<.005$). Interestingly, improved EF was observed in those aviators with significant increase of ADP levels

Conclusions: Data of the present study, describes that HH, acutely changes EF; however, being and endothelial injury, it stimulates the release of adiponectin, an endothelial "protective" adipocytokine. A close relationship exists between serum and salivary levels of ADP, indicating the potential utility of this not invasive measurement test

[257]

The relationship between structural geometrical changes of left ventricle and heart rate turbulence in patients with arterial hypertension of the II degree

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Introduction: Arterial hypertension (AH) is the most important risk factor for development of myocardial infarctions, strokes and lethal outcomes. It is very important to identify a group of patients with increased risk of unfavorable outcomes to modify treatment and prevention.

Aim of the study: To analyze the relationship of structural geometrical changes of the left ventricle and heart rate turbulence in patients with arterial hypertension of the II degree.

Material and methods: The study involved 214 patients with arterial hypertension (AH) of the II degree aged 35 to 70 years, of these, 121 women (56,5%) and 93 men (43,5%). All patients underwent echocardiography and Holter monitoring. Analysis of remodeling indicators and left ventricle myocardium contractility in patients with arterial hypertension of the II degree was carried out, taking into account age and gender differences. Analyzed the relationship of structural geometrical changes of the myocardium and parameters of heart rate turbulence (TO – turbulence onset; TS – turbulence slope).

Results: In the age of 40 years decreases the number of patients with arterial hypertension of the II degree (mostly men) with normal geometry of the left ventricular. The most common types of myocardial remodeling in patients with arterial hypertension of the II degree, both men and women are eccentric and concentric hypertrophy of the left ventricle. In the assessment of myocardial contractility of the left ventricle, it is necessary to note the lack of significant differences between ejection fraction (EF) at the identified geometric models that allows making a conclusion about the compensatory nature of the remodeling and myocardial hypertrophy to maintain adequate cardiac output. We have revealed the interrelation of the myocardium structural geometrical changes with heart rate turbulence parameters: TO and left ventricular mass index ($r=0,22$; $p=0,003$), TS and left ventricular mass index ($r=-0,21$; $p=0,005$), TS and EF ($r=0,2$; $p=0,008$).

Conclusions: The received results can be used during the selection of the group of patients with AH having high risk for unfavorable outcomes. This will enable the individualization of the assessment of the risk in AH as much as possible and to prescribe an adequate treatment for each patient.

[258]

Analysis of lemur tyrosine kinase-2 expression in neurodegenerative dementias

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Introduction: In physiological neurons harmonized axonal transport is essential for normal synaptic function. Changes in Lemur tyrosine kinase-2 (LMTK2) level may contribute to the disruption of molecular transport leading to synaptic loss and neurodegenerative process.

Aim of the study: Our aim was to characterize the LMTK2 expression in Alzheimer's disease (AD) and Dementia with Lewy bodies (DLB) and define the potential alterations compared to age-match controls.

Material and methods: Formalin-fixed paraffin embedded tissues were collected from MRC London Neurodegenerative Diseases Brain Bank. The assessed brain region was determined by neuropathologist (TH), then we applied the previously tested LMTK2 antibody according to the manufacturer protocol. We scanned the slides and analysed selected digital pictures with ImageJ software. Ten images/case were taken and post-processed to normalise intensity and reduce bias caused by the slide scanner. We selected cells based on size, cytoplasmic volume and visibility of nuclei and identified the pyramidal cells as the target subgroup. We measured the mean grey value of these neurons and determined mean, median and mode intensity profiles for each case. Statistical data was calculated with Sigma Stat software.

Results: One-way ANOVA showed significant differences in mean and median intensity among the three (AD, DLB, control; $p < 0.001$) groups. Comparing two-two groups with T-test (AD-control, DLB-control; $p < 0.001$ and $p = 0.012$ respectively) and Mann-Whitney U test (AD-DLB; $p = 0.026$) there were statistically significant differences in mean and median intensities. Mode intensity values were significant only between AD and control groups with T-test ($p = 0.021$).

Conclusions: Our results indicate significant changes in LMTK2 expression among age-match control and disease groups, as well as between AD and DLB patients. Further analysis of the protein's role in underlying pathomechanism may provide a promising new therapeutic target in dementias.

[259]

Frailty indices and both psoas muscle area and volume as predictors of outcomes in patients undergoing transcatheter aortic valve implantation

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Introduction: The assessment of frailty rely mostly on physical/functional performance tests or subjective questionnaires which are less feasible in very frail patients comparing to sarcopenia, defined as low muscle mass, that can be assessed objectively and relatively quickly by imaging modalities

Aim of the study: We sought to determine the long-term predictive value of different frailty scores and objective assessment of sarcopenia in patients undergoing transcatheter aortic valve implantation (TAVI)

Material and methods: Frailty indices according to VARC-2 recommendations [5-meter walk test (5MWT) and hand grip strength] as well as other available scales of frailty [Katz index, elderly mobility index (EMS), Canadian Study of Health and Aging (CSHA) scale, Identification of Seniors at Risk (ISAR) scale] were assessed at baseline. Sarcopenia was evaluated with psoas muscle area (PMA) and volume (PMV) using CT scans. The primary endpoint was 12-month all-cause mortality

Results: We enrolled 153 TAVI patients with analyzable CT scans and complete frailty data. Median of PMA normalized for body surface area (BSA) was 2581.1 (2214.9-2654.9) mm²/m², and median of normalized PMV was 338.8 (288.1-365.6) cc/m². According to 5MWT 13.7% were frail, EMS scale – 5.2%, CSHA scale - 11.1%, Katz index - 12.4% patients, hand grip test - 4.6%, and ISAR scale – 28.7%. There was no significant difference in STS and logistic Euroscore I predicted risk of death among the tertiles of normalized PSA. At 12 months, all-cause mortality (42.0% vs. 3.8% vs. 5.9%; p=0.001) and new-onset atrial fibrillation (18.0% vs 0.0% vs. 2.0%; p=0.001) were highest in the lowest tertile of normalized PMA. In the ROC analysis, all the tested frailty indices, as well as PMA and PMV, were good predictors of 12-month all-cause mortality after TAVI with the highest AUC value for PMA (0.89 (0.80-0.97); p=0.001) and PMV (0.89 (0.83-0.96); p=0.001). The predictive ability of PMA normalized for BSA was lower than for PMA (p=0.01) and PMV (p=0.005) but higher than for PMA normalized for BMI (p=0.004)

Conclusions: Normalized PMA and PMV are stronger predictors of long-term mortality after TAVI as compared to subjective frailty scores. CT evaluation of psoas muscles could be incorporated to preprocedural comprehensive clinical models used for prediction of outcomes in patients scheduled for TAVI.

[260]

The original reconstructive method for small defects of soft tissues of a floor of the mouth and a ventral surface of the tongue with FAMM-flap and Permacol surgical implant

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Introduction: Radical tumor resections in that area lead to hyper fibrosis of the floor of the mouth tissues and tissue-contraction of tongue which provide the deficit of the mouth floor mucosa and disrupt tongue mobility. In these cases we also observe the absence of the fold between a gum and a tongue. The anatomical structure of that fold provides tongue-mobility and optimal saliva outflow.

Nowadays restoration of anatomical structures such as the ventral surface of the tongue, the floor of the month and the fold between tongue and gum is a challenging issue, compelled us to retrieval of a relevant solution.

Aim of the study: The target of this work was to develop and implement the new method of reconstruction of the complex of structures of oral cavity, includes a ventral surface of a tongue, a floor of a month and a fold between a tongue and a gum by using FAMM-flap and Perm

Material and methods: At the period from 2016 to 2018 were surgically treated 5 patients with defects of the tongue and a floor of the mouth, with anamnesis of combined resection of the oral cavity cancer. In these cases were performed the original method of reconstruction.

The MRA was used as a preoperational tactics of facial artery for the evaluation of the perfusion of the cheek area as an appropriate donor site.

In a postoperative procedure for examination the implant and analysis of restoration processes (at the time of 14-days and 6-month after surgery) was conducted the histological research.

Results: Reconstruction have been performed with restoration of difficult 3D shape of that area. To achieve that goal we used two components: FAMM-flap for the defect of a floor of the mouth, and Permacol surgical implant size of 30 x 30 x 0,5 mm for a ventral tongue surface.

Conclusions: Advantages of this method come with a lack of donor site-damage, reduction of surgery time to 50-70 minutes, reduction of the post-operative period to 6-7 days, minor discomfort caused to patient in all stages of treatment, compelled with other alternative microsurgical methods.

This method is entitled to be presented among the number of reconstructive techniques following head and neck surgery, which helps to improve the quality of life of the patients small defects of soft tissues of a floor of the mouth and a ventral surface of the tongue

[261]

Sugammadex reversal of rocuronium – induced neuromuscular blockade

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Introduction: Muscle relaxants are used during intraoperative period to facilitate endotracheal intubation, ensure patient immobility and improve surgical exposure. Reversal agents are used to terminate the action of muscle relaxants. Sugammadex, a modified γ -cyclodextrin, is the first selective relaxant binding agent. It does not interact with cholinergic mechanisms to elicit reversal. Instead, it is a selective relaxant binding agent and acts by forming a 1:1 complex with steroidal nondepolarizing neuromuscular blockers in the plasma, lowering the effective concentration available at the receptor. Sugammadex rapidly clears from most organs. Sugammadex in doses ranging from 2 to 16 mg/kg is recommended, depending of the level of rocuronium-induced blockade.

Aim of the study: The aim of the study was to evaluate the usefulness of doses 2 mg/kg and 1 mg/kg of sugammadex in reversing neuromuscular blockade generated by rocuronium during operation in pediatric patients by measuring time needed to obtain a result TOF \geq 90%.

Material and methods: These are preliminary studies. Twelve patients (aged 6 – 17) undergoing elective surgery procedures with a standardized sevoflurane-fentanil-rocuronium (rocuronium dose 0,6 mg/kg) anesthetic technique received sugammadex, 2 mg/kg (n=5) and 1 mg/kg (n=7) for reversal of neuromuscular blockade, using the the train-of-four (TOF) technique to measure the level of neuromuscular blockade.

Results: The two groups were similar with respect to their demographic characteristics. The time to achieve TOF ratio of 90% was similar in both groups: 67 ± 26 s in group received 2 mg/kg and 70 ± 45 s in group with dose 1 mg/kg of sugammadex. All patients in both groups achieved a TOF ratio of $90 < 5$ min after reversal administration. We have not registered any serious side effects. Only 5% of patients had the incidence of dry mouth.

Conclusions: Sugammadex is fast and effective in reversing rocuronium-induced neuromuscular blockade in pediatric patients. Doses 1 mg/kg and 2 mg/kg of sugammadex are equally effective in reversing muscle relaxant effect of rocuronium. However, much more data regarding the safety of sugammadex in pediatric patients is still required.

[262]

Automatic estimation of CTV and PTV for Breast Cancer Radiotherapy Planning

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Introduction: Localization of breast tumor bed formed after tumorectomy or lumpectomy is a challenging task during the radiotherapy planning. Knowledge about an exact tumor bed localization is crucial for a correct

radiation dose distribution. Radiation dose margins customized for each tumor case separately can decrease the risk of cancer recurrence or secondary carcinogenesis.

Aim of the study: The aim of the study was a deformable image registration of CT data acquired before the breast tumor resection and CT data acquired during the radiotherapy planning in order to estimate localization of soft tissues originally surrounding the breast cancer

Material and methods: The research material included 10 CT scans acquired before the breast cancer resection and 10 CT scans acquired during the radiotherapy planning. The major challenge is the missing data in the data used for the dose distribution planning, which is a consequence of the tumor resection. This difficulty was solved using volume-based regularization. The experiments were performed using a set of deformable image registration algorithms. Breast tumors were segmented manually using the ITK-SNAP software. Soft tissues margins were automatically added to the cancer segmentations. The segmentation masks were warped using the calculated deformation fields with a topology preserving approach. The calculated tumor bed localizations were used to state CTV and PTV. The calculated localization, CTV and PTV were compared to the currently applied methods.

Results: In all 10 cases, the deformable registration showed potential improvement over traditional radiation dose margins estimation. This resulted in a potential decrease of the total volume of CTV and PTV. What is more, the results showed that sometimes the real target localization during radiotherapy is stated incorrectly when the traditional methods are applied.

Conclusions: The proposed approach improved the localization of the breast tumor bed during radiotherapy planning.

[263]

Levels of type IV collagen in plasma in patients with reflux esophagitis and obstructive sleep apnea syndrome

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Introduction: Type IV Collagen is the main structural component of basement membranes. It provides mechanical stability of basal lamina and serves as a ligand for cell adhesion molecules, takes part in molecules migration and differentiation.

Aim of the study: The aim of study was to estimate the levels of type IV collagen in human plasma in patients with reflux esophagitis and obstructive sleep apnea syndrome (OSA).

Material and methods: 80 patients with reflux esophagitis have been examined at Grodno city hospital №2, Belarus. The average age was about 48 (40; 53) years. For determination of OSA somnological study with calculation of apnea/hypopnea index (AHI) was performed. For visualization of upper gastrointestinal canal esophagogastroduodenoscopy (EGD) was used. Also morphological examination was provided by means of biopsy of the lower third of the esophagus. The levels of type IV collagen were estimated in plasma by means of enzyme-linked immunosorbent assay (Wuhan Fine Biotech Co., Ltd., China). For analyzing data nonparametric statistical methods were used. Patients were divided into 4 groups: the 1st group – patients with esophagitis (n=22), the 2nd group – patients with esophagitis and OSA (n=23), the 3rd group – patients with OSA (n=21), the 4th – control group (n=14).

Results: In the 2nd group of patients collagen IV level (5,981 (4,665; 7,378) ng/ml) was statistically significant higher in comparison with the 1st group (4,305 (3,895; 4,994) ng/ml) ($z=3,025$, $p=0,015$), the 3rd group (4,174 (3,300; 5,273) ng/ml) ($z=2,944$, $p=0,019$), the 4th group (4,538 (3,582; 6,005) ng/ml) ($p=0,011$). Patients with erosive reflux esophagitis had statistically significant higher values of type IV collagen in comparison with patients with non-erosive esophagitis (6,819 (6,209; 7,533) and 4,538 (3,582; 6,005) ng/ml respectively) ($p=0,011$).

Conclusions: The obtained data suggest that in patients with reflux esophagitis and OSA the injury of esophageal mucosa is more severe in comparison with patients without OSA. Type IV collagen seems to be as a marker of erosive esophagitis in patients with gastroesophageal reflux disease.

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Latvian Arrhythmogenic Right Ventricular Dysplasia (ARVD) Registry

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Introduction: Arrhythmogenic right ventricular dysplasia (ARVD) is a rare form of cardiomyopathy and the leading cause of sudden death among young athletes. Prevalence of ARVD in the general population ranges from 1 in 2000 to 1 in 5000. Pathogenesis is largely unknown. It may develop due to genetic mutations of desmosomal proteins encoding genes. ARVD has been associated with eight genes: TGFB3, RYR2, TMEM43, DSP, PKP2, DSG2, DSC2 and JUP.

Aim of the study: Aims of the Study was to establish Latvian ARVD Registry, to determine the genetic background of ARVD, to analyse discovered genetic variations frequency in European (EU) and Latvian (LV) populations, to determine sudden cardiac death risk (SCD) of patient

Material and methods: Registry enrolled patients from 1 August 2014 in Pauls Stradins Clinical University hospital according to ARVD diagnostic criteria based on Revised Task Force Criteria, 2010. Medical history, electrocardiography, echocardiography, cardiac magnetic resonance imaging, Holter monitoring and risk stratification were done. PKP2 (12p11.21) gene analysis were done using direct sequencing method. Genetic variations were checked in ARVD database and their frequency compared with European population data.

Results: 17 symptomatic patients were enrolled - 11 females (65 %), and 6 males (35%), with a mean age of 43 years (± 15.40 ; max-72, min-21). High risk of SCD were identified in 6 (35%) patients. Abnormalities in electrocardiography were found in 6 (35%) patients, Holter - 7 (41%), echocardiography - 11 (65%), cardiac magnetic resonance imaging - 6 (35%). Different non-pathogenic genetic variations were found: c.1097T>C, c.2145+45G, c.2145+72A>G, c.2578-69G>A, c.2489+14insC, c.2300-21delG. Two novel, unregistered, possibly non-pathogenic genetic variations: c.2489+131G>A, c.2489+72delA. One genetic variation c.1592T>G in a homozygote variation is possibly pathogenic. For treatment Beta blockers were used in 7 patients (41%), RFCA- 6 (35%), ICD- 3 (18%).

Conclusions: Latvian Arrhythmogenic right ventricular dysplasia (ARVD) Registry is established, it is the first in Baltic States. New ARVD patients are found, majority of whom were suspected due to changes in echocardiography. Third of patients are in high risk of SCD. In one case PKP2 gene genetic variation C.1592T>G is possibly pathogenic, other genetic variation are non-pathogenic.

[265]

Impact of Body Mass Index on the Outcomes Following Transcatheter Aortic Valve Implantation

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Introduction: Conflicting results have been presented regarding influence of body mass index (BMI) on outcomes among patients undergoing transcatheter aortic valve implantation (TAVI)

Aim of the study: To investigate impact of the BMI on the clinical results after TAVI

Material and methods: A total of 148 consecutive patients were categorized as normal weight, overweight, and obese according to World Health Organisation criteria. One patient with BMI ≤ 18.4 kg/m² was excluded from analysis. The baseline patient characteristics, procedural and clinical outcomes as well as the results of frailty were compared between BMI categories.

Results: Obesity was diagnosed in 37 (25.2%) patients, 73 were overweight (49.7%), and 37 (25.2%) had normal weight. Lower frailty prevalence as assessed with 5-meter walking test was confirmed in obese patients as compared to other groups. Patients were followed-up for a median of 460.0 (182.0-1042.0) days. A trend towards a lower rate of in-hospital bleeding complications [18 (48.6%) vs. 21 (28.8%) vs. 9 (24.3%); $p=0.06$] and less frequent blood transfusions in overweight and obese was observed [18 (48.6%) vs. 17 (23.3%) vs. 8 (21.6%); $p=0.016$]. The rate of grade 3 acute kidney injury was the lowest in the overweight group [4 (10.8%) vs. 1 (1.4%)

vs. 3 (8.1%); $p=0.05$]. There was no difference between groups in all-cause mortality at 30 days [$p=0.15$]. However, 12-month all-cause mortality was the lowest in obese patients [12 (32.4%) vs. 10 (13.7%) vs. 2 (5.4%); $p=0.004$]. Increase in BMI was independently associated with lower all-cause mortality [HR (95%CI) per 1 kg/m² increase: 0.91 (0.84-0.984); $p=0.018$].

Conclusions: Increased BMI was independently associated with survival benefit after TAVI.

[266]

Influence of obstructive disorders and the type of hyperinflation on arterial wall rigidity in patients with chronic obstructive lung disease

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Introduction: Cardiovascular malfunctions are one of the leading causes of high mortality in patients with chronic obstructive lung disease (COPD). Different indicators of arterial stiffness should be taken as important markers of the risk of death from cardiovascular events. An increase in the aortic stiffness disrupts its damping function, leads to an increase in systolic pressure and decrease in diastolic pressure that can damage target organs.

Aim of the study: The aim of our study was to assess arterial wall rigidity in patients with COPD depending on the degree of obstructive disorders and type of hyperinflation.

Material and methods: We examined 34 patients with COPD aged 45 - 70 years (59.8 ± 2.77)

with Vasera VS-1500 to estimate blood pressure level, CAVI and kCAVI indexes (average arterial stiffness of the aorta - tibial artery and aorta - femoral artery segments), PWV and kPWV (pulse wave velocity in these areas). Based on the results of body plethysmography performed with the MasterScreen Body, patients were divided into some groups according to the type of hyperinflation and severity of obstructive disorders according to GOLD gradation. Criteria for absolute hyperinflation were an increase in the residual lung volume (RV) and total lung capacity (TLC) of more than 140% and 125%, $RV / TLC > \text{normal value} + 8$.

Results: Plethysmography revealed that 23 patients had absolute hyperinflation and 11 patients had relative type of hyperinflation. In absolute hyperinflation, higher values of arterial stiffness and blood pressure were observed. CAVI was 10.5% higher in absolute hyperinflation, the difference in PWV level was 16.6%. The most significant differences were in terms of kCAVI (9 ± 0.83 ; 10.4 ± 0.85 ; 15.8%, $p=0,013$) and kPWV ($8.5 \pm 0, 94$ m/s; $10.6 \pm 0, 87$ m/s; 24.8%, $p=0.001$), which reflect mainly the stiffness of the aorta. When assessing the arterial stiffness, depending on the degree of bronchial obstruction we revealed that patients of groups GOLD 3,4 had higher rates of arterial rigidity. Patients with severe bronchial obstruction ($FEV_1 < 50\%$) had 8.8% higher rates of CAVI, 12% higher PWV, 13.9% higher kCAVI and 17% higher rates of kPWV without no significant differences in the level of arterial pressure in the groups.

Conclusions: Correlation of arterial rigidity, severity of COPD and the type of hyperinflation was revealed. Progress of COPD is followed by an increase in indices of the arterial wall rigidity. Blood pressure is more dependent on the type of hyperinflation than the severity of COPD.

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Implementation of image superimposition principle in dental practice: new approach in clinical evaluation process

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Introduction: Since Harvard Consensus Conference, the tendency of developing new criteria for evaluating results of implant treatment was focused on developing a more rigorous approach regarding verification of remote outcomes as statistical success parameters of rehabilitation to ensure adequate objectification of necessary clinical data.

Aim of the study: To approbate integrated approach for evaluation the results of dental implant treatment using customized image analysis algorithms for cone-beam computer tomography scans and subsequent comparison of the outcome data with indicators obtained from clinical

Material and methods: 58 patients were included in the study, their rehabilitation was provided using complete removable overdentures placed on dental implants. All patients were divided into three age groups: I - 50-54 years (9 persons), II - 55-59 years (5 persons), III - 60-64 years (9 people). Evaluation of bone parameters conducted in the adapted software ImageJ with additional plug-in BoneJ (the Wellcome Trust). Levels of bone resorption was determined using the superimposition principle of three-dimensional images specifically developed by authors for such purpose. Implant stability quotient (ISQ) was determine for every implant by resonance frequency analysis (Ostell Mentor). Statistical analysis of numerical data performed using software Microsoft Excel software (Microsoft Office, 2016).

Results: After statistical analysis it was found that the ratio of the bone reduction volume and ISQ parameters depends not only on the topography and structural characteristics of bone, but also on the values of implant stability quotient estimated from different sides of the implant (buccal, lingual, distal and medial). Ratio values of bone reduction/ISQ varies in the range of 0,114-0,847. The specific parameters of each of the values were statistically significant only within a specific age group and jaw segment, where implantation was provided. The method of superimposition bone analysis regarding density of segmental bone fragments helps to evaluate residual crest changes in absolute terms of up to 95,4-96,7±0,26% accuracy. One year after implantation peri-implant bone parameters defined using plug-in BoneJ had a next picture: Conn.D (connectivity density) =1,5017-1,8562, Tb.Th (trabecular thickness) = 0,407-0,425, DA (degree of anisotropy)=0,432-0,497.

Conclusions: The proposed approach ensures possibilities for objectification not only geometrical but also qualitative changes of bone at peri-implant region and takes into account the impact of functional stability of titanium infra-structures to prognose the success of treatment.

[268]

Assessment of auditory function in severely preterm infants born with very low and extremely low body weight

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Introduction: In poor demography women's health is of great significance as their preterm babies can have higher incidences of chronic diseases, psychomotor, sight and hearing disorders and as a consequence poor pre-speech and speech development. Perinatal pathology rates have increased being resulting in congenital loss of hearing, deafness and disability in severely premature children.

Aim of the study: The aim of the study was to conduct early screening of auditory function in severely preterm infants.

Material and methods: The study involved 50 infants with very low and severely low birth weight born at 24-32 weeks. Auditory function was assessed with an apparatus "Neuro-Audio-Screen" with otoacoustic emissions at the frequency of the distortion product and a method for evoked response audiometry potentials. Mothers' pregnancy, delivery characteristics and features of early and late neonatal period were studied.

Results: Children had risk factors for hearing loss, premature birth (100%), caesarean section (40%), detachment of normally located placenta (20%), preeclampsia (25%), rhesus-conflict mother and fetus (18%), acute respiratory viral diseases during pregnancy (10%), prolonged hyperbilirubinemia in the early neonatal period (18%), multiple courses of antibacterials (90%), prolonged ventilation (60%). Mothers had abnormal pregnancy and labour resulting in chronic fetoplacental insufficiency (96%). 1\3 newborns had intrauterine development of II-III degree (36%). Extragenital urinary system pathologies were (chronic pyelonephritis and glomerulonephritis (30%), hypertension (16%), diabetes mellitus (14%), heart diseases (4%). Pathologies of the neonatal period included prolonged exposure of children to artificial lung ventilation (60%), long-term nature of hyperbilirubinemia (18%), the use of multiple courses of ototoxic antibiotics (90%), severe hypoxic-hemorrhagic CNS lesions (90%), intraventricular hemorrhage II-III degree (70%; 90,0%), periventricular leukomalacia(10%). Children had moderate and severe asphyxia (40 % and 20%) requiring active resuscitation. 5% children had congenital intrauterine pneumonia with respiratory support, cases of necrotizing enterocolitis (8%) and urinary tract infection (20%). Otoacoustic emission was in 28 children (56%).

Conclusions: All severely preterm infants are at risk of hearing loss and require neonatologists, neurologists and ENT doctors' advice. Among those with impaired auditory function there may be ones with prolonged

hyperbilirubinemia, hemolytic disease of the fetus and newborn. The method of brainstem auditory evoked potentials is efficient at Newborns' Units.

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Optimization of functional and aesthetic outcomes of mandibular reconstruction with fibula free flap

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Trustee of the paper: Alexander Alexandrovich Smal**Introduction:** one of the most important steps in achieving esthetical and functional mandible reconstruction with vascularized fibula graft is positioning of the bone graft relative to the basis of the native mandible.**Aim of the study:** to compare different modeling methods and the positioning methods of the fibular free flap for mandible reconstruction. Moreover, to assess the outcomes of mandible reconstruction with double-barrel fibula free flap.**Material and methods:** 50 patients with oral cavity cancer after reconstruction with fibula free flap were included in retrospective study between 2005 and 20017. Group I - reconstruction with fibula free flap, which was fixed to alveolar mandible border were performed in 20 cases, Group II - reconstruction with fibula free flap, which was fixed to inferior border in 20 cases, Group III - 10 patients underwent mandible reconstruction using the double-barrel fibula free flap. Postoperative CT images were used to measure bone height of neomandible at 6 months postoperatively and at later follow-up.**Results:** the difference in bone height in first two groups was significantly larger than in patients with double-barrel graft. It required performing correction of the jawline for some patients from the first group. Only in the Group III fixed dentures were available to support osseointegrated dental implants. In all cases modeling of the bone was performed while keeping it in place at the donor site to reduce the exposure of ischaemia. There were no total or partial flap losses in the third group. Donor site morbidity was comparatively the same.**Conclusions:** fibula bony flap continuing to inferior mandible border may produce a high discrepancy between the residual mandible and fibula flap that results in difficulty in denture rehabilitation. Fibula bony flap continuing to alveolar mandible border creates asymmetric jowls and changed shape of jawline in graft-mandible zone. The double-barrel technique solves this problem, but needs a precise preoperative planning and precision fibula flap modelling.

[270]

Isoniazid-mono-resistant Tuberculosis: collation of drug regimens efficiency

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Trustee of the paper: Olga Schevchenko, Prof. MD, Head of physiology and pulmonology department**Introduction:** Mycobacteria Tuberculosis (MBT) with resistance to isoniazid (INH) is one of the most common resistant profile globally (from 3 to 10%). INH-resistant Tuberculosis (TB) has a high risk of treatment failure and there is no therapy regimen with proven efficiency.**Aim of the study:** to compare results of patients with INH-resistant TB treated by short (only I line antituberculosis drugs) and long (I and II line drugs) regimens.**Material and methods:** Retrospective analysis of 91 history cases of patients with pulmonary TB with resistance of MBT to INH was done. 1 group (46 patients) – received TB treatment by short or individual regimen using only I line drugs. 2 group (45 patients) – treated by long regimen including II line drugs (fluoroquinolones and aminoglycosides).**Results:** MBT+ by microscopy was found in 84,7%-1 group and 60% -2 group. After 60 doses of antituberculosis therapy bacteria excretion was stopped in 61,5% and 66,6%, after 90 doses 76,9% and 77,7%, after 120 doses 94,8% and 96,3%, in 1 and 2 groups respectively. Destruction of pulmonary tissue was present in 80,4% 1 group, 62,5% 2 group. Healing of destruction after 60 doses got 40,5% and 50%, after 90-120 doses 59,4% and 63,6%, at the end of treatment 86,4% и 86,6%, in 1 and 2 groups, respectively. At the end of antituberculosis therapy 65,9% patients from 1 group and 77,7% from 2 group got effective treatment (results «recurred» and «finished treatment»). During treatment 2,3% and 5,7% died, «treatment failure» got 27,3% and 5,7%, in 1 and 2 group respectively. Result «interrupted treatment» was fixed at 6,8% in 1 group and at 14,2% in 2 group.

Duration of treatment course was 8,16 months \pm 2,86 in 1 group and 10,86 months \pm 3,15 in 2 group, that was longer for 2,7 months. The frequency of side-effects was 8,69% and 26,6% in 1 and 2 group respectively.

Conclusions: Including of II line drugs in treatment regimen of INH resistant TB allows to raise the results of effective treatment to 11,8%. So we can recommend long regimens with using of II line drugs in individual way for patients with INH resistant TB, depending from the type of case, the level of bacteriaexcretion, the presence and volume of destruction in pulmonary tissue, necessity of hospitalisation, the adherence to treatment and the risk of side-effects, because this treatment is longer for 2,7 months than short regimen and is supported by the higher risk of side-effects, death, interruption of treatment.

[271]

Respiratory gymnastics as a method of non-pharmacological treatment of combination of panic attacks and myofascial pain syndrome

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Introduction: There are many links between panic attacks (PA) and myofascial pain syndrome (MFPS), which are creating a vicious circle, reinforcing each other. Medical treatment of these syndromes is mostly directed to the single components of these conditions. At the same time, breathing exercises can affect both processes, correcting the impaired respiratory system and reducing anxiety.

Aim of the study: The study was aimed at evaluating efficacy of breathing gymnastics as non-pharmacological treatment of combination of panic attacks and myofascial pain syndrome

Material and methods: The study involved 90 people (17 men and 73 women) who have PA and MFPS at the same time. Mean age was 30.58 ± 8.24 years. Patients were divided into two groups, the first group (n = 30) included patients who were treated with standard medical treatment, the second group (n = 60) included patients, who performed respiratory gymnastics specially developed by the author, twice a day for 8 weeks, in addition to standard medical treatment.

All patients were examined twice, on the first day and after 8 weeks of treatment, using the following methods: clinical and neurological examination; Quality of life (QoL) with SF-36v2 questionnaire; palpation of the muscles with detection of trigger points (TP) and Manual Assessment Respiratory Muscle; determination of pain intensity with visual analogue scale (VAS); State-Trait Anxiety Inventory, Hamilton Rating Scale for Depression; Nijmegen questionnaire (NQ).

Results: Both groups of patients significantly decreased the frequency of PA with 2.0 to 1.0 in the first group and to 0.375 in the second group, the level of state anxiety and depression from 53 to 44 and from 10 to 6 in both groups respectively. Level of pain was 5 in both groups, but it decreased more in second group syndrome to 1.5 than first group to 3. Indicators NQ and respiratory rate significantly decreased only in the second group from 28.6 ± 3.8 ($p < 0.05$) to 21.43 ± 3.64 and 20.33 ± 1.95 to 16.60 ± 1.72 ($p < 0.05$) respectively. QoL was also significantly improved only in the second group from 51.65 to 66.6, while in the first group from 51.2 to 54.4.

Conclusions: Respiratory gymnastics can significantly improve the QoL, level of pain and the state of the respiratory system of patients with a combination of PA and MFPS, compared with standard pharmacological treatment.

[272]

Attitudes towards learning communication skills in the group of surgical and operational nurses

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Introduction: Communication skills are one of the key skills a nurse should have. Positive attitudes towards them are equally important. Creating these attitudes is as important in both postgraduate and academic education. It contributes to the desire to expand their competence as well as development of knowledge, but also improves the quality of care, its effectiveness, and thus affects the safety of the patient and medical personnel.

Aim of the study: Assessment of attitudes towards learning communication skills in the group of nurses completing specialization training in the field of surgical and operational nursing.

Material and methods: The cross-sectional survey interviewed 752 nurses, including 428 during the surgical specialization (group 1) and 324 during the operational (group 2). The average age of the respondents was 42.1 years (median: 43, min. 20, max 61, SD: 7.95). The average seniority of the study group was 19 years (median 20, min. 2, max 39, SD: 8.83).

The study was conducted at the turn of the first and second quarter of 2017 at the Postgraduate Center for Nurses and Midwives in Warsaw. Participation in the study was voluntary and anonymous. The data was collected using the PAPI method.

The study was conducted with the use of a standardized questionnaire Communication Skills Attitude Scale (CSAS). The Polish language version has been validated and adapted to national conditions.

The obtained results were developed using CSAS and descriptive statistical methods (mean and standard deviation). A comparative analysis of the results for two groups of nurses was performed using the Student's t-test.

Results: Despite the assumption that attitudes towards learning communication skills should differ depending on the specialization, during the analysis, this hypothesis was not confirmed ($t=-0.513$, $p=0.608$). Regardless of the specialization, the groups of nurses surveyed demonstrated positive attitudes towards the learning of communication skills (average total score 85.4 vs 85.0). Similar results were obtained in two subscales of CSAS: positive attitudes (44.5 vs 43.9, $t=-1.132$, $p=0.258$) and negative (31.1 vs 30.9, $t=-0.311$, $p=0.756$).

Conclusions: The obtained results did not confirm that the nature of the work performed, and the specificity of the department affect the attitudes of nursing staff towards learning communication skills. Regardless of the nature of the work and the specificity of the department, it is important to create positive attitudes and to learn communication skills also at the postgraduate education stage.

[273]

Global trends in use of birth control methods

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Introduction: There is a variety of available contraceptive methods that a young woman can choose from.

Aim of the study: The aim of the study was to compare applied birth control methods among young, educated women from different geographical and cultural backgrounds.

Material and methods: It was a cross-sectional survey study. The questionnaire was distributed among female students studying in Austria, Egypt, France, Indonesia, Italy, Kosovo, Macedonia, Poland, Romania, Slovakia and the United Kingdom. Answers from 4340 students concerning sexual activity, gynecology visits and contraception use were analyzed. Patients The study group consisted of academic female students aged 20-25 years old. Interventions All study group was obliged to fill in a short questionnaire.

Results: 63% of respondents were sexually active. 61% of women after sexual initiation reported use of contraception. Barrier method was the most frequently reported form of contraception, reaching over 90% of cases. 1/3 of condom users apply additionally one or more other birth control methods. 73% of women stated use of hormonal pills. Other contraceptive methods were applied as frequently as follows: intrauterine device – 4%, vaginal ring – 4%, hormonal injection or implant – 2.5%, transdermal hormonal system – 2.5%. Differences between countries were observed concerning the percentage of sexually active women and frequency of applied methods. Use of intrauterine devices ranged from no cases in countries like Kosovo or Romania to 6% of studied population in France. Similarly, vaginal rings were most popular in Italy (6% of women using contraception), but nobody reported use of vaginal rings in Romania, Macedonia, Indonesia or Kosovo. The most frequent use of transdermal hormonal systems was observed in Austria, reaching 11% of women using contraception.

Conclusions: There are differences in applied birth control methods, especially in case of long-term ones, which depend on patient's religion and country of residence.

[274]

Active athletes and the problem of gaping intestinal barrier

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Introduction: Regular, intensive physical effort, which professional sportsmen perform, has huge effect on their constitution including processes in intestines. It appears that intensive physical effort can lead to disorders of enteric barrier, which can increase the permeability of enterocytes.

Aim of the study: The objective of our research was testing the connection of intestinal barrier.

Material and methods: In group of 27 active sportsmen, who are training effort and strength sports (MMA n=16, American football n=11) was testing the connection of intestinal barrier. In group of respondents were made tests including the concentration of zonulin in feces and functional test of concentration lactulose and mannitol in urine.

Results: 96% of patients had the higher results in zonulin test (43,24 ng/ml \pm 9,88). In 41% of patients, it was noticed that they had had the higher proportion of lactulose/mannitol test in urine (0,045 \pm 0,013). All patients, who had the higher proportion in lactulose/mannitol test, also had an increase in zonulin test. Only one patient (4%) had normal results in both tests. The proper values of tests are <30 ng/ml in zonulin test and <0,035 in lactulose/mannitol test.

Conclusions: It seems that regular, intensive physical effort, which is typical for professional sportsmen, has huge impact on functioning of the intestines. That kind of effort can destroy the intestinal barrier including decrease of permeability and increase in risk of infection. That kind of process can lead to inflammation and degrade the function of absorbent system, which can decrease performance of sportsman.

[275]

Virulence of mycobacteria tuberculosis depending on resistance to antituberculosis drugs

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Introduction: Virulence is a degree of pathogenicity, i.e. the ability of the mycobacteria tuberculosis (MBT) to grow and propagate in a macroorganism and cause specific changes in organs and tissues, it being dependant both on the bacterium's property and on the defensive properties of the host organism. Various MBT strains and MBT of various profiles of resistance to anti-tuberculosis drugs (ATD) are known to have different virulences.

Aim of the study: to assess the bacterial excretions of MBT depending on profile of resistance to ATD, to compare the data of the phenotypic and genotypic methods, to carry out the correlation analysis of the results.

Material and methods: Results of the phenotypic (culture on a solid media) and genotypic (Xpert MBT/RIF) studies of 148 patients with lung tuberculosis (TB) have been analyzed. The material was sputum collected for diagnosis of new TB case. The patients were divided into groups (gr.) according to the results of a Drug Sensitive Test. Gr. 1-52 patients with conserved sensitivity to ATD, gr. 2 included 38 patients with monoresistance to isoniazide (INH), gr. 3 included 58 patients with Multidrug resistant (MDR) profile. Assessment of positive inoculation: single colonies— 1-19; 1+ - 20-100; 2+ - 100-200; 3+ - 200-500; 4+ - over 500 (in colonies). The standard assessment of positive Xpert MBT/RIF testing by quantities of DNA copies: very small, small, moderate, great quantity. Bacterial excretion is assessed as: scanty for single colonies, moderate for 20 to 100 colonies (1+), massive for 100 and over (2+, 3+, 4+). Correlation analysis (by Spearman and Kendall) has been made in SPSS.

Results: Bacterial excretion: in 1 gr. 30,76%-scanty, 28,84%-moderate, 40,38%-high, in 2 gr. scanty-36,84%, moderate-39,17%, massive-23,68%, in 3 gr. scanty-37,93%, moderate-22,41% and massive-39,65%. In Xpert MBT/RIF testing 15 negative results have been noted, which comprised 7,7% in 1 gr., 15,8% in 2 gr., 8,6% in 3 gr. Results very small in 6,25%, 15,62%, 11,32%, small in 27,08%, 28,12%, «medium» in 42,1%, 34,37%, «great quantity» in 31,25%, 21,57%, 32,07% in 1, 2, 3 gr., respectively. The Spearman correlation is 0.75, Kendall - 0.66, with the reliability level $p < 0.01$.

Conclusions: MBT sensitivity to ATD have the highest, MBT with MDR-moderate, MBT with INH-mono-resistance the lowest virulence, according to the results of the phenotypic and genotypic tests. The results prove the ability

of the Xpert MBT/RIF to prognose the level of bacterial excretion and the necessity of reporting the details of test to specialist to raise level of epidemiological and infection control in TB.

[276]

Usefulness of neck circumference in evaluating patient's health state

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Introduction: The epidemiological study is one of the most demanding studies. Furthermore, receiving honest data from patients is required to obtain solid statistics. However, there are some questions generally regarded as inhibiting and sensitive, for instance concerning body weight or waist circumference. Those questions could have a significant impact on utter statistics making them unreliable. There is an enormous need to create some useful and convenient anthropometric tools that would help to evaluate patient's health status simultaneously avoiding sensitive questions and rendering all the data valid.

Aim of the study: The object of our study was to examine the usefulness of neck circumference in evaluating patient's body weight and waist circumference.

Material and methods: The study was conducted in Szczecin during two popular events: the final of The Great Orchestra of Christmas Charity (10.01.2016) and run for women „Alkala” (06.03.2016). It included 374 patients, 242 of whom were women. Every participant was measured using flexible measuring tape in order to obtain neck and waist circumference, and also the body mass was weighed. Additionally the short survey research, concerning height, educational background and place of residence, was conducted.

Results: Statistical analysis showed a very strong correlation of neck circumference and both body weight ($p < 0,01$, $RHO = 0,7$) and waist circumference ($p < 0,01$, $RHO = 0,76$).

Conclusions: It seems that neck circumference is a solid indicator that can help to evaluate both body weight and waist circumference avoiding sensitive questions. Thus neck circumference may be helpful in collecting a representative group of people during population study.

[277]

The impact of the family on Problematic Internet Use among young people in Warsaw

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Introduction: Problematic Internet Use (PIU) is defined as an excessive use of some Internet applications which leads to psychological, social and health problems. Adolescents using the Internet in a dysfunctional way get worse results on the psycho-sociological problems' scales. Research shows that adolescents who lack acceptance, understanding and good communication in families believe that only the Internet can give them opportunity to share their problems and feel understood.

Aim of the study: The assessment of the scope of PIU and the investigation of the family's role in the PIU prevalence among the students of secondary schools in Warsaw.

Material and methods: The research technique was random survey. The study group comprised of 1078 students from 9 randomly chosen secondary schools in Warsaw, Poland. The study was confidential and voluntary. Self-administered questionnaire consisted of the Internet Use Test by R. Poprawa, sociodemographic part and questions about the family. Statistical analyses were conducted with the use of IBM program SPSS Statistics.

Results: About 10,9% of students show a high level of PIU, and about 0,7% of students demonstrate very high level of PIU. There are no statistically significant correlations between family structure or professional status and PIU. Persons, whose parents limit the time spent on the Internet, show the highest intensity of PIU. The level of satisfaction from the family relationships is statistically correlated with all dimensions of PIU. Adolescents with highest intensity of PIU reported having biggest difficulties when discussing their problems with fathers and mothers.

Conclusions: Health promotion programs focused on PIU should take cognisance of the role of family. It would be highly valuable to conduct studies concerning the involvement of family in health promotion programs,

including intervention studies. Developing the longitudinal study is of utmost importance to comprehensively assess the proximate causes and examine potential influence of the family on PIU prevalence.

[278]

Assessment of the level of leadership competences of Public health and Nursing students at the Medical University of Warsaw - a pilot study

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Introduction: Leadership competence is a topic which is increasingly addressed in the context of higher education of future employees of the health care system. The issue of leadership is not realized as a separate subject in the program of studies in the field of nursing and public health. Therefore, the attitudes of students and the level of their leadership competences are associated rather with their character and personality traits than with formal education during compulsory subjects carried out by students.

Aim of the study: An attempt to assess leadership competences in the group of students of Public Health and Nursing at the Medical University of Warsaw.

Material and methods: The study was attended by 206 students: 131 students of the third year of first-cycle studies in nursing and 75 students of the third year of the second-degree studies of the Division of Public Health, Faculty of Health Sciences, Medical University of Warsaw. 189 women (91.75%). The average age of 21.85 years (at least 20, max 29, SD: 1,327). PAPI method, voluntary research, standardized, anonymous questionnaire Authentic Leadership Self-Assessment Questionnaire (SAP), 16 statements rated on a Likert scale ranging from 1 (strongly disagree) to 5, with four dimensions: 1. Self-awareness, 2. Ethics/Morality, 3. Openness to feedback and 4. Transparency in relationships, high score: 16-20 points, low score: 15 points and below.

Results: In all subscales, the surveyed students showed an overall low level of leadership competence. In each of the four dimensions analyzed, the average values of the level of competences were higher in the group of public health students: self-awareness 15.7 vs 15.1, ethics / morality 15.9 vs. 14.5, openness to feedback 15.7 vs 14.7, transparency in relationship 14,7 vs 13,7. Regardless of the field of study, respondents achieved the lowest results in the transparency in relationships.

Conclusions: In the studied group the level of leadership skills was low, therefore there is a need to supplement the study program with subjects developing psychosocial skills of students, which may in the future affect the development and improvement of leadership competencies, as expected by most employers. Due to the fact that the presented studies are of pilot nature, they will be continued in the future.

[279]

Physiological changes in conditions of low information load in students during classes

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Introduction: When we spend a lot of time on social networks, the brain is in a state of receiving an uninterrupted flow of information and fast replacing each other emotional impressions. As a result, the body is in a state of increased information load, leading to a stress reaction.

Aim of the study: The aim of the study was examine the impact of physiological changes in conditions of low information load during classes in students of Gomel State Medical University (GSMU).

Material and methods: Study was performed with the participation of 94 student's 2-4 course of GSMU aged 17 to 24. We conducted an experiment including: spent 3 hours (during the class), during students could not use any multimedia devices for surfing information in social networks (for experimental group). Also measuring blood pressure, heart rate, blood glucose level, level of concentration and attention, before and after experiments (for control and experimental group). The statistical analysis was performed with use of Statistica 10.0 and Microsoft Excel.

Results: The level of concentration and attention in the control group was low in 30% (n=12) before the start of the class and average in 70% (n=28). At the end of the class the level of concentration was statistically significant $p < 0.011$ improved to average level in 65% (n=26), to a good level in 35% (n=14). In 30% (n=12) students the concentration level increased from low to medium or good level. The level of concentration and attention in the experimental group before study was average in 40.7% (n=22), low in 55.5% (n=30) and good in 3.8% (n=2). After the experiment, there was a statistically significant $p < 0.04$ improvement in student's concentration: a good level of attention in 77.8% (n=42) and average in 22.2% (n=12). In an experimental group, the level of attention increased from a low to medium and good level in 55.5% (n=30).

In the experimental group, a statistically significant change in heart rate (71.12,76.55) $p < 0.0015$ after the experiment compared with the control.

A statistically significant (4.96,5.20) $p < 0.040$ increase in the glucose level after the experiment was also noted, compared with the control group.

Conclusions: Concentration and attention during classes improves without using social networks and the Internet, by reducing the amount of perceived information. A permanently high level of information load leads to nervous and mental exhaustion, as well as to unfavorable physiological changes.

[280]

Perinatal lesions of the central nervous system in infants: social and psychological profile of premature infants' parents

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Introduction: An increase in premature birth in some ways is associated with new criteria of birth assessment. Premature infants can have higher risks of the central nervous system, psychiatric (CNS), sense organs disorders, congenital malformations with pathology of the CNS comprising up to 80% all CNS diseases in childhood. Hypoxic lesions of the CNS can impair fetal development, neurological health, lead to disability and require proper rehabilitation to reduce risks of disability and improve social adaptation.

Aim of the study: The aim of the study was to assess social and psychological characteristics of families with premature infants with perinatal lesions of the CNS.

Material and methods: The study involved 100 parents with children born at gestational age 28-34 weeks and weighing up to 2000gr. Group 1 (n=50) had parents and preterm children with perinatal CNS lesions. Group 2 (n=50) included parents with premature infants without any perinatal CNS lesions.

Results: Mothers' age in Group 1 was 28.8 ± 0.5 years, fathers' - 32.5 ± 0.6 . The data were higher than in Group 2: $25, 4 \pm 0, 5$ and 26.3 ± 0.6 , respectively. There were no differences in education in the groups. Proportion of women with secondary school education was 65.0 and 60.0%, respectively. In Group 1, 35.0% mothers had university education and in Group 2 - 40.0%. Over 50% women of Group1 had mental work (65, 8%) in Group 2 - 33, 8%. In Group 1 45.3% fathers had heavy physical labor and in Group 2- 33.2%. The number of fathers with intellectual work did not differ (38.2 and 36.8%). The majority of preterm infants in both groups was born in officially married families or did not have formal marriage (86, 5 - 89, 2% respectively). Income had become worse and was associated with increased costs for treatment and rehabilitation. In Group 1, 40.0% parents and 38.8% of those in Group 2 spent their holidays in the countryside; in rest houses and resorts — 15, 8 and 27.9%, respectively. In Group 1 one of three woman (37.8%) avoided close communication with friends. The number was higher than in Group 2 (11.7%). In Group 1, 75, 6% had appropriate skills in care for babies compared with 16.7% mothers in Group 2. Some mothers required psychologist's advice (Group 1 - 79, 6% and Group 2 - 16.7%).

Conclusions: Families with premature infants with perinatal lesions of the CNS differ from those without any lesions of the CNS, their rehabilitation requires special education of families as well their close contact with doctors taking into consideration family characteristics.

[281]

Dysbiotic factors and frequency of painful defecation – result of Woodstok for future health study 2016-2017

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Introduction: Many healthy people experience symptoms of functional bowel disorders and painful defecation and various dysbiotic factors contribute to these symptoms.

Aim of the study: The aims were to: 1. assess the frequency of painful defecation among participants of Woodstock Festival in 2016, 2. identify variables disrupting microbiota composition during Woodstock Festival in 2017.

Material and methods: In total 1907 people aged 24.61 ± 6.2 years old filled in a Rome III criteria-based authors' questionnaire and Digestive Health Appraisal Questionnaire (DHAQ) in 2016 and 2017, respectively. The DHAQ was performed in 1-item scale, ranging from 0 to 3 (Symptoms in growing intensity).

Results: Among Woodstock 2016 cohort, 1. abdominal pain lasting 12 months were reported in 19.20% (n=284) of, 2. pain relieving after bowel movement in 12.51 % (n=185), 3. pain occurring while changes in defecation frequency in 8.72% (n=129), 4. pain occurring along the stool difference in consistency and form in 9.13% (n=135). Multivariate ordered regression analysis showed that frequent stress, proton pump inhibitors (PPIs) and antibiotics usage increased the risk of developing these symptoms (OR: 1.521-3.308; $p < 0.01$) and males were less prone to experience such manifestations (OR=0.717, $p = 0.011$). Continuously, in 2017 elevated intestinal permeability symptoms (EIPS) were found to be more prevalent in females (mean rank: 242.34 vs. 179.2, $p < 0.0001$). Usage of PPIs and nonsteroidal anti-inflammatory drugs (235.2 vs 206.3, $p < 0.03$ and 232.8 vs 200.9 $p = 0.008$) and living under permanent stress (279.9 vs 182.7 $p = 0.0001$) were linked to more intense experience of EIPS.

Conclusions: Female gender and permanent stress are main factors of functional digestive complaints among Woodstock Festival participants.

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[282]

Emotional reactions in pregnant women with cardiovascular disorders and threat of abortion at the early stages

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Introduction: Harmonious and stable state of psychoemotional sphere of pregnant women is an essential condition of favorable course of pregnancy and the full development of the fetus. The purpose of this study was to investigate the peculiarities of emotional response in pregnant women with cardiovascular disorders and threats of abortion at the early stages.

Aim of the study: The study involved 60 pregnant women in the first trimester of pregnancy (30 women with threatened miscarriage with disorders of cardiovascular system and 30 women whose pregnancy is progressing without complications). The study used clinical methods, dia

Material and methods: The study involved 60 pregnant women in the first trimester of pregnancy (30 women with threatened miscarriage with disorders of cardiovascular system and 30 women whose pregnancy is progressing without complications). The study used a clinico-anamnestic method, diagnostic method, testing (Colour test M. Luscher, Test of relations of a pregnant woman (TRPW), multi-factor personal questionnaire (16 PF) by R. Cattell).

Results: Analysis of data of a multi-factor personality questionnaire revealed a lower level of intelligence (5,6), low emotional stability (4,3), low stress resistance(6) in the group of women with threatened miscarriage with disorders of the cardiovascular system. Higher level of intellectual development (7, 5), higher levels of emotional stability (9,7) a high level of stress (9,6), ($p>0.05$) was identified in the control group of women. TRPW revealed that in threats of miscarriage with disorders of the cardiovascular system are dominated by anxiety type of PCGD (psychological component of gestational dominant) - 50%, women with pregnancy without complications have the optimal type of PCGD - 60%. The study also showed that self-doubt, lack of control of their desires, frustration, hypersensitive nervous system, a sharp reaction to any threat are characteristic for 90% of women with threatened miscarriage. Depressive type of PCGD was diagnosed for 20% in the main group of women and manifested as reduced background mood, doubts in ability to give birth to a healthy baby.

Conclusions: The obtained results confirm significant differences in emotional response between pregnant women with threats of miscarriage and with normal pregnancies without pathologies and psychological care in the first trimester of pregnancy.

[283]

A Preliminary Report on Knowledge and Attitudes Toward Electroconvulsive Therapy Among Polish Students

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Introduction: Electroconvulsive therapy is one the most stigmatized and controversial forms of treatment used in psychiatry. Social reception of ECT is believed to be influenced by how it is portrayed in popculture.

Aim of the study: The aim of this study was to investigate the general knowledge and attitudes towards ECT among polish students.

Material and methods: 1513 answers were collected via internet questionnaire, which consisted of questions about sociodemographic data and detailed ones regarding ECT, such as its indications, safety, anesthesia, pregnancy etc. The answers were divided into four subgroups- economic sciences, technical, medical and health science, depending on the faculty of the studies. The data was analyzed using SPSS Statistics version 12.5.

Results: Results have shown dramatically low knowledge about ECT. Approximately 1/3 of respondents claim it's dangerous, unethical and ineffective. Moreover the economic sciences students gave the most incorrect answers. There was also a statistically significant correlation between watching the four popular movies showing ECT (Requiem For a Dream; Girl, Interrupted; A Beautiful Mind; One Flew Over The Cuckoo's Nest) and the results.

Conclusions: The results indicate very poor level of knowledge regarding ECT among Polish students, even the medical ones. As the stigma is influenced by popculture the counteracting steps should be taken immediately.

[284]

Coping strategies and types of the sensitivity to justice in disabled children with musculoskeletal disorders

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Introduction: Studies focused on clinical and psychological characteristics of disabled children with musculoskeletal disorders are of great significance to plan and provide efficient social and psychological support.

Aim of the study: The aim of the study was to assess characteristics of disabled children when they face real life situations connected with such phenomenon as justice.

Material and methods: The study involved the R. Lazarus's coping test aimed at identification of various coping strategies and the M. Schmitt's questionnaire to assess individuals' sensitivity to justice and included 35 adolescents with disabilities aged 14 - 18 years with disorders of the musculoskeletal system.

Results: The following coping strategies prevailed: distancing - 64%, social support search - 48%, flight or avoidance - 67%. Adolescents in difficult situations preferred to escape from the situation, neglecting its significance and emotional involvement into it solution. We identified 4 groups with different types of sensitivity to justice. 58% of them had a kind of sensitivity to the victim's fairness with a trend to be weak a desire to shift responsibility to relatives as well as had sharp changes in mood. 25% children had the form of the sensitivity to the observer's fairness and demonstrated sympathy and empathy for other people who were in the situation of the injustice, although they don't make any decision about the help and suffered from the frustration. 5% of the respondents had a kind of sensitivity to the justice of the offender manifested in irritation, aggressive attacks, and lack of desire to have empathy to others. 12% children had the kind of sensitivity to the fairness of the beneficiary and attracted the attention of their nearest ones to meet their needs for acceptance, recognition and love were characterized by the position of receiving benefits from the disease, be praised by others for their results in the rehabilitation process. The study analysis showed that the coping strategy "distancing" scale was linked with «sensitivity to justice observer" scale ($r = 0.44$), the coping strategy "seeking social support" was associated with «sensitivity to justice of the beneficiary" scale ($r = 0.56$).

Conclusions: Thus, children with disabilities of the musculoskeletal system do not have strong internal resources to solve complex real life situations, so they prefer to be in the position of an observer and as far as possible to escape the source of the problem.

[285]

"Did you pass? What did you use?" - products used by nursing students of Medical University of Warsaw during the examination session

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Introduction: The session and oral exams are mentioned as the most stressful elements of studies. Through these conditions students use substances which support cognitive functions. Studies have shown that students use potentially unsafe substances (especially alcohol and cigarettes), despite being aware of their harmfulness. This is important in the context of studying nursing, where students acquire professional knowledge of pro- and anti-health behaviors.

Aim of the study: The aim of the project was to get knowledge about the prevalence, motivation and effects of the use of substances which are believed to improve cognitive functions during the examination session in the opinion of students of nursing.

Material and methods: The study was based on a voluntary, anonymous survey that included 34 questions: demographic part (11), main part about products and substances used during the session and outside of it (15), part related to medical education (5), part related to lifestyle and health (3).

The study population were 124 students of Nursing at the Warsaw Medical University. 89 respondents were on 1st degree studies and 35 students were on 2nd degree studies. The majority of respondents are women (98%).

Results: During the session the most frequent is used strong tea (89%). Dietary supplements are used by 57% of respondents and 4% of surveyed students declare taking prescription drugs. Respondents use also such stimulants as alcohol (65%), cigarettes (29%), and marijuana (8%). 58% of students declare using products to prevent falling asleep. 44% of asked people don't know whether the products they use help them achieve their goals. 44% of students don't use drugs because of doubts about their effectiveness and most of them (60%) indicate the harmful effect of stimulants on health. 81% think their education at the University are rather or definitely stressful.

Conclusions: Many students are aware of the harmfulness of stimulants and therefore do not use them, and the products they use are relatively safe for health. The most popular product among respondents is strong tea. The fact that majority of students drink alcohol and many smoke, is alarming. The most of people think that studies are stressful which may trigger the need for using these products more frequently.

[286]

Perceived stress, sense of self-efficacy and the severability of posttraumatic stress symptoms in patients with prostate cancer

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Introduction: Research indicates that perceived stress and the sense of self-efficacy (SSE) are significant factors in the development of elevated levels of depressive and anxious symptoms in patients with prostate cancer (PC). Patients with greater SSE were less likely to develop depressive symptoms during the course of disease. Therefore, perceived stress and SSE can be hypothesized to moderate the possibility of the development of posttraumatic stress symptoms (PTSS) and depressive symptoms in the patients with PC, thus offering an additional diagnostic criteria for screening tests in this clinical group.

Aim of the study: To measure the level of perceived stress, the sense of self-efficacy and the severability of PTSS in patients with prostate cancer; investigating the relations between those psychological characteristics.

Material and methods: Perceived Stress Scale (PSS-10), Generalized Self-Efficacy Scale (GSES) were administered in two groups: patients with PC (n=25), treated at the Department of Urology in University Hospital in Cracow, and healthy controls (n=25). The PC group also filled out the Impact of Event Scale-Revised (IES-R), measuring the severity of PTSS. The diagnostic criterium for PTSS is the IES-R score exceeding 1.5 points. Grade of the patients' prostate cancer was evaluated with the use of Gleason Scale Score. Statistical significance was ascertained by t-tests and Pearson correlations, performed with the use of IBM SPSS Statistics 24.

Results: IES-R and its subscale Re-Experiencing significantly correlated with the Gleason Scale Score ($r=0,439$, $p=0,028$; $r=0,444$, $p=0,026$). The mean IES-R score was 2,2 (SD=0,52), with mean scores of 2,51 for Avoidance (SD=0,64), 2,14 for Re-Experiencing (SD=0,68), and 1,95 for Arousal (SD=0,62). Only one patient did not score above 1.5p. The significant negative correlation in the clinical group was found between PSS-10 and GSES ($r=-0,42$, $p=0,039$). PSS-10 correlated positively with the time from diagnosis ($r=0,482$, $p=0,02$). In PSS-10, the PC group reported higher levels of perceived stress (18,44 vs 14,64, $p=0,013$) than healthy controls.

Conclusions: Patients with PC report elevated levels of PTSS and perceived stress. The results highlight the importance of the preventive interventions directed against PTSS and depressive symptoms in patients with PC, concentrated on their self-efficacy levels. Perceived stress levels are higher in the late course of the disease. The PTSS indexes are interconnected with the severity of PC.

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Problem gambling and bipolarity

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Introduction: Problem Gambling (PG) was first officially classified as an impulse control disorder in DSM-III (1980) and requalified as an addiction disorder in the current DSM-5. PG is characterised by frequent, repeated episodes of gambling that dominate the patient's life to the detriment of social, occupational, material, and family values and commitments. Research conducted on groups of gamblers who sought for medical help has revealed a significant comorbidity of problem gambling with depressive, bipolar, substance use and anxiety disorders. Bipolar Disorder (BD) is a serious psychiatric disorder characterised by recurring episodes of mania and depression. Currently, the most relevant screening test for BD is the Mood Disorder Questionnaire (MDQ).

Aim of the study: To determine bipolarity traits and assess affective temperaments in a group of gambling population.

Material and methods: 70 participants filled out online versions of questionnaires: Canadian Problem Gaming Index (CPGI), MDQ, Hypomania Checklist-32 (HCL-32) and Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego Autoquestionnaire (TEMPS-A). Questionnaires addressed to gambling people were shared on Facebook social groups and internet forums concentrated on gambling. Statistical analysis was conducted using IBM SPSS Statistics 24, t-tests were used to calculate the statistical significance. Correlations were measured with Pearson correlation coefficient.

Results: Significant positive correlation between CPGI score and MDQ score ($R=0,492$; $p<0,001$), also between CPGI score and HCL-32 score ($R=0,354$; $p=0,003$) was observed. Additionally, CPGI score correlated with TEMPS-A Cyclothymic ($R=0,521$; $p<0,001$), Anxious ($R=0,338$; $p=0,004$) and Irritable ($R=0,356$; $p<0,001$) affective temperaments. In groups of problem gamblers ($CPGI\geq 8$); ($N=38$) and gamblers with a zero to moderate risk of PG ($CPGI<8$) a significant differentiation in MDQ score ($p<0,001$), HCL-32 score ($p<0,003$) and Cyclothymic ($p<0,001$), Anxious ($p=0,009$) and Irritable ($p=0,053$) temperaments was observed. In a group of problem gamblers, 13 participants were positively screened for a Bipolar Spectrum Disorder.

Conclusions: There is a strong correlation between problem gambling, bipolarity and cyclothymic, anxious and irritable affective temperaments. Data suggests high Bipolar Spectrum Disorders incidence in a problem gambling group. Further research with more participants needs to be conducted.

[288]

Sleep deprivation among Indian and Ukrainian medical students

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Introduction: Sleep is one of the necessary components of our daily life, but due to large academic load which bequeath with a poor sleep quality. This leads to psychological problems and other such problems which may subsequently lead to serious consequences.

Aim of the study: To evaluate and compare subjective sleep quality in medical students from Ukraine and India.

Material and methods: About six hundred and ten medical students from both Ukraine and India were given an anonymous questionnaire to know about their basic knowledge on sleep and sleep practices. We divided them into Group 1 and 2, 1 belonging to Indian medical students and 2 belonging to Ukraine. The results were analyzed and presented.

Results: Of the 610 students who participated, 310 belonged to Group 1 and 300 to Group 2. In which, 263(43%) students reported that their sleep quality as bad, 293(48%) students reported that they have difficulty staying awake at least once in a week. 427(70%) students felt that they have trouble falling asleep at night. 42(7%) students agreed taking sleep medication at least once in a month. 480(80%) felt that they have no disturbance during their sleep. 335(55%) believed that they have developed insomniac characteristics after joining medical school. Only 183(30%) believed that they have are having a perfect sleep quality.

Conclusions: We conclude that the Medical Students in both the countries are undergoing a serious sleep disturbance which has in turn affected their social life and academics. Comparatively students from Ukraine have a slightly better sleep quality. There is a stressing need to address this issue at the earliest and help the student in need.

[289]

Prevalence of anxiety disorder in the students of the Medical University of Warsaw (MUW)

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Introduction: Anxiety disorder is one of the most common mental problems nowadays concerning about 15% of the population during their lifetime yet the awareness of it is low. Those exposed to severe, prolonged stress, such as medical students, without proper coping mechanisms are extremely prone to develop it. The disorder significantly deteriorates life quality and productivity so it is crucial to prevent it or at least diagnose at an early stage.

Aim of the study: Aim: First to establish if there exists the problem of anxiety disorder among MUW students, how severe it is and what are the causes, how does it depend on such factors as year, sex, grades, faculty, social status and relationships and finally how it infl

Material and methods: The study was led in February and March 2017 on the polish speaking students of MUW through the anonymous questionnaire partially based on Hamilton Anxiety Rating Scale (HAM-A). It was led in two parallel ways: paper version (handed in to participants at the area of the campus) and online (on social media) to check if the results would differ.

Results: We got 262 responses on paper and 431 online. The score range in HAM-A part of the survey was 0-56 (<17:low severity of anxiety symptoms, 18-24:moderate, over 25:severe). We discovered that: approximately 40% suffer from moderate to severe symptoms of anxiety (>18p) and 20% severe (>25p); HAM-A score depends on sex, having a friend, satisfaction with social life, ability to deal with stress, social status while it does not depend on grades, being a single, year, faculty; the most stressful situations (finals, relations problems, failure in achieving goals) are the same for different faculties; in the group with score over 18p about 40% have family history of mental disorder, in 35% the duration of symptoms is over 3 years, 45% experience them once in a few days . There were no significant differences between paper and online version.

Conclusions: As prevalence of anxiety in MUW students is very high: about 40% of surveyed group suffer from moderate to severe anxiety symptoms that are frequent and experienced for a long period of time, their quality of life is undoubtedly impaired and effectiveness is lowered. We should raise the awareness of the problem, teach techniques of dealing with stress and offer a specialist help for those who need it.

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Gender features of the internal picture of a disease in patients with liver cirrhosis

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Introduction: About 200 million patients have chronic liver diseases worldwide with 14 million of them suffering from liver cirrhosis resulting in high mortality rates.

Aim of the study: The aim of our study was to investigate gender aspect of the internal picture of the disease in cirrhosis patients.

Material and methods: We used a questionnaire, a clinical test aimed at assessment of the type of attitude towards the disease, a brief multifactorial questionnaire for personality investigation, self-assessment of mental states by Eysenck and index of life satisfaction. The study involved 60 patients aged 32 – 65. Group 1 consisted of 30 male and the second group 30 female patients with liver cirrhosis.

Results: The most common causes of liver cirrhosis were identified and included in males alcoholism (80%) Hepatitis C (13%), Hepatitis B (7%) and in female patients alcoholism (40%), Hepatitis C (27%), Hepatitis B (33%) with 14% prevalence of Hepatitis C in Group 2. Study of patients' attitude toward their illness showed that in Group1 there was a mixed type of the attitude towards the disease including a harmonious (26%) and anosognosic (26%) type of attitude towards the disease. Females had a harmonious type in 46% cases. In Group 1 this rate was 20% lower. Men from the study group tend not to exaggerate the severity of their disease. They tried to ease the burdens of the relatives with their own care. However, there was an opposite attitude to the disease, for example, denial of the disease and its consequences. Females were more aware of the disease and cooperated with doctors. The index of life satisfaction showed no gender differences. The low index of life satisfaction was predominant indicating a high level of emotional tension, low emotional stability.

Men with cirrhosis had hypochondriacal personality type. They had a super-valuable nature of their health. This reduced the level of social activity, impoverishes interests. In Group 2, paranoiac type of personality predominated and was characterized by self-confidence, aggressiveness, steadfastness.

Conclusions: Clinical and psychological study of cirrhosis patients revealed obvious gender differences involving neuro-emotional stability, degree of integration of personal characteristics and the level of adaptation to the social environment.

[291]

Burnout Syndrome and link between Personal Resilience Among Intensive Care Unit Cardiologist and Cardiac Anesthesiologists

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Introduction: Burnout is a prolonged response to chronic emotional and interpersonal stressors on the job. A fundamental aspects of the syndrome is emotional exhaustion, depersonalization and diminished satisfaction with personal accomplishments. Healthcare workers in intensive care unit have high risk to burnout, because of high rates of patients' mortality, responsibility overload, end-of-life issues. It is important to evaluate and lower the prevalence of burnout among medical staff in order to improve the quality of treatment and health care working environment. Personal resilience is a capability to use one's inner resources for finding functional solution in adverse circumstances.

Aim of the study: The aim is to establish the degree of burnout syndrome and expression of the resilience among intensive care unit cardiologist and cardiac anesthesiologists.

Material and methods: A questionnaire-based survey was performed in Vilnius University Hospital Santaros Klinikos Cardiac Intensive care unit, where 19 doctors took part. The questionnaire was composed of demographical questions (age, years of practice, workload, night shifts per week) as well as Maslach Burnout Inventory – Human Services Survey (MBI – HSS) and Resilience Scale for Adults (RSA) questionnaires.

Results: 19 respondents participated in the survey: 6 men (31.6%) and 13 women (68.4%); 11 Cardiologist (57.9%) and 8 Cardiac anesthesiologists (42.1%). Almost half of the respondents reported high emotional exhaustion (47.4%) another half medium (47.4%); 42.1% had high depersonalization and 89.5% demonstrated low personal accomplishment at work. Average personal resilience score was 180.83 (min. 153 – max. 212). 94.7% of the respondents working longer than 40 hours per week. Research showed no statistically significant difference evaluating age, years of practice, workload, night shifts per week.

Conclusions: Almost half of respondents reported high and another half medium emotional exhaustion and depersonalization. It is important to emphasize that almost all respondents (94.7%) are working longer than 40 hours per week. Burnout reduction should be considered in order to prevent a further increase of burnout syndrome among intensive care unit cardiologist and cardiac anesthesiologists.

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Possibilities of clinical and psychological diagnostics of the II type bipolar affective disorder premorbid background

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Introduction: The problem of studying the premorbid background role in etiology and clinical manifestations of bipolar affective disorder of II type (BARII) is controversial. Studying the propensity for affective pathology of the bipolar spectrum, considering personality characteristics and gender differences was our aim.

Aim of the study: The aim of the study was to assess the propensity for affective pathology of the bipolar spectrum, considering personality characteristics and gender differences.

Material and methods: Clinical and psychological diagnostics of 129 healthy students (female - 35%, male - 65%), aged (18.27 ± 0.12) was carried out. We used Bipolar Spectrum Diagnostic Scale (BSDS), R. Pies, Mood Disorder Questionnaire (MDQ) R. Hirschfeld, Hypomania Checklist (HCL-32), reduced multifactorial questionnaire for personality research (MMPI) and Zung Self-Rating Depression Scale. Statistical processing of data included methods of descriptive statistics; the mean \pm standard error of the mean; Student's t-test; Spearman rank correlation coefficient.

Results: Studying personality according to (MMPI) method revealed accentuations that did not reach pathological values with a statistically significant prevalence on the scale "Ma" (hypomania) (51.86 ± 1.05) DI ($49.76; 53,95$) above all other scales. In female, this trend was more pronounced, but did not reach statistical differences with male ($p < 0.05$). Both in male and female statistically significant decrease in the Pd scale (psychopathy) was found (42.88 ± 1.27 , DI ($40.36, 45.4$). According to the screening scales of propensity to bipolar disorder statistically significant excess of threshold without significant differences in male and female ($p < 0.05$) was found on HCL-32 questionnaire scales (15.4 ± 0.43 , DI $14.55, 16.26$). Moderate correlation dependencies between "Pa" - paranoiac scales and screening scales (BSDS, HCL-32, MDQ) in male ($r = 0.69$, $p < 0.05$) and in female between "Ma" - hypomania scale and MDQ scale ($r = 0.37$, $p < 0.05$) were found. The highest correlation dependence was noticed between the "Pa"-paranoiac scale in male and the Zung scale ($r = 0.39$, ($p < 0.05$) which allowed to construct an acceptable linear model: $Pa = 1.41 * BSDS + 37.78$ ($R^2 = 0.46$) for studying the propensity to BAP II.

Conclusions: The premorbid background of BAR II can be represented in male by paranoiac traits of character accentuation in combination with an increase in the values on the BSDS scales, in female - with hyperthymic features combined with increased MDQ scores, which can generally identify the corresponding "risk groups" of affective pathology development.

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Prevalence of Burnout Syndrome and Association With Personal Resilience Among Intensive Care Unit Nurses

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Introduction: Burnout syndrome is a consequence of prolonged effect of factors causing chronic emotional stress. Fundamental aspects of the syndrome are emotional exhaustion, depersonalization and diminished satisfaction with personal accomplishments. Health-care specialists working in a stressful environment, particularly in an intensive care unit, has increased risk of higher burnout rate. Personal resilience is a capability to use one's inner resources for finding functional solution in adverse circumstances.

Aim of the study: The aim of this study is to determine the prevalence of burnout and expression of resilience among cardiac - intensive care nurses. As well as to assess the correlation between burnout syndrome, sociodemographic aspects and personal resilience.

Material and methods: A questionnaire-based survey of nurses was performed in Vilnius University Hospital Santaros Klinikos Cardiac Intensive care unit, where 14 nurses took part. The questionnaire was composed of demographical questions (age, years of practice, workload, night shifts per week) as well as Maslach Burnout Inventory – Human Services Survey (MBI – HSS) and Resilience Scale for Adults (RSA) questionnaires.

Results: Results demonstrated that more than half respondents (57.1%) reported high emotional exhaustion and 35.7% - medium, 28.5% had high depersonalization and 78.5% demonstrated low personal accomplishment rate. Nurses with longer than 20-year work experience, statistically significant reported higher emotional exhaustion ($p=0.038$). Mean of personal resilience was 184,5 points. Negative relation was determined between psychological resilience and emotional exhaustion ($r = -0.677$, $p < 0.05$), positive relation was determined between years of experience and emotional exhaustion ($r = 0.559$, $p < 0.05$).

Conclusions: High level of burnout syndrome was determined for more than half respondents (57.1%). Manifestation of high levels of burnout is most common among nurses with over 20 years of experience. Symptoms of burnout are less frequent when psychological resilience is higher and symptoms increase with work experience.

[294]

What we really know about orthorexia? Do polish university students exaggerate with healthy eating habits?

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Introduction: Orthorexia is quite new definition for pathological obsession with quality of food. Currently, eating healthy and avoiding artificial food with conservants and some certain ingredients become very popular. Sometimes it is hard to keep our head in the world full of perfect celebrities' look, coaching, dietitians and fitness.

Aim of the study: Our aim was to assess eating habits and lifestyle among students of polish universities and to check if there exist cases of orthorexia in this social group.

Material and methods: In our research took part 4160 students from 55 polish universities. They were asked to fulfill original survey and validated questionnaire 'ORTO - 15' by Donini. Authorial survey included 24 questions and 'ORTO - 15' consisted of 15 questions. Both of them concern questions about eating habits.

Results: 57 was the biggest amount of points collected in the 'ORTO - 15' survey, the medium result was $38,7 \pm 8,62$ and the lowest was 18. Number of points below 40 is connected with heightened tendency to fall down with orthorexia and that result was achieved by 2109 students. Age, BMI, weight and amount of meals per day didn't correlate with tendency to orthorexia. However, spending more money on groceries, longer preoccupation with healthy eating, being vegetarian, reading labels and eating regularly have impact on gaining less amount of points in the questionnaire.

Conclusions: Among students of polish universities, tendency to fall into orthorexia was observed. In this connection, we consider that more attention should be paid to this problem, because it could be as dangerous as others eating disorders.

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Agenda Ministra Zdrowia

Date:

Saturday, May 12th, 2018

Location:

Room 231/232, Didactics Center

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Daria Choroś
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Michalina Musiałek
Agata Rawiak
Maria Filatova
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Daria Avchinnikova
Andrei Russianov
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[295]

The level of knowledge on the use of antibiotics among the general population in Latvia

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Introduction: Antibiotic resistance has become a major issue in healthcare worldwide due to growth of antibiotic availability and usage, especially unreasonable antibiotic prescription and incorrect usage. As a result of rapidly growing epidemics of antibiotic resistance, infections caused by bacteria are more difficult to treat, leading to rising costs of treatment, prolonged stay in healthcare facilities and increased mortality. One of action points to tackle this growing epidemics worldwide is to improve general public's awareness and knowledge about rational use of antibiotics.

Aim of the study: To examine the level of knowledge of antibiotic usage and awareness of resistance among the general population in Latvia.

Material and methods: A quantitative, cross-sectional study based on anonymous survey consisting of 36 questions about the general information of respondents, availability of antibiotics, knowledge of antibiotic usage, application, side-effects, resistance and as well as thoughts about the doctors' antibiotic prescribing habits was distributed via social networks and by personally meeting respondents of older age who do not have access to the internet. The target group of this survey were inhabitants of Latvia above the age of 18.

Results: From 689 respondents who filled the survey, 649 (94.2%) have used antibiotics in their lifetime. 240 (37%) of respondents admit they have used antibiotics without the doctors' prescription. 226 (34.8%) of respondents believe antibiotics are useful for influenza treatment and 99 (15.3%) think that common colds are cured more quickly with antibiotics. 188 (29%) of respondents believe that antibiotics are effective against viruses. 438 (67.5%) of respondents do recognize resistance as a significant problem both in the world and Latvia. 420 (64.7%) of respondents believe doctors prescribe antibiotics unreasonably.

Conclusions: Younger respondents show slightly higher level of knowledge of antibiotic usage and resistance than older respondents. Strikingly high rate of respondents do not follow doctors' instructions on how to use antibiotics and use them without prescription. At the same time, low level of trust is shown in doctors' decision to prescribe antibiotics and respondents believe that antibiotics are over-prescribed by doctors. Data shows respondents' lack of knowledge regarding whether antibiotics are effective against bacteria or viruses. Research shows that further educational campaigns regarding antibiotic usage and resistance should be developed for the general population.

[296]

Efficiency of questionnaire methods in assessment of the quality of life in elderly people and long-livers

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Introduction: Questionnaires based on subjective perception of individual health parameters are widely used for assessment of the quality of life. The point of reliability and diagnostic value of self-evaluation health state and the quality of life in elderly people and long-livers has not been properly understood yet.

Aim of the study: Our aim was to clarify the requirements for the use of well-known SF-36, associated with its diagnostic significance increase.

Material and methods: We used SF-36 Health Status Survey. The main group included 43 individuals over 70. Some of them were gerontology in-patients and the others had homecare social services and a history of cardiovascular and other somatic diseases in combination with I-II degree discirculatory encephalopathy. The control group involved 42 people over 70 who had fully retained their self-service abilities and didn't have doctors' consultations during a year period.

Results: The average PF (Physical Functioning) score had no significant differences in the main and control groups (43.07 ± 2.7 and 45.38 ± 3.1 , respectively). Patients required nursing subjectively, didn't feel an activity level decrease associated with the disease. In this case, the RP factor (Role-Physical Functioning) in the main group

was significantly reduced (21.44 ± 3.87), which indicates the limitations of vital activity in health (in control $57, 33 \pm 6, 4$). The RE (Role-Emotional) state in the main group exceeded the control indices with a reliable difference (72.22 ± 5.41 and 53.98 ± 4.6). The VT (Vitality) and MN (Mental Health) index in the main group also exceeded the corresponding values in the control group.

Conclusions: The main group revealed a discrepancy between a low health level and its self-esteem, which may be a consequence of criticality and cognitive functions decrease on the background of discirculatory encephalopathy. SF-36 use in such cases can lead to incorrect diagnosis when high mental health indicators regarded as evidence of a high life quality, being in fact a manifestation of an emotional affective disorder. Consequently, the informative quality of questionnaire methods to assess the quality of life in elderly individuals and long-livers can be reduced, applying to patients suffering from cerebrovascular disorders.

[297]

What do Polish mothers know about breastfeeding?

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Introduction: Breastfeeding up to 6th month of child's life is a „gold standard” recommended by World Health Organisation. According to the Main Statistic Office in 2014 more than 90% of women breastfed their children during the first days after delivery, but only 46% continued it beyond the 6th week postpartum. Discontinuation of breastfeeding may be caused by insufficient knowledge about the benefits of the process.

Aim of the study: The aim of the study was to assess the knowledge of Polish women about breastfeeding .

Material and methods: A prospective cross-sectional study was performed among Polish women aged 18 to 45, who were breastfeeding at present. The self-composed questionnaire consisting of 23 questions, regarding demographic data and knowledge about lactation, was distributed via internet between February and March 2017. Statistical analysis was performed with Mann-Whitney U-test for continuous variables and chi-squared test for categorical variables. P value <0.05 was considered significant.

Results: 761 women participated in the study. Mothers at the age of 26-30 were the largest group – 44% of all (n=335). 34% of respondents lived in cities with more than 500 000 inhabitants, 32% in cities with 50-500 000 citizens, 12% in cities with less than 50 000 of inhabitants, 22% in the countryside.

77% of women have learned about lactation from Internet. Only 8% indicated the doctors' consultations.

The question about the impact of used medicines on lactation was answered correctly by most of the respondents (97%). On the other hand the question concerning supplementation the mother's diet with iod was the most difficult for women (68% of incorrect answers). The most variable answers were given to the questions about supplementation the mother's diet with vitamin D3 and folic acid (49% of incorrect answers).

Giving correct answers was correlated with parity (multiparas significantly more often answered the questions correctly), but not with place of living or age.

Conclusions: The knowledge about lactation among the Polish women is not satisfactory. We should focus on well-maintained education guided by doctors, midwives and also media.

[298]

Assessment of the level of sugar addiction among students of Bogomolets National Medical University

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Introduction: WHO declared that the consumption of processed carbs, which may be associated with 'sugar addiction', is a global problem which leads to overweight, obesity and other non-communicable diseases.

Aim of the study: The main purpose of our work was to analyze the level of addiction to any kind of processed carbohydrates among the students of Bogomolets National Medical University and interns, who are highly aware of all consequences that brings high sugar intake to o

Material and methods: We have used the S-UNCOPE – screening for sugar addiction questionnaire method to analyze the addictiveness of highly processed foods. We gathered the information in both ways: through the Internet in Google Form and personally with the help of paper variant. To find out the stress level we asked to estimate subjectively the stress in one's life and choose the number from 1 (the lowest) to 10 (the highest).

Results: A total of 711 surveys were included in the analysis. We found out that an average participants' score (numbers of positive answers) was 3, which indicates the harmful use of carbs. An average stress level was 6,2. Among the participants the majority (71%) have declared eating more bad carbs than they meant to in the past year. 68% of students mentioned that they wanted to cut down on overeating bad carbs during the last year and 69% claimed that they used bad carbs to relieve emotional discomfort. 23% stated that they neglected some of their daily responsibilities because of using bad carbs. 37% found themselves preoccupied with wanting bad carbs. 29% of students were objected to their eating habits by their relatives, friends etc. Overall, the social use is among only 20% of students. 42% of respondents indicated harmful use and 38% indicated addiction itself.

Conclusions: Our assessment demonstrates that consumption of bad carbs among medical students in Kyiv is a real problem, because the majority of students have a significant level of excessive processed carbohydrates use (half among them do already have a sugar addiction). There is a strong need to emphasize the importance of this problem due to its relevance and to expand students' awareness about possible consequences for the health status. As an average stress level among the respondents is quite high and the majority of students use bad carbs to relieve emotional discomfort, there is a need to popularize other methods of dealing with stress such as sport, yoga, meditation etc.

[299]

Let's talk about physical activity before and after liver transplantation in young PSC patients - comparison of self-assessment and objective exercise stress test results.

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Introduction: Primary sclerosing cholangitis (PSC) is an uncommon, chronic inflammatory cholangiopathy of autoimmune pathogenesis, that results in fibrotic strictures and dilations of the intra- and extrahepatic bile ducts. Once patients have progressed to end-stage liver disease, the only treatment option is liver transplantation (LT). Health-related quality of life (HRQoL) is impaired in PSC patients, especially females, when compared to healthy individuals. However, data regarding HRQoL after LT in PSC subjects are scarce. On the other hand the impact of physical activity on liver graft recipients' well-being is documented.

Aim of the study: To compare individuals' physical activity in self-assessment and objective exercise test before and after LT in PSC patients.

Material and methods: The study group consists of 36 PSC patients (F=14, M=22 in mean age 37.0±14.4 years). A validated international physical activity questionnaire (IPAQ) was used to test patients self-assessment of efforts, and results were expressed in MET units. The final data was presented as Total MET minutes/day a week (TOTAL MET).

Results: PSC patients at listing to LT presented a TOTAL MET of 563.4±382,6 in respect to IPAQ questionnaire evaluation and obtained 7,7±2,4 METs in exercise test. Their results after LT improved non significantly in self-assessment, 618.3±357,7 (p=n.s.), and objective exercise test 8,1±2,7 (p=n.s.). The comparison of the results of IPAQ self-assessment physical activity before and after LT showed that 41% of patients noticed its improvement and 29% maintained their physical activity. Another 29% of respondents rated their activity as less intensive after LT. A comparative analysis of the results of the objective exercise test before and after LT showed that 36% of PSC patients improved their results after surgery and 14% maintained their results. However, worse result of the objective exercise test after LT was obtained in 50% of subjects. Male PSC patients improved significantly the results of their exercise test after LT, while females' patients results deteriorated.

Conclusions: The results of this study showed that even half of transplanted young PSC patients are less physically active after LT than before the procedure, with strong female predominance. This finding is opposite to verbally declared pro-healthy life-style. Thus, there is a need for modifications of current strategies aimed at improving physical activity in liver graft recipients.

[300]

Assessment of Health-Related Quality of Life using SF-36 questionnaire in patients after Liver Transplantation due to Alcoholic Liver Disease, Viral Hepatitis and Hepatocellular Carcinoma

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Introduction: Liver transplantation (LT) is universally accepted method of treatment of patients with liver failure and hepatocellular carcinoma. LT is known to be beneficial for long-term health-related quality of life (HRQoL) with relief of symptoms, emotional benefit and improved functional capacity compared to preoperatively or waitlisted patients. Thus, evaluation of HRQoL should be also an integral part of holistic long-term care of liver graft recipients.

Aim of the study: The aim of the study was to determine HRQoL in respect to mental and physical aspects in patients after LT and matched group of healthy individuals.

Material and methods: A total of 51 patients after LT (F 9, M 42) and 36 age-and gender matched healthy individuals (F 12, M 24) were prospectively enrolled into the study. The indication to LT were: ALD (36%), viral hepatitis (27%) and HCC (37%) respectively. In respect to time after LT patients were divided 3 groups: group A (n=13): 6-12 months; group B (n=17): 13–36 months; and group C (n=20): >37 months after LT. SF-36 questionnaire is widely used and validated generic HRQoL tool. It consisted of 36 items, divided into 8 domains, comprising the areas of both physical and mental health. Each domain is scored between 0 to 100 points, with higher scores indicating better HRQoL. There are also two summary scores: Physical Component Score (PCS) and Mental Component Score (MCS).

Results: Patients after LT had significantly impaired HRQoL in all domains of SF-36 measure when compared to healthy individuals, with the lowest scoring of Physical Functioning (72.8 ± 23.1 vs 88.5 ± 16.8 ; $P \leq 0.001$). When compared among groups of LT patients, A and B groups showed lower values of PCS than the group C ($A 64.30 \pm 23.0$ vs $B 63.8 \pm 25.7$ and vs $C 70.9 \pm 21.4$ $P = n.s.$). However, all groups of LT patient had comparable results in the MCS ($P > 0.05$). Female-graft recipients presented decrease HRQoL in most SF-36 domains when compared to males after LT and to healthy female individuals with the lowest score in Vitality domain (56.4 ± 21.5 vs 66.2 ± 18.2 ; resp. $P < 0.05$).

Conclusions: Our study showed that patients after LT due to ALD and viral hepatitis have significantly worse physical aspects of HRQoL when compared to healthy individuals. However, their PCS improved in longer time after the procedure. Of note, HRQoL after LT remains significantly worse in female patients as compared to male and healthy individuals. These results indicate the need for modifications of current therapeutic strategies aimed at QoL improvement.

[301]

Knowledge Competency in recognition of anatomical structures: from pre-clinical medical students to specialists

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Introduction: Insufficient anatomical training can put patients' safety at risk. Currently anatomical knowledge among medical professionals may be inadequate and lower than in the past.

Aim of the study: The aim of this study was to assess the practical knowledge of human anatomy among medical students and doctors.

Material and methods: We designed an anonymous, internet-based survey, which focused on recognizing anatomical structures marked on cadaveric specimens (10 multiple-choice closed-ended questions and 10 open-ended questions). Study group included 1186 participants (58.7% females): 931 medical students and 255 graduates from Polish medical schools.

Results: Mean total survey score in whole study group was 65.6%. Students earned significantly higher results than graduates (total: 67.3% vs. 59.5%, $p < 0.001$). A total of 331 (27.9%) participants did not pass the test (<60%):

24.2% of all students and 41.6% of graduates ($p < 0.001$). Correlation between grades earned in our survey and those earned in the anatomy course was observed ($p < 0.001$). Multivariable logistic regression found that participation in cadaver laboratory classes most strongly increases anatomical competencies (OR = 5.30, 95% CI = 1.20–23.40, $p = 0.03$), other significant factors were: membership in students' scientific circle of anatomy and surgery, being male and good or higher grade earned during the anatomy course. Time since the anatomy course was negatively correlated with the total survey score (OR = 0.86, 95% CI = 0.81–0.92, $p = 0.0001$).

Conclusions: In conclusion, anatomical knowledge of Polish medical students is at moderate level and significantly decreases with time from the anatomy course. The competency in recognition major anatomical structures could be even reduced by more than 25% in specialists compared to pre-clinical medical students.

[302]

Analysis of the iodine deficiency prevalence in schoolchildren of the Smolensk region

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Introduction: The problem of iodine deficiency and its adverse consequences for the population of Russia, especially for children and adolescents, does not lose its relevance. Endemic goiter prevalence in Russian schoolchildren is on average 15-40%. Iodine deficiency disorders occupy the leading position in the thyroid pathology structure in Russian population: up to 65% in adults and up to 95% in children.

Aim of the study: The aim of our study was to analyze the prevalence of iodine deficiency in primary school children of the Smolensk region, considering the epidemiological criteria of iodine deficiency disorders.

Material and methods: . Epidemiological criteria for assessing the iodine deficiency disorders severity in children (according to F. Delange, 1997) were the incidence of endemic goiter according to palpation data, the volume of the thyroid gland, the median concentration of iodine in the urine. We examined 205 pupils of 7-8 years. Ioduria was determined by the arsenic cerium method (O. Wawschinek, 1985). Thyroid gland volume was assessed by palpatory and ultrasonic methods taking into account gender, age and body surface area, according to WHO recommendations (1997). The ultrasonic study was carried out with AlokaSSD-550 apparatus (Japan) equipped with a 7.5-MHz sensor.

Results: . The results of our studies demonstrated that the ioduria median was 61.8 $\mu\text{g/l}$, and the proportion of urine samples with an iodine level of less than 50 $\mu\text{g/l}$ was 28.6%. Ioduria data showed a mild degree of iodine deficiency. Ioduria level testified to the insufficient degree of iodine salt and iodine preparations use for the prevention of iodine deficiency conditions in primary school children. The incidence of endemic goiter in pupils according to the results of palpation and ultrasonic study was 26.3% and according to the DeLange criteria (1997) corresponded to "average iodine deficiency".

Conclusions: Our study disclosed that the Smolensk region had a mild degree of iodine deficiency. The level of ioduria did not correspond to the prevalence of endemic goiter in schoolchildren. Iodine salt and iodine preparations use for the prevention of iodine deficiency disorders in schoolchildren was insufficient.

[303]

Knowledge and awareness of vaccinations among parents

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Introduction: Vaccination is one of the most effective prevention of infectious diseases in Poland. Mass vaccination has greatly limited child morbidity and mortality as a result of infectious diseases. Unfortunately, popularity of the anti-vaccine movement has increased in recent years, which can result in reemergence of the diseases that have been successfully eliminated.

Aim of the study: The aim of this study was to assess awareness, behavior and attitude of parents towards their children's vaccination and to identify their information sources.

Material and methods: A questionnaire survey was conducted among parents of 6 and 7-year-old children. The research was carried out in locations of various sizes: in a village with population of 5 thousand, in a small town with population of 6 thousand, in two county towns with population of 20 and 50 thousand and in the capital city of Poland.

Results: 306 participants were involved in the research. They fall into following age categories: 14% 20 to 30 years old, 69% 31 to 40 years old and 17 % 41 to 50 years old. The research shows that 99% of children have been vaccinated at least once in their lifetime and 96% have been following the vaccination schedule, 0,7% of parents refused to vaccinate their children due to safety concerns. The rest of respondents refused vaccination because of medical contradictions or complications after previous vaccinations. Side effects were observed among 30% (76) of children, the most common of which include fever (62), swelling (34), drowsiness (19), irritability (17) and rash (13). 83% of parents are of the opinion that vaccination should be mandatory. 64% of respondents preferred combination vaccines because of the lesser number of injections which consequently reduces children's anxiety and stress. 33% of parents admit going for additional vaccinations. In Warsaw 88% of parents chose additional vaccines to immunize their children (compared to average 61%) and 85 % decided on combination vaccines, while the average was 64%. The information about vaccinations is mostly acquired from doctors (80%) but also from television and internet (38%) and from friends (37%).

Conclusions: In spite of increasing popularity of anti-vaccine movements the majority of parents vaccinate their children and support the idea of mandatory vaccination.

Both combination vaccines and additional vaccines were chosen more often by parents from larger locations.

Healthcare personnel is still the most important source of information about vaccination.

[304]

Telemedicine system to early detect clusters of infectious diseases in developing countries

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Introduction: In the recent years, there have been many outbreaks of life-threatening infectious diseases in the world. One of the most known and tragic cases was the epidemic of Ebola hemorrhagic fever in West Africa in 2014.

In order to suppress the spread of an infectious disease, it is crucial to quickly detect disease outbreak and provide appropriate medical intervention. Unfortunately, the majority of infectious diseases occur in developing countries without adequate infrastructure as well as medical assistance. This situation significantly delays the detection of diseases in early stage, when it is easiest to control and treat.

Aim of the study: The aim of the research was to create a telemedicine system which is designed to quickly detect outbreaks of infectious diseases in developing countries. Its main features are ability to be used by health workers without medical degree, high sensitivity and

Material and methods: The designed system consists of three main parts.

The electronic device measures the body temperature using the infrared thermometer and then transmits its value together with the geographical coordinates and date of measurement to the central database via a GSM network. Because of its simplicity, the device can be used in daily work by physicians and uneducated health workers.

The statistical model is based on data collected from electronic devices belonging to the system and distribution of observations in space and time. The main purpose of the model is finding places with significantly higher density of measurements with fever.

Visualization software enables to work with data from the database directly. A user can analyse information about displayed area such as location of disease outbreak found by the model, kernel density lines of measurements, epidemiological situation in provinces, histogram of measurements, number of measurements per day and boxplots of temperatures.

Results: The result of the research project is the telemedicine system consisting of an electronic device, statistical model and web application. The model was tested on simulated data for Sierra Leone and disease outbreak was found. Results of analyzes for Sierra Leone are available on webpage seeck.co/demo

Conclusions: The implementation of the developed system in countries with high incidence of infectious diseases can enhance disease control and will provide health benefits for the population and savings for government budgets.

[305]

Causing pain or giving relief? Attitude of Polish university students towards pregnancy termination

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Introduction: Access to abortion has some limitations no matter in which country you live. Access to this procedure can be limited by social, logistic, and economic factors, as well as by religious and ideological beliefs even in the most non-restrictive countries. However we do not have enough data to describe opinion on this matter in different groups.

Aim of the study: Aim of the study was to evaluate students' opinion towards pregnancy termination in different situations.

Material and methods: There were 10293 people questioned (79,90% women and 20,10% men) from different fields of study, who took part in our research. Student were divided into two groups: medical (11,40%) and non-medical (88,60%) type of faculty. The questionnaire consisted of original questions which were first tested on a group of 30 students from Medical University of Silesia. Questions about attitude towards abortion in different situations (health problems' or threat to life, rape or social life) were involved in the survey.

Results: Roman Catholic beliefs was declared by 54,64% of non-medical students and 58,42% of medical students. Mean age of interviewee were 23 in group of men and 24 in group of women. 90,21% of women and 85,05% of men consider that abortion should be legal in the situation of threat to mother's life, while only 46,60% of women and 35,23% of men accept it in the hard financial situation of mother. Abortion in the situation of danger to mother's health was approved by 89,61% of people who do not declare religion affiliation approve in the comparison to 54,20% of students who are believers.

Conclusions: For legal abortion in the situation of threat to mother's life or mortal fetus defect as well as in the case of rape, stand most medical and non-medical students. In this cases non medical students and men accept abortion less frequently than medical students and women do. In situation of hard financial situation of mother or on mother's demand less than half of interviewee students consider that abortion should be legal. Religion affiliation let students disagree more often to abortion even in the hardest cases like danger of mother's life or mortal fetus defect.

[306]

What medical students know about diabetes? Evaluation of knowledge in field of diabetes among medical students in Poland

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Introduction: The number of patients suffering from diabetes mellitus is raising alarmingly. Wrong treatment or late diagnosis increase the risk of many serious complications, so that students of medicine as well as doctors of different specializations should possess adequate knowledge of diagnosis and therapy of that illness.

Aim of the study: The aim of the study was to evaluate knowledge of diabetes among medical students of 14 medical universities in Poland on different stage of their education (year 1 to 6).

Material and methods: Research involved 2823 students (32,4% men and 67,6% women). There were asked to fill the original, online questionarrie consists of 19 questions concerning risk factors, symptoms and complications of diabetes. The survey was pre-tested on a group of 30 medical students. Participants were qualified into two groups: preclinical (1-2 years of study) and clinical (3-6 years of study).

Results: Mean result of the survey was 66,75%, while the worst score was 28,5%. Number of correct answers in the questionnaire in clinical group compared to preclinical one in the section about risk factors for diabetes was 83±15% vs 55±15% respectively. The outcome of question about symptoms of diabetes was 85±12% for clinical students and 58±20% for preclinical group. In the part related to complications of diabetes score was 92±8% and 59±10% respectively. Collected results correlated positively with year of study and age of respondents ($p < 0,001$) and negatively with higher BMI of respondents ($p < 0,004$).

Conclusions: Knowledge of diabetes mellitus in the group of medical students, mostly in preclinical group is unsatisfying. Lacks in knowledge in every field of the disease are noticeable. There is a necessity to improve the diabetology knowledge among medical students during their education.

[307]

The attitude towards influenza vaccination among medical students of Warsaw Medical University

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Introduction: Although influenza is a self-limited infection in the general population, it can be associated with increased morbidity and mortality in certain high-risk populations. The influenza vaccination is the most effective way to prevent influenza or to reduce the severity of the illness. Vaccination is particularly important for individuals who might transmit influenza to persons at high risk for complications; such individuals include medical students.

Aim of the study: Our study aimed to provide a deeper insight into the influenza vaccination practices of medical students of Warsaw Medical University. We would like to examine how perceptions of influenza and flu vaccination were related to knowledge and self-efficacy of

Material and methods: It was a cross sectional study performed by means of anonymous questionnaire. 291 randomly selected students of all years from Warsaw Medical University were asked to answer 15 questions regarding knowledge about influenza, vaccination motivation and the role of the University in creating vaccination knowledge.

Results: Most students agreed or rather agreed that influenza is a serious illness(77,2%), which can be life threatening(91,7%) and the doctors belong to the risk group of infection(85,1%). They are rather aware that vaccination effectively protects from flu(47,6%) and its complications(67,9%). Nonetheless 66,6% of students did not vaccinated and 8% of them is not going to vaccinate in the future. 23,1% have vaccinated only once or few times in their life. The most important reasons for not being vaccinated were previous lack of illness(32,9%), absentmindedness(30,4%), laziness(28,4%) and also lack of time(28%). Only 16,1% definitively agreed that vaccination is a ethical duty for every doctor. Most students argue that their knowledge of influenza is good(45,5%) or very good(19,2%). Students have participated in a classes regarding vaccination among children(49,5%) and among adults(22,3%). However most of them affirmed that the classes were limited in scope. 71,6% would like to take part in extra activities regarding this topic. One in every 10 students believes that garlic consumption protects from flu to a large extent. 54,5% of students had a contact with immunosuppressed patients.

Conclusions: Relatively few medical students of Warsaw Medical University vaccinate. Although they have classes regarding vaccination, their knowledge is still not up to standard.

[308]

Promotion of sport by Medical University of Warsaw among its students

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Introduction: Professional sport means total devoting to training. However, academic sport is thought to be even tougher, because there is a need of combining physical trainings with education. Many universities apart from giving students the opportunity to do so, also strongly promote regular physical effort, because this is one of the methods of preventing diseases in the future life.

Aim of the study: The aim of the study was to find out how students of Medical University of Warsaw perceive the role of the university in promoting physical activity among students and also to analyse their opinion concerning the quality of physical education classes, off

Material and methods: The study was based on a specifically prepared survey. Participation was anonymous and voluntary. The survey included 25 structured questions, however in some of them respondents could have

written their own answer. Both electronic and paper versions of the survey were used. 300 students (165 women and 135 men) from 3rd and 4th year of medical studies from The First and Second Faculties of Medicine at the Medical University of Warsaw participated in the study.

Results: The results demonstrated that 57% of students assess the sport offer of the university well or very well. However, almost equally high proportion (60%) of those attending physical education claim that they had encountered obstacles choosing their classes, because of low accessibility of certain sport courses.

One third of respondents postulated that physical education should be compulsory for whole period of studies. Nevertheless, the same proportion of students strongly disagree with this solution and stand for optional classes of physical education. Almost 71% of students admitted that they would be more active, if facultative courses at university had also sport character.

Over 85% of respondents believe that the university should promote physical activity and encourage students to regular physical training. However, only 21% of participants of the study, praise Medical University of Warsaw for actions concerning sport popularisation.

Conclusions: Students of Medical University of Warsaw believe that the university should create more possibilities to train regularly and promote physical activity more efficiently than it is done at the moment.

[309]

Factors Associated with Knowledge, Attitude, and Practice Related to Tuberculosis among General Population in Cilincing District, Jakarta, Indonesia

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Introduction: Tuberculosis (TB) is still a major problem for developing countries. Indonesia has the second highest TB burden in the world. Furthermore, Jakarta has the third highest TB prevalence in Indonesia (0.6%). Awareness is an important component in TB control that can be determined by knowledge, attitude, and practice level. In Cilincing District, a rural area in Jakarta, TB remains to be a problem. Case detection rate and cure rate for TB in Cilincing are still below the target. Identifying factors associated with knowledge, attitude, and practice related to TB is thought to be useful in improving overall TB awareness and the problem.

Aim of the study: To determine factors associated with knowledge, attitude, and practice related to TB in Cilincing District.

Material and methods: A cross-sectional study using validated questionnaires was conducted in Cilincing District from October to November, 2017. Data were analyzed using SPSS V.20. Chi square test was employed to identify the association between socio-demographic characteristics and knowledge, attitude, and practice level of TB

Results: A total of 104 participants with 37% respondents were aged between 35-54 years, 42% had high school education. Most of the subjects have no history of TB (87%), but 6% of them are currently undergoing TB treatment. There were 85.6% and 75% of participants have poor knowledge and practice, however 95.2% of them have good attitude about TB. Among participants who have poor knowledge, 73.08% of them also have poor practice ($p < 0.0001$). On the other side, education level also have significant correlation with knowledge and practice ($p = 0.001$ and 0.046 respectively).

Conclusions: This finding indicates that there is a low awareness about TB in Jakarta and negative practice towards TB. Health promotion and education play as a vital role in improving knowledge, attitude, and promotion of community towards TB. Strategic health communications should be planned and implemented to improve the awareness gap about TB.

[310]

Assessment suitability of the home rehabilitation for increasing the physical and psychosocial ability of disabled people

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Introduction: Home rehabilitation is a service provided within the healthcare system. For handicapped people it is typically the only one option to maintain their physical ability of the highest reachable level.

Aim of the study: Goal of this paper was to analyze, whether home rehabilitation brings benefits to the physical and psychosocial ability of the handicapped people, or not.

Material and methods: 50 handicapped patients in age between 31 to 89, covered with the home rehabilitation programme, were invited to a survey condition of patients before the beginning of the rehabilitation programme -1st Part of the survey, and after a half-year period of the rehabilitation -the 2nd Part was assessed. The questions concerned individual experience of patients relating to their physical and psychosocial condition, locomotion, routine activities, falls and ailments. Then the differences in the answers in both parts of the survey were analyzed in order to verify the rehabilitation effects. In summing The results up, statistical methods available in the Statistica 9PL software were used.

Results: Comparative analysis of the surveys, using basic statistics and Wilcoxon signed-rank test showed, among other things, an improvement in physical condition ($p < 0.05$) and psychical condition ($p < 0.05$), an improvement in locomotion ($p < 0.07$), in ability to leave home ($p < 0.05$) and reduced fear of falling ($p < 0.05$). 96% of The interviewees saw health benefits from the home rehabilitation.

Conclusions: 1. The home rehabilitation brings advantages in terms of physical and psychosocial ability. 2. It is especially important to the handicapped "bedridden" people and to people, who are not able to perform their routine, personal activities and their social roles by themselves.

[311]

Air pollution problem – knowledge, searching for information and protection among risk groups patients

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Introduction: Air pollution is a serious problem worldwide and in Poland. Polluted air can cause significant negative health effects, such as various forms of cancer, respiratory diseases, cardiac diseases and may lead to a reduced lifespan. It also causes immediate symptoms and increased mortality. Older people and patients with cardiovascular, respiratory and metabolic diseases are especially susceptible.

Aim of the study: The aim of our work was to determine whether our patients know about pollution and its risks and take proper protective measures.

Material and methods: We constructed an anonymous survey which consisted of 20 questions answered on a 1 to 5 scale and three open ended questions, apart from basic demographic data. The survey was distributed among patients of the cardiology and diabetology wards over the period of 1 month.

Results: The survey was completed by 103 patients with increased susceptibility to air pollution (due to their diseases). The patients scored high on questions about their knowledge about adverse effects of smog and they were aware of high levels of pollution in Poland. However, they did not know where to find warnings and information about air pollution. Patients do not check pollution levels before physical activity and do not use masks (93%) – most declare they do not need them, that they are uncomfortable or that they are worried about their appearance. Patients' main sources of information were (in order) TV, news websites and radio. Only 3% were informed by medical personnel and 2% by public campaigns.

Conclusions: The patients possess a certain degree of knowledge about air pollution, although it is not adequate. The number of patients who take protective measures against air pollution is dramatically low. Furthermore, medical staff very rarely inform patients about the matter. Receiving advice from medical professionals and properly prepared and addressed public information campaigns could potentially convince the patients to e.g. wear masks, buy HEPA filters or simply avoid outdoor activity during times with high pollution. People should also be better informed about the current air pollutant concentrations from reliable sources.

[312]

The Knowledge of Malaria and Its Relationship to Demographic Characteristics of Villagers in Kalena Rongo Village, Southwest Sumba, Indonesia

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Introduction: Malaria is an endemic disease in East Indonesia. The Indonesian government has developed a program to control malaria intensively by early diagnosis, prompt treatment, vector eradication, and mosquito bites prevention. The success of the program depends on the behaviour and knowledge of the population about malaria. The lack of knowledge among the population about malaria may increase the risk of infection.

Aim of the study: The purpose of this research is to analyze the knowledge of villagers about malaria and its relationship to demographic characteristics in order to provide data to be used as basis of health education for villagers.

Material and methods: This research was conducted with a cross-sectional design. Adult subjects were questioned during the data collection on June 21, 2014 in Kalena Rongo, Southwest Sumba. The questionnaire contained 18 questions regarding the symptoms, treatment and prevention of malaria. Data containing subject's knowledge and demographic characteristic were analyzed with chi-square test and fisher exact test.

Results: There were 105 subjects, comprised of 29.5% men and 70.5% women. The educational level of most subject was in elementary school (39%), and most of them were farmers (92.4%). More than half of the subjects have had a history with malaria. In general, most of the subjects have lack of knowledge about malaria. Only 10.5% of the subjects had good level of knowledge regarding the symptoms of malaria, 3.8% in treatment, and 1.9% in preventing it. There are no significant difference between the subjects' knowledge about malaria with gender (fisher exact, $p>0.05$), educational level (fisher exact, $p>0.05$), occupational status (fisher exact, $p>0.05$), and history of malaria (chi-square, $p>0.05$).

Conclusions: In conclusion, subjects have lack of knowledge about malaria. Subject's knowledge level about malaria is not related to gender, educational level, occupational status, and history of malaria. The knowledge level about malaria among the population should be increased by providing health education about malaria using a simple method. Provision of health facilities such as prevention tools of malaria is necessary to support the improvement of subject's knowledge level about malaria.

[313]

Physical activity in students of Medical University of Warsaw

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Introduction: Physical activity and sport are believed to be a perfect way to relax or spend your free time. Sedentary lifestyle combined with lack of regular workout are global challenges, because these two factors contribute to expedited deterioration of the health state. This knowledge should be mandatory for everyone, especially medical students.

Aim of the study: The aim of the study was to analyse how educational duties impact on physical activity of university students and assess if there are any changes in their attitude towards intentional exercise in comparison to their high school experience.

Material and methods: The study was based on a specifically prepared survey. Participation was anonymous and voluntary. The survey included 25 structured questions, however in some of them respondents could have written their own answer. Both electronic and paper versions of the survey were used. 300 students (165 women and 135 men) from 3rd and 4th year of medical studies from The First and Second Faculties of Medicine at the Medical University of Warsaw participated in the study.

Results: The results demonstrated that almost 92% of students attended physical education classes in high school. The proportion of those attending physical education at university was even higher and totalled 96,7%.

Many respondents also claimed that their physical activity in high school and at university had exceeded compulsory lessons. 78,7% of the population had done additional exercise, the majority choosing exercises in the gym (47,4%) and running (40,8%). However, there was also a small group of students (9,3%), who denied any physical activity.

According to the survey, students exercise mainly for their own satisfaction (55,9%) or because of their will to stay healthy in the future (54,4%).

However, almost 86% of respondents admitted to having insufficient physical effort in their daily life and pointed out that they are primarily restricted by educational duties (75%). This outcome perfectly corresponds with the fact that the vast majority of students (93%) perceive sport as a factor which helps them to achieve better results in studying.

Conclusions: Students of Medical University of Warsaw are conscious that physical activity is very important to stay healthy. Nevertheless many of them do not work out as much as it is needed or as they want. Encouraging them to regular exercising will be beneficial for themselves, but primarily for the society, because as future doctors they are going to set an example for the patients.

[314]

Diagnostic value of questionnaire methods in assessment the quality of life in elderly people and long-livers

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Introduction: Questionnaire methodologies based on subjective perception of individual health parameters are widely used for assessment of the quality of life. The point of reliability and diagnostic value of self-evaluation health state and the quality of life in elderly people and long-livers has not been properly understood yet.

Aim of the study: Our aim was to clarify the requirements for the use of well-known SF-36, associated with its diagnostic significance increase.

Material and methods: We used SF-36 Health Status Survey. The main group included 43 individuals over 70. Some of them were gerontology in-patients and the others had homecare social services and a history of cardiovascular and other somatic diseases in combination with I-II degree discirculatory encephalopathy. The control group involved 42 people over 70 who had fully retained their self-service abilities and didn't consult a doctor during the year period.

Results: The average PF (Physical Functioning) score had no significant differences in the main and control groups (43.07 ± 2.7 and 45.38 ± 3.1 , respectively). Patients required nursing subjectively, didn't feel an activity level decrease associated with the disease. In this case, the RP factor (Role-Physical Functioning) in the main group was significantly reduced (21.44 ± 3.87), which indicates the limitations of vital activity in health (in control $57, 33 \pm 6, 4$). The RE (Role-Emotional) state in the main group exceeded the control indices with a reliable difference (72.22 ± 5.41 and 53.98 ± 4.6). The VT (Vitality) and MN (Mental Health) index in the main group also exceeded the corresponding values in the control group.

Conclusions: The main group revealed a discrepancy between a low health level and its self-esteem, which may be a consequence of criticality and cognitive functions decrease on the background of discirculatory encephalopathy. SF-36 use in such cases can lead to incorrect diagnosis when high mental health indicators regarded as evidence of a high life quality, being in fact a manifestation of an emotional affective disorder. Consequently, the informative quality of questionnaire methods to assess the quality of life in elderly individuals and long-livers can be reduced, applying to patients suffering from cerebrovascular disorders.

[315]

Psychological and social aspects of longevity

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Introduction: Longevity is becoming common in the majority developed societies. Good health and a high level of social activity are known to reduce the chronological age and contribute to human longevity.

Aim of the study: The aim of the study was to investigate occupational and family history, certain temperamental attributes and social conditions among long-livers of the Smolensk Region (Russia).

Material and methods: A survey of 110 male (56) and female (54) patients aged 90 and over admitted to Regional Clinical Hospital in 2013-2017 was performed. The questionnaire developed at the Scientific and Clinical Center "Gerontology" (a branch of the Russian National Research Medical University) was used. The results of the study were processed with the Statistica 10.

Results: The patients' age averaged 93.5 ± 2.3 , the oldest age was 97 years. Both male and female long-livers started their work approximately at the age of 17.8 years and retired at the age of 68.5. Social status of the surveyed: licensed workers - 33%, employees - 52%, officials - 7%, non-licensed workers - 9%. In 30% long-livers the work was connected with creative activities. An analysis of the life priorities of long-livers demonstrated that 84% had a life ambition and 81% of them successfully achieved it. To the question "Do you consider yourself a sociable person?" 90% long-livers responded positively. When 70% respondents asked about social activities confirmed active participation. When asked about the hobby, 60% responded positively. 32% knew foreign languages. 79% of long-livers did not ask the help of relatives, and 15% helped relatives themselves. Only 16% of patients had a support from Social Care Authorities.

"What do you attribute to your longevity»?

Lifestyle - 33%; Nutrition - 8%; Heredity - 23%;

28% respondents stated that they had an interesting and independent life.

Conclusions: Long-livers are characterized by a specific type of personality, with such character traits as self-esteem, strong work ethic, love of life, creativity, the ability to achieve economic independence, and the keeping of self-care ability even at a very old age.

[316]

Test tube baby or creation masterpiece? Opinion of Polish university students towards in vitro fertilisation

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Introduction: Nowadays rising number of couples contend with subject of infertility. Modern medical science can overcome this problem with in vitro fertilisation method. In vitro fertilization is one of the possible option to realize wish of having a children. This matter is widely discussed by polish society and public opinion never measured subject of IVF in objective way.

Aim of the study: To measure attitude of Polish university students towards fertilisation according to students' religious beliefs, age and type of faculty.

Material and methods: We gathered 10293 students' answers to our survey (79,90% women and 20,10% men) in the age bracket 19-35. Original questionnaire consisted questions about personal and demographic data as well as their attitude towards in vitro fertilization. Students were divided into two groups: medical (11,40%) and non-medical (88,60%). Questionnaire was pretested on a group of 40 students from Medical University of Silesia.

Results: Roman Catholic beliefs was declared by: 54,64% of non-medical students and 58,42% of medical students. IVF as a legal method in our country is accepted by: 89,11% women and 80,74% men. This method of therapy in case of own infertility would be considered by 70,60% of women and 61,33% of men. Essential differences in the field of in vitro fertilization, their legality and refundation were not observed in the group of medical and non-medical students. In the group of Roman Catholics only 56,90% would carry out this medical procedure in comparison to 83,25% of students who are not Roman Catholics.

Conclusions: Majority of students think that IVF should not be legally prohibited. Most of them declare that they would consider this kind of medical procedure in case if they have problems with infertility. In the group of students who declare religion affiliation method of in vitro fertilization is less admissible than in the group of non-believers. Women are more tolerant than men in the field of this infertility medical therapy.

[317]

Awareness and attitude of Pediatricians towards Human papilloma virus vaccinations

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Introduction: Human papilloma virus (HPV) is the most frequently sexually transmitted infection and is widely known as an independent risk factor of carcinogenesis. HPV vaccines allow to reduce the risk of contagion, however according to United Nations, only between 19 to 30 thousands of patients get vaccinated in Poland every year. There is a need of evaluation of reasons of the low rate of HPV vaccinations.

Aim of the study: To evaluate awareness, knowledge and attitude of Pediatricians to HPV vaccinations and to analyse interest in HPV vaccinations among patients and parents in Poland.

Material and methods: We performed an anonymous and voluntary survey study among Pediatricians. The questionnaire consisted of 29 questions regarding doctor's awareness and attitude to vaccinations, cognition of guidelines, interest in vaccination among patients and parents together with accessibility of information materials for them. The survey was distributed in every type of medical institution in Poland in a period from December 2017 to February 2018. Statistical analysis were performed with the use of Microsoft Excel.

The study included 100 responders and 82% of them were females. Most of doctors (93%) worked in the cities more than 100 thousands habitants. 73% of responders worked in hospitals and 43% at the same time in ambulatories. Job experience for 64% of doctors was more than 5 years.

Results: In the majority (65%) doctors inform patients about benefits of HPV vaccination but 87% of them marked patients interest in them as moderate or small. Over half of doctors (55%) advise HPV vaccination but no more than few times per year. Only 29% responders indicated availability of information materials for patients at work place. There were 12% responders against HPV vaccine.

Almost all responders (86%) claimed that HPV vaccination status should be refundable and 31% indicated this vaccination as mandatory.

Despite 55% of doctors predicting their knowledge about HPV vaccine as rewarding, only 42% are familiar with present recommendations, indications, price and number of doses of HPV vaccination.

Conclusions: The study showed positive attitude of Pediatricians to HPV vaccinations. However they rarely recommend this vaccination in their practice (in Poland). Moreover, low availability of information materials and moderate interest of patients might be the reasons of small vaccination rate. There is a need of further evaluation of awareness and attitude to HPV vaccination among Gynecologists and Family Doctors.

Radiology

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[318]

Extracurricular innovative simulation training of medical students in Basics of Functional Diagnostics

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Trustee of the paper: professor Aleksey Borsukov, MD, PhD, the Head of the Research, Diagnostic and Miniinvasive Techniques Laboratory**Introduction:** Introduction. Medical students' training in Functional Diagnostics and Miniinvasive Interventions under visual control is an important factor to develop doctors' high professional competence. Extracurricular activities aimed at medical literature reading, development of practical skills and working knowledge are of great significance but the activities can be less efficient because of lack of proper medical equipment and simulators.**Aim of the study:** The aim of the study was to create an innovative simulation model for comprehensive training of students in Basics of Functional Diagnostics and Miniinvasive interventions with a simulator of the abdominal cavity.**Material and methods:** The study involved teaching students in visualization of internal abdominal organs; development of a cheap innovative simulation model for manual skills training; training in miniinvasive procedures. The study including 47 senior medical students was conducted in 2016-2017.**Results:** Phase 1 included development of students' skills to work with an ultrasound device. Ultrasound ALOKA SSD-500 was used. The skills in spotting internal abdominal organs and kidneys were trained. 770 ultrasound investigations were held: 258 studies of the liver (33, 5%), 158 – the gallbladder (20, 5%), 218 – spleen (28, 3%), 136 – kidney (17.7%).

Phase 2 involved creation of an innovative simulation model (a plastic container 1000 ml, ultrasound transmission gel with the inclusion of stylized objects: large – grapes (n=3), medium size – cranberry (n=4), small – raisins (n=5), puncture needles with different diameters) with the subsequent development of the skills of miniminvasive interventions (Phase 3). Each student (2 times a week for 2 months) performed 266±34 punctures for 16 days: grapes – 120, cranberry – 86, raisins – 60. Time of internal organs spotting reduced in average from 8 to 2 minutes as a result of the training process. 24 students demonstrated their progress (ingress the puncture needle into the large and medium-sized objects in 90% of cases) in 1 month from the onset of their training (51.0%), 44 students got good results in 2 months (93.6%).

Conclusions: Training of highly competent doctors requires various forms of classroom and extracurricular activities. Good practical diagnostic skills are of prime importance. Teaching in ultrasound diagnostics and miniinvasive interventions with a simulation model characterized by low cost and high educational efficacy is a good opportunity to develop and improve diagnostic skills.

[319]

Calcified carotid atherosclerotic plaques and abnormal geometry of arteries supplying the brain – do they correlate with ischaemic changes of the brain?

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Trustee of the paper: Prof. Andrzej Urbanik MD, PhD**Introduction:** Coronary Artery Calcium Score is a well-known predictor of cardiovascular risk, but existence of analogous risk factors of brain ischaemic disease are still a matter of debate.**Aim of the study:** The aim of the study was to evaluate the correlation between brain ischaemic changes and the presence of calcified carotid atherosclerotic plaques as well as abnormal geometry of arteries supplying the brain.**Material and methods:** The study group consisted of 201 patients, who underwent unenhanced computed tomography (CT) of head with subsequent CT angiography (CTA) of head and neck. All examinations were performed in the University Hospital in Cracow in the period between September 2016 and November 2017. 57.2% of patients were female. Mean age was 52.6±19.6 years. Firstly, presence of calcified carotid atherosclerotic plaques, complete carotid occlusion, carotid artery kinking and vertebral artery hypoplasia was

assessed on CTA. Then, head CT was screened for ischaemic stroke, minor ischaemic changes, leukoaraiosis and global cortical atrophy.

Results: Incidence of calcified atherosclerotic plaques in carotid arteries was 50.2%. Patients with calcified plaques were more likely to have ischaemic stroke ($p=0.003$, $OR=4.356$), minor ischemic changes ($p<0.001$, $OR=5.041$), leukoaraiosis ($p<0.001$, $OR=16.970$) and global cortical atrophy ($p<0.001$, $OR=9.129$). Unilateral complete carotid occlusion was associated only with higher ischaemic stroke incidence ($p<0.001$, $OR=58.667$). Stroke significantly more often was located ipsilateral to carotid occlusion (right side: $p<0.001$, $OR=40.500$; left side: $p<0.001$, $OR=31.000$). Carotid artery kinking correlated with increased prevalence of leukoaraiosis ($p=0.030$, $OR=2.236$) and cortical atrophy ($p=0.028$, $OR=2.894$). Hypoplasia of vertebral artery predisposed to posterior circulation infarction ($p<0.001$, $OR=18.400$).

Conclusions: There is a strong correlation between the presence of calcified carotid atherosclerotic plaques and the occurrence of ischemic changes in the brain. Abnormal geometry of brain vascular supply (carotid kinking, vertebral artery hypoplasia) are also associated with increased incidence of particular brain ischaemic changes.

[320]

Anatomic variations of carotid and main cerebral arteries and their correspondence to cerebral aneurysm formation

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Introduction: Vascular anatomic variations are very prevalent in the population, but their coexistence with life-threatening vascular malformations remain unclear.

Aim of the study: The objective of the study was to assess the correlation between the presence of carotid and main cerebral arteries anatomic variants and the occurrence of cerebral aneurysms.

Material and methods: We analysed examinations of 194 patients who undergone computed tomography (CT) of head with subsequent CT angiography of head and neck between September of 2016 and November of 2017 in University Hospital in Cracow. The mean age of patients was 52.6 ± 19.6 years. 57.2% of them were females. Assessed parameters: the variation of the common carotid arteries (CCA) origin, hypoplasia or duplication of any main cerebral artery, carotid artery kinking and the presence of cerebral aneurysms. Statistical significance was set at $p<0.05$.

Results: 5.6% of patients had cerebral aneurysm. Hypoplasia of at least one main cerebral arteries occurred in 34.5% of patients, the most frequently it was vertebral artery (21.6%), P1 segment of posterior cerebral artery (8.2%) and A1 segment of anterior cerebral artery (5.2%). Duplication of at least one main cerebral artery was detected in 2.6%. Cerebral aneurysms occurred more often together with hypoplasia ($p=0.041$; $OR=3.175$) or duplication ($p<0.001$; $OR=18.500$) of at least one main cerebral artery. In 7.2% of cases, origin of CCAs created true bovine arch and in 4.1% a so-called bovine arch. Patients with non-standard origins of CAAs were more likely to have cerebral aneurysms ($p=0.002$; $OR=5.903$). 27.3% of patients had ICAs affected by kinking. Kinking was more prevalent in patients ≥ 65 years ($p=0.001$; $OR=2.926$) and females ($p=0.027$; $OR=2.083$). Carotid kinking did not predispose to cerebral aneurysm formation ($p=0.378$).

Conclusions: There is an evident correspondence between the presence of vascular anatomic variants (abnormal origin of the carotid arteries, hypoplasia or duplication of main cerebral artery) and the occurrence of cerebral aneurysms. Carotid kinking is not associated with higher probability of aneurysm formation.

[321]

Incidental findings in patients with suspected pulmonary embolism diagnosed with use of pulmonary CT angiography

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Introduction: CT angiography (CTA) is a golden standard in diagnosing pulmonary embolism (PE). Although symptoms may be indicative, the result of the examination often excludes the suggested diagnosis. However, there are many situations when some other significant features are imaged accidentally.

Aim of the study: The aim of the study was to evaluate the most common incidental findings discovered in CTA performed due to PE clinical suspicion.

Material and methods: There were 201 recorded cases (males 52.2%; mean age 66.3±15.5 years, range 20-98 years) of pulmonary CTA performed due to suspected PE in archives of the Department of Radiology in the University Hospital in Cracow between June and October 2017. CT scan range: from lung apices to adrenal glands. All cases were analysed in term of described lesions. Statistical significance was set at $p < 0.05$.

Results: Pulmonary embolism was confirmed in 14.9% of cases. These patients were significantly younger than those without PE (60.3±15.2 vs. 67.4±15.4 years, $p=0.020$). Age group with the highest rate of confirmed PE was: 40 – 49 years (40.0%). The most common additional findings among these patients were spinal osteoarthritis (43.3%), lung tumour (20.0%), calcified atherosclerotic plaques in aorta and systemic arteries (16.7%) and liver steatosis (13.3%). Liver steatosis (13.3% with PE vs. 4.1% without, $p=0.040$, $OR=3.604$) and lung tumour (20.0% vs. 7.6%, $p=0.032$, $OR=3.038$) coexisted significantly more often with PE. Abnormalities within lungs and pleura were detected in 72.1% of patients without signs of PE: 34.5% pneumonia, 30.4% pleural effusion, 21.1% atelectasis. In 10.0% of patients neither embolism nor pulmonary lesions were found. In this group, the most common findings were spinal osteoarthritis (65.0%), calcified atherosclerotic plaques in coronary arteries (20.0%), pericardial effusion (15.0%), cardiomegaly (15.0%), hiatal hernia (15.0%).

Conclusions: Older patients are more prone to diseases which mimic symptoms of the pulmonary embolism, namely: pneumonia, pleural effusion, nerve compression due to spinal osteoarthritis. Pulmonary embolism is likely to coexist with lung tumour and liver steatosis.

[322]

Sonography of basilic vein for cardiac catheterisation – is this a good way for accessing the heart?

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Introduction: Right heart catheterisation can be performed from many possible access sites including basilic vein. Thanks to its superficial localisation and significant diameter it can be easily visualised using ultrasound. There are, however, no anatomical studies concerning the usefulness of the basilic vein for cardiac catheterisation and cardiovascular interventions.

Aim of the study: To assess basilic vein morphological suitability for cardiac catheterisation using sonography.

Material and methods: 14 healthy volunteers aged 19-44 with no history of any procedure performed on upper arm were recruited. Total number of 28 arms were examined using LOGIQ F8 GE ultrasound with L6-12 transducer (6-13MHz). Basilic vein was identified on medial aspect of upper arm on both sides. Sites where the vein pierces the brachial fascia and where it joins the deep venous system were found, its distances to medial epicondyle of humerus, as well as vein's diameter on its section superficial to brachial fascia with and without tourniquet were measured. Medial cutaneous nerve of forearm accompanying the basilic vein was also identified and measured.

Results: Basilic vein was identified on both sides in every case. Its mean brachial fascia perforation site was 98.6 mm (50.0-145.0±24.2) from medial epicondyle, and its mean deep venous system connection site was 152.4 mm (110.0-225.0±27.1) from medial epicondyle. In one case deep venous system conjunction site was not possible to be identified because the vein reached up to deep tissues of axillary fossa. Its mean subfascial section length was 55.0 mm (0.0-165.0±34.7). Its diameter ranged from 1.4 mm with no tourniquet (WNT) and 1.3 mm with tourniquet (WT) to 7.6 mm WNT and 8.3 mm WT; mean 3.9 mm (±1.6) WNT and 4.3 mm (±1.8) WT. These measurements would allow to fit introducer sheaths sized from 3 French (F) to 24 F (median 12 F). Medial cutaneous nerve of forearm was identified 17 times out of 28 arms, with mean diameter of 1.7 mm (1.1-2.6±0.5).

Conclusions: Basilic vein could be visualised easily in all arms. Its diameter provided access for even large introducer sheaths. Surrounding structures could be seen in sonography and have to be taken into consideration when planning the procedure.

[323]

The image of proton magnetic resonance spectroscopy (1HMRS) of patients with dementia in Alzheimer's disease

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Introduction: Alzheimer's disease (AD) is a primary degenerative disease of the brain of unknown etiology accompanied by characteristic neuropathological and neurochemical features. With absolute certainty, AD can only be seen posthumously on the basis of a neuropathological examination. The chance for a lifetime diagnosis of Alzheimer's disease appeared along with the possibility of neuroimaging and assessment of diagnostic biomarkers. 1HMRS may facilitate early diagnosis of AD.

Aim of the study: The aim of the study is to analyze the 1HMRS spectrum in people with clinically diagnosed dementia in the course of Alzheimer's disease

Material and methods: The retrospective analysis used data from 60 patients (including 30 from AD and 30 from the control group) obtained during the 1HMRS study using the MR 1.5 T system. VOIs were located in the frontal area, parietal occipital region and hippocampus. The analysis uses the relative concentrations of selected metabolites: NAA / Cr, Cho / Cr and ml / Cr. Evaluation of RRC differences between the studied groups was carried out with the Student's t-test. $P < 0.05$ was assumed as the level of significance

Results: The obtained spectra in the group of AD patients were found in relation to the control group:

- statistically significant decrease in the value of RRC NAA / Cr in all locations, especially within the hippocampus
- statistically significant increase in RRC ml / Cr in all locations, especially within the hippocampus

In RRC Cho / Cr there were no statistically significant differences in the examined locations.

Conclusions: 1. In the studied locations, which were the frontal area, parietal occipital region and hippocampus, statistically significant changes in the levels of metabolites in the course of AD were observed: decrease in RRC NAA / Cr and increase in RRC ml / Cr.

2. The largest changes in metabolites in the course of Alzheimer's disease were found within the hippocampus.

[324]

Correlation analysis of the indicators of ultrasound research and elastography of the liver

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Introduction: Elastography is a method of tissue differentiation by their rigidity by mechanical action on them and analysis of deformations, obtained by means of ultrasonic waves. It is performed as an addition to the traditional ultrasound examination and is a non-invasive method for diagnosing fibrosis and cirrhosis of the liver.

Aim of the study: To perform a correlation analysis of the ultrasound and elastometry parameters of the liver.

Material and methods: 614 ultrasound and elastography protocols (compression and shear, SWM) conducted in 2017 on the Hitachi Aloka ARIETTA S70 (Japan) apparatus. The correlation analysis was performed using Spearman's criterion on the Statistica 8.0 software module (Statsoft).

Results: There was no statistically significant correlation between the patient's sex and elastography indices ($p = 0.1$).

The elasticity of the liver correlates directly with weak strength with the age of the patients, as indicated by the increase in the speed and pressure of the shear wave (Young's modulus) with age (Spearman $R = 0.246$ and $R = 0.243$ at $p < 0.05$, respectively)

The diameter of the portal vein increases with the growth of shear wave speed and pressure (Spearman $R = 0.261$ and $R = 0.244$ at $p < 0.05$, respectively).

The speed of blood flow through the portal vein significantly negatively interacts with the Young's modulus ($r = -0.482$, $p = 0.0471$); in women this is more pronounced ($r = -0.3719$; $p = 0.0008$).

The data obtained during compression elastography (fibrosis index) and shear-wave elastography SWM (shear wave speed and pressure) also have statistically significant strong correlation links, with the highest coefficient observed in the age group over 60 (Spearman $r = 0.7478$ and $r = 0.7643$ $p = 0.00001$, respectively). In men, these values are higher ($r = 0.7803$ and $r = 0.8021$, $p = 0.00001$).

Conclusions: According to the study, it can be argued that there is a significant correlation of liver elasticity with age, sex of patients, structural and anatomical characteristics of the liver. Correlation of the Young's modulus and the speed of blood flow through the portal vein indicates a hemodynamic disorder with a decrease in the elasticity of the liver, which is associated with an increase in resistance to portal blood flow in the development of liver fibrosis. The pressure and speed of the sound wave have a strong correlation with the index of fibrosis, so the compression and shearing gel elastography complement each other and increase the diagnostic efficiency of ultrasound examination of the liver.

[325]

Safety of pulmonary ultrasonography at neonatal intensive care unit

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Introduction: Lung diseases are the most serious complications of prematurity. Chest X-rays (CXRs) have still remained procedures used in the evaluation of the respiratory system in the neonates. Lung ultrasound (LUS) is another validated method which can be easily used in diagnosing neonate lung.

Aim of the study: To find the potential relationship between lung ultrasound and pulmonary haemorrhage to evaluate the safety of this method in very low birth weight infants.

Material and methods: We conducted medical analysis of infants admitted to the NICU of the Department of Pediatrics, Jagiellonian University Collegium Medicum in Cracow. Infants were enrolled into the study with birth weight under 1500g. We divided them into two groups, depending on the date of admission. The first one includes patients admitted between 2008 and 2011, when the chest X-ray was the main procedure. The second, between 2013 and 2016, when lung ultrasound became a routine procedure. The indications to perform studies were: respiratory failure, suspicion of RDS, air leak syndromes, congenital pneumonia, lungs and diaphragm malformations and confirmation of central venous catheter's position. Lung ultrasound was done by Philips machine with a broadband probe (5-12 MHz).

Results: 297 infants were enrolled in the first group and 286 in the second. Statistically significant differences were observed in mean birth weight ($p=0,0027$), a median of gestational age ($p=0,0003$), a median of the Apgar score at five minute ($p=0,0027$), number of intraventricular haemorrhage grade III/IV ($p<0,001$), and number of deaths mortality before discharge ($p=0,021$). Analysis of number of CXR and LUS studies revealed statistically significant difference between groups ($p<0,001$). It showed that over 70% of patients from the second group had not even one X-ray picture made during hospitalization. There was no difference in frequency of pulmonary haemorrhages between groups. In the first group there was only one episode of PCH, in the second no PCH was seen. Analysis of risk factors showed statistically significant differences in patients who had surfactant administered ($p<0,001$), in whom mechanical ventilation was used ($p=0,0003$), and who had hemodynamically significant PDA ($p=0,025$).

Conclusions: Lung ultrasound appears to be a perfect diagnostic tool for young patients' pulmonary disorder. However, we cannot forget that as every electronic device, it also has its limitations. Reserve and individual approach during performing the procedure is highly required.

[326]

Magnitude of Cholelithiasis among Patients Visiting the Department of Radiology at Myungung Christian Medical Center, Addis Ababa, Ethiopia

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Introduction: Cholelithiasis is a common health care problem that leads to surgical intervention. Cholelithiasis was thought to be infrequent in many developing countries including Ethiopia. However cholelithiasis has been believed to be developed nation's problem worldwide, mainly due to the main risk factors being sedentary life style, obesity and Western diet. While rapid urbanization and sedentary lifestyle have been on the rise in developing nations like Ethiopia there is no recent documentation of the magnitude of cholelithiasis. Thus this study aims to determine the magnitude of cholelithiasis among patients visiting the department of radiology at Myungung Christian Medical Center, Addis Ababa, Ethiopia.

Aim of the study: To assess the magnitude of cholelithiasis among patients visiting the department of radiology Visiting the at Myungung Christian Medical Center, Addis Ababa, Ethiopia

Material and methods: A prospective, descriptive cross-sectional study design was conducted. Patients older than 18 and who have underwent ultrasound examination of the abdomen or abdominopelvic region were included as study subjects. Questionnaires were administered to study subjects which were selected by systematic random sampling. SPSS software version 22.0 was used for data entry and analysis.

Results: A randomly selected sample of 162 subjects were reviewed. The Male to Female Ratio is 1:2. 14.2% of all subjects had family history of gallstones. The prevalence of cholelithiasis in this population was 34.4%. Among all patients with cholelithiasis, 55.6% were symptomatic and 16.7% had ultrasound evidence of cholecystitis. 25.9% were single stones, 64.8% were multiple stones and the remainder demonstrated Gravel. 6.8% of all subject studied underwent cholecystectomy.

Conclusions: Compared to prior to studies done elsewhere in Ethiopia, the magnitude of cholelithiasis has increased 6.6-fold in the past 12 years. Hence the medical team as well as the general public should be made aware and important public health measures needs to be taken. Government policies should also include strategies to reduce the rise in the burden of gallstone disease.

[327]

ACUTE GAMMA-IRRADIATION INFLUENCE ONTO MYOCARDIAL TISSUE RESPIRATION IN ALBINO RATS

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Introduction: Numerous data on the development of post-radition complications from the heart and large vessels are not consistent with the opinion of high radioresistance of the myocardium. The effect of ionizing radiation on the myocardium is manifest-ed by an increase in the variability of the reactions of the cardiovascular system and the mechanisms of the energy homeostasis of the myocardium, realized main-ly in mitochondrial oxidation reactions. The combined effect of ionizing radiation and other unfavorable factors can initiate or exacerbate the already existing car-diac pathology (for example Radiation Induced Cardiovascular Disease – RICVD).

Aim of the study: To study the parameters of mitochondrial breathing of the myocardium of albino rats with a single general external γ -irradiation.

Material and methods: The state of tissue respiration of pieces of myocardium of white rats irradiated in doses of 0.5 Gy and 1 Gy (dose rate 0.92 Gy / min) was evaluated by polarogra-phy using Clark's electrode in a thermostated cell (25 ° C) in Hanks solution. The rate of oxygen consumption (nmol O₂ / (min × mg protein)) was measured on en-dogenous substrates, and also with the addition of exogenous substrates - suc-cinate and glutamate.

Results: A significant increase in the endogenous respiratory activity of myocardial tissue of irradiated rats at doses of 0.5 Gy and 1 Gy was established. Thus, on day 3 after γ -irradiation, the rate of endogenous respiration increased by 29.4% (0.5 Gy) and 43.1% (1 Gy), compared to a control of 2.11 ± 0.02 nmol O₂/ min * mg of protein. Ten days after γ -irradiation, in doses of 0.5 and 1 Gy, this indicator increased compared to the control, respectively, by 49.3% and 60.7%. The great-est increase in the rate of respiration was observed when glutamate was applied on the 10th day after exposure to 92.9% and 98.2%, respectively, for doses of 0.5 and 1 Gy.

Conclusions: The obtained data testify to the high sensitivity of the myocardium to γ -irradiation, as evidenced by the dynamics of changes in mitochondrial respiration on endogenous and exogenous substrates. Stimulation of respiratory activity of functionally unloaded irradiated myocardium makes its energy less effective and vulnerable to the action of other damage factors, which contributes to the devel-opment of cardiovascular pathology.

[328]

Antropometric characteristics of eye socket depending on sex and age

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Introduction: Eye socket - a pair of cavities of the facial skull, designed to support and protect the organ of vision. With age, this cavities undergoes a number of changes, which are practically not described in modern literature. To take into account these features is necessary for the development of operational access and effective methods of treating injuries in this area.

Aim of the study: Identification of the patterns of changes in the qualitative and quantitative parameters of the eye sockets in the age range of 36-85 years in males and females.

Material and methods: We examined 181 tomograms, of which 90 were males and 91 females. We measured the dimensions of the side walls of the orbit, the angle between them and the width of the entrance to the orbit.

Results: For men: a gradual decrease in the sizes of both walls by 0.1 mm occurs every 5 years. The size of the entrance to the orbit during the whole life does not change significantly, but there is an increase of 0.1 cm at the age of over 67 years. The angle between the walls of the left eye socket up to 45 years is 46°, then it decreases by 1° every 5 years, and at the age after 70 - loses 2° every 5 years. As for the angle between the walls of the right eye socket, then in the age range of 36 to 46 years, its value is on average 47°, then at the age of 47 to 66, its size is 49°, and then sharply decreases and from 67 years is 46°.

For women: The length of the orbital wall is 4.9 cm in 55 years, then it gradually shrinks 0.1 cm every 5 years. The size of the medial wall varies abruptly: at the age of 45 years it is 4.8 cm, then its size decreases by 0.1 cm. After 55 years, the size decreases by 0.3 cm and practically does not change until the end of life. The size of the entrance to the orbit throughout life does not change significantly and is 4.5 cm on average. The angle between the walls of the left orbit is 46°, but its size is reduced by 1° every 5 years. The angle between the walls of the right eye socket is 48° at the age of 36, then it decreases by 2° after 46 years and loses 1° every 5 years until the end of life.

Conclusions: The length of the walls of the right and left eye sockets is gradually shortened with age.

The angle between the walls of the orbit and the width of the entrance increase, which is a consequence of the degenerative processes, occurring in the eyeball.

The dimensions of this cavity in women predominate over those of men.

Surgery

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[329]

Comparison of surgical results in patients with onychocryptosis after treatment by methods of wedge resection and Bartlett's method

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Introduction: Onychocryptosis, or ingrown toenail is a common inflammatory nail disorder, caused by penetration of the nail plate into the tissue around the nail. Average occurrence in the world is approximately 6-10%. There are various surgical techniques to treat ingrown toenails, but there is still a high incidence of recurrences and complications after procedures. To know which method is more appropriate to use in different stage and condition of the toenail and how to decrease recurrence rate is very crucial.

Aim of the study: To evaluate the effectiveness of surgical treatment in patients with onychocryptosis by methods of wedge resection and Bartlett's method.

Material and methods: In the present randomized controlled trial, conducted in the period between June, 2015 and June, 2017, 381 consent patients that suffered ingrown toenail were included in this study. They were randomly divided into 2 groups in the order of their joining to the study. The Group-1 190 patients were treated by wedge resection, whereas the Group-2 191 patients were treated by Bartlett's method.

Results: Among 190 patients which had wedge resection (Group-1), 49 (25,78%) of them had recurrence in the next one year period, 12 (6,31%) with complication. 169 patients (88,94%) were satisfied with a result. Mean recovery time was 8 ($\pm 3,2$) days. Among 191 patients from Group-2, 18 (9,42%) of them had recurrence rate, 40 (20,94%) patients had complications. 148 patients (77,48%) were satisfied with a result. Recovery time was 11 ($\pm 2,2$) days.

Conclusions: Wedge resection method reduces inflammation in the tissue around the nail and has better recovery time index with patient's satisfaction. On the other hand, Bartlett's method is more effective in preventing recurrence, but it has increased risk of postoperative infection. Despite on recurrences after wedge resection, it is more wisely to use this method for patients with 2nd and 3rd stage of ingrown toenail in initial cases. If subsequent recurring cases take place, Bartlett's method could be performed in order to physician's choice.

[330]

The disease spectrum and the outcome of older patients wit acute abdomen

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Introduction: The rapid ageing of polish population results in an increasing number of surgeries performed on the elderly. Major interventions, especially emergency abdominal surgeries, in this certain group of patients are connected with high risk of complications and mortality.

Aim of the study: The aim of the study was to evaluate the disease spectrum and the outcome of older patients with acute abdomen.

Material and methods: All patients aged 65 or more, requiring emergency abdominal surgery were included into the study. The data about reasons for hospitalisation and 30-day mortality was collected prospectively. A logistic regression analysis was performed to identify the risk factors for 30-day mortality.

Results: Four hundred twenty two patients (231 males and 191 females) were included with a median age of 77 (range 65-100) years. The most common reasons for surgical intervention were acute cholecystitis, ileus (mostly due to colorectal cancer complications), diverticulitis, and acute appendicitis. Cancer was the cause of 90 (21.3%) hospitalisations. The total 30-day mortality was 28.44%, and it was the highest considering patients with acute mesenteric ischemia, post-radiotherapy ileus, or intraabdominal bleeding (48.1%). The age 85+, the type of procedure, the comorbidity were independent risk factors of 30-day mortality.

Conclusions: Emergency surgical interventions in the elderly carry a great risk of postoperative mortality. The leading reason for hospitalisation is acute cholecystitis followed by ileus. Elective cholecystectomy and colorectal cancer screening can improve the outcomes of older patients.

[331]

Appendectomy - comparison of Classic Laparoscopic Appendectomy (CL) and Single Port Laparoscopic Appendectomy (SPLA)

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Introduction: Laparoscopy in pediatric surgery is still a developing technique. While appendectomy is a common surgical procedure in children population, the best surgical method, the most effective one but still the least invasive, was searched for. In selected cases Single Port Laparoscopic Appendectomy (SPLA) is used as an alternative to, also commonly performed, Classic Laparoscopy (CL).

Aim of the study: Classic Laparoscopy (CL) and Single Port Laparoscopic Appendectomy (SPLA) data comparison.

Material and methods: As a material patients treated between July 2012 – December 2017 due to appendicitis in Ward of Clinical Pediatric Surgery and Urology, Regional Specialistic Childrens' Hospital in Olsztyn were taken. Retrospective analysis was used as a method, paying special attention to age and sex of the patients, time of the surgery, complications and reoperations, need for analgesic drugs after the surgery and hospitalization length.

When anatomy of caecum and appendix are favorable for pulling the appendix out through the umbilicus SPLA is performed, if not CL with use of 3 ports is performed.

Results: Between July 2012 and December 2017 there were 331 appendectomies performed in Pediatric Surgery Ward in Olsztyn, 127 using CL and 25 using SPLA. In total 81 males and 71 females aged 3-18 were treated due to appendicitis using those two methods. Mean age of patients treated with CL was 11.08 and with SPLA 12.32. Mean time of the surgery using CL was 50.4 minutes and using SPLA 32.4 minutes. There were 10 complications due to surgical approach in total, 9 after using CL and 1 after using SPLA. . After performing CL 2 reoperations were needed, after SPLA none reoperation was needed. Mean number of analgesic drugs doses was 15.22 for CL (with the lowest number of 7 and the highest number of 48) and 11.8 for SPLA (with the lowest number of 3 and the highest number of 20). Mean hospitalization time was 7.5 days after using CL and 5.52 days after using SPLA.

Conclusions: Appendectomy is a common surgery in children population. Single Port Laparoscopic Surgery is one of many possible methods for this procedure. SPLA is performed faster than CL, is burdened with less percentage of complications and reoperations than CL and recovery time is shorter than after CL. Furthermore, after SPLA patients needed less number of analgesic drugs doses than after CL. SPLA can be an interesting variation for appendectomy.

[332]

The feasibility of Edmonton Obesity Staging System in Polish bariatric center

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Introduction: The volume of bariatric surgeries performed worldwide is growing every year. So far the criteria for surgical treatment are based on BMI and comorbidities. The new scale - Edmonton Obesity Staging System (EOSS) is proposed as more comprehensive to evaluate the necessity of surgical intervention. EOSS assess the severity of obesity-related comorbidities and functional status, assigns them suitable value, from 0 to 4 stage. Patients who achieve at least second stage should undergo bariatric treatment.

Aim of the study: The aim of the study was to compare bariatric surgery results and morbidity with EOSS score.

Material and methods: The retrospective study enrolled 761 patients, who underwent laparoscopic bariatric surgery between April 2009 and November 2017 in tertiary referral center. EOSS score was assigned postoperatively basing on clinical records. Analyzed variables included operative time (OT), excess body mass

index loss (EBMIL) and morbidity. ANOVA with post hoc Bonferroni test was used for quantitative variables and logistic regression models were created for qualitative variables.

Results: In analyzed group, 29 patients were classified as stage 0, 118 as stage 1, 541 as stage 2, 35 as stage 3 and 38 as stage 4. There were statistically significant differences in OT between stages ($p=0,008$). The longest OT were found in EOSS stage 4 (141.11 min). Post hoc analysis revealed differences between groups 1 and 4 ($p=0.026$) and 2 and 4 ($p=0.0053$). The least EBMIL was present in EOSS stage 4, but analysis revealed no significant differences between groups ($p=0.397$). We did not find significant differences regarding postoperative and intraoperative overall complications. When analyzing specific complications, the only significant differences was present in gastrointestinal stricture ($p=0.03$).

Conclusions: Higher stage of EOSS is associated with significantly longer operative time, but do not affect the excess BMI loss. EOSS requires a prospective cohort study to fully evaluate its potential usefulness as a qualification tool for bariatric surgery.

[333]

Colorectal cancer liver metastases in surgically treated patients: histopathological characteristics in relation to primary cancer location

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Introduction: In 2012 colorectal cancer (CRC) was the third most common cancer in males and the second among females (Ferlay et al., 2014; GLOBOSCAN 2012), as well as the third cause of cancer related death in the world (Engstrand et al., 2018). Recently, there has been increased interest and discussion regarding association between primary tumour location and metastatic spread pattern as well as histopathological characteristics (by TNM) (Ahmed et al., 2017; Augestad et al., 2015).

Aim of the study: To evaluate association between primary tumour location and histopathological characteristics of colorectal cancer liver metastases (CLM) in surgically treated patients.

Material and methods: Patients with CRC who received surgical treatment for primary tumour were identified by archive search and retrospectively analysed in single university hospital (2013–2015). Patients with missing data on primary tumour site, histopathological characteristics were excluded. The study group consisted of 149 patients who received surgical treatment for CRC. Descriptive and analytical statistics was done using SPSS 23 software (Mann-Whitney and Chi square tests).

Results: The mean age of study group was 68,12 years [95% Confidence Interval: 66,22–69,99]. Males compiled 51,0% [43,0–59,1], females 49,0% [40,9–57,0]. Across all primary sites 45,6% [37,6–54,4] were left side CRC, 20,1% [13,4–26,2] right side, 30,9% [23,5–38,9] rectal and 3,4% [0,7–6,7] of combined location. Mean number of lymph nodes removed was 13,77 [12,48–15,05], while the mean number of lymph nodes with metastases was 1,33 [0,98–1,71]. CLM prior to surgery for primary tumour was present in 14,8% [9,4–20,8] of patients. Among CLM patients the most common tumour locations were left side (63,6%), right side (13,6%) and rectum (22,7%). There was statistically significant correlation between present distant metastases and biggest size of primary tumour ($p=0,038$), CLM and age ($p=0,033$) as well as primary tumour invasion characteristics.

Conclusions: Left side of the colon is the most common location of primary tumour in patients with CLM. Moreover, CLM shows statistically significant correlation with characteristics of primary tumour invasion, patient age and biggest size of tumour. Nevertheless, histopathological characteristics and biological potential of CRC are heterogeneous and therefore further research needs to be done.

[334]

Predictors for length of hospital stay after colorectal cancer surgery

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Introduction: The number of colorectal cancer cases is increasing over recent years. Length-of-stay (LOS) is an indicator of health service efficiency and an important factor determining the overall cost of hospitalization. Finding the predictors of LOS can help managing resources.

Aim of the study: Identify the variables that can predict the duration of hospital stay after colorectal cancer surgery.

Material and methods: 451 patients who underwent colorectal cancer surgery in the LUHS Kaunas Clinics hospital between January 2016 and December 2017 were registered and statistically analyzed by using linear regression, Mann Whitney – U and ANOVA tests. The age, sex, surgical approach, TNM stages and differentiation were observed with the aim of calculating the predictors of LOS after colorectal cancer surgery. Continuous variables are presented as mean \pm standard deviation.

Results: The total of 451 patients were operated for colorectal cancer (37.1 % male and 62.9 % female). The mean age was 63 years. The age was similar between male (62.9 years) and female (63 years) patients ($p=0,901$). The age and LOS was not associated.

The mean length of postoperative hospital stay was 7.3 ± 4.5 days. The rates between female (7.2 ± 4.7 days) and male (7.4 ± 4.4 days) did not differ ($p=0.732$).

Based on the surgical approach, patients who underwent laparotomy stayed 8.2 ± 4.3 days, laparoscopy – 6.4 ± 2.1 days ($p=0.001$).

LOS was similar between different tumor differentiation grade. G1 – 6.8 ± 5.4 days, G2 – 7.8 ± 4 days, G3 – 8.4 ± 5 days ($p=0.231$).

The local extent of the tumor was an influencing factor for LOS. Patients who were diagnosed with T1 cancer stayed 4.6 ± 2.8 days, T2 – 6.9 ± 2.8 days, T3 – 8 ± 4.4 days, T4 – 8.1 ± 4.6 days ($p<0.001$).

LOS was similar based on outspread to sentinel lymph nodes. N0 – 7.4 ± 4.5 days, N1 – 8.2 ± 4.1 days, N2 – 7 ± 3.1 days ($p=0.152$).

The metastases to distant sites did not influence LOS. M0 – 7.2 ± 3.7 days, M1 – 7.4 ± 4.7 days ($p=0.694$).

Conclusions: 1. The sex, differentiation grade, lymph node metastasis and spread to distant sites did not affect length of hospital stay after colorectal cancer surgery.

2. Laparotomic approach and higher local extent of the tumor were associated with prolonged length of stay after colorectal cancer surgery.

[335]

Economic burden of postoperative colon anastomosis leakage

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Introduction: Anastomotic leakage is one of the most dangerous postoperative complications after colon resection operation. Concerning this complication, patients have greater chances of morbidity and mortality. In addition to the clinical complications, anastomotic leakage cause a significant financial burden to health care institution, due to additional reoperations, longer hospital length of stay, instrumental examinations and other actions, related to anastomotic leakage treatment.

Aim of the study: To analyse anastomosis leakage treatment price after colon resection operation.

Material and methods: We made a retrospective analysis of 39 patients, who experienced anastomotic leakage during postoperative period in Vilnius university hospital Santaros klinikos from year 2014 to 2016 after colon resection operation. Data were gathered from patients cases protocols. In a collaboration with Vilnius university hospital Santaros klinikos economics department, all the costs related with anastomotic leak patients treatment were counted. We compared anastomosis leak treatment price with remuneration from National health insurance fund and also with nonleak treatment price.

Results: Out of 39 patients 26 were men (66,7%) and 13 - women (33,3%), the mean age was $69,5 \pm 13,56$ years, mean of the body mass index (BDI) – 28,34. Hospital's costs average for leakage complication was greater than the remuneration for the treatment ($8373,2 \pm 3709,27$ Eur vs $4097,1 \pm 1254,66$ Eur) ($p<0,001$). Leakage treatment significantly cost fourfold more than nonleak treatment ($8373,2 \pm 3709,27$ Eur vs. $2041,51 \pm 146,53$ Eur), lasted longer ($25,7 \pm 18,48$ days vs. 7,5 days) and caused tenfold greater loss ($4275,6 \pm 2967,84$ Eur vs. $389,0 \pm 146,08$

Eur). Total hospital's loss during year of 2014-2016 caused due to anastomotic leakage treatment - 166769,74 Eur. Mortality rate was 25,6%.

Conclusions: Anastomosis leakage cause a great financial loss to health care institution. It is important to find the ways how to solve this problem.

[336]

Prolonged hospitalization after laparoscopic total gastrectomy- evaluation of risk factors

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Introduction: D2 gastrectomy is the gold standard in the treatment of gastric cancer. It is, however, associated with long convalescence and thus long hospital stay. Enhanced Recovery After Surgery (ERAS) protocol combined with laparoscopic approach allows to limit surgically induced trauma, thus improving recovery, reducing the number of complications, and shorten length of hospital stay. The aim of this study was to determine factors affecting prolonged hospitalisation after laparoscopic total gastrectomy combined with ERAS protocol.

Aim of the study: To determine risk factors of the prolonged hospitalization after laparoscopic total gastrectomy.

Material and methods: The analysis included 90 consecutive patients who underwent elective laparoscopic D2 gastrectomy in 2nd Department of General Surgery Jagiellonian University Medical College (JUMC) due to gastric adenocarcinoma. Demographic and surgical parameters, compliance with ERAS protocol, recovery parameters, postoperative complications and readmissions were analysed. Patients were divided into two subgroups depending on their reaching the targeted length of stay-LOS (49 patients in group 1-≤5 days, 49 patients in group 2 - >5days). A univariate and multivariate logistic regression was performed to assess for factors associated with prolonged LOS.

Results: Median LOS was 5 (4-8) days. 41 patients (45.5%) required prolonged hospitalisation. Univariate logistic regression revealed that lack of oral diet toleration in the 1st postoperative day (OR: 5.42; 95% CI 2.17-13.53), peritoneal drainage (OR: 5.01; 95% CI 1.82-13.74), postoperative complications (OR: 4.61; 95% CI 1.69-12.55) and prolonged catheterisation (OR: 2,78; 95% CI 1.04-7.39), were associated with prolonged LOS. In multivariate logistic regression model lack of oral diet toleration in the 1st postoperative day (OR: 6.44; 95% CI 2.22-18.66), postoperative complications (OR: 3.72; 95% CI 1.15-12.03) and peritoneal drainage (OR: 4,06; 95% CI 1.26- 13.14) were associated with longer hospitalization.

Conclusions: Peritoneal drainage, no toleration of oral diet on the 1st postoperative day and the occurrence of postoperative complications are related to prolonged hospitalization. In our analysis, neither demographic nor operational factors had an impact on prolonged hospitalization.

[337]

The influence of postoperative biliary occlusion on patients' mean survival time after implantation of endoscopic stent

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UJ CM

Trustee of the paper: Monika Orłowska

Introduction: Endoscopic stents are commonly referred to as self-expandable metallic stents (SEMS). They play a significant role in the management of malignant obstructing lesions in the gastrointestinal tract. A frequent complication of this procedure is occlusion of the bile duct.

Aim of the study: Our objective was to determine what is the postoperative life expectancy of patients and what impact do complications have on the patients' survival time.

Material and methods: Descriptive and retrospective analysis of 165 patients who underwent an implantation of endoscopic stent due to biliary occlusion because of pancreatic or biliary malignancy. 94 of them were women. Patients were followed up in terms of stent occlusion in the postoperative course. Overall survival time was also assessed.

Results: Mean survival of the patients was 163 days. 21 patients had stent occlusion in the postoperative course. There were no statistical differences between mean survival time in the stent occlusion group and no-complication group, however it was higher in no-complication group (107 days vs 170 days, $p=0,08$). There were no statistical differences between men and women regarding overall survival ($p=0,047$).

Conclusions: Self-expandable stents are efficient and effective way of palliative treatment of biliary occlusion due to malignancy. Stent occlusion in the postoperative course does not affect overall survival time.

[338]

The Correlation Between RDW and Cancer-Specific Survival in Patients With Renal Cell Carcinoma Treated With Nephrectomy

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Introduction: The rising number of newly diagnosed renal cell carcinoma, highly aggressive malignancy, is the reason why there is the need to search for new preoperative markers. We need the new markers to help select patients who would benefit the most from additional postoperative care and to evaluate the course of the disease

Aim of the study: The aim of the study was to evaluate the influence of red cell distribution width (RDW) on cancer-specific survival (CSS) in patients who undergo nephrectomy for renal cell carcinoma (RCC).

Material and methods: A total number of 434 patients with pathologically proven RCC treated with radical or partial nephrectomy between 2003 and 2012 were identified in a single tertiary academic center. To evaluate the accuracy of RDW for CSS prediction, a receiver operating characteristic (ROC) curve was plotted. Patients were divided into 2 groups, with low and high RDW, according to the optimal cutoff value, which was determined according to the ROC curve. The association between groups and CSS was analyzed using the Kaplan–Meier method with log-rank testing. The Cox proportional hazards regression model was applied to perform univariate and multivariate analysis for CSS.

Results: Median follow-up was 2146 days. There were no differences between subjects with high and low RDW in terms of sex, age, body mass index, histological type of tumor, frequency of partial nephrectomy, and TNM stage. Patients with high RDW had significantly lower hematocrit, hemoglobin level, and red blood cell count. Tumor necrosis and larger tumor size were significantly more prevalent in the group of patients with high RDW. CSS was significantly lower in patients with $RDW \geq 13.9\%$ compared with patients with $RDW < 13.9\%$. After adjustment for pathological and clinical covariates RDW remained an independent predictor for CSS in a multivariable model for CSS.

Conclusions: Our study revealed that the RDW might be an easily obtainable prognostic marker in RCC patients treated with nephrectomy.

[339]

Reconstruction of soft tissue defects of the fingers with second and third dorsal metacarpal artery perforator flaps

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Introduction: Soft tissue defects of the fingers with exposed tendons, bones or joints are frequently encountered in reconstructive hand surgery. The second and third dorsal metacarpal artery perforator flaps are used in reconstruction of the soft-tissue defects of index, middle and ring fingers.

Aim of the study: This study aimed to show our experiences in the reconstruction of fingers soft tissue defects by second and third dorsal metacarpal artery perforator flaps.

Material and methods: Twenty nine patients with finger defects were treated at the Department of plastic, reconstructive and hand surgery, University Hospital Foca, during the period from January 2009 to December 2015 year. There were 21 males and 8 females, with an average age of 33,5 years (range, 19-71 years). These flaps were used to reconstruct soft-tissue defects after debridement of infected wounds in 17 patients, traumatic

wounds in 8 patients, and after excision of skin tumors in 4 patients. The locations included 8 index fingers, 15 long fingers and 6 ring fingers. The area of defect ranged from 1.5 cm x 1.0 cm to 6.0 cm x 3.0 cm. The donors side were closed directly in all patients. The descriptive statistics were used in this study.

Results: The average flap size was 3,9 × 2.0 cm. Twenty flaps were based on the second dorsal metacarpal artery perforator and nine flaps were based on the third dorsal metacarpal artery perforator. Ten flaps were used to reconstruct defects distal to the proximal interphalangeal joint, and nineteen flaps were used to reconstruct defects over the proximal interphalangeal joint and proximal to it. In six cases there were venous congestion while in four patients there were partial flap loss.

Conclusions: Benefits of the second and third dorsal metacarpal artery perforator flaps are quick and easy dissection, thickness and quality of the flap as well as lack of sacrifice second and third dorsal metacarpal arteries. These flaps can reliably to cover soft-tissue defects up to the proximal half of the distal phalanx. Donor site morbidity is minimised and direct closure is almost always possible.

[340]

Selective digestive decontamination by rifaximin during severe acute pancreatitis

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Introduction: Selective digestive decontamination (SDD) could diminish septic complication during severe acute pancreatitis (SAP). Rifaximin (Rf) is antibiotic with minimal activity against intestinal microbiota and therefore may prevent dysbiotic complications of standard SDD protocol.

Aim of the study: To investigate the efficacy of SDD by different forms of Rf during SAP.

Material and methods: In 168 Wistar rats SAP was induced by L-arginine. Rf 6 mg/kg (normal dose) was administered enterally in 1st group, Rf 15 mg/kg (high dose) in 2nd group, Rf 6 mg with bile in 3rd group and normal saline in control (C) animals every 6 hour. Mucosal resistance (MR) of jejunum, ileum and caecum to 10 Gram negative pathological enterobacteria (GNPE), intestinal microbiota and bacterial translocation during 6-120 hours were investigated.

Results: In C group intestinal colonization (IC) by GNPE and BT occurred in 50% after 24 h and in 100% during 48-120 h. MR for GNPE appeared after 72 h of Rf administration in 1st group, 48 h in 2nd group and 24 h in 3rd group. IC by GNPE was determined in 16.7% (p<0.05) in 2nd group, 33.3% (p>0.05) in 1st group and prevented in 3rd groups. BT was significantly reduced in 1 group after 96 h, 2 and 3 group – after 48 h.

Conclusions: SDD with Rf in high dose or with bile prevents IC by CNPE after 24-48 hours of administration.

[341]

Association between patient age and hepatocellular carcinoma biological aggressiveness in a population of liver transplant recipients

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Introduction: Although young age may be associated with more aggressive biology of hepatocellular carcinoma (HCC), its prognostic role in liver transplantation for HCC has not been thoroughly examined.

Aim of the study: The aim of the study was to determine whether younger age is associated with more aggressive tumor behavior in a population of HCC liver transplant recipients.

Material and methods: A total of 214 consecutive patients with HCC who underwent liver transplantation in the Department of General, Transplant, and Liver Surgery (Medical University of Warsaw) in the period between 2010 and 2017 were included in this retrospective observational study. Patients were divided into two groups basing on the cutoff of 50 years. HCC recurrence was the primary end-point.

Results: Patients over and under 50 years were similar regarding sex (p=0.999), hepatitis C virus infection (p=0.828), neoadjuvant therapy (p=0.115), microvascular (p=0.485) and macrovascular (p=0.597) invasion, tumor

differentiation ($p=0.999$), Milan criteria fulfillment ($p=0.421$), tumor number ($p=0.207$) and size ($p=0.844$), alpha-fetoprotein (AFP) concentration ($p=0.420$) and Model for End-stage Liver Disease score ($p=0.783$), whereas hepatitis B virus infections were significantly more frequent in the younger group (63.3% versus 40.8%; $p=0.028$). Five-year recurrence-free survival did not differ significantly between patients under and over 50 years (80.5% versus 73.5% respectively; $p=0.669$). Multivariable analyses revealed that only number of lesions ($p=0.038$), AFP concentration ($p<0.001$), microvascular invasion ($p=0.004$) and poor tumor differentiation ($p=0.011$) were independent risk factors for tumor recurrence. No significant effect of patient age on recurrence risk was also found following adjustment for the confounding effects of these independent predictors ($p=0.878$). Recurrence-free survival at 5 years did not differ between patients under and over 50 years also in subgroups within (88% versus 85.6% respectively; $p=0.748$) and beyond (63.5% versus 57.3% respectively; $p=0.764$) Milan criteria.

Conclusions: Younger age is not associated with more aggressive tumor behavior and should not be considered as predictor of HCC recurrence in patients undergoing liver transplantation.

[342]

Lung transplant donors – a key to successful lung transplantation

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Introduction: Lung transplantation is a surgical procedure, in which recipients with end stage lung disease have their lungs replaced by donors' ones. Single-lung(SLT) or double-lung transplantation (DLT) may be performed, depending on recipients' medical condition. Following possible donor-recipient matching combinations are permitted: female donor(FD) – female recipient(FR), male donor(MD) – male recipient(MR), FD – MR and MD – FR.

Aim of the study: The main aim of the study was to analyze donors, whose lung are being transplanted in Silesian Center for Heart Diseases (SCCS).

Material and methods: Study group consisted of 78 patients qualified as lung donors by SCCS lung transplant team between 2012 and 2017(32 women and 46 men, mean age at qualification: 37,78 yo.). 33 of the transplantations were SLT and 42 were DLT. There were 3 retransplantations as well. Various combinations of donor-recipient matching were performed: FD – FR (21), MD – MR(32), FD – MR(11) and MD – FR(14). Blood types of donors were: A+(28%), A-(8%), B+(12%), B-(4%), AB+(4%), AB-(0), O+(35%) and O-(10%). Data was obtained from medical records, Donor's Qualification Card in particular.

Results: The general average survival after lung transplantation is 658 days. The longest survival after retransplantation was 1834 days, not included in general average survival. The average survival of matching combinations is: FD-FR 559 days, MD-MR 734 days, FD-MR 749 days and MD-FR 540 days. 51 transplantations were blood type compatible procedures, 27 were not. The average survival of patients after exact same blood type transplantation was 672 days and same parameter in the group, who underwent compatible but not the same blood type transplant was 651 days. The most common cause of donors' death was subarachnoid hemorrhage. Mean survival of the patients, who received lungs harvested from the hospital located up to 150 km from SCCS was 515 days, whereas 912 days of survival were observed in case of recipients of the lungs harvested from the facility located more than 300 km from SCCS.

Conclusions: There is no significant difference in survival among male recipients regarding the gender of the donor. The same can be observed in case of female recipients. It seems that average survival of male recipients is longer than female ones. There is also no significant difference in survival between blood type compatible transplantations and non-compatible ones.

[343]

The in vitro research of bacterial adherence and colonisation on prosthetic vascular grafts that are used in vascular surgery

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Introduction: Prosthetic vascular graft infection is one of the most difficult complications to deal with in the field of vascular surgery. That is life-threatening complication and in most of the cases requires repeated surgical intervention. To prevent vascular graft from infection the following methods are used:

- impregnation with gelatin and antibiotics like rifampicin
- coating with the layer of silver.

Aim of the study: Aim of the study is to evaluate and compare in vitro bacterial adhesion and colonisation on polyester (Dacron®) and silver-coated grafts of two types of bacteria (Staphylococcus epidermidis (S.epidermidis) and Pseudomona aeruginosa (P.aeruginosa)).

Material and methods: To determine bacterial adhesion and colonisation on commercially available vascular grafts (polyester (Dacron®) and silver-coated (SC) graft), samples were incubated 2 and 24 hours in bacterial suspension with concentration 10². After incubation samples were tested using sonication and culture methods. Adhesion and colonisation was tested using S.epidermidis ATCC 12228, P.aeruginosa ATCC 27853 bacterial reference cultures.

Results: A total of 40 samples were examined, 20 samples of polyester (Dacron®) vascular graft and 20 samples of silver-coated vascular graft. No significant difference was observed on adhesion intensity on both graft samples for both bacterial cultures: 3,8 average colony forming units (CFU) for polyester graft and 0,5 average CFU for silver-coated graft.

P.aeruginosa colonisation intensity on vascular grafts has shown the results of average 755,8 CFU/mm² on polyester graft and 0,31 CFU/mm² on silver-coated graft. S.epidermidis colonisation turned out less intensive with average 1339 CFU/mm² on polyester graft and 447 CFU/mm² on silver-coated graft.

Conclusions: Silver-coating do not play significant role in prevention from bacterial adhesion on vascular grafts due to absence of significant difference in both vascular types' colonisation results.

Silver-coating inhibits bacterial colonisation on graft surface. This effect is stronger for P.aeruginosa then S.epidermidis.

Regarding possible development of the experiment, many other bacteria species' colonisation on vascular grafts may be studied. The following species seem of the most interest: staphylococcus aureus, escherichia coli, candida spp.

[344]

Application of fast-track surgery in the management of patients with esophageal cancer

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Introduction: According to the current global statistics data, the average incidence of esophageal cancer (EC) is 4,2 per 100,000 in a year. Surgical intervention is recognized as the most radical method of treatment for EC. Therefore pre-, intra- and post-operative patient management is particularly important for clinicians. All these stages of case management are regulated by principles of fast-track surgery. It is a multimodal rehabilitation technique which is focused at acceleration of postoperative reconvalescence and recommended as surgical therapy for esophageal cancer

Aim of the study: The purpose of our study was to analyze outcomes of fast-track surgery comparing with traditional method in treatment of patients with esophageal cancer between October 2016 and June 2017

Material and methods: Clinical data of 29 patients with squamous-cell esophageal cancer were retrospectively analyzed. All patients received surgical treatment with minimal-invasive or open approach. 31%(9) were treated with FTS, which included skipping pre-operative mechanical bowel preparation, early restoration of diet and early post-operative ambulation; 69%(20) were treated according to routine protocol. Operation time, anesthetic management, length of hospital and ICU stay, complication rate, drain removal, outcomes were analyzed and compared between two groups.

Results: Operation-time, hospital and ICU stay, drainage tube and gastro-duodenal tube removal were lower in FTS-group (all P<0.05). Complication rate was 37,5%(6) and 25%(4) in FTS-group and control group, respectively.

Conclusions: For that reason, fast-track surgery can be used to optimize and hasten post-operative recovery of patients with esophageal cancer without risk of increasing the frequency of complication

[345]

Influencing ischemia-reperfusion-induced micro-rheological alterations by remote organ ischemic preconditioning in a rat model

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Introduction: Ischemia-reperfusion (I/R) worsens micro-rheological parameters and causes microcirculatory deterioration. Remote organ ischemic preconditioning (rIPC) is a well-known technique to prevent I/R injury. However, little is known about the micro-rheological relations of the rIPC, and the optimal extent of the tissue involved and the timing are still needed to be answered.

Aim of the study: Our aim was to examine the effect of two rIPC timing protocols on hemorheological parameters 1 or 24 hours prior to the renal I/R.

Material and methods: The experiment (permission Nr.: 25/2016/UDCAW) was performed on 27 male Cr1:WI rats (bodyweight: 301.6 ± 38.6 g). Animals were anesthetized with Sodium-Thiopental (40-60 mg/bwkg, i.p.). In the sham operated group (n=7) median laparotomy was performed, the left kidney was exposed and the left femoral artery was cannulated. In the I/R group (n=7) 45-minute ischemia was carried out on the left kidney using microvascular clips, and a 120-minute reperfusion period was followed-up. In the preconditioned groups, 1 hour (1h-rIPC, n=7) or 24 hours (24h-rIPC, n= 6) prior to the renal I/R 3x10-minute ischemic periods with 10-minute intermittent reperfusion were induced on the right hind limb using a tourniquet applied below the level of the inguinal ligament. Blood samples were taken from the cannulated artery at the beginning of the operation, and in the 30th, 60th, and 120th minutes of reperfusion (base, R-30, R-60, R-120) for the determining hematological parameters (Sysmex K-4500 automate), red blood cell aggregation (Myrenne MA-1 aggregometer) and erythrocyte deformability (LoRRca Maxis Osmoscan Ectacytometer).

Results: The highest leukocyte count and the lowest platelet count was found in the I/R group. Red blood cell aggregation index significantly increased during the reperfusion dominantly in the 24h-rIPC group (from R-30 to R-120, $p < 0.05$ vs. base). Red blood cell deformability worsening was observed in all ischemic groups, however, in a smaller degree in the 24h-rIPC group (Elmax/SS1/2 parameter, R-120, $p < 0,05$ vs. 1h-rIPC). Deterioration of osmotic gradient deformability was observed in both rIPC groups.

Conclusions: In summary, 45-minute renal ischemia and the following 120-minute reperfusion resulted in micro-rheological changes in the rat that could be modified by the rIPC protocols. However, based on these results, it is not possible to decide which rIPC protocol (early or late) is more effective. Detailed histological evaluation may answer the question.

[346]

Influence of needle reposition during RFA procedure on HCC recurrence

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Introduction: Radio-frequency ablation (RFA) is one of the recommended methods in Hepatocellular Carcinoma (HCC) treatment. The effectiveness of this procedure is widely proven especially in the group of patients with comorbid conditions and progress of liver cirrhosis. Due to the range of the electromagnetic field generated by the RFA needle, the best outcomes are noted for tumors less than 3 cm in diameter. According to recommendations these lesions should be ablated within single needle insertion. It is suggested that changes of the ablated tissue's characteristics lead to difficulties in USG imaging and misguidance of the secondary needle reposition.

Aim of the study: The aim of this retrospective study was to evaluate the RFA needle reposition's impact during the procedure in patients with tumors less than 3 cm in diameter on the operation outcomes and HCC recurrence rate.

Material and methods: Fifty-two patients with HCC treated in Department of General and Transplantation Surgery in years 2009-2017 were analysed in a case-control study. In the group of 15 patients (the Needle

Reposition group, 28,8%) minimum one needle reposition was performed during the procedure. In the group of 37 patients (the No-reposition group, 71,2%) needle was placed into the tumor within single insertion. Post-operative observation included multiphase CT-scan and/or MRI of the liver and AFP level in 3-6 months intervals. The shortest follow-up period was 11 months. Chi-square test was used to determine whether association between study and control group was present. P-value <0,05 was considered as statistically significant.

Results: Total number of relapses in the analysed group was 33 (63,5%). HCC recurrence was observed in 8 (53,3%) patients from the Needle Reposition group and in 25 (67,6%) from the No-reposition group ($p=0,33$).

Conclusions: The reposition of the needle during the RFA procedure caused less recurrences in this group than in patients with single insertion. The difference between both groups was not statistically significant although there is a lot of factors that may affect the study outcome. We suggest that needle replacement may be beneficial due to the wider area of the destruction and more complete tumor tissue eradication. Further observation is needed.

[347]

To cure diabetes with a scalpel? – The effects of Duodenojejunal Omega Switch on glucose tolerance in rats

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Introduction: Diabetes mellitus type 2 is recognized as a global epidemic by the World Health Organization. This disease currently affects about 6% of the world's population. For this reason, new types of treatment are constantly being needed. Hence, duodenojejunal omega switch surgery comes as an option.

Aim of the study: The aim of our study was to assess the effect of duodenojejunal omega switch surgery and diet on glucose tolerance in diet-induced obese rats.

Material and methods: 48 rats were divided into control diet group (CD, $n=24$) and high fat diet group (HFD, $n=24$). After 8 weeks, half of rats from both groups underwent SHAM surgery and duodenojejunal omega switch (DJOS) surgery. All rats were then randomly assigned to HFD and CD group. Glucose tolerance was measured by performing Oral Glucose Tolerance Test.

Results: No changes between the two operation types were observed for groups HFD/HFD ($p=0,499$), HF/CD ($p=0,073$), and CD/HF ($p=0,252$). A statistically significant difference in time profile course in the group CD/CD was observed ($p<0,01$). Taking AUC OGTT time profiles into account, no statistically significant changes between the two operation types were observed for the groups HFD/HFD ($p=0,205$) and CD/HF ($p=0,207$). In the HF/CD group, AUC OGTT was statistically significantly higher for DJOS type surgery than in the SHAM type ($p<0,05$), while in the CD/CD group the opposite was found, i.e. the AUC OGTT was higher in the SHAM group compared with the DJOS group ($p<0,05$). In the SHAM surgery group, no statistically significant differences between groups were observed, whereas for the DJOS operation groups the following statistically significant differences were noted: group CD/CD has lower values of AUC OGTT than the HFD/HFD group ($p<0,05$), HF/CD group ($p<0,001$) and CD/HF group ($p<0,01$).

Conclusions: DJOS operation leads to positive changes in carbohydrates metabolism, which may be attributed to the improve glucose tolerance. This procedure could play a supportive role in treatment of type 2 diabetes.

[348]

Comparison of preoperative medication in terms of intraoperative haemodynamic status in patients with pheochromocytoma

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Introduction: Pheochromocytoma (PHE) is a catecholamine-producing neuroendocrine tumor associated with high hemodynamic risk. Perioperative hemodynamic instability remains one of the biggest surgical and anaesthetic challenge in patient undergoing adrenalectomy. Preoperative pharmacological preparation is strongly recommended to prevent perioperative complications. Recommendations suggest preoperative

blockade with alpha-blockers as the first choice and calcium channel blockers as the second. Added therapy with beta-blockers is required to counteract the tachycardia induced by alpha-blockade.

Aim of the study: To compare preoperative medication in terms of intraoperative haemodynamic status in patients with PHE prepared for adrenalectomy.

Material and methods: A retrospective analysis of medical histories of 23 patients with PHE hospitalized in the Clinic. Patients were qualified to the study based on histopathological reports. Adrenalectomy was performed in all cases. Patients were evaluated considering administered medicaments and intraoperative blood pressure (BP) fluctuations.

Results: Preoperative medication was based on alpha-blockers, beta-blockers and calcium channel blockers. 20 patients (86,96%) were given alpha-blockers, in majority in the form of doxazosin. Calcium channel blockers were administered in 8 patients (34,78%). Added therapy with beta-blocker was performed in 15 patients (65,22%). The average dose of doxazosin was 6,06mg (range 1-24mg). BP fluctuations were observed in 18 patients (78,26%). The comparative analysis of the intraoperative haemodynamic status did not show statistically significant differences depending on the administered medicaments. BP fluctuations were found in 80% of patients with vs. 67% without alpha-blockers ($p=0,62$), in 75% with vs. 80% without calcium channel blockers ($p=0,79$), in 87% with vs. 62,5% without beta-blockers ($p=0,2$). No statistically significant differences in intraoperative BP fluctuations were found regarding to the dose of alpha-blockers (Spearman's rank correlation $R=-0,028$).

Conclusions: Perioperative hemodynamic instability remains a surgical and anaesthetic challenge in patient with PHE. Our study showed that there are no clinically relevant differences in intraoperative haemodynamic status depending on the preoperative medication with alpha-blockers, beta-blockers and calcium channel blockers. Future analysis is required to confirm these observations in a larger prospective study.

[349]

Difficulties in management of simultaneous elevation and depression deficit persisting after posttraumatic orbital floor reconstruction

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Introduction: Ocular motility impairment associated with orbital trauma may present as several different patterns. The most common is limited elevation of the globe. However, in some cases it is accompanied by depression deficit. In such instance the patient reports diplopia in both up- and downgaze.

Aim of the study: The aim of this study is to examine the results of treatment methods in cases of simultaneous elevation and depression deficit that persisted after posttraumatic orbital floor reconstruction.

Material and methods: The study was designed as a retrospective analysis of medical records of patients who had undergone surgical correction for diplopia associated with orbital fracture and which persisted after orbital reconstruction surgery. Eight cases (5 males, 3 females, mean age 34.1 ± 7.2 years) were identified. Data from the records concerning type of fracture, timing of reconstruction surgery, alloplastic materials used, number and timing of the strabismus surgeries were evaluated. All patients underwent orthoptic evaluation before surgery and postoperatively with various times of follow-up. In all cases the procedure of choice was contralateral inferior rectus recession combined with superior oblique recession and superior rectus posterior fixation.

Results: 8 cases of blow-out fracture of the orbital floor were identified. Orbital rim involvement was present in 3 cases. In 5 cases titanium mesh was used in reconstruction surgery, polipropylene sheet in 3 cases. Delay of the reconstruction surgery: 34.6 ± 31 days (7 to 90 days). Mean time elapsed from the reconstruction surgery to the first strabismus procedure was $10.3\pm 5,5$ months (6 to 24 months). In all cases there were at least two procedures necessary. Postoperatively 4 patients (50%) were diplopia free, 2 (25%) presented diplopia in extreme upgaze and 1 (12.5%) in upgaze, by adduction and 1 (12.5%) in extreme upgaze, by adduction.

Conclusions: Diplopia persisting after reconstructive surgery of a fractured orbital floor may be corrected surgically. The results of this study suggest that at least two surgical procedures are necessary to achieve satisfying outcomes. In such cases contralateral inferior rectus recession combined with superior oblique recession and superior rectus posterior fixation appear to be effective procedures for use. However, despite many modifications and improvements of extraocular muscle surgeries it is still challenging to resolve diplopia persisting after posttraumatic orbital floor reconstruction.

Surgical Case Report

Jury:

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Date:

Sunday, May 13th, 2018

Location:

Room 233/234, Didactics Center

Case Report:

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[350]

Validity of head computed tomography of neurologically symptomless patients with end-stage lung diseases referred to Silesian Center of Heart Diseases in Zabrze in order to qualify to lung transplantation

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Background: Patients referred to lung transplantation (LTx) must undergo proper and thorough examination because of the post-transplant immunosuppressive treatment and its risks. Between 2012-2017 head computed tomography (head CT) was mandatory among all referred patients who were being qualified to LTx, regardless of their neurological status.

Case: The case treats about 57 years old patient with chronic respiratory failure due to Chronic Obstructive Pulmonary Disease (COPD), who was referred to Silesian Center for Heart Diseases (SCCS) in 2015. She met the spirometric criteria to be referred (FEV1 13%) and her BODE was 9, which is enough to be qualified to LTx. Despite the lack of neurological symptoms, the patient was subjected to head CT according to the qualification protocol, which showed abnormalities. Examination showed changes leading to disqualification for lung transplantation. The changes in the tomography contained a tissue mass with the features of a strong homogeneous enhancement after administration of a contrast agent adhering broadly to the dura mater on the left side, convex to the bottom of the middle cranial fossa. Further MRI diagnostics were recommended as a matter of urgency.

Conclusions: CT is associated with exposure of the patient to radiation and should not be performed without important indications. From the group of 250 patients who were pre-qualified for LTx, only in this case changes were detected. Authors of the paper consider head CT of asymptomatic patients as unfounded.

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Elongated acromion – a case report and review of the literature

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Background: An elongated acromion process has been described as covering the superior and lateral aspects of the humeral head and extending to the level of the surgical neck. It is considered to be an extremely rare congenital anomaly of scapula, occurring as isolated defects with minor diagnostic value. Only three cases of patients presenting such a malformation have been reported so far.

Case: The patient, 21-year-old woman presented complaining about a limited movement of upper limbs, which has been present since birth. Prior, at the age of 11, without any basic radiological tests, she had undergone bilateral excision of both pectoral major and latissimus dorsi muscles, obtaining no improvement in movement. Physical examination revealed restricted abduction, flexion, scarce internal and external rotation in both glenohumeral joints. On palpation, bone limitations covering humeral heads were noticed – RTG showed bilateral elongation of acromion processes. The patient underwent two surgical resections of acromion processes which, in combination with physiotherapy, resulted in transient although significant improvement in range of movement in glenohumeral joints. Nevertheless, after 11-years follow-up, the patient rejected further surgical treatment, what aggravated her condition.

Conclusions: Review of the literature revealed that elongated acromion is an extremely uncommon phenomenon. Reported case describes this congenital scapular malformation and treatment with 11-years long follow-up. In this case, the patient was misdiagnosed with muscular contracture what led to unnecessary surgery. It is of the utmost importance to take into consideration such a pathology and prevent patients from being misdiagnosed.

[352]

Lung Transplantation as a successful method of treatment in Williams-Campbell syndrome in adults

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Background: Williams-Campbell syndrome (WCS) is a rare condition diagnosed usually in childhood. It is associated with a bilateral absence or maldevelopment of cartilage in subsegmental bronchi (4th to 6th division). Weakened bronchial wall collapses during expiration, which leads to the formation of bronchiectasis in distal parts of lungs. Patients with WCS suffer from recurrent suppurative pneumonias and eventually develop a respiratory failure which intensity differs according to the level of cartilage malformation. Double lung transplantation (DLT) used to be considered as a controversial therapeutic option for WCS patients.

Case: In August 2015 36-year old patient with WCS was referred to Silesian Centre for Heart Diseases (SCCS) for evaluation and possibly qualification to DLT. The patient presented with an end-stage lung dysfunction with FEV1 of 0,78 l (21% predicted) and FVC of 1,59 l (35% predicted) and the distance of 173m in 6MWT, eventually meeting the requirements of ISHLT Guidelines for Lung Transplantation. He was diagnosed in early childhood and since then his respiratory function was slowly decreasing in time. He suffered from recurring respiratory infections what was associated with multiple hospitalizations and long periods of treatment in sanatoria. He developed bronchiectasis and COPD. A few months earlier his condition had significantly declined and echocardiography had revealed symptoms of right ventricle enlargement as well as pulmonary hypertension. Treatment with home non-invasive ventilation was introduced. In September 2016 the patient was admitted to SCCS in order to undergo a sequential double lung transplantation. 1,5 year after the procedure patient's condition is described as very good, despite several respiratory infections that might be linked with an immunosuppressive treatment. The patient reaches FEV1 of 1,73 l (47% predicted) and FVC of 3,49 l (79% predicted) and walks 616 m in 6MWT. His functional class has changed from NYHA IV to NYHA I.

Conclusions: PubMed database mentions only 3 DLT performed previously in WCS patients. Palmer et al. described a patient who died 1 year after the transplantation due to bronchomalacia proximal to the bronchial anastomoses, convincing medical community that DLT should be avoided in this condition because of the risk of possible complications. However, further data suggested the contrary. Our report seems to confirm the latter attitude and shows that DLT might be an effective therapeutic option in WCS.

[353]

Results of treatment of false aneurysms complicating internal carotid artery dissection

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Background: False aneurysms are dangerous complications of dissection of carotid arteries. They can result from trauma of carotid artery, its spontaneous or traumatic dissection or from iatrogenic causes. The aim of the study was to present results of treatment of three patients with false aneurysms complicating internal carotid artery (ICA) dissection.

Case: Patient 1. 26-year-old female presented with left sided hemiparesis after traffic accident. CT scan revealed multiple ischemic areas. CT angiography showed dissection of right ICA with false aneurysm (8x7,8mm), and dissection of left ICA with false aneurysms. Based on the clinical and radiological findings, the endovascular treatment was planned. First stent was placed in the extracranial right ICA, and second one in the intracranial segment. 9 days later, stent placement was performed on the left ICA. After 3 years of observation, the patient required angioplasty of recurrent stenosis in right ICA stent. Doppler ultrasound examination, one and two years after the last procedure showed patent stents in right and left carotid artery.

Patient 2. 39-year old male presented with ear buzzing, vertigo and balance disorder. Treated 3,5 years ago with Gamma Knife, because of tumor on left VIII cranial nerve. Doppler ultrasound, then CT angiography revealed dissection of left internal carotid artery with false aneurysm (12mm in diameter). Coil embolization (using

Microevention HydroFrame 18 10/36mm) with stent placement (Carotid Wallstent 5/30mm) was performed. An angiogram confirmed good flow in the left ICA.

Patient 3. 36-year-old male with Horner syndrome and numbness to the upper and lower limbs, after trauma to the left side of neck. The patient was admitted for endovascular treatment of left internal carotid artery dissection. CT angiography confirmed the dissection, and the presence of false aneurysm (5x8mm). After stent placement (Carotid Wallstent 5x30mm), arteriography showed good flow. CT angiography after 2 months revealed patent stent.

Conclusions: False aneurysms of carotid arteries are rare, but dangerous complications of artery dissection. They can be treated with anticoagulation or antiplatelet drugs, or with endovascular procedures. Our study shows, that symptomatic patients can be successfully treated by placement of stents with good long-term outcome.

[354]

The life after three hearts - a case series

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Background: The first successful orthotopic heart transplant (OHT) in Poland was performed by Religa et al. in 1985 in Zabrze. Since then, the heart transplant programme was developed and improved. The next step seems to be reoperating the patients with such graft failure. In our country, several heart retransplantations (HRT) have been attempted, but none of them succeeded. The first successful HRT at Silesian Centre for Heart Diseases (SCCS) was carried out in 2017. Such experience enabled performing the next one in the beginning of 2018.

Case: Case series describes two male patients aged 52 and 65 respectively, who underwent OHT followed by HRT. First patient received his first transplant in March 1992. Due to cardiac allograft vasculopathy (CAV), he had 8 coronary angioplasty procedures between 2006-2016. He was qualified for HRT due to terminal graft failure caused by chronic rejection and CAV progression. Procedure was performed in August 2017.

The second patient underwent his first OHT in 2001, due to dilated cardiomyopathy (DCM). After 15 years, he experienced sudden cardiac arrest resulting from acute graft rejection. In 2017 he was listed for HRT. In January 2018, a matching donor was found and the second successful HRT was performed.

Both patients were discharged from hospital in good condition.

Conclusions: Heart retransplantation covers 2.6 – 4% of indications for heart transplant in the United States. Reoperations, including retransplantations, are always connected to technical difficulties during the procedure and higher risk of complications. The insufficient number of donors in Poland explains the rare occurrence of the procedure. First achievements in this field provide new possibilities for patients, who otherwise would have no other option for long-term treatment.

[355]

Better late than too late: life-saving surgical treatment of acute airway obstruction due to giant retrosternal goiter in an elderly patient with infective exacerbation of chronic obstructive pulmonary disease (COPD)

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Background: Benign multi-nodular goiter is a common problem affecting 5% of the general population in non-endemic and 15% in endemic areas. The size and duration of growth of a goiter has a significant effect on the presentation and subsequent outcome, since it increases the risk of compression of vital structures in the neck, particularly the airway, which is a clear indication for surgery. The incidence of benign goiter causing acute airway obstruction, however, is as low as 0.6%.

Case: A 92-year-old woman was referred to Medical University of Warsaw Hospital with suspicion of pneumonia due to a week history of persistent productive cough, dyspnoea at rest, loss of appetite and an episode of fever resistant to antipyretics. Past medical history was significant for chronic HF (NYHA class II), chronic renal failure, COPD, DM type 2 and long-standing huge benign non-toxic multi-nodular goiter. The patient, however, did not consent to surgery. Lab tests showed increased CRP (19,4) yet without leucocytosis. Chest X-ray revealed a massive enlargement of the mediastinum and displacement of trachea nearly 4cm to the right with no signs of recent pneumonia. HRCT of the chest showed a large tumor (75x 77mm) in the upper mediastinum, connected to huge left lobe of the thyroid and enlarged right lobe. Tracheal lumen was narrowed critically to 4mm in transverse diameter. That, accompanied with increased sputum production due to exacerbation of COPD led to periodic attacks of severe dyspnoea with episodes of desaturation during hospitalisation. The patient was qualified for a life-saving procedure of total thyroidectomy to which she finally consented. The surgery went without complications. On the 4th day post operation notwithstanding, an increasing hoarseness suggested voice plicae palsy due to oedema of the left recurrent laryngeal nerve. Glucocorticosteroids were administered with good response. Patient also developed transient hypoparathyroidism, hence substitution therapy administration. 11 days after operation, the patient was discharged from the hospital in quite good general condition.

Conclusions: The choice of treatment in patients with benign non-toxic nodular goiter can be challenging. For the treatment of obstructive goiter, surgical procedure (total thyroidectomy) is recommended aiming at rapid relief of compression of vital cervical structures. For those patients who are unable or unwilling to undergo an operation, radioiodine therapy is a reasonable alternative option.

[356]

SADI(-S) – new surgical option for patient with insufficient weight loss after sleeve gastrectomy

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Background: Laparoscopic sleeve gastrectomy is one of the most common bariatric procedures due to its efficiency, low cost and modest complication rate. Its drawback is alteration of restrictive mechanism alone, without any impact on absorption. Failed bariatric operation is defined as resultant BMI > 35 kg/m² or <50% of excess weight loss. There is no evidence based recommendation on the second step procedure in case of failure. SADI-S (single-anastomosis duodenoileal bypass with sleeve gastrectomy) is relatively simple and new procedure.

We present the very first case of a patient with inadequate weight loss after sleeve gastrectomy followed by malabsorptive part of SADI as a second step procedure in Poland.

Case: A 46-year old female patient was admitted to surgical department because of her super obesity (BMI=53.6 kg/m²; weight=151.9 kg). She suffered from hypertension, depression and hypothyroidism. After complete set of medical examinations she underwent laparoscopic sleeve gastrectomy. Volume of the resected stomach reached 900 ml measured by insufflation CO₂ under pressure of 20 mmHg. During first 9 months her weight loss was satisfactory. Then, the patient began slightly regain her weight. Fourteen months after the procedure her BMI was still over 40 and weight loss was 41.1% of excess body mass. Hence, the patient fulfilled criteria of inadequate weight loss.

Considering all the facts, second bariatric procedure was decided on. On the day of operation the patient weighed 115 kg (BMI=40.75). During laparoscopic surgery duodenum was cut off 4 cm distally from pylorus within linear stapler. A distance of 150 cm from Bauhin valve on the ileum was measured and ileal loop was anastomosed to the proximal part of transected duodenum. Water-tightness of the anastomosis was checked.

No complications were noted short time after surgery. Radiological control of the anastomosis showed no leakage. Patient was discharged after 5 days of hospitalization.

Conclusions: Patients with inadequate weight loss after LSG have a few surgical options. One of the most interesting is transforming restrictive procedure into a SADI(-S). The simplicity of the procedure and only one anastomosis are strong advantages. It seems to be very promising also one, primary operation. So far there are not many reports of its long-term effects or complications, so more time of observation is required.

[357]

Salvage surgery for recurrent hypopharyngeal cancer after primary radiotherapy. Options for digestive tract reconstruction – report of two cases

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Background: Head and neck cancers are characterized by a significant risk of recurrence or second malignant neoplasm development (25% in long-term follow-up). Most patients with a primary tumor can be treated with organ-preserving strategies including radiotherapy (RT) or chemoradiotherapy (CRT). However, if recurrent lesions develop after definitive primary RT, it is impossible to use therapeutic dose of radiation again. Salvage surgery is regarded as the only curative option in these cases. The second cancer in hypopharynx needs pharyngectomy with or without laryngectomy. The radial forearm free flap (RFFF) is often considered the first-choice for the reconstruction of digestive tract after salvage pharyngectomy with or without laryngectomy.

Case: In our study we analysed 2 patients: 65- and 75-year-old women, who presented with head and neck cancer recurrence in the area of hypopharynx, 25 and 10 years after primary radiotherapy due to oropharyngeal and laryngeal cancer. In both cases, tumors infiltrated posterior and lateral walls of the hypopharynx. A total pharyngectomy with larynx preservation, radical right and selective left cervical lymphadenectomy were performed in the first case. Second patient, due to perilaryngeal invasion, underwent total pharyngolaryngectomy and selective bilateral cervical lymph nodes dissection. In both patients the reconstruction of the digestive tract was performed with the use of RFFF. The perioperative and postoperative courses were unremarkable. The functional examinations of the first patient showed correct function of the vocal folds and good voice quality. However, despite the therapy of swallowing the high risk of aspiration made the oral nutrition impossible. In the second case, oral fluid nutrition was successfully introduced 1 month after operation. Both patients stay under regular observation, so far 30 months (first patient) and 5 months (second patient) without disease reoccurrence.

Conclusions: The main goal of reconstruction after salvage surgery in cases of recurrent pharyngeal cancer is to reconstruct the digestive tract. The other important aspect is to optimize the anatomy for voice rehabilitation and swallowing. Unfortunately, radiation and chemotherapy impair wound healing, which indicates increased risk of postoperative complications and makes salvage surgery results unpredictable.

[358]

Recanalization and stenting of chronically obstructed inferior vena cava filter and iliac veins

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Background: Postthrombotic occlusions of permanent cava filters are reported in 20% of cases in long term period after implantation. Nowadays thrombolysis (catheter-directed or systemic) in combination with endovascular thrombectomy is a common method of management of symptomatic cava filter occlusions. Open surgery repair of inferior vena cava filter occlusion is associated with a high rate of postoperative complications.

Case: A 62-year-old male presented with inferior vena cava syndrome with significant lower limb pain and inability to walk. In 2007 cava filter "Korona" was implanted to the patient. Anticoagulant therapy was not conducted. October 11, 2016 the patient was admitted to a vascular center where the CT -showed occlusion of inferior vena cava under cava filter, right and left iliac veins. December 12, 2016 the patient was hospitalized to Clinical Hospital no.1 of the President Administration of Russian Federation. December 13, 2016 the diagnosis was confirmed by phlebography. Partial recanalization of the right external iliac vein, recanalization of the left external and left common iliac veins and recanalization of the inferior vena cava to the level of the cava filter were performed simultaneously. The patient underwent a 3-day catheter-directed thrombolysis. December 16, 2016 recanalization, transluminal balloon angioplasty and stenting of the inferior vena cava with the transition to the common iliac, left external iliac and left common femoral veins were performed simultaneously with post-dilation of the stent. Further 2 stents were implanted in common iliac, external iliac and common femoral veins and final transluminal balloon angioplasty was performed. Control CT-scan and ultrasound angioscanning

showed patency of the stented segments. There were no complications during procedure. 20 mg rivaroxaban and 75 mg Cardiomagnyl were prescribed on a long term period.

Conclusions: Our clinical report shows that patients with a cava filter suffering from chronic inferior vena cava occlusion can be successfully treated by endovascular methods.

[359]

Pancreatoduodenal resection with marginal resection of the portal vein

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Background: Cancer of pancreas - is one of the most significant problems of medicine. The proof of this lies in the increase in morbidity and complexity of treatment, and it is due to anatomical features, which are predisposed to the initial spread of the process even with a small amount of tumor.

Case: Patient K. entered Grodno Regional Hospital with obstructive jaundice, abdominal pain absent. An examination by ultrasound and MRI of the abdominal cavity was set: 110x38mm gall bladder with stagnant content, thick walls. CBD 20mm in diameter, intrahepatic ducts 4mm. V.porta - 9mm. MR - signs of additional tissue formation in the head of the pancreas (28x20x25 mm), chronic pancreatitis.

The mobilization of the duodenum by Kocher was made. Gastrocolic ligament was dissected, followed by ligation. The right bend of the colon was mobilized. After the ligation of the branches of the right gastro-omental arteries and veins, the right gastric artery and vein, the resection of gastric antrum using a linear device GIA was carried out. The cholecystectomy with separate ligation of arteries and veins was produced. The common hepatic duct above the confluence of the cystic duct was isolated and cut. Jejunum was cut at a distance of 10 cm from the ligament of Treitz via intestinal suture apparatus. The transection of neck of pancreas above v.porta and v.mesenterica superior was performed. After the mobilization of the head of the pancreas, the tumor invasion into the portal vein of the right semicircle (volume 3x5mm) was noted. The marginal elliptical resection of the right semicircle of the portal vein was made. Pankreatojejunostomosis was formed by double-row suture "end to side" by atraumatic thread, at a distance of 8 cm distal of it was imposed hepatikojejunostomosis by single interrupted sutures with an atraumatic thread. Gastroenteroanostomosis was formed by 40 cm distal of hepatikojejunostomosis using a linear device GIA 60mm.

Conclusions: The presented variant of operation extends possibility the treatment of pancreatic head cancer with invasion in the mainline vessels, allows to perform radical surgery and to improve the results of treatment of this pathology.

[360]

A case of an acute colon pseudo-obstruction – Ogilvie Syndrome following total hip arthroplasty

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Background: Acute colon pseudo-obstruction (ACPO), also described as Ogilvie's syndrome, is one of the rarest life-threatening complication of major orthopaedic surgeries or drugs' side-effect that disturb colonic motility (e.g., anticholinergics or opioid analgesics). It is characterised by massive colonic dilatation without mechanical obstruction and high mortality.

Case: An 84-year-old female patient was admitted to the local department for the elective total right hip arthroplasty due to chronic pain and limited range of joint mobility. The pain was scored for 8 in 1-10 scale during admitting. Moreover, patient complained of hypertension, diabetes mellitus type 2 and asthma and had thyroidectomy and appendectomy performed in the past. Before admitting she had all needed consultations which were satisfying. The arthroplasty was performed through the left approach under epidural analgesia, involving treatment of the greater trochanter lesion which was found accidentally. The procedure finished within no complications. Two days after the operation the patient started complaining of retrosternal pain which corresponded with increased troponin and CK-MB mass levels. Cardiology consultation was arranged. During

postoperative day 3 she reported abdominal pain. While examine no peritonitis signs were found. X-ray of the abdominal cavity presented colon dilation in splenic flexure area with 90 mm in diameter with massive amount of intestinal gas and fluids. CT without contrast infusion was performed for the next day and presented dilated colon for 85 mm. Colonoscopy performed in postoperative day 5 was reached hepatic flexure due to liquid stool that did not allow for examination of the rest of colon. The patient was diagnosed with the acute colon pseudo-obstruction.

Treatment contained of analgesic, neostigmine metyloclopramid and flatulence drainage. Since the postoperative day 8 the patient has been denying any pain or symptoms connected with ACPO. Due to pressure ulcers on heels and buttocks hospitalisation was prolonged and till the patient's stabilization and later on discharged on postoperative day 27.

Conclusions: This case report is an example of very rare arthroplasty complication. It is important to be aware of Ogilvie's syndrome due to its high mortality risk. In these cases death usually is the effect of continued bowel distension which can lead to perforation. Knowledge of the risk factors may enable physicians to predict which patients could develop ACPO after the surgery.

[361]

Symptomatic iliofemoral deep vein thrombosis most probably due to May-Thurner syndrome

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Background: Lower extremity deep vein thrombosis (DVT) is a common cardiovascular disease, cause of disability and high social costs. Postthrombotic syndrome (PTS) is a long-term complication of acute DVT that occurs in a large number of individuals despite optimal anticoagulation and elastic compression therapy. Most common symptoms of PTS includes oedema, pain, tenderness, skin pigmentations, varicose veins and ulcerations. One of many possible causes of DVT may be a May-Thurner syndrome (MTS), which is characterised by atypical sitting of the right common iliac artery compresses the left common iliac vein, resulting in impeded venous return. Dedicated venous stents are relatively new instruments in vascular surgeons equipment, allowing to perform less invasive treatment methods in patients with chronic DVT.

Case: A 74-year-old female patient was admitted to the Department of General and Endocrinologic Surgery due to chronic oedema of the left lower limb which occurred after proximal DVT before 8 months. The MTS was cause of thrombosis probably. Despite the anticoagulant therapy recanalization was not achieved. Obstruction of the iliofemoral segment provoked massive limb swelling, pain and venous claudication, which precluded normal walking. The lower limbs CT angiography and ultrasonography revealed chronic thrombosis of the left common iliac, external iliac, common femoral and femoral veins. Percutaneous venous angioplasty from popliteal ultrasound guide approach was conducted. During the procedure the occluded segment was traversed with the guide wire and predilated. Then 4 dedicated venous stents and one self - expandable Wallstent were implanted and postdilated. A good clinical outcome was achieved with reduction of swelling, pain and claudication. The patient can move independently. Second class compression and oral anticoagulation with warfarin were recommended after procedure. Two follow-up examinations were performed, after 2 and 14 months. Both revealed permeable stents with good patency and no features of thrombosis.

Conclusions: Endovascular venous angioplasty and stenting may be a safe, effective and minimally invasive treatment method in highly symptomatic patients with chronic DVT. Adequate anticoagulation and compression treatment is vital for stent patency. Patient should be observed with regular clinical examination, duplex ultrasound, CT angiography or transfemoral venography against in-stent stenosis or thrombosis.

[362]

Late-onset critical intestinal ischaemia and necrosis as a result of posttraumatic mesenteric haematoma

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Background: Traumatic injuries may affect simultaneously many organs in the abdominal cavity, therefore differentiation can be extremely difficult. Symptoms of intestinal ischemia are often nonspecific, which leads to late recognition and treatment, resulting in very high mortality.

Case: 41-year-old woman was admitted to the Emergency Department after car accident. The patient presented multiple ribs and pelvis fractures due to trauma and no other findings. Her impulsive behaviour resulted in difficulties with obtaining informed consent for interventions.

In third day the woman complained about abdominal pain and developed ileus without abdominal guarding. CT imaging of the abdomen and pelvis showed uncertain oedema and haematoma affecting the anatomical position of superior mesenteric artery, fluid surrounding unevenly contrasted head of pancreas and widening of caecum with no obvious signs of necrosis. Numerous retroperitoneal haematomas were confirmed. Laboratory tests showed a high level of CRP and procalcitonin, indicating possibility of intestinal necrosis.

Clinical condition, laboratory tests and imaging studies qualified her to an urgent operation - an exploratory laparotomy followed by emergency right hemicolectomy. A significant distension of a right part of the large intestine caused critical ischaemia with several necrotic changes of the wall of ascending colon.

Postoperative period was uneventful. The woman was transferred to Orthopedics Department week after surgery for further treatment.

Conclusions: Misleading image of intestinal ischaemia is the main factor of severe complications. It may be especially deceptive in orthopaedic patients treated with antibiotics and conservative management such as laxatives. Raising awareness among medical staff may shorten the time of diagnosis and therefore help to avoid radical operations such as hemicolectomy and decrease the death rates.

[363]

Pleuropulmonary blastoma- report of two cases

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Background: Pleuropulmonary blastoma (PPB) is a rare and aggressive dysontogenetic neoplasm that occurs exclusively in early childhood. PPB usually presents with symptoms of respiratory tract infection. Because of that the diagnosis may be delayed. There are no distinguishing clinical features. The diagnosis is made on histologic examination of tumor.

Case: The authors report two cases of PPB. The first one is a 3-year old girl with suspicion of left-sided pleuropneumonia. The CT-scan showed multiloculate cistern that occupied left half of the chest- the lesion looked like abscess. Chest tube insertion caused no clinical improvement. Microbiology examination of fluid from the drain didn't reveal any microorganism with Mycobacterium BCG included. After 16 days drain was removed. The marker of inflammation was elevating- highest CRP 405 mg/l. Next radiographs showed dense-fluid cystern of the basal segment of the left lower lobe and contralateral shift of the mediastinum. As no clinical change occurred- a thoracotomy with excision of the lower left lobe was performed. Histology of the lesion was reported as pleuropulmonary blastoma. The patient underwent chemotherapy with good result. After 6 years she developed second tumor.

The second case- 3-year old boy presented with respiratory distress and pain of the right clavicle area. The chest radiograph demonstrated right pleural effusion with contralateral shift of the mediastinum and atelectasis. The aspiration biopsy of the lesion was performed. Histology disclosed a PPB. Patient underwent first cycle of chemotherapy and after that the surgical excision of the tumor was performed. Despite radical treatment he developed metastasis in central nervous system. The therapy is still in progress.

Conclusions: Pleuropulmonary blastoma is rare primary lung tumor. It originates from the thoracopulmonary mesenchyme. The symptoms and radiological signs are not specific. Most common symptoms include chest pain, wheezing, breathlessness and respiratory tract infections. Radiological signs such as pneumothorax, hydrothorax and pleural effusion may suggest inflammatory lesions, which delays the diagnosis. In other cases mediastinal shift due to tumor mass may occur. Early diagnosis significantly improves prognosis. Surgical resection is necessary during treatment.

[364]

Long-Term Survival After Surgical Resection of Locoregional Gastric Adenocarcinoma Recurrence – A Case Report

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Trustee of the paper:

Background: Recurrence is the leading cause of death of gastric cancer patients after curative resection. At present, no effective therapy exists for recurring gastric cancer and there are no proper indications for surgical treatment. This report describes a 44-year-old woman with gastric adenocarcinoma and surgically resected locoregional recurrence who survives for more than 13 years after diagnosis.

Case: A 31-year-old woman was referred to the Gastroenterology Clinic with episodes of epigastric pain and irregular ulceration of the gastric antrum on endoscopy. At diagnosis, an exophytic mass with extensive ulceration was detected and a biopsy confirmed that it was gastric adenocarcinoma. A total gastrectomy with D2 lymphadenectomy was performed and the tumor was excised with proximal margin of 9cm and 2 lymph nodes with cancer cells out of 30 resected. After more than two years, metastatic adenocarcinoma was detected in a lymph node within the gastric bed. Surgeons performed an explorative laparotomy and resected the malignant lymph node. The patient also received perioperative chemotherapy. Since April 2007 she stays recurrence-free and there have been no signs of recurrence on either US or CT scan, as of February 2018. This patient represents a rare case of long-term survival of recurrent gastric adenocarcinoma treated with surgery despite particularly poor prognosis.

Conclusions: Surgery for gastric cancer recurrence is a valuable treatment in chosen patients, provided that it is performed by a team of specialized surgeons. Considering high mortality and ineffectiveness of other therapies for recurrent gastric cancer, standardized indications for surgery should be elaborated.

[365]

Renal artery branch embolization in patient with complication after partial nephrectomy

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Background: Due to advances in surgery, partial nephrectomy, or nephron sparing surgery (NSS) has emerged as an alternative to radical nephrectomy in patients with kidney tumour. While NSS enables to preserve the kidney, its technical complexity is greater and it causes postoperative complications more often. The most important complication of NSS is severe postoperative haemorrhage. It occurs in 6% of open partial nephrectomies and in most cases has a form of arteriovenous fistula or pseudoaneurysm bleeding into retroperitoneal space.

Case: 70 year old male diagnosed with tumour (3cm in diameter) of upper part of right kidney underwent elective open NSS. A week later, the man started to suffer from haematuria. The patient had a contrast CT done, in which the cause of haematuria was identified as arteriovenous fistula, unusually bleeding to the renal pelvis.

12 days after NSS, emergency embolization of right renal artery branch was ordered. The patient's right femoral artery was cannulated and a catheter was inserted into right renal artery. Arteriography of renal artery branches was performed, allowing for localization of the fistula and identification of subsegmental artery feeding it. The feeding artery was occluded with two embolization coils. Control arteriography was performed, in which the arteriovenous fistula was no longer visible.

Conclusions: Although renal pseudoaneurysms and arteriovenous fistulas usually bleed into retroperitoneal space, they should be taken into account as a possible cause of haematuria. In this case of patient after NSS, bleeding from arteriovenous fistula was stopped by endovascular embolization of renal artery branch. Quick, complete subsidence of haematuria provided ultimate evidence of success of the intervention.

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Cardiac Calcified amorphous tumor of the mitral valve presenting as Transient Ischemic Attack

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Background: Calcified amorphous tumors (CATs) of the heart are an exceedingly rare non-neoplastic intra-cardiac mass that was originally described in 1997 by Reynolds et al. (1). The Clinical features of cardiac CAT are usually like the other cardiac masses which include the symptoms related to obstruction or embolization such as dyspnea and syncope. Thus, it may be misdiagnosed with other cardiac tumors (2, 3). Accurate diagnosis of a cardiac mass is often made on surgical excision and histopathological examination (1-3). Currently, only a few cases of cardiac

CATs have been reported in the literature. The incidence, pathogenesis, and best approach to the treatment are not certain. Herein we describe a case of cardiac CATs originating from the mitral valve in a 37-year-old woman who revealed by the transient ischemic attack (TIA).

Case: A 37-year-old woman sought neurological assistance after an episode of TIA manifested predominantly as left hemiparesis of 5-minute duration. transesophageal echocardiography (TEE) revealed an echogenic, round, and mobile mass is measuring 5 × 5 mm in diameter that attached by a short pedicle on the atrial surface of the anterior mitral valve leaflet.

Histopathological evaluation of the resected tumor showed a dense calcification (shredded due to no decalcification) in a background of amorphous degenerating fibrinous material, so a diagnosis of the cardiac CAT was provided. Patient was discharged from the hospital 4 days after the surgery without any complications

Conclusions: The CATs of the heart are extremely rare non-neoplastic intra-cardiac mass and accurate diagnosis of a cardiac mass is often made on surgical excision and histological examination for the best management of them.

[367]

Corneal transplantation after severe keratitis

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Background: Infectious keratitis is a serious ocular disease that can lead to severe visual disability. The severity of the corneal infection depends on the underlying condition of the cornea and the pathogenicity of the infectious organism. Refractive surgery and the usage of soft contact lens cause disruption of the integrity of the corneal epithelium and increase the risk of infectious keratitis development.

Case: L.G. is a 35-year-old female, who was admitted to the Pauls Stradiņš University Hospital on January 30, 2018 with complaints of gradually increasing pain, redness, tearing in the right eye, deterioration of vision and photophobia for the last 7 days. The patient had refractive surgery in 2010, wore soft contact lenses and periodically suffered from conjunctivitis. L.G. has had severe keratitis since November 3, 2017, treated by outpatient. However, corneal inflammation has progressed and patient was hospitalized in December of the same year. The condition has been improved, after the patient underwent treatment. But on January, 30, slit lamp examination revealed the diffuse conjunctival injection of the right eye, as well as corneal edema with epithelial defects along the refractive surgical border and focal white infiltrates with sharp epithelial demarcation, underlying stromal inflammation and centrally located ulcer. Visual acuity of the right eye was classified as "counting fingers". Left eye remained without any abnormalities. In spite of the received therapy, there were no improvements in the right eye condition. Ulcer was perforated on February,6. On the next day, the total corneal transplantation was performed.

Conclusions: This case of recurrent severe keratitis demonstrates that effective measures undertaken in the initial stages of medical disorder might not be enough for quick recovery and the corneal transplantation is the only way of vision loss prevention.

[368]

Choledochocystopancreatojejunostomy in surgical treatment of the complicated cyst of the pancreas

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Background: The frequency of chronic pancreatitis and its complications is increasing, that makes the problem of treatment of this disease meaningful. There is no single point of view in the surgical treatment strategy with cyst of the pancreas. Volume of surgery depends of the etiology, presence or absence of the complications. Different surgery are used: from percutaneous puncture, drainage and sclerotherapy of cysts to resection of the pancreas and pancreaticoduodenal resection.

Case: Presented the results of surgical treatment of 4 patients with hypertensive-ductal type of chronic pancreatitis complicated by a cyst of the pancreatic head (CPH) and the extended terminal part of the common bile duct stricture with obstructive jaundice. According to the methods developed in the clinic an operative intervention was carried out. An upper-median laparotomy was carried out. Access to the pancreas was carried out through the gastro-colonic ligament. After puncture of the cyst pancreatic head it was carried out its opening and excision of the anterior wall with subtotal intraparenchymal resection of pancreatic head and longitudinal wedge resection of pancreatic body and tail (IRPH LWRPBT). Further cholecystectomy are carried out. On metal dilator Dogliotti, which was entered through the stump of cystic duct, carried out opening the common bile duct into cavity of CPH and sutured for hermetization of choledochocystoanastomosis. Through the stump of cystic duct was entered drainage into formed choledochocystopancreatoanastomosis. Holes of drainage disposed in the cavity of CBD and cavity of CPH and cavity formed after intraparenchymal resection of pancreatic head and longitudinal wedge resection of pancreatic body and tail. Further superimposed longitudinal pancreatocystojejunostomosis by Roux. During surgery and early postoperative period complications were not remarked. All patients were discharged from the hospital in satisfactory condition and they returned to his former job. Recurrence of pain symptoms, readmissions to hospital and jaundice were not at the observation period during 2 years.

Conclusions: The use of this method of surgical treatment is carried out adequate decompression of CPH, pancreatic ductal system and biliary tract while preserving the physiological digestive conditions. It doesn't require forming of separate pancreatocystojejunostomosis and choledochojejunostomosis, that reduces the duration of operation and postoperative complications.

[369]

Use of three-dimensional printing and custom made implant in total hip arthroplasty: a case study

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Background: Precise total hip arthroplasty (THA) revision in a patient with chronic periprosthetic hip infection (PHI) can be difficult in a use of traditional techniques and devices. Three-dimensional (3D) printing allows to create patient-specific anatomical models and is perceived as a new alternative for preoperative planning in orthopaedic surgery. 3D models give a new approach of acetabular component to fix position and cup size and allow to prepare patient-matched implants.

Case: We present a case of 70 years old female patient with history of right hip dysplasia. In 1994 THA was performed. First revision was made in 2012 to remove part of damaged acetabulum. Later in 2013 new hip endoprosthesis was implanted. After operation bleeding with pus leaking from a wound was observed. Patient was treated with oral ciprofloxacin and clindamycin. Infection recurred frequently after discontinuation of antibiotic therapy. In 2015 endoprosthesis was removed due to chronic PHI.

In 2017 patient was qualified in our Department for third THA. Computed Tomography Scan of pelvis reconstructed by 3D printer allowed to reveal accurate bone defects after previous hip operations which was necessary to prepare patient-matched acetabulum and facilitate precise integration between implant and pelvis. Then implantation of custom made endoprosthesis was performed.

Conclusions: Periprosthetic hip infections are rare clinical problems but one of the most severe complications related to THA. Ineffective antibiotic treatment is an indication for endoprosthesis removal. Use of 3D models in preoperative planning and implantation of custom made endoprosthesis are the latest alternative for patients with chronic complications after THA and may decrease rate of PHI. Our case study confirms the statement that modern technologies developed in orthopaedic surgery have benefits for patients. Use of patient-matched endoprosthesis should become a gold standard in patients with notable bone defects.

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Cross-fused renal ectopia – nephron sparing surgery – case report

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Background: Crossed fused renal ectopia essentially refers to an anomaly where the kidneys are fused and located on the same side of the midline. This disease usually is asymptomatic but may have different presentations, as well. The aim of the study is to refer a case report of female patient in the age of 68 with a tumor of cross fused pelvic kidney.

Case: Female patient in the age of 68 with a cross fused pelvic kidney was admitted to the Urology Department in Zabrze since renal tumor diagnosed with CT. The examination performed a centrally positioned, 8 cm tumor with contrast enhancement. The tumor invaded the collecting system of the left part of the kidney. The patient was qualified for surgery. Nephron sparing surgery through abdominal approach was performed. Blood loss was 300 ml and warm ischaemia time was 20 minutes with removal of the tumor and reconstruction of opened caliceal system. Malecot drain was left in the collecting system. The complication of the surgery was injury of a kidney. After one course of hemodialysis parameters of renal functioning returned to preoperative values. 10 after surgery anterograde pyelography with removal of Malecot drain and insertion of D-J catheter was performed. Patient was discharged home. 7,5 cm tumor – renal cell carcinoma G1 with negative surgical margins was revealed in pathology report.

Conclusions: Despite complete excision of a big tumour in cross-fused renal ectopia being a demanding procedure, nephron sparing approach should be taken into account in every case to avoid permanent renal replacement therapy.

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Recurring numerous keratocystic odontogenic tumours of the 31 year old patient with suspicion of the Gorlin-Goltz syndrome

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Background: The Gorlin-Goltz syndrome is a genetically determined, autosomal dominant disease, manifesting through skin, eyes, bone structure and nervous and endocrine systems abnormalities. The main diagnostic criterion is the presence of numerous keratocystic odontogenic tumors.

Case: In 2017 a patient reported to the Cranio-Maxillo-Facial Surgery, Oral Surgery and Implantology of Medical University of Warsaw Clinics with suspicion of cyst. In the medical interview - treatment caused by the suspicion of the Gorlin-Goltz syndrome 8 years earlier. The panoramic radiograph made in the Department of Dental and Maxillo-Facial Radiology of Medical University of Warsaw revealed three osteolytic centres in the base, left angle and ramus of the mandible. All of the changes had osteosclerotic shells, visible mass effect, without the radiological signs of roots' external resorption of the adjacent teeth. One of them involved a partially impacted tooth 38. The diagnosis was broadened by the CBCT examination, which revealed a recommence of the growth process in the maxilla and mandible, and a calcification in the cerebral falx and the cerebellar tentorium, which

are the main diagnosis for the Gorlin-Goltz syndrome. In the course of two months, all of the changes were removed, as well as adjacent 37, 38, 45 and 46 teeth. Tissue material was transferred to the histopathological examination, which, except for the right maxilla (cyst), confirmed the the suspicion of numerous keratocystic odontogenic tumors. In the routine CBCT examination no signs of recurrence were identified.

Conclusions: The Gorlin-Goltz syndrome is a challenge for many specialities. Patients with the diagnosed disease show large predispositions to developing tumorous changes. The knowledge on this subject amongst dentists allows an early diagnosis and introduction of the proper procedure. An aggressive local behaviour and high recurrence tendency of keratocystic odontogenic tumors requires an individual consideration of chirurgical intervention radicality and consistent radiological examinations.

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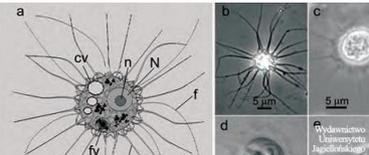
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