



15<sup>th</sup> Warsaw International Medical  
Congress

# Abstract Book

9<sup>th</sup> – 12<sup>th</sup> May, 2019  
Warsaw, Poland

ISBN 978-83-7637-488-8

The Students' Scientific Association is not responsible for the content of abstracts contained in the book.  
© Copyright by the Students' Scientific Association of the Medical University of Warsaw

## General Information

### **Congress Dates**

May 9-12, 2019

### **Congress Venue**

Convention Centre, Medical University of Warsaw

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

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

Distance to airport: 3 km

Distance to the city centre: 1.5 km

### **Official Language**

English

### **Congress Internet Service**

Website: [www.wimc.wum.edu.pl](http://www.wimc.wum.edu.pl)

Facebook: Warsaw International Medical Congress

Twitter: [\\_WIMC](https://twitter.com/_WIMC)

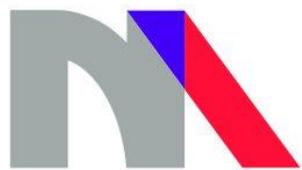
### **Contact**

The Students' Scientific Association  
of the Medical University of Warsaw

1a Oczki St., 02-007 Warsaw, Poland

[www.stn.wum.edu.pl](http://www.stn.wum.edu.pl)

[stn@wum.edu.pl](mailto:stn@wum.edu.pl)



# Ministry of Science and Higher Education

Republic of Poland

Polish Ministry of Science and Higher Education

We would like to inform that the organization of the congress “15th Warsaw International Medical Congress for Young Scientists” was financed under contract 579/P-DUN/2019 from the resources of Ministry of Science and Higher Education allocated for activities which disseminate the science.

„Organizacja kongresu dla młodych naukowców 15th Warsaw International Medical Congress for Young Scientists”-zadanie finansowane w ramach umowy 579/P-DUN/2019 ze środków Ministra Nauki i Szkolnictwa Wyższego przeznaczonych na działalność upowszechniającą naukę.”



# Contents

General Information	2
Invitation	6
Honorary Patronage	7
Media Patronage	9
Partnerships	11
Congress Sponsors	13
Organizers	14
Basic & Preclinical Science	15
Cardiology & Cardiosurgery	29
Dentistry	43
Dermatology	59
Endocrinology & Diabetes	65
Genetics & Molecular Biology	71
Gynecological Case Report	79
Infectious Diseases	91
Internal Case Report	99
Internal Medicine	115
Laryngology	125
Lifestyle Medicine	133
Nephrology & Renal Transplantation	143
Neurology & Neurosurgery	151
Obstetrics, Perinatology & Gynecology	159
Oncology & Hematology	169
Ophthalmology	177
Pediatric Case Report	183
Pediatrics	197
Pharmacy	211
PhD Basic & Preclinical Science	219
PhD Clinical Science	231
PhD Health Science	239
Psychiatry & Clinical Psychology	245
Public & Global Health	255
Radiology	269
Surgery	275
Surgical Case Report	285

# Invitation

Dear Colleagues,

on behalf of Organizing Committee we would like to welcome you to the 15th Warsaw International Medical Congress for Young Scientists. We are honored that you have decided to present results of your research on our Congress.

Warsaw International Medical Congress for Young Scientists is the biggest congress for undergraduate and postgraduate students in Poland and one of the four biggest congresses in Europe. WIMC as an international scientific platform, provides young researchers an opportunity to share the results of their work. It also allows you to meet with world's top specialists and authorities in biomedical fields. We aim to support encounter of the greatest minds in biomedical sciences and foster further development of young researchers. We take great pride in inviting special guests who can share their scientific and professional expertise.

Top research papers will compete in Grand Prix Session to win the title of 15th Warsaw International Medical Congress Winner. Moreover, we will discuss current challenges and controversies in healthcare and biomedical science. Innovation in medicine surrounds us everywhere, changing the lives of patients and doctors' day-to-day work. From gene sequencing to mobile apps - possibilities are endless and certainly worth exploring. This is why we introduced the 1st biomedical startup competition - 15th WIMC x Inkubator UW Startup Contest. Apart from that, we are going to offer a wide range of workshops, lectures and unforgettable social programme.

Over 100 enthusiastic young people had been working relentlessly for over a year in order to make the 15th WIMC happen - members of the organizing committee, session coordinators, workshop organizers; students of Medical University of Warsaw. We have done our best to make the Congress an unforgettable event. Last but not least, we want to thank our ambassadors and partner conferences who have helped us to spread the news about WIMC.

Now it is your turn to start creating your professional network together with other young scientists from over 30 different countries.

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

On behalf of the 15th Warsaw International Medical Congress Organizing Committee,



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



President of 15<sup>th</sup>  
Warsaw International  
Medical Congress



President of Student's Scientific  
Association of Medical University  
of Warsaw, Head of the  
Organizing Committee

# Honorary Patronage



Rector of Medical University of Warsaw  
Professor **Mirostaw Wielgoś**, MD, PhD



Deputy Rector  
for Student Affairs  
and Education  
Professor **Barbara  
Górnicka**, MD, PhD



Deputy Rector  
for Science and  
Technology Transfer  
Professor **Jadwiga  
Turło**, PharmD, PhD



Deputy Rector  
for Clinical Affairs  
and Investments  
Professor **Wojciech  
Braksator**, MD, PhD



Deputy Rector for  
Human Resources  
Professor **Andrzej  
Deptala**, MD, PhD



Dean of the First Faculty  
of Medicine  
Professor **Paweł Włodarski**,  
MD, PhD



Dean of the Second Faculty of  
Medicine with the English Division  
and the Physiotherapy Division  
Professor **Marek Kuch**, MD, PhD



Dean of the Faculty of Health  
Science  
Professor **Piotr Małkowski**, MD,  
PhD



Dean of the Faculty  
of Pharmacy  
Professor **Piotr Wroczyński**,  
PhD



Dean of the Faculty  
of Medicine and Dentistry  
Professor  
**Elżbieta Mierzińska-Nastalska**,  
MD, PhD



Dean of the Centre of  
Postgraduate Training  
Professor **Bolesław Samoliński**,  
MD, PhD

# Honorary Patronage



Ministry of Science  
and Higher Education

Republic of Poland

Minister of Science and Higher Education  
of Republic of Poland  
**Jarosław Gowin**



Ministerstwo Zdrowia

Patronat Honorowy Ministra Zdrowia

Minister of Health  
**Łukasz Szumowski, MD, PhD**



MAYOR OF WARSAW

Mayor of Warsaw  
**Rafał Trzaskowski**



Akademia Młodych Uczonych  
POLSKA AKADEMIA NAUK

The Polish Young Academy  
**Anna Ajduk PhD**

Krajowa  
Reprezentacja  
Doktorantów



The National Representation of Doctoral  
Candidates  
**Łukasz Kierznowski, MSc**



Fundacja  
im. Leśława A. Pagi

President of the Foundation  
**Ewa Paga**



Parlament Studentów  
Rzeczypospolitej Polskiej

President of the Students' Parliament  
of the Republic of Poland  
**Dominik Leżański**

# Media Patronage



## Media Patronage



# Partnerships



WORLD  
HEALTH  
SUMMIT | 10  
YEARS

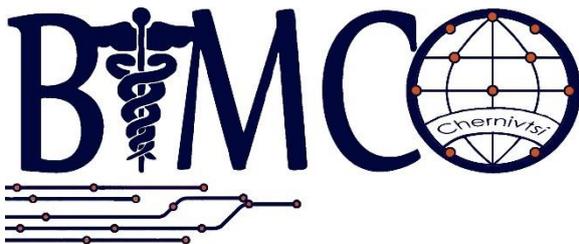
BERLIN, GERMANY  
OCTOBER 14-16, 2018

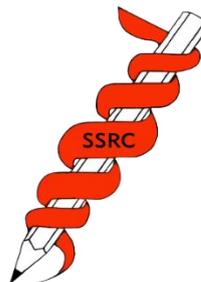
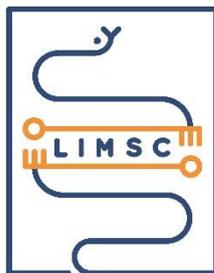
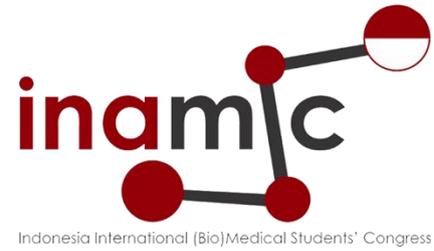
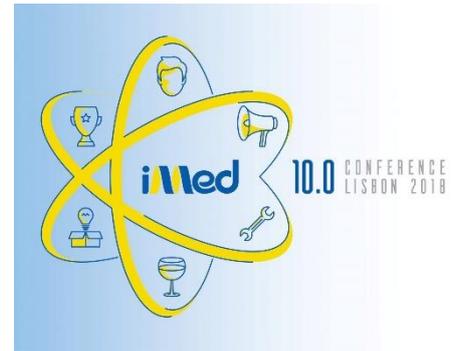
SCIENCE · INNOVATION · POLICIES



Annual Young Medical  
Scientists Conference

- "Inspires to Solve and Go Forward"





## Congress Sponsors



# Organizers

## Organizing Committee:

Head of the Organizing Committee,  
President of the Students' Scientific Society: Jacek Dzieziak

President of the Congress: Marta Kiziak

President of the Students' Government: Natalia Bierezowicz

President of the PhD Students' Government: Bartosz Godek

President of IFMSA-Poland Warsaw Local Committee: Aleksandra Gos

President of EMSA Warsaw: Anna Gumienny

President of Polish Association of Dental Students (PTSS): Wojciech Poniewierski

Scientific Programme: Aleksandra Kurek, Olga Płaza, Zazanna Znajdek, Zuzanna Stemplewska

Workshops: Piotr Rękawek, Wiktoria Różanowska

Visa affairs: Maciej Pawliszewski

Ambassador affairs: Łukasz Mielczarek, Zuzanna Stemplewska

Accommodation and Social Programme: Helena Symonides

Social Media: Łukasz Mielczarek, Helena Symonides, Paulina Mąkosa

Graphics: Mateusz Kaczmarski, Tatiana Choroszun

International Relations: Kinga Szczepaniak, Zuzanna Znajdek

Logistics: Ewa Józefik, Tatiana Choroszun, Krzysztof Pieluszczyk, Maciej Pawliszewski

Fundraising: Aleksandra Kurek, Krzysztof Pieluszczyk, Jakub Marek, Maciej Kostewicz,  
Zuzanna Stemplewska

Public Relations: Ewa Józefik, Paulina Mąkosa, Maciej Pawliszewski

IT Section: Łukasz Mielczarek, Michał Szyszka

## Session Coordinators:

Celuch Agata, Chabior Aleksandra, Cieślak Ilona , Dratwicka Zuzanna, Dryżałowska Zuzanna, Filipski Łukasz, Gajewska Magdalena, Guzek Rafał, Hus Aleksandra, Hyży Aleksandra, Iwanow Lucyna, Jasińska Karolina, Jończy Katarzyna, Kamińska Daria, Kobierska Agata, Kobryń Krzysztof, Kołtuniak Aleksandra, Koppolu Agnieszka, Koronowski Kamil, Kościuk Julia, Krawczyńska Anna , Lesiczka Jakub, Malek Barbara, Mikołajczak Maciej, Pachowska Kinga, Palus Agnieszka, Paździor Dominika, Perlik Marta, Pierzak Anna , Płatos Emilia , Pohadajło Aleksandra, Przybyszewska Weronika, Pytlos Jakub, Ryl Joanna, Samelska Katarzyna, Siatka Agnieszka, Siemianowska Dominika, Stańczyk Justyna, Steć Zuzanna, Śliwińska Weronika Lea, Ślubowska Antonina, Toboła Agata, Twardowska Karolina, Włodarczyk-Pruszyńska Inga, Wolska Marta, Wrotek Oliwia, Zamora Katarzyna, Zembrzycka Adrianna, Zygałto Jakub

# Basic & Preclinical Science

**Date:**

Friday, May 10th, 2019

**Location:**

Room 8, Library - CBI

**Jury:**

prof. dr hab. n. med. Agnieszka Cudnoch-Jędrzejewska  
prof. dr hab. n. med. Jakub Gołąb  
prof. dr hab. n. med. Witold Lasek  
prof. dr hab. n. med. Jacek Malejczyk  
prof. dr hab. n. med. Paweł Włodarski  
prof. dr hab. n. med. Dariusz Szukiewicz

**Coordinators:**

Weronika Przybyszewska  
Emilia Płatos

**Scientific Patronage:**

National Consultant in Medical Microbiology Prof. Katarzyna Dzierżanowska-Fangrat MD PhD  
Instytut Biochemii i Biofizyki Polskiej Akademii Nauk  
Polskie Towarzystwo Histochemików i Cytochemików



Pawińskiego 5a, 02-106 Warszawa



[1]

### **Detection of chromogranin and synaptophysin in autolysosomes of tumor cells from neuroblastoma patients**

Sofija Jovanović, Adriana Joksimović

jovanovicsofija@gmail.com

University of Belgrade, Faculty of Medicine/Institute for Histology and Embryology

**Trustee of the paper:** professor Tamara Kravić Stevović

**Introduction:** Peripheral neuroblastic tumors are a group of tumors arising from primordial neural crest cells. Neurosecretory granules (NSG) can be seen in the cytoplasm of the cells of these tumors. Chromogranin and synaptophysin are glycoproteins that frequently serve as panendocrine markers. Crinophagy, as an ultraphysiological phenomenon present in numerous tissues, is a characteristic of all neuroendocrine cells, theirs included. It entails autophagy of NSGs, for various reasons.

**Aim of the study:** The aim of this study was to determine whether synaptophysin and chromogranin are present in the autolysosomes of cells of peripheral neuroblastic tumors and, consequently, prove the existence of crinophagy in these cells.

**Material and methods:** Tumor tissue biopsies came from 11 previously untreated pediatric patients diagnosed with peripheral neuroblastic tumors. Five samples of tumors with a favorable and six samples of tumors with an unfavorable prognosis were taken into consideration. The frozen tumor samples were fixed in glutaraldehyde, embedded in Epoxy resins and cut by an ultramicrotome. The analysis of autolysosomes containing NSG was done using transmission electron microscopy, whereas the detection of chromogranin, synaptophysin and LC3, an autophagy marker, were done using confocal microscopy.

**Results:** By way of transmission electron microscopy we've established there is a larger number of crinophagic vesicles in the neuroblasts of tumors with an unfavorable prognosis than the corresponding number seen in cells of tumors with a favorable prognosis. Chromogranin and synaptophysin were successfully detected in the cytoplasm of these tumor cells, however, they didn't appear to colocalize with the LC3 protein.

**Conclusions:** The observed absence of colocalisation of chromogranin and synaptophysin with LC3b, as a macroautophagy marker, comprises potential evidence for the premise that the molecular mechanisms of autophagy in neuroblastoma cells differ from said mechanisms in macroautophagy.

[2]

### **Changes of glycogen content in heart of experimental diabetic rats**

Pantsiuk Kyrilo, Olexandra Kushnir

pantsiuk@icloud.com

Department of Clinical Biochemistry

**Introduction:** Diabetes may cause myocardial cell damage and eventually lead to the development of diabetic cardiomyopathy (DCM). DCM is a disease caused by diabetes that is independent of coronary artery disease, hypertension and heart valve disease. The main characteristics of DCM include oxidative stress, cardiac hypertrophy, apoptosis, myocardial fibrosis and impaired cardiac function. Melatonin, a potent antioxidant agent, is essential for glucose homeostasis and regulation.

**Aim of the study:** Therefore, the aim of the present study was to investigate the effects of melatonin against DCM in a rat model of diabetes and the possible mechanism.

**Material and methods:** The experiments were carried out on 24 sexually mature male albino rats with the body mass – (0,18 – 0,20) kg. Alloxan diabetes was evoked via injecting the rats with a 5% solution of alloxan monohydrate intraperitoneally in a dose of 180 mg/kg of body weight (b.w.). The animals were divided into three subgroups: 1) control group; 2) diabetic rats; 3) diabetic animals which were introduced the melatonin preparation intraperitoneally in a dose of 10 mg/kg of b.w. at 8 a. m. daily during 7 days starting with a 5-th 24 hour period after the injection of alloxan. The splitting of heart muscle tissue with 30% solution of KOH, followed by the addition of ethanol and cooling, precipitate of glycogen has fallen. Glycogen hydrolyzed by sulfuric acid to glucose, which is indicated of glycogen content. Statistical analysis of results was conducted by Student's test. Sufficient level considered probability differences  $p \leq 0,05$ .

**Results:** We have established reduction of glycogen in the heart muscles of diabetic animals by 20% compared with the control. Such changes are likely occurred because of a decrease in revenues of glucose in heart muscle tissue and inhibition of its use.

**Conclusions:** According to our research, week daily administration of melatonin to diabetic rats at 10 mg/kg of b.w. resulted in normalization of heart muscle glycogen content.

The positive impact of melatonin probably mediated by improved of glucose utilization due to increased capture of tissues and activating major enzymes of glycogenesis.

[3]

**Comparative study of the heart and skin peripheral blood circulation response to experimental ischemic myocardial necrosis in an emergency hypertrophy**

Andrey Terehkov, Olga Khalepo

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Olga Khalepo, PhD

**Introduction:** It is impossible to register cardiac microhemodynamics in vivo, so comparative studies of the response of the skin microvasculature and myocardium in experimental ischemic damage are of significance.

**Aim of the study:** The aim of the study was to perform a comparative analysis of the reactions of microcirculation in the skin and heart in experimental ischemic necrosis with emergency hypertrophy.

**Material and methods:** For the study we used 21 rabbits. Laser Doppler study was used to assess peripheral circulation in the skin and the left heart ventricle. The ascending aorta stenosis was simulated, after which the microcirculation was recorded again. Myocardial hypertrophy, after microcirculation indicator recording, ischemic myocardial damage (IMD) were modeled by the coronary artery ligation with the subsequent registration of microhemodynamic indicators. On day 21 of IMD, after the usual microcirculation indicator registration, animals were removed from the experiment.

**Results:** After aortic stenosis, a decrease in perfusion by 11.8% and microvascular vasomotor activity by 9.6% were identified accompanied by an increase in arterial inflow (AI) by 13.7% and a decrease in venous outflow (VO) by 18%. A positive correlation was found between AI, VO in the heart and skin perfusion. Myocardial hypertrophy the endothelial-dependent component of microvascular tone (EDCT) and neurogenic tone (NT) increased 2.6 times and 6%, respectively. AI and VO decreased and became lower than the initial values, respectively, by 57.8% and 30.7%. In the skin, there was a decrease in NT by 17.4% and an increase in VO by 55.3%. A positive relation was found between the increase of EDCT in the heart and the level of perfusion and vasomotor activity of the skin microvessels. Coronary artery ligation VO increased by 12.2% in the heart, while in the skin, it decreased by 13.7%. In 21 days of an INM in the heart, there was an increase in vasomotor microvascular activity by 8%, which was accompanied by an increase in AI. In the skin, VO increased by 12.3% and EDCT decreased by 11.2%. Positive correlation was found between the vasomotor activity of the heart microvessels and the EDCT in the skin.

**Conclusions:** Response of the heart microvasculature and skin to aortic stenosis and INM is multidirectional, homeostasis in the myocardium can be restored by enhancing predominantly active regulation mechanisms, and skin disorders can be detected during all observation periods.

[4]

**Study of cutaneous microcirculation reserve capacities in myocardial infarction dynamics in emergency hypertrophy**

Alexey Kuznetsov, Olga Khalepo

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof. Oleg Molotkov, MD, PhD, Olga Khalepo, PhD

**Introduction:** Activation of peripheral circulatory reserve capacities can determine patient's survival and the following prognosis. They can be reliably estimated by stress testing in myocardium experimental ischemic necrosis against its emergency hypertrophy.

**Aim of the study:** The aim of the study was to identify cutaneous microcirculation reserve capacity in experimental ischemic myocardial necrosis in emergency hypertrophy.

**Material and methods:** In the study we used laser Doppler flowmetry for 21 experimental animals (rabbits) to assess cutaneous microcirculation and its reserve capacities through an occlusal test. Aortic stenosis was modeled by applying clamp to the ascending aorta. On day 21 of the myocardial hypertrophy, the study of

cutaneous microcirculation was repeated, after which the coronary artery was ligated. The state of cutaneous microhemodynamics was studied on days 1, 3, 7, 10, and 21 of the ischemic myocardial necrosis (IMN) simulation.

**Results:** Skin microvessel vasomotor activity and the level of venous outflow (VO) increased on days 1 and 3. The mean square deviation was higher than baseline values by 26%, VO – by 140%.

On the 1st day, decrease in the active mechanisms of microvascular tone regulation was recorded: neurogenic tone (NT) by 23% and myogenic tone (MT) by 22% compared with baseline values. Results of the occlusal test revealed a decrease of the biological zero level on the 3rd day of IMN (perfusion min (Pmin) was 51% less than the original). On the tenth day Pmin decreased significantly and turned out to be 42% lower than the initial values, which reflects the severity of the resulting disorders at the level of tissue metabolism. On the third day of IMN, a 39% increase in the estimate indicator of the difference between the biological zero level and the perfusion at the time of reactive hyperemia was revealed. After 10 days the IMN indicator Pmin began to restore and by the 21st day of observation reached its initial values.

**Conclusions:** Severe disorders can be detected on the 1st and 3rd days after IMN, however, the tissue perfusion state was maintained through its reserve capacities, which were limited on days 3 and 10. Subsequently, the compensatory capacities of microhemodynamics can be restored and the tissue perfusion does not differ from the original values on the 21st day. Evaluation of the microcirculation reserve capacities can be used in clinical practice to make the prognosis and assess effectiveness of treatment.

[5]

#### **Microelemental composition of tibial proximal epiphysis in rats after 60-day administration of sodium benzoate and fracture modeling**

N. Mosyagina, O. Fastova, V. Luzin

mosyaginan@bk.ru

SE "St. Luke Lugansk State Medical University"

**Trustee of the paper:** Prof. V. Luzin

**Introduction:** From our previous studies we learned that intragastric administration of sodium benzoate (SB) for 60 days results in slower formation of bone mineral crystal lattice and in disturbance of mineral phase contents in bone regenerate in metaphyseal injury area. We also proved that long-term administration of SB affects growth rate and strength of injured bones. Bone tissue, however contains microelements and influence of fracture on microelement content of bone tissue draws a special attention.

**Aim of the study:** The aim of the present study was to examine microelemental composition of tibial proximal epiphysis (TBE) in rats after 60-day SB intake in various concentrations and injury to tibia.

**Material and methods:** The experiment involved 210 male rats. The 1st group (K) comprised animals that received daily per os 1 ml of 0.9% solution of NaCl, the 2nd and the 3rd groups (SB1 and SB2) received per os 1 ml of SB in dosage of 500 or 1000 mg per kg of body weight daily, the 4th group (D) comprised animals with defects in both tibiae made after SB discontinue in the groups 2 and 3. The groups 5 and 6 (DSB1 and DSB2) comprised the rats that sustained combined action of SB and tibia injury. Observation terms were 3, 10, 15, 24, and 45 days after discontinue of experimental influences. Upon expiration of observation terms, TBE samples were prepared for chemical analysis and atomic absorption spectrometry. The samples were tested for amount of copper, iron, zinc, and manganese.

**Results:** A simple injury to tibia results in microelemental depletion in bone tissue of this bone found in all observation terms. Depletion grows up to the 15th day after bone injury yet later it slows down and almost stops.

In DSB1 group, Zn and Mn shares in comparison with group D diminished by the 15th day of observation period – by 5.88% and 5.13% respectively. By the 24th day same values were already lower than those of group D by 9.32% and 7.54%. Fe share by the 15th day decreased by 6.23%. Cu share diminished by 5.94% and 6.19% yet later - by the 24th and the 45th days.

In DSB2 group Zn and Mn shares diminished in the period from the 10th to the 45th days by 5.84%, 6.98%, 7.92%, and 6.17% and by 10.36%, 12.74%, 13.05%, and 7.32% respectively. Fe depletion was found only at the 15th day – by 6.23%, and Cu share diminished by the 24th and 45th days by 5.94% и 6.19% respectively (all in comparison with group D).

**Conclusions:** SB intake and fracture modeling cause microelemental depletion in TBE; intensity and duration of alterations depend on dosage of SB.

[6]

**Susceptibility testing to caspofungin and other antimicrobials in *Candida* spp. isolated from patients with candidaemia**

Adriana Joksimovic, Sofija Jovanovic, Milica Jovanovic

joksimovic.adriana@gmail.com

Microbiology

**Trustee of the paper:** Prof. dr. Sanja Mitrovic

**Introduction:** *Candida* species are part of the physiological microflora of humans, and are responsible of causing various clinical forms of mycosis, among which are particularly significant systemic mycoses in immunocompromised individuals. Systemic candidiasis represents a significant diagnostic and therapeutic problem, given the increasingly frequent occurrence of resistant strains on antimicrobials. In vitro testing of the susceptibility to antimicrobials should allow the determination of optimal therapy, which is particularly important in immuno-deficient individuals who represent a high-risk population for the development of resistance.

**Aim of the study:** The aim of this study was to examine the susceptibility of *Candida* spp. strains, isolated from the hemoculture to caspofungin and other antimicrobials in order to determine the degree of sensitivity and resistance to these drugs.

**Material and methods:** We determined sensitivity of sixteen strains of *Candida* spp. (*C. albicans*-8, *C. glabrata*-3, *C. parapsilosis*-3, *C. krusei*-1, *C. tropicalis*-1) isolated from the hemoculture. The study was carried out by the broth microdilution method for caspofungin (EUCAST) and the disc diffusion method for other antimicrobials (amphotericin B, ketoconazole, myconazol, fluconazole, itraconazole and voriconazole) by the CLSI (Clinical & Laboratory Standard Institute) method.

**Results:** The minimum inhibitory concentration (MIK) for caspofungin was in the range of 0.032 to 2 µg / ml. Resistance to caspofungin was observed in strains of *C. albicans* (1) and *C. glabrata* (2). The most significant results of the disc diffusion method indicate a decreased sensitivity among the tested strains of azole derivatives: fluconazole-*C. albicans* (5/8), *C. glabrata* (2/3) and *C. krusei* (1/1) and itraconazole- *C. albicans* (3/8), *C. glabrata* (2/3) and *C. krusei* (1/1).

**Conclusions:** The results of the study indicate that among the tested strains of *Candida* spp. there were strains, primarily resistant to azoles, but also to caspofungin, which is a gold standard in the treatment of systemic mycoses. This indicates the need to continuously test the sensitivity of isolates from hemocultures to antimicrobials in order to set optimal therapy.

[7]

**Assessment of whole body cryotherapy protocols through their effect on enzymatic antioxidant systems in Wistar rats**

Jan Augustyniak, Justyna Maciarz, Agnieszka Dulaska, Diana Ali, Jakub Bodziony, Agnieszka Maziarz

jsaugustyniak@gmail.com

Medical University of Silesia, Zabrze, Department of Physiology

**Trustee of the paper:** Dominika Stygar Ph. D.

**Introduction:** Whole body cryostimulation (WBC) is gaining popularity as a therapeutic method in a wide range of medical conditions. It can induce responses of the cardiovascular system, antioxidant pathways, and anti-inflammatory and analgesic processes. Despite its growing potential, the method has not been thoroughly researched concerning the resulting oxidative stress, in context of varying parameters such as temperature, duration of exposition and number of repetitions.

**Aim of the study:** To describe the effectiveness of systemic cryotherapy in chosen temperatures and durations, by assessing enzymatic oxidative stress markers in the rat animal model.

**Material and methods:** Wistar rats were split into four experimental groups and a control group (n=6). The experimental groups were exposed to either -60°C or -90°C for 1 minute, for either 5 or 10 consecutive days, while the control has not been treated with low temperature. After completing the treatment and collecting samples of serum, erythrocytes and liver, the activity of superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GPx), glutathione transferase (GST) and glutathione reductase (GR) was assessed.

**Results:** SOD activity in -60°C groups was significantly lower than in -90°C groups in measurements made for haemolysates and liver, but SOD activity in serum was higher for the -60°C groups. CAT activity was significantly lower in -60°C than in -90°C. GPx activity was significantly lower in -90°C than in -60°C.

**Conclusions:** According to activity of most oxidative stress markers measured in this experiment, systemic cryotherapy using -60°C can be considered more beneficial than -90°C. Both the 5 and 10 day -60°C therapeutic sessions were found to be the optimal schemes of WBC, according to measurements of the selected enzymes.

[8]

### **Could physical exercise modify the course of experimental colitis in obese mice?**

#### **The role of muscle-fat crosstalk in intestinal inflammation**

Aleksandra Danielak

aleksandradanielak26@gmail.com

Department of Physiology Faculty of Medicine Jagiellonian University Medical College, Cracow, Poland

**Trustee of the paper:** prof. Tomasz Brzozowski Md PhD, Zbigniew Śliwowski MD PhD, Department of Physiology Faculty of Medicine Jagiellonian University

**Introduction:** A remarkable increase in the prevalence of Inflammatory Bowel Disease (IBD) comprising Crohn's disease and ulcerative colitis has been recently observed in countries characterized by „westernized” lifestyle. Although the etiology of IBD remains unknown, previous studies suggest that mesenteric white adipose tissue (mWAT) plays an important role as a source of proinflammatory cytokines and adipokines. In contrast, contracting skeletal muscles can exert anti-inflammatory action possibly due to myokines such as irisin released during exercise. However, the exact mechanisms underlying beneficial effects of physical activity have yet to be clarified.

**Aim of the study:** Therefore, the aim of our present study was to investigate the contribution of obesity inducing diet and voluntary exercise (wheel running) to the experimental colitis and to investigate the changes in colonic blood flow (CBF), the plasma levels of tumour necrosis factor-alpha (TNF- $\alpha$ ), IL-1 $\beta$ , IL-6 as well as plasma irisin, adiponectin and leptin concentrations.

**Material and methods:** Fifty male mice were used in this study. They were randomized into groups receiving standard diet (SD) and high-fat diet (HFD) with or without an access to voluntary running. After 6 weeks of exercise the experimental colitis was induced by intrarectal administration of 2,4,6-trinitrobenzenesulfonic acid (TNBS).

#### **Results:**

The colitis was aggravated in HFD sedentary mice in comparison to SD as manifested by a significant increase of mucosal damage, the decrease in CBF and an significant increase in the levels of proinflammatory markers such as TNF- $\alpha$ , IL-1 $\beta$ , IL-6 and leptin. HFD was also associated with the reduction in plasma levels of irisin and adiponectin. These effects observed in HFD sedentary mice were reversed in voluntary-exercising mice because the index of mucosal damage and the plasma cytokine-proinflammatory status were significantly decreased while the CBF and the plasma levels of adiponectin and irisin were significantly increased.

**Conclusions:** We conclude that HFD exacerbates experimental colitis in mice. In contrast, a voluntary physical activity exerts beneficial effect on the course of intestinal inflammation in mice fed HFD by mechanisms involving increase in the CBF and upregulation of protective irisin and adiponectin resulting in elevated mucosal resistance to injury and healing acceleration of colitic mucosal damage in experimental colitis.

[9]

### **In vitro differentiation of cartilage in a hyperosmotic environment**

William Jayasekara Kothalawala, Róza Zákány, Csaba Matta

williamkothalawala@gmail.com

University of Debrecen / Department of Anatomy, Histology and Embriology

**Trustee of the paper:** William Jayasekara Kothalawala

**Introduction:** Therapeutic attempts concerning the restoration of damaged articular cartilage still remain a great challenge today, mostly on account of the unique biological properties of cartilage tissue. The intracellular matrix of the articular cartilage has an extremely complex structure: the matrix is based on the highly negatively charged glycosaminoglycans which, on one hand, bond a significant amount of water, improving the biomechanical characteristics of the tissue, and, on the other hand, it also attracts many positively charged ions, electrolytes. Due to the high content of these electrolytes, the osmolality of the cartilage matrix is higher than in other tissues of the body.

**Aim of the study:** The osmolality of most commercially available culture media isn't as high as the physiological needs of cartilage cells. Therefore, we were trying to answer whether or not a hyperosmotic environment promotes the development of cartilage tissue.

**Material and methods:** In our experiments we used cartilage cultures isolated from the limb buds of 4-day old chicken embryos and investigated the effects of nutritional mediums modified with differing concentrations of saline-solutions. We measured mitochondrial activity by MTT assay, cell division activity by monitoring the incorporation of tritiated thymidine, and detected the amount of matrix produced by metachromatic stainings. We also studied the expression of cartilage specific genes SOX9, COL2A1 and ACAN with RT-qPCR. To study the short-term effects of changing the osmolality of the environment we examined intracellular calcium activity with the help of Fluo-8 fluorescent calcium-sensitive dye and a TRPV4-inhibitor under fluorescent microscope.

**Results:** Based on our results, we found using a hyperosmotic medium during the entirety of the 6 day long differentiation period inhibited the process of cartilage differentiation, however applying them only later in the process (from day 4 onwards or only for 24 hours on day 6) increased the rate of cartilage formation which was confirmed by metachromatic staining and by the results of the qPCR. A sudden increase in the osmolality of the environment caused an increase in intracellular Ca<sup>2+</sup> levels which was not mediated through the TRPV4 ion channel.

**Conclusions:** In conclusion, a hyperosmotic environment timed correctly may promote the development of mature cartilage and could contribute to the effectiveness of cartilage regeneration procedures.

[10]

#### **Lymphatic vessels network in hindlimb skeletal muscle of db/db mice mimicking metabolic syndrome**

Mateusz Bartkowiak<sup>1</sup>, Krzysztof Bartkowiak<sup>1</sup>, Anna Ratajska<sup>2</sup>

mati4992@gmail.com

<sup>1</sup>Katedra i Zakład Histologii i Embriologii, SKN HESA Studenckie Koło Naukowe przy Katedrze i Zakładzie Histologii i Embriologii WUM,

<sup>2</sup>Katedra i Zakład Patomorfologii, Warszawski Uniwersytet Medyczny

**Trustee of the paper:** Ewa Jankowska-Steifer

**Introduction:** Metabolic syndrome (MetS) is one of the emerging health problems in the world and represents a cluster of related metabolic abnormalities, including obesity, hypertension, dyslipidemia, hyperglycemia, and insulin resistance, which lead to increased risk of cardiovascular events. Recently it has been noted that lymphatic vessel (Ly) functional status (reflected, among others, by density of lymphatic capillaries) is important for normal work of various organs. This vessel status, however, is less explored in MetS. An impairment of Ly vessels leads to edema, decreased inflammatory cell transport and abnormal tissue remodelling leading to fibrosis. An animal model of MetS are db/db mice with persistent mutation in leptin receptor. They are obese with type 2 diabetes and normotensive. Angiotensin II treatment for 4 weeks makes animals hypertensive, thus reflecting all features of MetS.

**Aim of the study:** The aim of our study was to study how AngII treatment, and therefore hypertension, influences lymphatic vessel density in obese, T2Diabetic mice db/db (BKS.Cg-Dock7m +/- Leprdb/J).

**Material and methods:** We focused on hindlimb muscles (gastrocnemius, soleus) obtained from db/db mice, db/db mice treated with AngII (by osmotic minipumps implanted subcutaneously for 4 weeks), and control mice that were sacrificed at the age of 21 weeks. The hind limb skeletal muscle (SM) was dissected, frozen, and cryosections immunostained with antibodies to Lyve-1, CD31, and smooth muscle actin (SMA) were analysed in a laser confocal microscope. The density of lymphatic vessels was calculated and normalized on 1mm<sup>2</sup> of tissue.

**Results:** We observed a statistically significant decrease in lymphatic vessel density in SM of db/db mice compared to the density in control animals. We also observed an increase in density of lymphatic vessels in animals treated with ANGII vs control and db/db mouse.

**Conclusions:** A rarefaction of Ly vessels in SM of db/db mice is one of many dysfunctions caused by Mets. Our experiment suggests that administration of ANGII can increase density of Ly in SM tissue, but additional studies are necessary to characterise the molecular pathway of this observation. Also our study can contribute to better understanding of the role of the lymphatic system and the effect of ANGII on the lymphangiogenesis in SM and in pathogenesis of MetS with and without hypertension.

[11]

**Vasopressin V2 receptor in the carotid body and arterial chemoreflex**

Piotr Partyka, Michał Proczka, Adam Trzciński  
ppartyka994@gmail.com

Department of Experimental and Clinical Physiology,  
1<sup>st</sup> Faculty of Medicine the Medical University of Warsaw, Poland

**Trustee of the paper:** Tymoteusz Żera MD, PhD

**Introduction:** Vasopressin (AVP) is a potent pressor neurohormone involved in regulation of cardiovascular and respiratory system. Renal effects of AVP are mediated by V2 receptors, however, V2 receptors are also expressed in extra-renal tissue, such as lungs and vessels. The carotid body (CB), which detects chemical and hormonal signals in bloodstream, is the main peripheral chemoreceptor involved in triggering arterial chemoreflex with eventual increase in ventilation, sympathoexcitation and rise in blood pressure. Recently, AVP was shown to affect ventilation via CBs, however, the role of V2 in CBs receptors has not been determined so far.

**Aim of the study:** Our goal was to investigate whether CBs contain V2 receptors for AVP and how the receptors influence arterial chemoreflex.

**Material and methods:** The study was performed on adult male Sprague-Dawley rats (n=12). Under urethane terminal anesthesia animals were implanted with the catheters in both femoral artery and femoral vein for recording hemodynamic parameters (mean arterial blood pressure - MABP; heart rate - HR) and for intravenous infusions. Tracheotomy was also made and was followed by insertion of the tracheal tube for recording of ventilatory parameters (minute ventilation - MV; respiratory rate - RR). The control group of animals (n=6) was pretreated with 0.9%NaCl (100 µl i.v.) followed by pharmacological testing of arterial chemoreflex with potassium cyanide (KCN) (30 µg/100 µl i.v.). The experimental group (n=6) was pretreated with V2 receptor antagonist (Tolvaptan) (0,5 mg/100 µl) followed by pharmacological testing of the arterial chemoreflex. After euthanasia, carotid body bifurcations were collected and thin (30 µm) sections were cut on a cryostat. CBs were immunostained with primary antibodies against tyrosine hydroxylase (TH) to detect chemoreceptor cells (glomus cells) and V2 receptor. After incubation with secondary antibodies, sections were visualised with confocal microscopy

**Results:** Intravenous infusion of KCN resulted in significant increase in MABP, MV and RR in control group. Pretreatment with V2 receptor antagonist had insignificant effect on arterial chemoreflex. Immunostaing confirmed presence of V2 receptors in the CB. However, they were not located on the chemoreceptive glomus cells.

**Conclusions:** Our results show that V2 receptors are expressed in the carotid bodies, but not on glomus cells.

In addition, inhibition of V2 receptors seems to have insignificant effect on the arterial chemoreflex.

[12]

**The effect of iron oxide nanoparticles functionalized with salicylic acid on the development of chorioallantoic membrane vessels of the avian embryo**

Mesina Andrei  
mesinaandrei96@yahoo.com

University of Medicine and Pharmacy of Craiova, Anatomy Department

**Trustee of the paper:** Ion Mindrila MD PhD

**Introduction:** Nanotechnology provides an attractive work platform for the development of new therapeutic anti-tumor products. Testing the biological properties of nanoparticles remains a challenge, in which in vitro tests have shown their limits, and in vivo tests are starting to raise more and more ethical issues.

**Aim of the study:** In this paper we propose to test on the avian in vivo model the effects of iron oxide nanoparticles functionalized with salicylic acid on the development of the chorioallantoic vessels.

**Material and methods:** Our study used a batch of 12 chicken embryos six days old and the chorioallantoic membranes were implanted with antibiotic probes impregnated with nanoparticles with different concentrations (0.356, 0.7, 1, 10 mg Fe / ml). As a control, probes impregnated with physiological saline were used. The evaluation of the chorioallantoic membrane vessel development was done by using an operating microscope for over 5-days period.

**Results:** The results of the experiment showed that iron oxide nanoparticles with a concentration greater than 0.7 mg Fe / ml showed a visible antiangiogenetic effect on the chorioallantoic membrane vessels. The magnitude

of this effect is dependent on the concentration of the nanoparticles and can be attributed to the salicylic acid used in their functionalization.

**Conclusions:** In conclusion, through magnetic field manipulation, the studied nanoparticle can be used as a target blocking agent for angiogenesis of the chorioallantoic membrane vessels.

[13]

#### **Anatomo-clinical considerations of the arterial circle of Willis**

Bianca-Andreea Coțovanu, Roxana-Florentina Călin, Victor Indoitu, Gabriela Sechel  
mcbdeea@gmail.com

Transylvania University, Faculty of Medicine

**Trustee of the paper:** Bianca-Andreea Coțovanu

**Introduction:** The arterial anastomotic circle of Willis connects the main sources of vascular supply for the brain: the internal carotid arteries and the vertebrobasilar system. Located at the base of the brain and surrounded by cerebrospinal fluid, it is susceptible to many anatomical variants that can be correlated to different pathologies.

**Aim of the study:** This study aimed to describe the anatomical anomalies of the arterial Circle of Willis and state their clinical significance, as well as identify the correlation between different types of polygons and the frequency and localisation of aneurysms.

**Material and methods:** The study was performed on a group of 30 patients investigated by angio-computer tomography and the analysis of the cases was performed with VRT and MPR 3D reconstruction types. We used CT devices Somatom Emotion 6 and 16 to provide the imagistic aspects, at a private hospital from Brasov, in collaboration with Transylvania University. The study was also conducted on 20 human brain cadavers, dissected within the autopsy laboratory of the Faculty of Medicine from Brasov.

**Results:** The most frequent type of arterial circle found in the group was the ideal one (12 cases, type 1, according to the Lazorthes classification of the polygons), followed by type 7 (10 cases, both right and left posterior communicating arteries and the anterior communicating artery are hypoplastic), and type 4 (9 cases, hypoplastic right posterior communicating artery). The geometry of the arterial circle of Willis could represent a risk factor for intracranial aneurysms, as it shows in the angio-CT cerebral exam of a patient who presents an aneurysm at the level of the anterior cerebral artery in the precommunicating segment and other two at the emergence of the medium cerebral arteries bilaterally.

**Conclusions:** Both the CT angiography and the prosection method can be used for accurate measurements of the blood vessels, but information obtained through CT has proved to be more valuable. The most frequent type of polygon found was Type 1. The anomalies of the arterial circle of Willis can facilitate the development of different pathologies, respectively atherosclerosis, which can lead to cerebral aneurysms. The persistence of structural anomalies such as aneurysms or their development in time, represent risk factors in the appearance of cerebral hemorrhagic vascular diseases.

[14]

#### **Clinico-imaging correlations in dimensions of left and right vertebral arteries in formation of basilar artery**

Victor Indoitu, Bianca-Andreea Cotovanu, Roxana-Florentina Calin, Gabriela Sechel, Cristian Kakucs  
victor.indoitu@yahoo.ro

Transilvania University, Faculty of Medicine, Brasov, Romania

**Trustee of the paper:** Victor Indoitu

**Introduction:** The vertebrobasilar territory is susceptible to physiological or pathological size variations of its segments which may be the cause of various types of neurological disorders.

**Aim of the study:** The objective of this study is to highlight the possible correlations in variations of sizes of vertebral arteries in the intracranial region in formation of basilar artery. These variations are reported to patients gender, age and possible arterial stenoses. Also, we would like to see the differences between scans details in CT and MRI.

**Material and methods:** The study was conducted on 60 patients from two private hospitals from Romania, aged between 29 and 91 years old. Patients have been treated of different diseases which are not correlated to the study. The study was realised on computed tomography angiography scans using Siemens Somatom Emotion 16, GE Optima CT520 and MRI scans using GE Optima MR360 Advance MRI. The scans were analysed on OsiriX software. We calculated the diameter of vertebral arteries in the intracranial territory at foramen magnum level

(inferior) and in the middle region, before the formation of basilar artery (superior). Using these values and 3D reconstruction, we had searched for stenoses and then correlated them to the sizes of arteries.

**Results:** In the inferior intracranial region of vertebral arteries, 56,66% of patients have the diameter of the left vertebral artery bigger than the right artery; 31,66% have the diameter of the right vertebral artery bigger, 5% have equal diameters and 6,66% have stenosis. In the superior region, 48,33% of patients have the diameter of the left vertebral artery bigger than the right artery; 28,33% have the diameter of the right vertebral artery bigger, 6,66% have equal diameters and 16,66% have stenosis. 8,4% of the subjects have the diameter of basilar artery smaller than vertebral arteries, from who 80% have stenosis.

**Conclusions:** More patients have the left vertebral artery with a bigger diameter at both foramen magnum level and middle region, before the formation of basilar artery. The frequency of arterial pathologies increases with ageing. Reduced caliber of vertebral arteries is more frequent than the reduced caliber of basilar artery, associated with pathologies of the regions. Regarding imaging techniques, MRI scans have more details of the arteries.

[15]

### **The effect of NK cell education and differentiation on CX3CR1 and CXCR3 expression and migratory capabilities**

Mieszko Lachota, Magdalena Winiarska, Karl Johan Malmberg

mieszko.lachota@gmail.com

Medical University of Warsaw, Department of Immunology

**Trustee of the paper:** Magdalena Winiarska

**Introduction:** Natural Killer (NK) cells are the effector cells of innate immune system, defined as CD56+CD3- lymphocytes, capable of exerting natural and antibody-dependent cytotoxicity. They play an important role in cancer surveillance because of their unique capability of spontaneous cytotoxicity against cancer cells. NK cells differentiate from CD56bright to CD56dim cells, sequentially losing NKG2A expression, and acquiring KIRs and CD57. Along the process, NK cells shift from immunosuppressive CD56bright cells to highly cytotoxic, mature NKG2A-CD57+KIR+ NK cells. Apart from differentiation, NK cells undergo functional calibration of their function, termed education. By expressing inhibitory KIRs for self-MHC class I molecules, NK cells gain superior functionality and cytotoxic properties, unlike those who lack such KIR-MHC I interactions.

**Aim of the study:** Two chemokine receptors expressed on NK cells, CX3CR1 and CXCR3, play an important role in guiding NK cell migration to tumors. This study aims to evaluate how both, education and differentiation processes affect CX3CR1- and CXCR3-dependent NK cell migration.

**Material and methods:** Peripheral blood mononuclear cells (PBMC) were isolated from buffy coats by centrifugation in Ficoll gradient. Then, PBMCs were labeled with fluorochrome-conjugated antibodies anti-CD3/14/19, CD56, CD57, NKG2A, KIR3DL1/DS1/DL1/DL3, CX3CR1, and CXCR3. Finally, the cells were washed and analyzed using FACS LSR II.

**Results:** Based on CD56, CD57, NKG2A, and KIR expression, NK cells were divided into 5 functionally different subsets. For each chemokine receptor, both the percentage of positive cells and MFI was determined in every subset. A gradual increase in CX3CR1 expression was associated with more mature phenotype, while CXCR3 was predominantly expressed on naïve NK cells, and decreased along with differentiation. Moreover, as determined by in vitro migration assay, the responsiveness towards CX3CL1 (CX3CR1 ligand) increased with differentiation. Conversely, mature NK cell subsets were becoming hyporesponsive to CXCL10 (CXCR3 ligand), implying, that the expression of these receptors is directly correlated with migration capability induced by their ligands.

**Conclusions:** NK cell migration pattern changes from CXCR3- to CX3CR1-driven, along with differentiation and education process, suggesting, that poor prognosis in CXCL10-secreting cancers might be associated with attracting naïve NK cells. Vice versa, CX3CL1 expression attracts highly cytotoxic NK cells and correlates with good prognosis.

[16]

### **Expression of vasopressin V1a receptor in the carotid body and its role in arterial chemoreflex**

Michał Proczka, Piotr Partyka, Adam Trzciński

michal2095@gmail.com

Department of Experimental and Clinical Physiology,  
1<sup>st</sup> Faculty of Medicine, the Medical University of Warsaw, Poland

**Trustee of the paper:** Tymoteusz Żera MD, PhD

**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. Vasopressin (AVP) was shown to stimulate ventilation via V1a receptors in the carotid body (CB). Therefore, question arises what is the role of vasopressin V1a receptor in arterial chemoreflex.

**Aim of the study:** Our goal was to assess the role of V1a receptors in arterial chemoreflex. Furthermore, we evaluated the presence of V1a receptor on glomus cells (chemoreceptor cells type 1) in CBs.

**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 groups (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. At first animal were pretreated with 0.9%NaCl (100 µl i.v.) (control group) or with V1a receptor antagonist (d(CH<sub>2</sub>)<sup>5</sup>1,Tyr(Me)<sub>2</sub>,Arg<sub>8</sub>)-Vasopressin (5 µg/100 µl) (experimental group). Next, the arterial chemoreflex was triggered pharmacologically with potassium cyanide (KCN) (30 µg/100 µl). Following measurements of hemodynamic and ventilatory parameters, CBs were collected. After collecting carotid bifurcations, CBs were immunostained for glomus cells marker- tyrosine hydroxylase (TH) and for V1a receptor and imaged with confocal microscopy.

**Results:** Stimulation of the chemoreflex with KCN led to increase in mean arterial blood pressure (MABP), respiratory rate (RR), minute ventilation (MV). However, blocking of V1a receptor did not lead to decrease in any of those parameters. V1a receptor was confirmed to be present on glomus cells.

**Conclusions:** V1a is present on carotid body glomus cells. Inhibition of V1a receptors seems to have insignificant effect on the arterial chemoreflex.

[17]

#### **Features of displacement of convoluted seminiferous tubules wall of juvenile rats' testicles in experimental diabetes mellitus**

Ledwożyw Katarzyna, Kondrat Andriy, MD PhD Tetyana Knyazevich-Chorna

katarzyna.ledw@gmail.com

Pathomorphologist

**Trustee of the paper:** MD prof. Mykhailiuk Ivan

**Introduction:** The sharp increase in the incidence of diabetes mellitus, its complications and high lethality is the most acute medical and social problem of the healthcare system of all countries of the world.

**Aim of the study:** To detect the features of displacement of convoluted seminiferous tubules in 3-month-old rats on the 42nd day of the experimental diabetes mellitus development.

**Material and methods:** Testicular pieces of ten 3-month-old rat males, divided equally into two (control – 5 animals) and (experimental – 5 animals), were investigated. Experimental animals were modeled streptozotocin DM by means of a single intraperitoneal injection of streptozotocin (Sigma Chemical Co., U.S.A.) having been previously diluted in 0.1 M citrate buffer (Ph 4.5) at a rate of 7 mg per 100 g of body weight. Histological and electron microscopy techniques were used.

**Results:** On the 42nd day from the beginning of SDM model glucose and glycated hemoglobin levels correspondingly increase indicating the development of a severe decompensated DM.

On the 42nd day of SDM it is observed the diabetic microangiopathy of the testicle's vessels accompanied by the narrowing and obliteration of the arterioles and capillaries lumen and venules congestion. At the same time, the Vogenvort index in arterioles increases by 23% indicating a decrease in their capacity. There are erythrocyte sludges in the lumen of all vessels. Swelling and endothelium desquamation appears. Thickening of the basement membrane of convoluted seminiferous tubules and displacement of seminiferous epithelium layers towards their lumen are observed in the testicle's parenchyma. The height of the seminiferous epithelium is likely to decrease by 25.6. A gradual decrease in the number of seminiferous epithelium cells is observed in the lumen of the seminiferous tubules: spermatoblasts by 18.2%, spermatocytes – by 47.1%, spermatids – by 28.9%, compared to control. Hydropic degeneration is observed in spermatoblasts, spermatocytes, and spermatids. It shows the translucence of matrix of mitochondria and disorganization of their cristae; numerous vacuoles of various sizes, lipid droplets and lysosomes appear in the cytoplasm. Mitochondrial matrix becomes translucent and most cristas are destroyed. Contact between the cells is uninterrupted.

**Conclusions:** On the 42nd day of SDM the development of diabetic microangiopathy is observed. It is accompanied by the hemato-testicular barrier disturbance and results in hypoplasia and hypotrophy of the seminiferous epithelium.

[18]

**The effect of Podophyllotoxin derivatives (KL1, KL2, KL3) on five cancer cells lines and two non-tumorigenic cells lines**

Piotr Strus, Kamil Lisiecki, Andrzej Szczepankiewicz  
struspiotrek@gmail.com

MUW, Histology and Embryology Students' Science Association

**Trustee of the paper:** Izabela Młynarczyk Biały MD PhD Department for Histology and Embryology MUW

**Introduction:** Effective and selective anti-cancer drugs are one of the most searched medications in pharmacological and biological studies. Often the leading structures are inspired by substances found in the nature. One of such substances is Podophyllotoxin (PTOX) representing the anti-cancer and antiviral, plant-derived drug. PTOX is too toxic for any other than local therapy of anogenital warts. However, derivatives of PTOX, teniposide and etoposide are approved drugs for systemic antitumor treatment. Our team was inspired by the ideas above. Therefore, we designed and synthesized three novel derivatives of PTOX, named KL1, KL2 and KL3. The compound KL3 is a conjugate of podophyllotoxin and benzothiazole.

**Aim of the study:** We aimed to study biological effects of three novel PTOX derivatives in comparison to parental PTOX in tumor and non-tumor cells.

**Material and methods:** POTOX (SIGMA-ALDRICH) and KL1, KL2, KL3 (University of Warsaw) were incubated with cells for 24h and 48h, respectively. Cell lines, tumor-derived: HeLa (Human cervix cancer), MDA-MB-431, MCF7 – (breast cancer), PC3, DU145 (prostate cancer), and non-tumorigenic: NIH-3T3 (fibroblasts), HaCaT (keratinocytes). We analyzed cell viability by crystal violet assay and counted the IC50 value, cell cycle phases distribution including sub G1 peak, and cell structure by means of phase contrast microscopy and electron microscopy.

**Results:** Compound KL3 turned out to be most active in induction of cytotoxic/cytostatic effects from all of three novel compounds (average IC50 22  $\mu$ M). Such a good anti-tumor profile of KL3 was accompanied with less toxicity towards NIH-3T3 and HaCaT cells in comparison to the parental PTOX.

Derivates KL1 and KL2 were also less toxic than PTOX. The values of IC50 ranged from 140  $\mu$ M to 490  $\mu$ M. All substances induced dose and time dependent block in the G1 phase of the cell cycle and induce apoptosis and secondary necrosis in morphological studies.

**Conclusions:** The obtained derivatives turned out to induce death of tumor cells by apoptosis and G1 arrest and are less toxic for normal fibroblasts and keratinocytes in comparison to parental podophyllotoxin.

[19]

**Molecular insight into glioma-associated epilepsy**

Szymon Baluszek  
szymonbaluszek@gmail.com

Nencki Institute of Experimental Biology PAS

**Trustee of the paper:** Jakub Mieczkowski

**Introduction:** Glioma is the most common primary intra-axial brain tumour, conferring a grim prognosis. So far, molecular profile of glioma-associated epilepsy (GAE) remains poorly understood. With unclear guidelines on pharmacotherapy, 50% of patients with GAE remain pharmacoresistant. Although seizures impair life quality in glioma patient population, they prognosticate well. Therefore, characterization of epileptogenesis in GAE could yield new glioma prognostic markers.

**Aim of the study:** This study undertakes systems biology approach to the puzzle of positive prognostic value of seizures in glioma.

**Material and methods:** Whole-genome expression profiles of samples from 475 primary grade II and III gliomas were downloaded from The Cancer Genome Atlas and analysed in R. The differentially expressed genes (DEGs) in samples with seizure history were identified, characterized using gene set enrichment approach and their prognostic value was compared with established biomarkers in Cox model. Additionally, multifaceted approach to identifying associated epigenetic features was undertaken and verified with ENCODE database experiments.

**Results:** Among the upregulated genes, the majority prognosticated positively and some, like SEZ6, SLC6A11 and CRH, have established roles in epileptogenesis. Signature derived from DEGs was superior in predicting survival to that based on established prognostic factors. GAE samples were enriched in gene expression signatures associated with neurotransmitter and neuropeptide signalling whereas those without seizure history displayed traits of higher aggressiveness and invasiveness. This was attributed to increased activity of the Neuron-Restrictive Silencer Factor (REST) in those samples. REST is a negative prognostic feature in glioma and its inactivity in GAE may explain better prognosis in this setting. Moreover, molecular signatures of antiepileptic pharmaceuticals were analysed, supporting use of those with calcium channel modulating properties in GAE.

**Conclusions:** REST is a master regulator of glioma biology with profound impact on seizures. The genes associated with epileptogenesis are also prognostic features. Therefore, by deepening knowledge about GAE, systems biology approach has yielded insight into its symptomatic and causative treatment.

[20]

### **Deregulation of PD-1/PD-L1 inhibitory pathway in Primary Glomerulonephritides as a potential prognostic factor**

Martyna Podgajna, Michał Mielnik, Mateusz Mielnik  
marpodgajna@gmail.com

Medical University of Lublin/Chair and Department of Clinical Immunology

**Trustee of the paper:** Ewelina Grywalska MD PhD, Associate Professor

**Introduction:** The pathogenesis of primary proliferative and non-proliferative glomerulonephritides (PGN and NPGN) is still not fully understood, however, current evidence suggests that most cases of PGN and NPGN are the results of immunologic response to different etiologic agents that activates various biological processes leading to glomerular inflammation and injury. Programmed cell death protein 1 (PD-1) is the major inhibitory receptor regulating T cell exhaustion.

**Aim of the study:** The aim of this study was to evaluate the frequencies of PD-1-positive and PD-ligand 1 (PD-L1)-positive T and B lymphocytes in patients with NPGN and PGN in relation to clinical parameters for the first time.

**Material and methods:** The study included peripheral blood (PB) samples from 20 newly diagnosed PGN and NPGN patients. The control group comprised of 20 healthy age- and sex-matched subjects. The viable PB lymphocytes underwent labelling with fluorochrome-conjugated monoclonal antibodies anti-PD-1 and anti-PD-L1, and were analyzed using a flow cytometer.

**Results:** The frequencies of CD4+/PD1+ T lymphocytes, CD8+/PD1+ T lymphocytes, and CD19+/PD-1+ B lymphocytes in the PGN group exceeded values obtained both in the NPGN group, and the control group. Alteration of PD-1/PD-L1 pathway may be involved in poorer prognosis, as patients with PGN are characterized by higher frequencies of PD-1-positive and PD-L1-positive T and B lymphocytes than patients with NPGN.

**Conclusions:** Our results suggest that deregulation of PD-1/PD-L1 axis may contribute to the PGN and NPGN pathogenesis. High percentages of lymphocytes with PD-1 and PD-L1 expression may be related to the continuous T-cell activation and development of glomerular inflammation and injury.



# Cardiology & Cardiosurgery

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 139/140, Didactics Center

**Jury:**

prof. dr hab. n. med. Katarzyna Biernacka  
dr hab. n. med. Piotr Hendzel  
prof. dr hab. n. med. Marek Kuch  
prof. dr hab. n. med. Bohdan Maruszewski  
prof. dr hab. n. med. Janina Stępińska  
prof. dr hab. n. med. Piotr Hoffman  
dr hab. n. med. Agnieszka Kapłon-Cieślicka

**Coordinators:**

Agata Kobierska  
Aleksandra Chabior

**Scientific Patronage:**

National Consultant in Cardiology Prof. Jarosław Kaźmierczak MD PhD  
National Consultant Pediatric Cardiology Prof. Jacek Białkowski MD PhD  
Śląskie Centrum Chorób Serca  
Klub 30 Polskiego Towarzystwa Kardiologicznego  
Polskie Towarzystwo Kardio i Torakochirurgów  
Fundacja Serce Dziecka



**Klub 30**  
Polskiego Towarzystwa  
Kardiologicznego



**Serce  
Dziecka**

[21]

### **T2-mapping predicts ventricular arrhythmia in patients with acute myocarditis**

Dzmitry Salauyou  
dr.salauyou@gmail.com

Republican Scientific and Practical Centre "Cardiology", Minsk, Belarus

**Trustee of the paper:** Alena Kurlianskaya, M.D., Ph.D., FESC

**Introduction:** Myocarditis accounts for 2-42% of all sudden cardiac death cases. There is a lack of research in ventricular arrhythmia (VA) risk stratification by assessing myocardial edema with cardiac magnetic resonance (CMR) T2-mapping in acute myocarditis (AM) patients.

**Aim of the study:** To determine T2-mapping predictors of VA in patients with AM.

**Material and methods:** The study included 46 patients with AM (age median – 33 [29; 45] years, males – 80.4 %), which was diagnosed according to Lake-Louise CMR-criteria in disease debut. The patients with coronary disease evidence were excluded. T2-mapping was estimated in 16 segments of the left ventricle (LV) myocardium.

**Results:** VA occurred in 30,4% of patients (14 patients had frequent ventricular extrasystoles, 6 – nonsustained ventricular tachycardias, 5 – sustained ventricular tachycardias; 2 – ventricular fibrillation). VA-patients had significantly higher levels of T2-mapping in the 2nd, 8th, 13th, 14th LV segments than patients without VA (in the 2nd segment: 52.3 [49.6; 55.5] ms vs. 48.5 [47.1; 51.1] ms,  $p = 0.042$ ; in the 8th – 59.4 [54.3; 60.9] ms vs. 51.8 [48.7; 54.1] ms,  $p=0.012$ ; in the 13th – 62.5 [57.6; 71.1] ms vs. 52.1 [49.8; 58.9] ms,  $p = 0.007$ ; in the 14th – 60.0 [54.6; 65.5] ms vs. 52.3 [49.9; 56.2] ms,  $p = 0.004$ ). Cut-off value in the 8th LV segment, determined by receiving operator characteristic (ROC) analysis, was 54.2 ms (the area under the curve (AUC) was 0.799, sensitivity (Se) – 75.0%, specificity (Sp) – 79.2%,  $p = 0.002$ ), risk ratio (RR) = 5.5 (95% confidence interval (CI) 3.00 – 5.16). We also compared T2-mapping maximum levels of LV walls (T2-mapmax) between VA and non-VA patients. VA patients demonstrated higher levels of T2-mapmax in ventricular septum [VS] (63.1 [57.8; 66.9] ms vs. 54 [51.9; 57.1] ms,  $p = 0.011$ ), LV front wall [FW] (62.5 [57.6; 72.1] ms vs. 54.0 [51.0; 58.9],  $p = 0.012$ ), LV lateral wall [LW] (67.5 [64.6; 70.0] ms vs. 60.0 [57.5; 63.2],  $p = 0.001$ ). ROC analysis cut-off values of T2-mapmax in VS were 57.3 ms (AUC = 0.807, Se – 75.0%, Sp – 79.2%, RR = 5.50 (95% CI 2.98 – 5.16),  $p = 0.001$ ), in FW – 57 ms (AUC = 0.802, Se – 75.0%, Sp – 70.8%, RR = 4.18 (95% CI 2.30 – 4.79),  $p < 0.001$ ), in LW – 57 ms (AUC = 0.870, Se – 75.0%, Sp – 83.3%, RR = 6,67 (95% CI 3.50 – 4.69),  $p < 0.001$ ).

**Conclusions:** This study shows that myocardial edema, its location are significantly associated with VA occurrence. Assessment of T2-mapping in LV segments may be useful for VA risk stratification in patients with AM and deciding on an antiarrhythmic therapy.

[22]

### **Outpatient management of patients with advanced heart failure in Debrecen, Hungary**

Arnold Péter Ráduly  
radulyarnold27@gmail.com

University of Debrecen, Department of Cardiology

**Trustee of the paper:** Attila Borbély M.D. Ph.D

**Introduction:** The incidence of heart failure (HF) is continuously increasing worldwide. Despite the significant developments in the pharmacological and device therapy the prognosis of HF remains poor. It is recommended that high-risk symptomatic patients with advanced HF are enrolled in an outpatient management programme to reduce the risk of HF hospitalization and mortality.

**Aim of the study:** The aim of our study was to investigate the clinical characteristics of HF patients attended in the HF Outpatient Clinic in the Institute of Cardiology at the University of Debrecen between 2016 and 2018.

**Material and methods:** Relevant HF specific parameters were assessed (NYHA functional class; left ventricular ejection fraction (LVEF); pharmacological therapy (including the use of ACE-inhibitors (ACE-I), angiotensin receptor blockers (ARBs), beta-blockers (BBs) and mineralocorticoid receptor antagonists (MRAs)) and device therapy (use of CRT-P/D or ICD)). Statistical analysis was performed using Wilcoxon signed-rank test ( $P < 0.05$ ).

**Results:** 129 patients were included (mean age  $60.2 \pm 11.4$  years, 34 women, 95 men). Before entering the HF Outpatient Clinic 87.6% of the patients were hospitalized because of HF. The etiology of HF was dilatative cardiomyopathy (CM) in 68.2% and ischemic CM in 26.4% of the patients. During follow up significant improvements in the NYHA functional class ( $2.6 \pm 0.6$  vs.  $1.9 \pm 0.6$ ,  $P < 0.001$ ) and the LVEF (33.6% vs. 31.9%,  $P = 0.04$ )

could be observed. At the time of the first visit 94% of patients received ACE-Is/ARBs, 95% BBs and 89% MRAs. The proportion of patients at guideline recommended target doses increased significantly during the follow up (53.5% vs. 31% for ACE-Is/ARBs, 45% vs. 30.2% for BBs and 64.3% vs. 42.6% for MRAs,  $p < 0.001$  for all). 7%, 26.4%, and 24.8% of patients were treated with CRT-P, CRT-D or ICD, respectively. Coronarography was performed in 88.8% of patients, 21% had PCI and 12.4% had CABG. During a mean follow up period of  $5.2 \pm 4.2$  months HF hospitalization rate was 7.8%.

**Conclusions:** Structured, regular care significantly improves functional status, left ventricular function and substantially increases in the proportion of patients at evidence-based target doses of HF therapy. Our data support the need for organized care, which improves quality of life and prognosis of patients with advanced HF.

[23]

### 2-year procedural, intrahospital and 1-year long-term outcomes after true bifurcation stenting

Arnīs Laduss<sup>2</sup>, Evija Camane<sup>1</sup>, Kārlis Pētersons<sup>2</sup>, Andrejs Erglis<sup>1,3</sup>, Karlis Trusinskis<sup>1,2</sup>, Gustavs Latkovskis<sup>1,3</sup>, Dace Sondore<sup>1,3</sup>, Inga Narbute<sup>1,3</sup>, Kristīne Dombrovska<sup>3</sup>, Andis Dombrovskis<sup>3</sup>, Ieva Briede<sup>1,3</sup>, Aigars Lismanis<sup>3</sup>, Ainars Rudzītis<sup>1,3</sup>, Sanda Jeger

arnis.laduss@gmail.com

<sup>1</sup> University of Latvia, Faculty of Medicine, Riga, Latvia;

<sup>2</sup> Riga Stradins University, Faculty of Medicine, Riga Latvia;

<sup>3</sup> Paul Stradins Clinical University Hospital, Latvia Center of Cardiology, Riga, Latvia

**Trustee of the paper:** dr. med. Indulis Kumsars

**Introduction:** Bifurcation percutaneous coronary intervention (PCI) is challenging and is associated with a lower rate of procedural success and a higher risk of complications. The optimal management of bifurcation lesions is a matter of considerable debate.

**Aim of the study:** The aim of this study was to evaluate procedural, intrahospital and long-term outcomes of patients who underwent PCI for bifurcation lesions involving main vessel and side branch with diameter more or equal 2.5 mm.

**Material and methods:** A retrospective analysis of the ongoing Coronary Bifurcation Treatment registry in Latvia Center of Cardiology (PCI performed from 01.01.2017. to 31.01.2019.) and 1-year follow-up. Study population was divided into two groups: provisional single-stenting and systematic double-stenting. Procedural, intrahospital and long-term complication rates were compared between groups.

**Results:** Totally were screened 8276 PCI procedures performed in Latvia Center of Cardiology in year 2017 and 2018. Patients with ST elevation myocardial infarction in last 24 hours were excluded. A total of 278 patients with true bifurcations were included in this study. 237 patients were treated using provisional single-stenting technique (1 stent) and 41 with systematic double-stenting technique (2 stent). Procedural complications were perforation (1 stent 0% ( $n = 0$ ) vs 2 stent 2.4% ( $n = 1$ ),  $p = 0.147$ ), side branch occlusion (1 stent 1.7% ( $n = 4$ ) vs 2 stent 0% ( $n = 0$ ),  $p = 0.469$ ). Intrahospital complications were periprocedural myocardial infarction (1 stent 5.1% ( $n = 12$ ) vs 2 stent 4.9% ( $n = 2$ ),  $p = 0.956$ ), stent thrombosis (1 stent 0.4% ( $n = 1$ ) vs 2 stent 0% ( $n = 0$ ),  $p = 0.676$ ). All cases were non-Q MI. 1-year follow-up till now was possible in 154 patients (1 stent - 133 patients, 2 stent - 21 patients). Long term complications were death (1 stent 0.8% ( $n=1$ ) vs 2 stent 9.5% ( $n=2$ ),  $p = 0.049$ ), myocardial infarction (1 stent 0.8% ( $n=1$ ) vs 2 stent 0% ( $n=0$ ),  $p = 0.703$ ), target lesion revascularization (TLR) (1 stent 1.5% ( $n=2$ ) vs 2 stent 0% ( $n=0$ ),  $p = 0.578$ ) and target vessel revascularization (TVR) (1 stent 3% ( $n=4$ ) vs 2 stent 4.8% ( $n=1$ ),  $p=0.514$ ).

**Conclusions:** Procedural, intrahospital and long-term complication rate in the treatment of true coronary bifurcation lesions was low and there were no significant differences between groups.

[24]

### Prognostic value of neutrophil to leukocyte ratio in assessment of cardiac incidents in elderly with acute coronary syndrome

Agnieszka Pura, Marta Wilk, Gabriela Kuczyńska, Katarzyna Wąchała, Klaudia Bielecka, Larysa Bielecka  
agnieszkapura@poczta.fm

Jagiellonian University Medical College, Students' Scientific Group at the Department of Social Cardiology

**Trustee of the paper:** Assoc. Prof. Maria Olszowska MD, PhD

**Introduction:** Chronic vascular inflammation plays a key role in development of atherosclerosis and coronary artery disease, therefore many inflammatory biomarkers have been examined and evaluated as a potential factors in assessment of cardiac risk. WBC blood count and WBC subtypes levels are one of the most simple inflammation indicators measured in nearly every patient admitted to medical care. Neutrophil to leukocyte ratio can be an easily obtained parameter indicating a systemic inflammation and can be used in cardiac risk assessment.

**Aim of the study:** We aimed to examine prognostic value of the neutrophil-leukocyte ratio in assessment of occurrence of adverse cardiac events (defined by sudden cardiac arrest, cardiogenic shock and pulmonary edema) in elderly patients suffering from acute coronary syndrome.

**Material and methods:** The study included 217 consecutive patients admitted to Heart and Vessel Diseases Clinic in Cracow Specialist Hospital between 2016 and 2018 due to acute coronary syndrome (STEMI, NSTEMI, UA). Other inclusion criterion was age 75 and above. Laboratory tests results and clinical characteristics were obtained by analyzing their medical records. We excluded 3 patients with incomplete data. The remaining patients were divided into four groups based on their NLR level: low <2,5; moderate 2,5-4; high 4-9; very high >9. The groups respectively consisted of 67, 60, 61 and 26 patients. Occurrence of cardiac events in each group was analyzed.

**Results:** In studied population adverse cardiac events occurrence differed significantly between analyzed groups (low NLR: 5,97%, moderate: 8,33%, high: 21,31%, very high: 25% of patients in each group;  $p < 0,05$ ). CRP level median also was significantly different between groups (low NLR: 3,3 ug/dl; moderate: 18,87 ug/dl; high: 25,85 ug/dl; very high: 42,19 ug/dl;  $p < 0,05$ ). There were none statistically significant differences concerning other analyzed factors.

**Conclusions:** In studied population of elderly patients with AMI adverse cardiac events occurred more frequently in group with higher NLR. Those results indicate the possibility of using NLR as a prognostic marker in stratification of cardiac risk. Further studies are needed to determine cut-off value for geriatric patients. CRP is another marker of systemic inflammation, thus increases along NLR and can be taken into consideration in assessment of cardiac risk.

[25]

#### The difference of clinical characteristics between diabetic and non-diabetic patients with in-stent restenosis

Agnese Amālija Eihenberga, Kristīne Dombrovska

agnese.eihenberga@gmail.com

Rīga Stradiņš University, Faculty of Medicine

**Trustee of the paper:** Dr. Sanda Jēgere (Paula Stradiņš Clinical University, Latvian Center of Cardiology)

**Introduction:** Although stents have proven to be a success in interventional cardiology, in-stent restenosis (ISR) has remained a concerning complication. It has been established that diabetes mellitus (DM) is a risk factor of ISR, however, considering the pleiotropic manifestations of DM, research is needed to determine the various characteristics of diabetic and non-diabetic patients with ISR.

**Aim of the study:** The aim of the study was to investigate and analyze clinical parameters of diabetic and non-diabetic patients with ISR.

**Material and methods:** A single center retrospective cohort study was carried out by analysing all of the hospitalized patients who underwent percutaneous coronary intervention (PCI) at Pauls Stradins Clinical University Hospital from January 1, 2017 till July 31, 2017. 137 patients with a newly diagnosed ISR were included in the study. Data was analyzed using SPSS.

**Results:** Out of the 137 patients, 111 (81%) were male with an average time of 2633.5 ± 356.7 days from implantation-to-restenosis. 92 (67.6%) had ISR in a drug-eluting stent (DES), 44 (32.4%) had ISR in a bare-metal stent (BMS). The affected arteries were predominantly left anterior descending – 59 (43.1%) patients – or right coronary artery – 55 (40.1%) patients. ISR in other location – left main in 5 (3.6%) patients and left circumflex artery in 18 (13.1%) patients.

34 (24.8%) patients had DM, out of who 32 (94.1%) had non-insulin dependent DM and 2 (5.9%) had insulin dependent DM. A statistically significant difference was found in glycated haemoglobin (HbA1c), high density (HDL) cholesterol, international normalized ratio (INR) and activated partial thromboplastin time (APTT). In the non-diabetic group HbA1c was 5.8% (5.4–6.1) vs the DM group 7.2% (6.1–7.4) ( $p < 0.001$ ). HDL cholesterol was higher in the non-diabetic group (3.9 mmol/L (3.1–7.5)) than in the diabetic group (3.6 mmol/L (3.3–3.6)) ( $p = 0.004$ ). INR was shorter in the DM group (0.96 (0.94–1.00)) vs the non-diabetic group (1.01 (1.00–1.07)) ( $p = 0.006$ ). APTT was also shorter in the DM group than in the non-diabetic (29.85s (28.90–32.75) and 34.40s (31.60–58.70) respectively).

**Conclusions:** No other risk factors associated with ISR showed a statistical significance.

Patients with DM also had shorter INR and APTT compared to the non-diabetic group, which could be a possible contributing factor to ISR, considering no other DM unrelated risk factors showed a statistical significance.

[26]

**A particle hsa-miR-21-5p as a potential predictor of reduced ejection fraction in acute coronary syndrome patients after successful primary PCI**

Kuligowska Aleksandra, Kowara Michał, Głowczyńska Renata, Paskal Wiktor, Opolski Grzegorz, Cudnoch-Jędrzejewska Agnieszka

a\_kuligowska@tlen.pl

Chair and Department of Experimental and Clinical Physiology, Laboratory of Centre for Preclinical Research, Medical University of Warsaw, Poland;

1<sup>st</sup> Chair and Department of Cardiology, Medical University of Warsaw, Poland;

Department of Methodology Laboratory of Centre for Preclinical Research, Medical University of Warsaw, Poland

**Trustee of the paper:** prof. dr hab. n. med. Agnieszka Cudnoch-Jędrzejewska; lek. Michał Kowara

**Introduction:** MicroRNAs (miRNAs), short non-coding RNAs, are involved in post-transcriptional silencing of different genes' expression. Therefore, these particles play a role in diseases like acute coronary syndrome. In this study we investigated hsa-miR-21-5p, an inhibitor of RECK and TIMP-3, i.e. proteins that inhibit metalloproteinases. Metalloproteinases are involved in remodeling of extracellular matrix, a key process occurring as a result of myocardial necrosis. In consequence, hsa-miR-21-5p serum level in initial phase of acute coronary syndrome can be correlated with left ventricular ejection fraction measured directly after successful coronary intervention.

**Aim of the study:** In this research we investigated whether a hsa-miR-21-5p serum level in acute coronary syndrome (ACS) patients correlates with left ventricle ejection fraction (LVEF) measured in the acute phase of myocardial infarction, a few days after successful primary coronary intervention (PCI).

**Material and methods:** The study group consisted of 26 patients with ACS – unstable angina (UA), non-ST-segment elevation myocardial infarction (NSTEMI) and ST-segment elevation myocardial infarction (STEMI). Serum samples were taken within 24 hours from admission to the hospital, before coronary intervention. Serum levels of hsa-miR-21-5p (relative expression) were measured using quantitative Real-Time Polymerase Chain Reaction technique (qRT-PCR), according to manufacturer protocol, with the use of spike-in method. Left ventricular systolic function was estimated by left ventricular ejection fraction (LVEF) measured by echocardiography a few days after successful PCI. Results were compared with the use of appropriated statistic tests in STATISTICA 13, StatSoft. Inc,  $p < 0,05$  was considered statistically significant.

**Results:** The ACS patients were divided into 2 groups according to left ventricle systolic function measured within a few days after successful coronary intervention: reduced LVEF (LVEF<50%) (n=12) and preserved LVEF (LVEF>50%) (n=14). Patients with reduced LVEF were characterized with increased hsa-miR-21-5p serum level comparing with preserved LVEF patients (median [interquartile range]) - 5,36 [2,47-8,05] vs 2,69 [1,29-3,43];  $p = 0,015$ .

**Conclusions:** Our results have shown, that hsa-miR-21-5p serum level measured in ACS patients before coronary intervention correlates with LVEF reduction after successful primary PCI.

[27]

**Higher resting heart rate might be associated with higher success rate of ablation for paroxysmal atrial fibrillation**

C Maciejewski, D Wiewiór, N Roman, I Sierakowska, P Łodziński, P Balsam, E Koźluk, G Opolski

nataliaroman72@gmail.com

Medical University of Warsaw, Students' Scientific Group, 1<sup>st</sup> Department of Cardiology

**Trustee of the paper:** Michał Peller

**Introduction:** Ablation is a medical procedure for atrial fibrillation during which pulmonary veins are being isolated from left atrium. The aim of the procedure is to stop conduction of electrical activity arising in the pulmonary veins that triggers arrhythmia.

There is an evidence suggesting that success of the procedure may be in part related to modulation of the cardiac autonomic nervous system. In some cases increased resting heart rate after ablation is observed, which might be a sign of this neuronal alteration.

**Aim of the study:** The aim of this study was to assess correlation between resting heart rate after ablation for paroxysmal atrial fibrillation and the recurrence of arrhythmia.

**Material and methods:** We retrospectively analyzed data of patients with paroxysmal atrial fibrillation (AF) who underwent radiofrequency pulmonary vein isolation in 2016 in 1st Chair and Department of Cardiology, Medical University of Warsaw. We analyzed patients heart rate (HR) at discharge from the ward. Only patients with sinus rhythm after the procedure were included to the analysis. In January 2019 all patients were recalled for follow-up. Kaplan-Meier curves for patients with HR above and below median value were calculated.

**Results:** Total of 12 patients were included to the analysis. Median heart rate at discharge was 74 beats per minute. There were no direct association between resting HR after the procedure and recurrences of AF. However, Kaplan-Meier curves showed trend towards higher ablation success rate for patients with resting heart rate above median compared to those with resting heart rate below median ( $p=0.0582$ ).

**Conclusions:** Presented study shows the tendency of higher success rate of ablation in patients with higher resting heart rate after ablation. Confirmation of this observation needs further research on bigger study group.

[28]

#### The prevalence of risk factors included in the CHA<sub>2</sub>DS<sub>2</sub>-VAsC scale

Gabrielė Kalvelytė

gabrielek13@yahoo.com

Vilnius University

**Trustee of the paper:** Dr. Aušra Marcijonienė

**Introduction:** The CHA<sub>2</sub>DS<sub>2</sub>-VAsC scale reflects the risk of stroke in patients with atrial fibrillation. Based on the scale, the risk of thromboembolic complications is estimated for 1 year in patients without antithrombotic treatment. If CHA<sub>2</sub>DS<sub>2</sub>-VAsC produces more than 1 point, anticoagulants are recommended.

**Aim of the study:** To assess the prevalence of risk factors included in the CHA<sub>2</sub>DS<sub>2</sub>-VAsC scale.

**Material and methods:** A retrospective study was conducted. Data collected from patient's medical records. The sample consists of 138 patients who were diagnosed with ischemic stroke in March - April 2017 in Vilnius University Hospital, Santaros Clinic. The CHA<sub>2</sub>DS<sub>2</sub>-VAsC scale was used to assess patient risk of stroke. Based on data from patient records, the score of the CHA<sub>2</sub>DS<sub>2</sub>-VAsC scale was calculated for patients with atrial fibrillation and retrospectively assessed for the risk of a stroke.

**Results:** Of all the patients, atrial fibrillation was observed in 51 patients, of whom 18 (35%) were men and 33 (65%) women. Patients aged 37-95 years, average  $73.10 \pm 11.24$  m. The average age of women was  $75.46 \pm 11.29$  years, while the average age of men was  $70.87 \pm 10.82$ . ( $p = 0.009$ ). Patients with modified stroke risk were: arterial hypertension - 24 (47%), heart failure - 20 (39%), diabetes - 13 (25.5%), peripheral arterial disease - 11 (21.6%). Non-modified stroke risk factors were: a history of stroke - 9 (17.6%), history of myocardial infarction - 28 (54.9%), older age ( $\geq 65$  years) - 47 (92%) patients. Seven patients (13.7%) had no risk of stroke. The only risk factor for five patients (9.8%) is female sex. The CHA<sub>2</sub>DS<sub>2</sub>-VAsC score was 0-8, with an average of  $3.75 \pm 1.51$ .

**Conclusions:** The retrospective study involved 138 patients, 51 of whom had atrial fibrillation. The most common modified risk factor for stroke is arterial hypertension. The most common non-modified risk factor is older age ( $> 65$ m).

[29]

#### Heart Rate Variability Predictors of Early Atrial Fibrillation Recurrence After Electrical

Dzmitry Salauyou

dr.salauyou@gmail.com

Republican Scientific and Practical Centre "Cardiology", Minsk, Belarus

**Trustee of the paper:** Elena Kovsh, PhD, M.D.

**Introduction:** Atrial fibrillation (AF) accounts for 1/3 of heart arrhythmias. Electrical cardioversion (ECV) is widely used for sinus rhythm restoration. The features of the sinus node autonomic modulation (AM) may cause early

recurrence of AF (ERAF) after ECV. AM of the heart rhythm can be evaluated by heart rate variability (HRV) analysis.

**Aim of the study:** To determine HRV predictors of ERAF within 48 hours after ECV.

**Material and methods:** The study covered 35 patients with ERAF in 48 hours after ECV (mean age  $64 \pm 7$  years; 18 females, 17 males) and 41 patients (mean age  $63 \pm 8$  years; 21 females, 20 males) without ERAF. All patients had persistent AF before ECV. There were no significant differences in antiarrhythmic therapy before and after rhythm restoration. All patients underwent 24-hour Holter monitoring right after ECV.

**Results:** ERAF patients showed decreased heart rhythm AM: standard deviation of all normal-to-normal intervals (SDNN) was lower than in non-ERAF patients ( $114.74 \pm 9.25$  ms vs.  $132.51 \pm 12.01$  ms,  $p < 0.001$ ). Cut-off value for SDNN, determined by receiving operator characteristic (ROC) analysis, was 127,19 ms (the area under the curve (AUC) was 0.937, sensitivity and specificity were 100% and 85% respectively,  $p < 0.001$ ), odd ratio (OR) = 6,95 (95% confidence interval (CI) 2.25 – 4.47). We have analysed spectral HRV parameters. ERAF patients demonstrated higher level of sympathetic influence on heart rhythm than non-ERAF patients: they had higher values of relative power of the low-frequency band (LF) ( $57.86 \pm 4.74\%$  vs.  $48.34 \pm 4.41\%$ ,  $p < 0.05$ ), lower values of relative power of the high-frequency band (HF) [ $22.39 \pm 2.12\%$  vs.  $31.34 \pm 2.91\%$ ,  $p < 0.05$ ], higher ratio of LF-to-HF power (LF/HF) [ $2.59 \pm 0.32\%$  vs.  $1.54 \pm 0.14\%$ ,  $p < 0.001$ ]. According to the ROC-analysis, cut-off predictive value for LF was 52,94 % (AUC 0.893, 85.7% sensitivity, 82.9% specificity,  $p < 0.001$ ), OR = 3,21 (95% CI 2.89 – 3.14); for HF – 25.49% (AUC 0.996, 91.4% sensitivity, 99.8% specificity,  $p < 0.001$ ), OR = 5,80 (95 CI 1.38–2.26); for LF/HF – 1.88 (AUC 0.989, 97.1% sensitivity, 99.9% specificity,  $p < 0.001$ ), OR = 3,43 (95 CI 1.56 – 2.31).

**Conclusions:** This study demonstrates that increase in sympathetic influence on heart rhythm, decrease of HRV and total sinus node AM elevate the risk of ERAF within 48 hours after ECV. The time and spectral HRV parameters analysis within 24 hours after ECV will help to identify patients with a high risk of ERAF and give an opportunity for antiarrhythmic therapy corrections.

[30]

### Platelet and endothelial cell-derived extracellular vesicles as new potential biomarkers in acute myocardial infarction

Katarzyna Karoń, Dominika Siwik, Magdalena Gajewska, Mateusz Wondołkowski M.D.,  
Professor Krzysztof J. Filipiak M.D. PhD

katarzkar@gmail.com

I Cardiology Clinic of Medical University of Warsaw

**Trustee of the paper:** Aleksandra Gąsecka M.D.

**Introduction:** Extracellular vesicles (EV) are nanoparticles released by various types of cells, involved in intercellular communication. EVs have recently gained attention due to their possible application as new biomarkers of cardiovascular disease (CVD). In course of acute myocardial infarction (AMI) activated platelets, endothelial cells and leukocytes release EVs.

**Aim of the study:** We aimed to compare the concentration of EVs from various cell types in patients with AMI and healthy controls.

**Material and methods:** 30 patients (mean age  $64 \pm 9$  years, 28% females) presenting with first AMI and treated with primary percutaneous coronary intervention (PCI), all of whom received double antiplatelet therapy with ticagrelor and aspirin, were included in the study. Venous blood was collected three times: 24 hours (h) after AMI, 72h after AMI and 6 months after AMI. In addition, blood was collected once from 30 gender- and age-matched healthy volunteers. Concentrations of EVs from activated platelets (CD61+/P-selectin+ or CD61+/fibrinogen+), endothelial cells (CD146+) and leukocytes (CD45+) were analysed with flow cytometry (Apogee A60 Micro).

**Results:** Concentrations of platelet EVs exposing CD61/P-selectin and CD61/fibrinogen were elevated in patients with AMI, compared to healthy volunteers, both at at 72h and 6 months after AMI ( $p=0.07$ ;  $p=0.02$ , respectively). Concentration of endothelial cell-derived EVs decreased 24h after AMI in patients, compared to controls, and returned to the control group concentration after 6 months ( $p<0.001$ ). Concentration of EVs from leukocytes were comparable in patients and controls at each time point.

**Conclusions:** Increased concentrations of EVs from activated platelets and decreased concentrations of EVs from endothelial cells differentiate AMI patients from healthy volunteers, suggesting potential clinical application of these EVs as AMI biomarkers. Concentrations of EVs from activated platelets remained increased up to 6 months after AMI, suggesting ongoing platelet activation despite potent antiplatelet therapy with ticagrelor and aspirin. Further studies are required to investigate whether elevated concentrations of EVs from activated platelets are associated with adverse outcomes after AMI.

[31]

**Evaluation of the reference values of aortic pulse wave velocity in healthy subjects using Doppler echocardiography**

Katarzyna Cienszkowska, Marta Ludwiczak

k.cienszkowska@gmail.com

Medical University of Warsaw, Department of Internal Medicine, Hypertension and Vascular Diseases

**Trustee of the paper:** dr hab. n. med. Grzegorz Styczyński, dr hab. n. med. Cezary Szmigielski

**Introduction:** Aortic pulse wave velocity (aPWV) is a measure of aortic stiffness, which is an indicator of vascular aging and has established role as an independent in predicting cardiovascular risk factor. aPWV can be measured with various non-invasive methods, unfortunately with different reference values depending on the technique used. The Doppler echocardiography is potentially widely accessible and recently had been shown to have high correlation with invasive reference method

of aPWV based on intraarterial pressure evaluation.

**Aim of the study:** The aim of the study was to establish reference values of aortic pulse wave velocity, measured by Doppler echocardiography in healthy subjects.

**Material and methods:** 94 healthy adults (well-functioning, normotensive, non-smoking, free

of chronic diseases and medications) were included. All the patients were divided into 5 groups due to age criterion (21-30 yrs., n=22; 31-40 yrs., n= 18; 41-50 yrs., n=23; 51-60 yrs., n=16; and 61-70 yrs., n=15). During the echocardiographic examination with a standard cardiac probe ten Doppler waveforms were recorded in the distal aortic arch and then in the left external iliac artery. The transit time was calculated as a difference between time delay of the two points of the Doppler recordings relative to ECG signal. The distance between proximal and distal points was measured over the body surface using a flexible measuring tape. aPWV values were calculated according to the formula  $PWV = \text{distance}/\text{transit time}$ .

**Results:** The mean age of the studied group was 43±13 yrs., BMI 24.5±3.4, SBP 123±10.44 mmHg

and HR 64±10 bpm. aPWV did not differ according to sex (females, n=41: aPWV 5.52±1.29 m/s, males, n=53: aPWV 5.27±0.94 m/s, p=0.61). There was significant positive correlation of aPWV

with age (Pearson correlation coefficient 0.68, p<0.0001) and SBP (Pearson correlation coefficient 0.42, p<0.0001). Mean aPWV values with 95% confidence interval (95%CI) for each decade of life were as follows: age 21-30, aPWV 4.59 m/s (95%CI 4.38 to 4.80); age 31-40, aPWV 4.73 m/s (95%CI 4.37 to 5.08); age 41-50, aPWV 5.26 m/s (95%CI 4.95 to 5.57); age 51-60, aPWV 5.85 m/s (95%CI 5.32 to 6.39), age 61-70, aPWV 6.99 m/s (95%CI 6.50 to 7.47).

**Conclusions:** We report age-related values of aPWV in a healthy population measured by Doppler echocardiography. This may be helpful in future research exploring the associations between aortic stiffness, cardiac function and cardiovascular morbidity and mortality.

[32]

**The relationships between vitamin D status and common inflammatory biomarkers in the early postoperative period in infants with congenital heart defects operated on with extracorporeal circulation – preliminary results**

Julia Haponiuk

jula.haponiuk@gmail.com

Warsaw Medical University of Warsaw, II Faculty of Medicine, Warsaw, Poland / Department of Pediatric Cardiac Surgery, St. Adalbertus Hospital Gdańsk-Zaspa, Poland

**Trustee of the paper:** Ireneusz Haponiuk

**Introduction:** Cardiac surgery for congenital heart defects(CHD) in children performed with extracorporeal circulation(ECC) uniformly leads to various forms of systemic inflammatory response syndrome(SIRS) measured by routine biomarkers(C-reactive protein-CRP, Procalcitonin). Vitamin D(Vit D) concentration in multiple potential mechanisms may be related to the level of inflammatory response activation in acute phase of SIRS after ECC in infants operated on with CHD.

**Aim of the study:** The aim of the study was the analysis of Vit D status and inflammatory biomarkers in the early postoperative period in infants with CHD operated on with ECC, and the presentation of preliminary report.

**Material and methods:** The group of 15 infants (age: 4-7 months) with CHD who underwent moderate hypothermic ECC cardiac surgical correction of congenital heart defects in one cardiac unit were analyzed at the end of 2018. The levels of Vit D (in 2 forms: 25(OH)D<sub>3</sub> and 1,25(OH)<sub>2</sub>D<sub>3</sub>) as well as CRP and leukocytosis were measured three times: a day before surgery, in the 2nd day after the operation, and finally- in the 6th postoperative day. All infants received a standard dose of Vit D supplementation (500 IU) within the first week after birth, as well as in the 1st postoperative day. All specimens were collected, analyzed in the laboratory and the obtained data was evaluated statistically. Standard accepted thresholds for defining Vit D sufficiency were used.

Clinical course analysis and possible factors of susceptibility to Vit D level fluctuations were also examined in every subject. Presented single-institutional prospective study was performed according to the guidelines of the Ethic Examining Committee.

**Results:** All patients had a sufficient level of Vit D before the operation, their biomarkers levels were within acceptable range, every clinical symptom of potential infection was identified and excluded. In the 2nd postoperative day, when the peak level of CRP was observed, the active metabolite of Vit D fell to severe insufficiency. In the 6th postoperative day CRP was measured in nearly normal range, while Vit D levels returned to preoperative sufficiency.

**Conclusions:** Our preliminary results showed an inverted correlation between the SIRS parameters and the level of Vit D in infants with standard preoperative supplementation. Further studies of presented relationships could determine whether the perioperative Vit D level maintenance could have a therapeutic effect, and a benefit for pediatric patients undergoing cardiac surgery in early infancy.

[33]

#### **The effect of pharmacotherapy on concentrations of extracellular vesicles concentrations in patients with myocardial infarction**

Karol Pałucha, Michał Wawiórka, Monika Szewczak, Aleksandra Gąsecka, Krzysztof J. Filipiak

karol277.pl@op.pl

Medical University of Warsaw, 1st Department of Cardiology

**Trustee of the paper:** Aleksandra Gąsecka

**Introduction:** Extracellular vesicles (EVs) are cell-specific nanoparticles released to body fluids, which mediate intercellular communication. The concentrations of EVs change in cardiovascular (CV) disease, such as acute myocardial infarction (AMI), making EVs potential novel biomarkers of AMI. The effect of CV pharmacotherapy on EV concentrations in plasma has not been established.

**Aim of the study:** We aimed to investigate the effect of standard CV pharmacotherapy (antiplatelet therapy, statin and  $\beta$ -blocker therapy) on EV concentrations in plasma in patients after AMI.

**Material and methods:** Venous blood was collected 24 hours and 6 months after AMI from fasting patients (n=60, 64.5±10.8 years, 32% female). Flow cytometry (Apogee A60 Micro) was used to determine plasma concentrations of EVs labelled with antibodies for activated platelets (CD61, CD62p; PEVs), endothelial cells (CD146; EEVs) and red blood cells (CD235a; RBC-EVs).

**Results:** After 6 months of treatment, antiplatelet drug ticagrelor decreased the concentrations of PEVs, compared to less potent clopidogrel (p=0.03), but did not affect EEVs and RBC-EVs. In turn, concentrations of EEVs positively correlated with the dose of atorvastatin (p<0.001), but this correlation was absent for PEVs and RBC-EVs. The antioxidative  $\beta$ -blocker carvedilol increased concentrations of RBC-EVs, compared to nebivolol (p=0.05), but did not affect PEVs and EEVs.

**Conclusions:** During 6 months after AMI, ticagrelor decreased PEV concentrations, atorvastatin increased EEV concentrations and carvedilol increased RBC-EV concentrations, suggesting that the concentrations of EVs are widely affected by CV pharmacotherapy. It is crucial to take into consideration these effects when developing EV-based biomarkers.

[34]

#### **Assessment of heart rate and heart rate variability using Polar H7 sensor in subjects with sinus rhythm**

Maria Zaborska

mariaannazaborska@gmail.com

Department of Internal Medicine, Hypertension and Vascular Diseases, Medical University of Warsaw

**Trustee of the paper:** Maciej Siński, MD, PhD

**Introduction:** Atrial fibrillation is the most common arrhythmia and affects around 3% of the population over the age of 20 years. Moreover, atrial fibrillation is related to increased cardiovascular mortality and morbidity. Atrial fibrillation, often diagnosed after ischemic stroke, may be asymptomatic. Early detection of the arrhythmia could prevent disability and reduce cardiovascular mortality and morbidity. Perfect tool to screen for the arrhythmia should be easily accessible and inexpensive, thus attempts to detect arrhythmia using a non-medical grade technology, gain on popularity in recent years.

**Aim of the study:** Our pilot study was aimed to assess possibility of application of the Polar H7 Heart Rate Sensor in assessment of heart rate in people with sinus rhythm. Results will be used to construct an algorithm, which would detect a silent atrial fibrillation using the Polar H7 Heart Rate Sensor.

**Material and methods:** This prospective analysis study was conducted in a group of 15 healthy individuals (8 females, 7 males) aged of  $22 \pm 1.3$  years with sinus heart rhythm. Heart rate was recorded simultaneously with ECG (CNSystems, Medizintechnik, Graz, Austria) and Polar H7 Heart Rate Sensor. Heart rate was monitored at rest in supine position. One hundred and fifty 30-second-long intervals recorded by both devices to assess the agreement of the heart rate and heart rate variability. Variability of heart rate was defined as a standard deviation. Bland-Altman statistics were used in the analysis.

**Results:** Mean HR recorded by ESC was  $71.8 \pm 12.0$  and by Polar H7  $71.4 \pm 12.1$ ,  $p=0.79$ . Mean HR SD recorded by ESC was  $3.98 \pm 1.89$  and by Polar H7  $1.45 \pm 0.81$ ,  $p<0.001$ . We found good agreement between ECG and Polar H7 in assessment of mean heart rate (bias 0.37 with limits of agreement: -1.66 to 2.40) and poor agreement according to heart rate variability (bias 2.52 with limits of agreement: 0.59-5.54).

**Conclusions:** Polar H7 Heart Rate Sensor showed a good agreement with reference ECG method determining a mean heart rate in 30 second-long intervals. The assessment of heart rate variability was below expectations. Polar H7 Heart Rate Sensor can be used in assessment of mean heart rate in subjects with sinus rhythm at rest. The ability of Polar H7 to detect atrial fibrillation is diminished by limitations in estimating heart rate variability.

[35]

#### **Factors influencing the choice of a P2Y<sub>12</sub> receptor block for treating a patient with acute coronary syndrome in real clinical practice**

Sharaeva Yadviga Valerevna, Kuznetsova Veronika Andreevna  
ankuver@mail.ru

Internal diseases department RNRMU

**Trustee of the paper:** Konstantinova Ekaterina Vladimirovna

**Introduction:** Ticagrelor is known to prefer clopidogrel except in cases of an increased risk of bleeding, but according to the literature, clopidogrel still remains the most frequent second component of dual antiplatelet therapy (DAPT) in the world.

**Aim of the study:** To conduct comparative description of patient groups with the acute coronary syndrome (ACS), taken depending on a prescription of clopidogrel or ticagrelor as the second component of DAPT according to data of the year's work of the Pirogov City Clinical Hospital №1.

**Material and methods:** Clinical data of 854 patients with ACS who undergone treatment in RVC of Pirogov City Clinical Hospital №1 on the time of January to December of 2017 were analyzed. Statistical analysis was performed using the program SPSS 22.0.

**Results:** Clopidogrel was prescribed to 623 patients (73%) - the I group, ticagrelor 231 (27%) - the II group. Patients in the I group compared to the II group were significantly older (70 and 62 years accordingly), women accounted for 43% in I group and 27% in II group. Arterial hypertension (96 and 89%), diabetes (34 and 26%), post-acute myocardial infarction (38 and 19%), chronic kidney disease (26 and 12%), anemia (15 and 7%). Among patients of II group final diagnosis of ST-elevation myocardial infarction (STEMI) was more often (64 and 31%), coronary angiography (CAG) and percutaneous coronary intervention (PCI) were more frequent - 98/94% and 88/75%, accordingly. There was a difference in the frequency of clopidogrel administration (57%) among patients with STEMI compared to the administration of ticagrelor (43%). Among elderly patients with STEMI (75 years and older), clopidogrel was prescribed in 74% of cases, ticagrelor - in 26%, with non-ST-elevation myocardial infarction (NonSTEMI): 92/8% accordingly. CAG / PCI was performed more frequently on older patients who received ticagrelor compared to patients receiving clopidogrel, both in these group with STEMI (100/92% and 82/75%) and with NonSTEMI (94/81% and 80/68 %).

**Conclusions:** Clopidogrel is prescribed to the patients more often in comparison with ticagrelor. Doctors make a choice in favor of clopidogrel for elderly patients, more often women and more comorbid patients. The presence of STEMI, as well as the performance of CAG / PCI in any definitive diagnosis, is associated with a relatively more

frequent prescription of ticagrelor, and in elderly patients, the implementation of PCI is the only factor that significantly influences the choice of more active antiaggregants in DAPT.

[36]

#### **Assessment of right ventricular function and pulmonary circulation in patients with systemic sclerosis**

Antonina Respondek, lek. Bartosz Karolak

antonina.res@gmail.com

SKN przy Klinice Chorób Wewnętrznych i Kardiologii WUM

**Trustee of the paper:** Prof. dr hab. n. med. Michał Ciużyński

**Introduction:** Systemic sclerosis (SSc) is an autoimmune disease whose unequivocal causes have not been defined yet. Cardiovascular and pulmonary comorbidities, resulting from increased synthesis of collagen, are the leading causes of death in patients suffering from this disease.

**Aim of the study:** The aim of this study was to assess right ventricular function and pulmonary circulation in SSc patients.

**Material and methods:** The group of 52 patients diagnosed with SSc (47F, 5M;  $58 \pm 13$  years, mean disease duration  $14 \pm 12$  years), and age-matched healthy control group of 24 patients (22F, 2M;  $53 \pm 8$  years) were studied.

Transthoracic echocardiography (TTE) and 6 minute walk test (6MWT) were performed. In addition, serum NT-proBNP concentration was measured

**Results:** In SSc patients median right ventricle (RV) diameter was significantly higher than in control group 26 (24-30) vs 23 (22-25) mm,  $p=0,0002$ . The mean RV/LV ratio in patients with SSc was also significantly higher ( $0,61 \pm 0,08$  vs  $0,56 \pm 0,06$ ;  $p=0,007$ ). Median tricuspid regurgitant peak gradient (TRPG) value was higher in the patients of studied group 24 (20-29) vs 18 (15-22) mmHg,  $p=0,001$ . In study patients significantly lower value of the median acceleration time of pulmonary ejection (AcT) was observed, 120 (120-130) vs 130 (120-130) ms,  $p=0,025$ . Median serum NT-proBNP concentration was significantly higher in SSc patients than in controls 128 (101,0-211,0) vs 67 (47,7- 81,4) pg/ml,  $p=0,0005$ . Furthermore, NT-proBNP level strongly correlated with AcT values ( $r=-0,67$ ;  $p<0,001$ ); RV ( $r=0,41$ ;  $p=0,02$ ) and TRPG ( $r=0,65$ ;  $p<0,001$ ).

Despite the trend to a shorter 6MWT distance in patients with SSc group, no significant statistical difference was found ( $554 \pm 127$  vs  $574 \pm 57$  m,  $p=0,38$ ) Nevertheless, the 6MWT distance of the SSc group showed a strong correlation with TRPG ( $r=-0,42$ ;  $p=0,003$ ), RV ( $r=-0,35$ ;  $p=0,016$ ) and RV/LV ( $r=-0,38$ ;  $p=0,008$ ).

**Conclusions:** Systemic sclerosis leads to the progressive impairment of right ventricular function and its coupling to the pulmonary arterial bed.

[37]

#### **Understanding the impact of patient and stent characteristics on single or multiple in-stent restenosis**

Kristīne Dombrovska, Agnese Amālija Eihenberga

023360@rsu.edu.lv

Rīga Stradiņš University

**Trustee of the paper:** Dr. Sanda Jēgere

**Introduction:** In-stent restenosis (ISR) is a problem faced by interventional cardiologists and remains an unresolved issue. Drug-eluting stents (DES) have reduced the incidence of ISR compared to bare metal stents (BMS), however the prevalence of ISR still remains noteworthy.

**Aim of the study:** A study was conducted to determine the different characteristics affecting development of ISR.

**Material and methods:** Out of 4538 patients undergoing percutaneous coronary intervention (PCI) at Pauls Stradins Clinical University Hospital, Latvian Center of Cardiology, 66 patients with newly diagnosed ISR were included in a single center retrospective cohort study from January 1, 2018 till December 31, 2018. Patients were divided in subgroups depending on the affected stent (DES or BMS) and the occurrence of solitary or multiple ISR. Collected data was analyzed using SPSS (Student T test and Mann-Whitney U test).

**Results:** Out of 66 enrolled patients with a mean age of  $67 \pm 9$  years, 54(81,8%) were male, 3(4,5%) patients had ISR in the left main artery(LM), 30(45,5%) – in left anterior descending(LAD), 25(37,9%) – in right coronary artery (RCA) and 8 (12,1%) – in left circumflex artery (LCX). In 43 (65,2%) cases drug eluting balloon was used to treat

ISR, 7 (10,6%) patients underwent repeat stenting with DES, 7(10,6%) - balloon angioplasty, 9(13,6%) – only cutting balloon intervention.

47(74,6%) patients had ISR in DES, 16(25,4%) in BMS. Stent localization in the coronary artery was proximal in 27(54%) cases in DES vs 9(56,3%) in BMS, middle in 18(36%) in DES vs 4(25%) in BMS, distal localization 5(10%) in DES vs 3(18,8%)in BMS. Patients with an ISR in DES tended to be younger ( $65,72\pm 9,22$  years in DES vs  $71,38\pm 6,8$  in BMS;  $p=0,01$ ) and time from implantation to ISR was shorter (709 vs 3432 days;  $p=0,02$ ).

30(45,5%) patients had single ISR and 36(54,5%) had multiple ISR. Patients with multiple ISR more often had history of previous myocardial infarction (20(64,5%) vs 15(51,7%) in single ISR group). The average stent length was  $20,5(13,5-27,25)$ mm in single ISR vs  $16(12-22)$ in multiple ISR group. Patients with multiple ISR were more often male ( $p=0.024$ ), had prevalent hypertriglyceridemia ( $p=0.047$ ) and a history of previous smoking ( $p=0.044$ ). Multiple ISR had an association with longer time from implantation to ISR time ( $p=0.003$ ).

**Conclusions:** Hypertriglyceridemia and time till ISR had an impact on the occurrence of multiple ISR. Younger age and shorter implantation-to-ISR time was found in the DES subgroup.

### [38]

#### **Inhibition of extracellular vesicles release after acute myocardial infarction is a new mechanism of action of ticagrelor**

Kinga Pluta, Agata Ćwiek, Michał Konwerski MD, Aleksandra Gąsecka MD, Prof. Grzegorz Opolski MD, PhD, Prof. Krzysztof J. Filipiak MD, PhD

plutakinga.01@gmail.com

1<sup>st</sup> Chair and Department of Cardiology, Medical University of Warsaw

**Trustee of the paper:** Aleksandra Gąsecka MD

**Introduction:** Extracellular vesicles (EVs) are nanoparticles released from cells to body fluids. EVs from activated platelets expose P-selectin, phosphatidylserine (PS) and fibrinogen, which are involved in thrombosis and inflammation. Thus, EVs from activated platelets are potential new biomarkers of cardiovascular (CV) complications after acute myocardial infarction (AMI). Potent antiplatelet drug ticagrelor decreases mortality compared to clopidogrel, previous standard care after AMI, suggesting that greater platelet inhibition is associated with better outcomes. We hypothesized that ticagrelor decreases concentrations of EVs after AMI, compared to clopidogrel, which is a new mechanism of action of ticagrelor.

**Aim of the study:** To compare plasma concentration of EVs in patient after AMI treated by ticagrelor or clopidogrel.

**Material and methods:** The study population consisted of 60 patients (32% female, age  $64.5\pm 10.8$  years) who were admitted to the hospital due to first AMI and underwent percutaneous coronary intervention. Patients were randomized in 1:1 ratio to treatment with ticagrelor (study group) or clopidogrel (control group). Blood was collected at randomisation, 48 hours later and after 6 months. EV concentrations were measured with flow cytometry (Apogee A60 Micro). EVs from activated platelets were identified based on the exposure of CD61/P-selectin, PS or fibrinogen. Impedance aggregometry (Multiplate) was used to determine response to therapy with P2Y<sub>12</sub> antagonist and acetylsalicylic acid (platelet reactivity).

**Results:** Concentration of platelet EVs exposing P-selectin, PS and fibrinogen were lower in patients treated with ticagrelor compared to clopidogrel ( $p=0.034$ ,  $p=0.018$ ,  $p=0.021$ , respectively). Platelet aggregation was lower on ticagrelor compared to clopidogrel, both at 72 hours ( $p=0.04$ ) and after 6 months of treatment ( $p=0.07$ ).

**Conclusions:** Concentration of prothrombotic and proinflammatory platelet EVs was decreased by ticagrelor, compared to clopidogrel, suggesting that inhibition of EVs release is a novel mechanism. Further research is required to determine, whether this effect is associated with decreased mortality on ticagrelor.

### [39]

#### **Prognostic value of miRNA-150-5p for post-myocardial infarction heart failure development**

Agnieszka Makowska<sup>1</sup>, Roksana Gozdowska<sup>1</sup>, Aleksandra Chabior<sup>1</sup>, Agata Maciejak<sup>2</sup>, Karolina Maciak<sup>2</sup>, Monika Góra<sup>2</sup>, Agata Tyimińska<sup>1</sup>, Aleksandra Gąsecka<sup>1</sup>, Michał Marchel<sup>1</sup>, Krzysztof J. Filipiak<sup>1</sup>, Grzegorz Opolski<sup>1</sup>  
maknieszka@gmail.com

<sup>1</sup> 1<sup>st</sup> Department of Cardiology, Medical University of Warsaw

<sup>2</sup> Institute of Biochemistry and Biophysics Polish Academy of Science

**Trustee of the paper:** Aleksandra Gąsecka

**Introduction:** Adverse left ventricular remodeling (LVR) after acute myocardial infarction (AMI) leads to heart failure (HF). At present, there are no biomarkers to predict which patients will develop HF, and hence there is a need for novel biomarkers to stratify HF risk after AMI.

MicroRNAs (miRNAs) are small non-coding RNAs that regulate gene expression involved in multiple processes, including cardiovascular pathophysiology. Several miRNAs are dysregulated in patients with HF.

**Aim of the study:** To identify miRNAs which predict the development of post-infarction HF.

**Material and methods:** The study included 14 patients with ST-elevation AMI treated with percutaneous coronary intervention. Serum concentrations of 13 microRNAs were determined 24 hours after AMI using polymerase chain reaction. The correlations between miRNAs expression 24 hours after AMI, and (i) left ventricular ejection fraction (EF) measured by echocardiography, (ii) concentration of N-terminal-pro B type natriuretic peptide (NT-proBNP), a peptide associated with the severity of HF, and (iii) patients' age 6 months after AMI were evaluated.

**Results:** Among 13 miRNAs, miRNA-150-5p was downregulated 24 hours after AMI in patients who had lower EF ( $r=0.60$ ,  $p=0.022$ ), higher concentration of NT-proBNP ( $r=-0.56$ ,  $p=0.036$ ) and higher age ( $r=-0.66$ ,  $p=0.01$ ) at 6 months follow-up.

**Conclusions:** MiRNA-150-5p, reported to have anti-apoptotic and anti-fibrotic functions, was downregulated in the acute phase of AMI in patients who had lower EF 6 months after AMI. Hence, miRNA-150-5p is a promising biomarker to improve risk prediction of post-infarction HF. However, because miRNA-150-5p correlated also with age, further studies in large cohorts with adjustment for patients' characteristics and comorbidities are required before clinical application.

[40]

#### LDL-C Lowering Peculiarities in Patients after Myocardial Infarction in Lithuania

Zivile Girkantaite

zivile.girkantaite@gmail.com

Vilnius University, Faculty of Medicine

**Trustee of the paper:** Assoc. Prof. Jolita Badariene, MD, PhD, Vilma Dzenkeviciute, MD, PhD, Alma Cypiene, MD, PhD

**Introduction:** Despite the proven efficacy of statins in reducing low-density lipoprotein cholesterol (LDL-C), many patients do not achieve recommended LDL-C target levels. This situation may be influenced by statins nonadherence and low awareness of LDL-C targets.

**Aim of the study:** To assess the success in achieving recommended LDL-C targets in patients after myocardial infarction (MI) and to find out the differences in the duration of statins usage and its influence on arterial stiffness between patients who achieved LDL-C target levels ( $< 1.8$  mmol/L) and patients who did not achieve LDL-C target levels ( $< 1.8$  mmol/L) after MI.

**Material and methods:** We analyzed 191 outpatients after MI, 140 male and 51 female (mean age  $59 \pm 9.22$  years), treated in Vilnius University Hospital Santaros Klinikos. All patients were asked to complete the questionnaire "Cholesterol-lowering Drugs Consumption Peculiarities", compiled by the authors of the study. The levels of serum LDL-C were analyzed using an Autoanalyzer. Carotid-femoral pulse wave velocity (cfPWV in m/s), a parameter of arterial stiffness, was measured by an applanation tonometry system (SphygmoCor). Statistical analysis was performed using the SPSS software.

**Results:** The study showed that there were more patients (84.7%;  $n=161$ ) who did not achieve the recommended LDL-C target levels ( $< 1.8$  mmol/L) than patients (15.3%;  $n=30$ ) who achieved the recommended LDL-C target levels ( $p < 0.001$ ). In a group of patients who achieved LDL-C target levels ( $< 1.8$  mmol/L) were statistically significantly more patients who did not interrupt taking statins after one year of MI in comparison with a group of patients who did not achieve LDL-C target levels (58.6%;  $n=17$  vs. 50.3%;  $n=81$ , respectively;  $p=0.039$ ). Moreover, there was found that patients who were taking statins uninterruptedly for more than one year after MI had lower cfPWV than patients who interrupted statins usage after one year of MI ( $8.51 \pm 1.69$  m/s vs.  $9.68 \pm 2.72$  m/s, respectively;  $p=0.028$ ).

**Conclusions:** The minor part of post-MI patients achieved the recommended LDL-C target levels. Between patients with LDL-C target levels were more individuals who were taking statins uninterruptedly for more than one year after MI. Furthermore, patients who were taking statins uninterruptedly after MI had less stiff arteries.



# Dentistry

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 8, Library – CBI

**Jury:**

prof. dr hab. n. med. Elżbieta Mierzwińska-Nastalska  
prof. dr hab. n. med. Dorota Olczak-Kowalczyk  
prof. nadzw. dr hab. n. med. Leopold Wagner  
prof. dr hab. n. med. Kazimierz Szopiński  
prof. dr hab. n. med. Małgorzata Zadurska  
dr hab. n. med. Izabela Strużycka  
dr hab. n. med. Maciej Czerniuk  
dr hab. n. med. Jolanta Kostrzewa-Janicka  
dr hab. n. med. Agnieszka Mielczarek  
mgr Bartłomiej Polaczyk

**Coordinator:**

Katarzyna Jończy

**Scientific patronage:**

National Consultant in Oral and Maxillofacial Surgery Mariusz Szuta MD PhD  
Polskie Towarzystwo Stomatologiczne  
Polskie Towarzystwo Periodontologiczne  
Polskie Towarzystwo Ortodontyczne  
Polskie Towarzystwo Stomatologii Dziecięcej



[41]

### **Influence of storage conditions of alginate mass impressions on their spatial dimensions**

Daniel Surowiecki, Michał Tyrajski

michaltyrajski@gmail.com

Students' Scientific Group, Department of Prosthodontics, Medical University of Warsaw

**Trustee of the paper:** lek. dent. Marcin Szerszeń

**Introduction:** Alginate masses, due to their numerous advantages, are still one of the most common impression materials in prosthetic treatment. Storage conditions of alginate impressions are crucial for stability of its dimensions. In everyday practice, prosthetic laboratories are rarely a part of dental offices, what makes reasonable to determine the optimal conditions for storing impressions made with alginate masses.

**Aim of the study:** To investigate the following issues: 1. Does the variation of storage conditions affect the dimensions of the tested samples made from alginate mass? 2. To what extent does humidity affect the parameters of the tested samples? 3. What is the influence of the storage temperature on the dimensions of the samples?

**Material and methods:** A silicone form was prepared for making cubic blocks. The form was filled with Hydrogum 5 (Zhermack, Italy) alginate mass, made in the proportion recommended by the manufacturer. In this way, forty alginate samples were created, subsequently divided into eight groups relative to their storage environment. Dimensions of the cubes were measured using an electronic vernier caliper, with an accuracy of  $\pm 0.02$  mm. Storage conditions - humidity, room temperature and temperature in the refrigerator, were controlled by two digital hytherographs. The cubes were stored under different conditions including increased humidity, dry or submerged in water or alcohol disinfectant solution. After 24hrs and 144hrs (6 days) measurements of cubes were taken by the same operator, using the same tool and taking into account the same measuring sites. The results were analyzed using descriptive statistics as well as Kruskal-Wallis test.

**Results:** The lowest mean dimensional change after 24 hours was found in the group of samples stored at a reduced temperature and humidity of 65%. Measurements after 6 days showed storage at the same humidity, but at room temperature, to be the best if the original dimensions of the samples are to be preserved. The largest dimensional change was noted during the storage of alginate mass without increasing the ambient humidity, as well as in the alcohol-based solution of the disinfecting liquid.

**Conclusions:** 1. Increased humidity ensures the smallest change of the dimensions of impressions taken using alginate mass. 2. Lowering the storage temperature positively influences the dimensions of the tested samples. 3. Alcohol-based disinfectants should not be used for storing alginate impressions because they reduce the size of the tested samples.

[42]

### **The oral health awareness among the residents of Warsaw**

Magdalena Batko, Karolina Świdorska

magdalenambatko@gmail.com

Medical University of Warsaw, Department of Periodontology

**Trustee of the paper:** Prof. Renata Górka MD PhD, Andrzej Miskiewicz PhD, MD, GDP

**Introduction:** The most common among adult patients periodontal diseases include gingivitis and chronic periodontitis. The etiopathogenesis of chronic periodontitis includes the formation of supragingival plaque and changes in subgingival biofilm. The progression of periodontal disease leads to the loss of the alveolar bone and the connective tissue attachment. The study is a part of the national research in the field of periodontal disease. This study takes into account the patients' attention to oral hygiene, general condition of periodontal tissues, treatment needs and preparation of a preventive program.

**Aim of the study:** The aim of the study was to provide evidence for oral health awareness among the residents of Warsaw.

**Material and methods:** A carefully prepared questionnaire has been used as a screening test among hundreds of patients. We have taken into our analysis 370 completed questionnaires. The study included the information about patients such as: age and gender, place of residence, degree of education, body mass index, nicotine use and diabetes. Patients' hygienic habits were also taken into account. Patients were also asked about their number of teeth, gums bleeding and the presence of the leukoplakia on the tongue. The statistical analysis of the results was developed by mean of Statistica 13.1. We have considered statistically significant values for which the significance level was  $p < 0.05$ .

**Results:** There is a statistically significant correlation between risk factors and the number of teeth. One of the most crucial factor influencing the state of periodontium is an oral hygiene. Most patients brush their teeth twice a day. The frequency of brushing teeth decreases with age. The results revealed that the use of soft and hard fiber brushes is unfavorable. There is a positive correlation between use of electric or sonic and interdental toothbrush and the number of teeth. The quarter of patients use the dental floss everyday. Most of the respondents do not use it at all. Older patients often use toothpicks but rarely use a dental floss and mouthwash. The majority of patients have visited the dentist in the last 6 months. There is a deep correlation between the social status and the health awareness.

**Conclusions:** It is essential to explain that the hygienic and dental negligence can have an adverse health effect. Patients with periodontal diseases need systematic control. Due to screening examinations it is possible to determine early detection and treatment among the patients with periodontal disease.

[43]

#### **A self-reported parental behaviour and attitude toward children's oral health in Saudi Arabia, Jeddah city**

Fahd Sijari

fahd\_a\_1@hotmail.com

Lithuanian University of Health Sciences, Clinic for preventive and pediatric dentistry

**Trustee of the paper:** DMD. Petrauskiene Sandra

**Introduction:** Parental health attitude toward child's oral health has a major role in oral diseases prevention of the child. A proper oral health behavior such as regular tooth brushing of teeth can reduce the prevalence of dental caries.

**Aim of the study:** To evaluate parental behavior attitudes towards their children's oral health.

**Material and methods:** A cross-sectional study of 114 participants (mean (M) =37.12; Standard deviation (SD) =10.10) was carried out in Saudi Arabia-Jeddah city, in dentistry department of private Ghassan Najeeb Pharaon hospital (GNP) from December till January of 2018/2019 year. The anonymous self-administered questionnaires were given to parents with children aged 3-15 years (mean (M) =7.81; Standard deviation (SD) =3.01) prior consultation with pediatric dentist. The questionnaire covered background characteristics, parental smoking habits, oral hygiene habits of parents and child, attitude toward child's oral health. The study was approved by the Bioethics Center of the Lithuanian University of Health Sciences (No BEC-OF-14). Statistical data analysis was performed using SPSS 22 version. To establish relationships between categorical variables, the Pearson ( $\chi^2$ ) test was used. P-value  $\leq 0.05$  was set to indicate statistically significant differences. The logistic regression analysis evaluated probability of an event given a certain risk indicator/s, including odds ratio (OR) and its confidence interval (95%CI).

**Results:** Considering to the relation to child, 50.9% were mothers and 48.2% were fathers. A majority of participants (78.9%) was with university education. 76.3% of participants were non-smokers regarding to smoking habits. Associations were found among non-smoking (OR =2.672[1.040-6.868]) (p=0.041), child's tooth brushing twice-a-day (OR=4.013[1.472-10.941]) (p=0.007) and parental tooth brushing twice-a-day, respectively. Associations were found between self-reported oral health status of child (OR =3.402[1.333-8.684]) (p=0.008), satisfaction of child teeth appearance (OR=3.497[1.494-8.186]) (p=0.007) and child's tooth brushing twice-a-day, respectively.

**Conclusions:** A significant relationship was found between parental attitude toward oral hygiene and oral behavior. The parents brushing their teeth regarding to recommendations cleaned their child's teeth likewise. Furthermore, a self-reported oral health status and satisfaction of child teeth appearance were strongly associated with tooth brushing habits of the child.

[44]

#### **Identification of abnormal changes in the upper respiratory tract in patients with decreased occlusal vertical dimension with cone-beam computed tomography scan**

Dvoretzkii Nikita, Grigorian Andrey, Alexandr Romanov, Petr Geletin

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Petr Geletin, MD, PhD

**Introduction:** Upper respiratory tract disorders require joint treatment of various medical specialists, such as dentists, neurologists and ENT doctors that makes treatment more complicated. Unfortunately, the necessity of referring those patients to dentists is often ignored. However, early detection of morphological changes in the upper respiratory tract in patients with decreased occlusal vertical dimension is a key aspect not only for treatment planning but also to prevent respiratory diseases such as obstructive sleep apnea and laryngeal stenosis.

**Aim of the study:** The aim of study was to identify correlation between the decreasing of occlusal vertical dimension and morphofunctional abnormalities of the upper respiratory tract with a cone-beam computed tomography scan.

**Material and methods:** The study involved CT-examination of 123 patients aged 35-54. Experimental group included 63 patients with increased tooth attrition (1/3-2/3 of the crown) and decreased occlusal vertical dimension. The control group consisted of 60 patients without any occlusal disorders. In our study we used cone-beam computed tomography scanner PICASSO EPX –Impla to estimate the state of the upper respiratory tract. The scanner had a generator that produced a cone beam and a planar sensor receiving the image. The amperage and anode voltage are 3-8 mA and 70-90 kV respectively. Ray exposure is 30-70  $\mu$ Sv. The data was statistically processed.

**Results:** After processing the data the following results were obtained: in 83% of the experimental group patients the upper respiratory tract narrowing was revealed. That may cause the mandibular offset in different directions. At the same time, just 10% of control group had the narrowing of the upper respiratory tract.

**Conclusions:** Overwhelming majority of studied patients with increased tooth attrition and decreased occlusal vertical dimension suffer from narrowing of the upper respiratory tract. Obtained results lead us to the comprehension that we should take into account the state of the occlusal vertical dimension to treat patients with respiratory disorders, especially with narrowing of the upper airways.

[45]

#### **Awareness of the hygienic regimen in patients using removable dentures- a questionnaire study**

Olga Rybińska

olgarybinska@gmail.com

Students' Scientific Group, Department of Prosthodontics, Medical University of Warsaw

**Trustee of the paper:** lek. dent. Marcin Szerszeń

**Introduction:** Removable prosthesis are very common in Polish elderly society. Correct hygiene plays a significant role in using removable dentures. Recommendations for dentures' using and hygiene has changed over the years, but current rules were established long time ago.

**Aim of the study:** The aim of the study is to evaluate patients' knowledge about hygiene of removable dentures depending on the time of making last prosthesis.

**Material and methods:** The study involved 100 randomly selected patients receiving treatment in the Department of Prosthodontics, Medical University of Warsaw. The survey included 9 single choice questions considering the time of making last prosthodontic treatment and hygienic and using habits.

**Results:** According to survey collected so far, most patients (over 63%) store their dentures at night in dry surroundings, but unfortunately 21% of them store them in water or other solutions. Despite the recommendation of brushing prosthesis with toothbrush and soap, over 44% of the patients wash them with toothpaste. The vast majority of patients (over 94%) come to appointment to prosthodontist only if they have a problem with their dentures. Only 5,7% declared to come for a supervision regularly.

**Conclusions:** In conclusion, patients using removable dentures should have prosthetics supervisions at least once a year. Every appointment each patient should be reminded of recommendations in using and hygiene of removable prosthesis.

[46]

#### **Subjective evaluation of dental care among Warsaw population - a questionnaire study**

Anna Wojewódzka, Michał Tyrajski

annawoje94@gmail.com

Students' Scientific Group, Department of Prosthodontics, Medical University of Warsaw

**Trustee of the paper:** lek. dent. Marcin Szerszeń

**Introduction:** Well-known is the fact that achieving success in dental treatment requires cooperation between dentist and the patient, hence understanding patient needs and expectations is crucial. Suitable treatment helps to establish and to increase patients' trust in GDP's authority.

**Aim of the study:** The aim of the study was to gather subjective opinions of underwent dental care among Warsaw population in order to improve quality of provided treatment as well as observe patients' attitude towards dental practitioners. Such survey may help meet patients' expectations of professional dental care.

**Material and methods:** One hundred and fifty questionnaires were distributed during VIIIth Warsaw Medical University Picnic Dentistry stand visitors. After excluding 18 surveys, because of lacking data, 132 were taken into consideration. Each survey consisted of 11 questions of multiple choice concerning: frequency and causes of dental visits, patients expectations of GDP and regarding time of the visit, main complaints, satisfaction from dental treatment, and subjective evaluation of present cooperation with dentist. Results were analyzed and compared respecting sex and age of respondents.

**Results:** According to survey, most patients presents regularly for a check-up visit, however, half of men tend to visit the dentist "only, when it's necessary". Main complaint differs with age and sex of respondent, nonetheless the general expectation of GDP is to "take care of my health" which suggest a need for holistic treatment covering all aspects of dental care such as aesthetics, hygiene and functionality. Unfortunately, half of the patients expect the visit to be shorter than 30 minutes, which correlate with lack of time being the main factor of avoidance of dental visits. Majority of respondents are also satisfied with the final effect of the treatment, however two-thirds of them claim that satisfactory treatment is not refunded by National Health Fund thus they are willing to invest into treatment to obtain desirable effect. Fortunately, only about 10% of respondents are not convinced that their GDP is trustworthy and doubt the course of treatment.

**Conclusions:** In conclusion, this study helps us understand and meet the expectations of patients who search for optimal dental care, depending on their age and sex. Results from this survey may be a guidance for establishing a good rapport between GDP and the patient.

[47]

#### **Compatibility of digital design and final prosthetic restoration assessed using reverse engineering**

Agata Walczyk, Daniel Surowiecki DDS, Roman Grygoruk PhD Eng  
agata.walczyk5@gmail.com

Medical University of Warsaw/ Department of Prosthetic Dentistry

**Trustee of the paper:** Kamila Wróbel-Bednarz PhD DDS

**Introduction:** Digital workflow in dentistry has increased in recent years. The analysis of the digital procedures is crucial to understand the impact of the actual digitalization trend in the field of prosthodontics. Data in the literature and own research shows that fully digital workflow is clinically acceptable. Before a full recommendation of digital techniques, it is advisable to carry out a thorough analysis of the accuracy of the used procedure

**Aim of the study:** The aim of the study was to compare compatibility of digital design of the dental crown with ready-made prosthetic restoration made in the DMLS technique.

**Material and methods:** Ten teeth have been prepared in order to create prosthetic crowns. Intraoral scanning have been performed. Once the crowns were designed using 3Shape Desktop software they were sent digitally to EOS M100 device. The metal substructure were made using selective laser sintering technique. The next step was to scan ten prosthetic crowns with the GOM optical scanner. The obtained mesh was used to create CAD model, which was compared with a project generated in the 3Shape programme.

**Results:** The results of models comparisons were obtained graphically in the form of „heat-maps”, which have been described for every single tooth.

**Conclusions:** The comparison of models shows slight deviations that required clinical verification. There are indications for further research to determine if the deviation affects the quality of the restoration.

[48]

#### **Evaluation of anthropometric face parameters in 10-16 year old lithuanian children with impacted maxillary permanent canine (-s). Pilot study**

Ona Nagreckaitė  
onutenagreckaite@gmail.com

Vilnius University Faculty of Medicine Institute of Dentistry

**Trustee of the paper:** Rūta Almonatienė

**Introduction:** The maxillary permanent canine impaction frequency is 0,9-3%. The condition is more than twice as common in girls as in boys. Because patients with canine impaction usually have complications and longer treatment time, early diagnosis is crucial to the orthodontist. Some studies estimated facial bone parameters using CT scans, panoramic and lateral cephalometric radiographs but none of them evaluated external face parameters. This is the first study done in Lithuania that does evaluate external face parameters.

**Aim of the study:** The aim of this pilot study is to determine whether impaction of a maxillary permanent canine can be predicted by measuring external face parameters.

**Material and methods:** A prospective research was performed in Vilnius University Hospital Žalgiris Clinics. Thirty patients with unilateral or bilateral impacted maxillary permanent canine age 10 to 16 were investigated. Research group consisted of 8 boys and 22 girls. The study was carried out by one person ( $r = 0,99$ ) using anthropometric instruments: spreading and sliding calipers, measuring tape (1mm) in order to measure the face parameters of children with impacted maxillary canines and to compare it with the control group. Control group data was taken from a large cross sectional anthropometric study on facial growth, carried out in Lithuania. Statistical analysis was performed with SPSS 21.0, MS Excel 2016 programmes.

**Results:** Initial study showed that in both genders and all age groups the medians of the participants height of lateral dermal part of upper lip and width of philtrum are below the 50 percentile comparing to the same parameters of the control group. 22 of 30 (73,3%) participants have face width that is below the 50%. The study also showed that depth of lower and middle third of the face in the research group is smaller than in control group. Moreover, 86,36% of 10-16 year old girls have lower depth of upper third of the face value than control group. From them, 36,36% are below the 5%. Differently, the medians of intercanthal and nose widths are both above 50% in all boys age groups.

**Conclusions:** The tendency towards significantly lower values for sagittal and transversal facial measurements and lip parameters in children with impacted maxillary permanent canine has been found. Depth of the middle and lower thirds of the face, face width as well as philtrum width showed the most difference between control and study group.

[49]

#### **The Oral Health Habits and Modifying Factors of Mothers of Young Children in Urban Areas in the United States and Poland – A Questionnaire Study**

Dominique Gnatowski, Steven Hamati

dominiuegnatowski@gmail.com

Medical University of Warsaw/ Department of Pediatric Dentistry

**Trustee of the paper:** Anna Turska-Szybka, DDS, PhD

**Introduction:** In the U.S. and Poland, early childhood caries (ECC) in children is still a health concern.

**Aim of the study:** To compare the oral health habits and modifying factors of both American and Polish mothers and their children.

**Material and methods:** Surveys consisting of 49 questions were given to mothers from Philadelphia (USA) and Warsaw (Poland). Statistical analyses including Spearman correlations were made using Statistica 12.

**Results:** There were 500 Polish and 504 American surveys collected. The average age of Polish and American mothers was  $39.0 \pm 6.5$  and  $37.7 \pm 8.6$  ( $p=0.008$ ). 47.2% of Polish and 42.3% of American mothers had a graduate level of education and 91.8% and 88.3% were in the middle class ( $p>0.05$ ). In Poland 26.4% and in the U.S. 17.3% of mothers cleaned their children's toothless mouths after feeding and before bed. When the first teeth appeared, 80.7% and 47.8% of mothers started cleaning their children's teeth ( $p<0.05$ ). In both countries if mothers had systemic diseases they were more likely to breastfeed for a shorter time ( $p=-0.173$ ,  $p=-0.011$ ). As a Polish mother's education level and social status increased smoking during pregnancy ( $p=-0.260$ ,  $p=-0.207$ ) and breastfeeding decreased ( $p=-0.270$ ,  $p=-0.206$ ). In Poland, the higher the education and status of a mother, the earlier she started cleaning her children's teeth ( $p=-0.270$ ). Similarly, with U.S. mothers ( $p=-0.196$ ), but without the social status correlation.

**Conclusions:** In Poland, a higher percentage of mothers cleaned the child's toothless mouth after feeding and before bed as compared to the U.S. However, they did not start brushing the children's teeth immediately after the appearance of the first tooth.

[50]

### **Influence of disinfectant solutions on spatial dimensions of alginate mass impressions**

Michał Tyrajski, Daniel Surowiecki, Wojciech Poniewierski

michaltyrajski@gmail.com

Students' Scientific Group, Department of Prosthodontics, Medical University of Warsaw

**Trustee of the paper:** lek. dent. Marcin Szerszeń

**Introduction:** One of the most important things of conducting dental office is the prevention of cross-contamination and appropriate care for the disinfection of tools and used materials. This also applies to impression materials sent to the prosthetic laboratory, which are in contact with saliva in the patient's oral cavity, and often also with blood. It is generally accepted, that after taking the impression and rinsing it with running water, it should be disinfected with a spray or immersed in a specially prepared solution. However, only a few publications that focus on the impact of disinfectants on spatial dimensions of alginate impressions have been found in the literature, what makes it reasonable to conduct such a study.

**Aim of the study:** To investigate the influence of disinfectants available on the market on spatial dimensions of samples made of alginate mass.

**Material and methods:** Metal cubic forms with internal dimensions of 27mm x 27mm were used to make alginate samples. The molds were filled with Kromopan alginate mass (Lascod, Italy), made by hand in the proportion recommended by the manufacturer. 90 blocks were prepared, divided into three groups, due to the type of used disinfectant. Before using the disinfectant, the dimensions of the samples were measured using an electronic vernier caliper with an accuracy of  $\pm 0.02\text{mm}$ . Storage conditions - increased humidity (65%) and in a reduced temperature ( $7.5^\circ\text{C}$ ), determined as the best for storage of alginate masses, were controlled using a stationary hytherograph Blow TH103. The cubes were disinfected with Zeta 7 Spray (Zhermack, Italy) and Zeta 7 Solution (Zhermack, Italy). After 24 h and 120 h (5 days) measurements of cubes were taken by the same operator, using the same tool.

**Results:** As expected, the dimensions of all samples decreased, however, in individual groups these changes differed from each other. The study showed a larger reduction in the size of the samples sprayed with Zeta 7 Spray compared to the control group rinsed in water and samples immersed in the Zeta 7 Solution. In order to determine the significance of differences between all the examined groups, a ANOVA and Sheffe statistical tests were performed, with assumed significance level of  $\alpha < 0.05$ .

**Conclusions:** Disinfecting samples with Zeta 7 Spray results in greater shrinkage and spatial dimensions change of alginate impressions, compared to control group that was only rinsed in water and to group of samples submerged in Zeta 7 Solution.

[51]

### **Impact of 3D printing specifications on accuracy of 3D printed surgical guides**

Marta Czajkowska

mrtczajkowska@gmail.com

Dentistry Division, Medical University of Warsaw

**Trustee of the paper:** PhD Łukasz Zadrozny

**Introduction:** A number of studies show that using surgical guides templates ways out problems with accuracy and repeatability of dental implantation procedures. Analysis of in vitro studies and systematic review leads to the conclusion that using individual guides is the best way to achieve treatments effects which are accuracy and in line with plan of the treatment.

**Aim of the study:** 1. Estimate impact of 3D printing specifications on accuracy of 3D printed surgical guides.

**Material and methods:** Patient data, required for implant treatment, like image of mandible from CBCT and virtual model of soft tissue and teeth, were used to prepare complete virtual model of patient clinical conditions. For this purpose the Software (DDS-Pro software) for virtual planning treatment was used. The same software was used for supporting diagnosis process and surgical guide designing. The model of the bone was saved as STL file and 3D printed at a SONDASYS SL01 device in SLS technology (Sondasys, Poland). Also surgical guide was 3D printed using a technical resin at the Vida printer (EnvisionTEC, USA) with various specification of manufacturing:

- singly, horizontally,
- singly, at an angle,

- doubly, at an angle.

**Results:** As a result four surgical guides was printed. All of them precisely matched to the model of mandibula.

**Conclusions:** Within the limitations of this study, the following conclusion was drawn:

1. As far as manufacturer's instructions are used, 3D printing specifications do not have impact on 3D printed surgical guides accuracy.

[52]

### **The Oral Health Habits and Modifying Factors of Mothers of Young Children in Urban Areas in the United States and Poland – A Questionnaire Study**

Dominique Gnatowski, Steven Hamati

dominiquegnatowski@gmail.com

Medical University of Warsaw / Department of Pediatric Dentistry

**Trustee of the paper:** Anna Turska-Szybka, DDS, PhD

**Introduction:** In the U.S. and Poland, early childhood caries (ECC) in children is still a health concern.

**Aim of the study:** To compare the oral health habits and modifying factors of both American and Polish mothers and their children.

**Material and methods:** Surveys consisting of 49 questions were given to mothers from Philadelphia (USA) and Warsaw (Poland). Statistical analyses including Spearman correlations were made using Statistica 12.

**Results:** There were 500 Polish and 504 American surveys collected. The average age of Polish and American mothers was  $39.0 \pm 6.5$  and  $37.7 \pm 8.6$  ( $p=0.008$ ). 47.2% of Polish and 42.3% of American mothers had a graduate level of education and 91.8% and 88.3% were in the middle social class ( $p>0.05$ ). Of Polish and American mothers 52.8% and 59.1% did not have dental caries during pregnancy or breastfeeding ( $p<0.05$ ). Polish (80.0%) and American (92.7%) mothers received instructions about caring for children's oral health: 55.3% and 46.3% from the dentist and 56.5% and 46.3% from the pediatrician ( $p<0.05$ ). 76.1% of American children above 3-4 years, never had dental caries but 43.1% of Polish children had caries ( $p<0.05$ ). In Poland 26.4% and in the U.S. 17.3% of mothers cleaned their children's toothless mouths after feeding and before bed. When the first teeth appeared, 80.7% and 47.8% of mothers started cleaning their children's teeth ( $p<0.05$ ). In both countries if mothers had systemic diseases they were more likely to breastfeed for a shorter time ( $p=-0.173$ ,  $p=-0.011$ ). As a Polish mother's education level and social status increased smoking during pregnancy ( $p=-0.260$ ,  $p=-0.207$ ) and breastfeeding decreased ( $p=-0.270$ ,  $p=-0.206$ ). In Poland, the higher the education and status of a mother, the earlier she started cleaning her children's teeth ( $p=-0.270$ ). Similarly, with U.S. mothers ( $p=-0.196$ ), but without the social status correlation.

**Conclusions:** Mothers received instructions from both the dentist and pediatrician about caring for their children's oral health. In Poland, a higher percentage of mothers cleaned the child's toothless mouth after feeding and before bed as compared to the U.S. However, they did not start brushing the children's teeth immediately after the appearance of the first tooth. A higher incidence of caries was reported in Polish children than in American children.

[53]

### **Restoration of microcirculation in the marginal periodontium in different shoulder level after dental preparation for full aesthetic crowns**

Alexandra Minaeva, Mikhal Serdiukov, Boris Minaev, Nikolay Abolmasov

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof. Nikolay Abolmasov, MD, PhD

**Introduction:** The longevity and quality of the denture depend on the impression. The best option is to take an impression after a complete recovery of the marginal gingiva. Regeneration is known to depend on microcirculation in tissues. So, the parameters of microcirculation can be objective and valuable criteria to determine the time of taking impressions.

**Aim of the study:** The aim of the study was to identify the optimal time to take precision impressions after dental preparation, taking into account the state of microcirculation in the marginal periodontium.

**Material and methods:** The study involved 3 groups of patients (n=90). The patients underwent dental preparation for full aesthetic crown. In the Group 1 preparations were carried out with shoulder located at the level of the gingival margin. In Group 2 preparation was made with shoulder located subgingivally, taking into account the biological width. Group 3 had gingivectomy before dental preparation. The study of microcirculation of the marginal periodontium was performed with laser Doppler flowmetry with a diagnostic complex "LAKK-M". The following parameters were estimated: vascular tone, intravascular resistance and blood microcirculation index. The measurements were carried out during primary examination, immediately after teeth preparation or gingivectomy and in 1, 7, 14, 21 days and 6 months after the procedure. The data was statistically processed using student's T-test.

**Results:** The shortest terms of the blood flow recovery were observed in group I patients ( $7 \pm 0$ , 29 days), intravascular resistance and vascular tone returned to normal in  $21 \pm 1,34$  days. In group II the normalization of all parameters occurred later in  $21 \pm 1,82$  days.

Changes of parameters in group III were more significant than in groups I and II. After gingivectomy microcirculation index increased sharply and intravascular resistance decreased. Stable recovery of microcirculation parameters to the initial values was observed on 7, 14, 21 days, and their full recovery was recorded only after 6 months ( $176 \pm 4,13$  days).

**Conclusions:** Thus, optimal time for taking impressions can be determined. In cases with shoulder location above the gum or at the same level with it, taking impressions can be performed immediately after the preparation. In the cases with subgingival shoulders, even in compliance with gentle preparation, impressions should not be taken as early as in 21 days. After gingivectomy we don't recommend to take an impression earlier than in 6 months.

[54]

#### **The age groups of risk in female patients with internal disorders and inflammatory-degenerative disorders of TMJ**

Denys Shtybel, Ruslan Kulinchenko, Viktor Kukhta  
denys.shtybel@gmail.com

Danylo Halytsky Lviv National Medical University / Department of Prosthetic dentistry

**Introduction:** Clinical differential diagnosis of certain forms of temporomandibular disorders (TMD) is significantly complicated by both each other and diseases imitating them (R. Kulinchenko, V. Makeyev, 2016). Symptoms of some forms of TMD could be superimposed on signs of other forms, which prompt a doctor to engage additional criteria for the differentiation.

It is a common statement that a peak of the age distribution of TMD patients is between the age of 35 and 45 (Leresche L, Drangsholt M., 2008). However, it has been recently suggested that the age peak is not the same for diverse TMD, with significantly different prevalence peaks for internal disorders (ID) and inflammatory-degenerative disorders (IDD) (D. Manfredini, 2010), that include osteoarthritis and osteoarthrosis.

**Aim of the study:** To improve the quality of differential diagnosis of ID and IDD of temporomandibular joints (TMJ) by determining the age groups of risk in females for both pathologies.

**Material and methods:** A group of 131 female patients diagnosed with ID of TMJ (group 1) and a group of 85 female patients diagnosed with IDD of TMJ (group 2), which has been referred during the period from 2015 to 2018, was involved in the study. Women's age of the group 1 was from 12 to 64 y.o., group 2 – from 17 to 84 y.o. Quartiles and the Mann–Whitney U-test has been used to assess statistical data.

**Results:** It was revealed  $Q1=20$  years and  $Q3=37,5$  y. with median on 27 y. in the first group. In the second group  $Q1=33$  y.,  $Q3=56$  y. with median on 48 y. The Mann–Whitney U-test confirmed significant difference ( $p < 0.001$ ) in obtained results in two groups. The mean age of the group 1 shifted to 5 years, group 2 – 6 years in the direction of younger age comparing to literature data (mean age equal to 32,7 y. and 54,2 correspondingly by D. Manfredini, 2010). The mean age discords with literature data due to the fact that both men and women were included in D. Manfredini's investigation. The divergence in the results also may be due to the methodological issues and regional features of the course of ID and IDD in women.

**Conclusions:** The age group of risk in female patients with internal disorders of TMJ was determined at the range from 20-37,5 years, with inflammatory-degenerative disorders of TMJ – 33-56 years. Considering the fact of significant difference ( $p < 0,001$ ) in the age groups of risk in female patients with internal disorders and with inflammatory-degenerative disorders of TMJ, age can be used as differential diagnostic criteria of TMD in women.

[55]

### **USG parameters of TMJ and masseter muscles in norm for males and females of age 18-24 years**

Olha Levytska, Ruslan Kulinchenko, Oleksii Dutchak

super\_olha1@ukr.net

Danylo Halytsky Lviv National Medical University / Department of Prosthetic dentistry

**Introduction:** For a qualified and fast diagnostic of temporomandibular disorders (TMD) it is necessary to standardize mean values of parameters of ultrasonography (USG) of TMJ for different age groups (A. Duaro et al., 2017). Authors emphasize the necessity of paying extra attention to the age group of 18-24 years (J. McDonagh, 2018).

**Aim of the study:** To improve the quality of diagnosing of TMD by determining the norms for USG parameters of TMJ and masseter muscles.

**Material and methods:** The protocols of TMJ USG examination of 63 volunteers in the age 18-24 years were analyzed. 23 females (group 1) and 24 males (group 2) with normal occlusion, without symptoms of TMD and periodontal diseases were involved in the study. The following USG parameters were studied: thickness of disk over the articular condyle, width of the articular fissure in anterior part of TMJ, amplitude of the forward condylar translation, thickness of masseter muscle at rest, percentage of masseter muscle thickening at contraction. Average values of USG parameters for right and left TMJs were calculated for both groups.

**Results:** No significant differences were found in the left and right TMJs ( $p > 0,05$ ) both in male and in female group. The calculated mean values of USG parameters are: thickness of disk over the articular condyle  $0,97 \pm 0,03$  mm (f.) and  $1,11 \pm 0,03$  mm (m.); width of the articular fissure in anterior part of TMJ  $0,96 \pm 0,03$  mm (f.) and  $1,08 \pm 0,04$  mm (m.); amplitude of the forward condylar translation  $13,72 \pm 0,18$  mm (f.) and  $13,65 \pm 0,24$  mm (m.); thickness of masseter muscle at rest  $9,61 \pm 0,19$  mm (f.) and  $11,37 \pm 0,19$  mm (m.); percentage of thickening of masseter muscle at contraction  $24,56 \pm 0,95$  % (f.) and  $26,83 \pm 0,61$  % (m.). There was significant difference of USG parameters in male and female groups ( $p < 0,05$ ), except amplitude of the forward condylar translation ( $p > 0,05$ ). Comparing the results with the data of other authors, there was the difference in amplitude of the forward condylar translation (12,7mm by C. Landes, 2017) and in thickness of the masseter muscle at rest (men - 10mm, women - 8mm by M. Palinkass et al., 2010). It is possibly connected with the less number of persons in researches.

**Conclusions:** Calculated mean values of conventional USG parameters of TMJ for males and females in the age of 18 to 24 years are essential in improving the quality of diagnostic of TMD by USG. Significant difference of single USG parameters in males and females points out the necessity to consider sex-features during the ultrasound examination of the patients with TMD.

[56]

### **Manifestations of arthritis of temporomandibular joints in women based on the complaints and medical histories**

Yuliia Stetska, Ruslan Kulinchenko, Viktor Kukhta

julia.steskaya@gmail.com

Danylo Halytsky Lviv National Medical University / Department of Prosthetic dentistry

**Introduction:** Arthritis of TMJ in age group 9-90 years range from 28% to 38% and the risk of the disease increases with age (F. Massilla, S. Satha, 2016). Other authors indicate that TMJ arthritis is approximately twice as prevalent in women than in men (Robinson L. et al., 2012, Xue X.T. et al., 2017). Researchers point out the need to improve diagnostic algorithms and timely detection of arthritis of TMJ (M. Bansal, 2016).

**Aim of the study:** To improve the diagnostic quality of TMJ arthritis by identifying the typical manifestations of the disease.

**Material and methods:** Medical records of 46 women with arthritis of TMJ, applied to the department of orthopedic dentistry during the period 2015 to 2018, were analyzed. 22 patients that had simultaneously arthritis and other articular disorders of TMJ were excluded from the study. Group of study included 24 persons with arthritis of TMJ aged from 17 to 77 years. Complaints and medical history data of patients were entered into the Microsoft Excel spreadsheet. The proportion of patients with each identified complaint and sign of disease was calculated.

**Results:** Manifestations of 28 various complaints and signs of the disease were revealed in the study group. It was determined that the proportion of patients with the complaint about the pain during chewing in TMJ area was  $67.86 \pm 8.99$ %. The fractions of patients with complaints about the pain during mouth opening and

spontaneous pain in TMJ area were  $60.71 \pm 9.40\%$ . The proportion of patients with the complaint about limited mouth opening was  $57.14 \pm 9.52\%$ . The proportion of patients with the complaint about noise in the TMJ was  $50.0 \pm 9.62\%$ . Other complaints and signs of arthritis of jaw joints were much less common. Similar results have been obtained by other authors. Ferrazzo K.I. (2013) claimed the most common sign of TMJ osteoarthritis is limited jaw movement. According to Kristensen M. (2017) individuals with TMJ osteoarthritis report pain at mouth opening, clicking and crepitus more frequently comparing with other signs of disease.

**Conclusions:** The obtained results confirm that TMJ arthritis have no pathognomonic manifestation, that greatly complicates their clinical diagnosis. The most common manifestations of the disease are complaints about the pain at the joint area during chewing, mouth opening, spontaneous pain, restriction of the jaw joint function, and noise in the TMJ. The outlined group of complaints allows the dentist to suspect timely the course of TMJ arthritis in the daily practice.

[57]

#### **Calcium and phosphorus analysis of pregnant's women saliva**

Butvilovsky Aleksander, Bulatova Viktoriya, Volchok Anastasia

nastyavolchok072000@mail.ru

Belorussian State Medical University

**Trustee of the paper:** Butvilovsky Aleksander, Bulatova Viktoriya, Volchok Anastasia

**Introduction:** The risk of caries is increasing during pregnancy. A change of the saliva biochemical components during this period affects on enamel and it's resistance to microorganisms of the oral cavity. It is necessary to prevent dental caries. The change of calcium and inorganic phosphorus concentration in saliva of pregnant women in the Republic of Belarus and comparison getting data with standard indicators isn't made and it's represented relevance.

**Aim of the study:** To determine calcium and phosphorus concentration in pregnant's women saliva.

**Material and methods:** Saliva is gotten from 20 pregnant women in volume of 1,5 ml during dental appointment at the a.m. The final stage was made in the analytical laboratory of chemical department of BSU. Calcium concentration was identified by photometric method with o-cresolphthaleincomplexon on the spectrophotometer SOLAR at the wavelength of 574 nm. Phosphorus concentration was identified by reaction with ammonium molybdate on the spectrophotometer SOLAR at the wavelength of 340 nm. Calculation of getting data was made in program STATISTIKA 10.0.

**Results:** Mediana of getting calcium concentration was 0,457 (0,316-0,626) mmol/l, inorganic phosphorus 4.810 (3,583-5.750) mmol/l. Molar ratio of Ca/P was 0,09. Getting results are comparable to the literature for this group of patients. Analysis of the first and the second semester showed that in the first semester mediana of calcium concentration was 0,457 (0,316-0,515) mmol/l, inorganic phosphorus 4,828 (3,890-5,750) mmol/l, in the second semester mediana of calcium concentration was 0,488 (0,382-0,793) mmol/l, inorganic phosphorus - 4,366 (3,583-5,342) mmol/l. The assessment of difference between the first and the second semester is statistically insignificant by Mann-Whitney's criterion  $p = 0,610$  and  $p = 0,746$  accordingly.

**Conclusions:** Calcium and phosphorus concentration in saliva of studied pregnant women are on the low end of normal.

[58]

#### **Comprehensive diagnostics in «burning mouth syndrome» in patients with somatic pathologies**

Victorya Litvinenko, Andrey Verkhovskiy, Nikolay Abolmasov

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Andrey Verkhovskiy, PhD; professor Nikolay Abolmasov, MD, PhD

**Introduction:** Dental construction materials are known to interact with the tissues of the oral cavity and the whole body itself. It often results in such an antagonism which is called the «burning mouth syndrome», due to the effects of electrochemical processes in persons with metal dentures with underlying to chronic somatic diseases. In such cases special methods of research are used to confirm the diagnosis, in particular, biopotentialometry and the determination of the oral fluid pH.

**Aim of the study:** Aim of the study was to assess effectiveness of biopotentialometry in combination with determination of the oral fluid pH while diagnosing the «burning mouth syndrome» in patients with somatic diseases.

**Material and methods:** Our study involved comprehensive examination, treatment and prosthetics of 72 patients with «burning mouth syndrome» aged 43–67 using metal dentures. Besides routine methods of dental examination, all patients underwent biopotentialometry, determination of oral fluid pH, as well as additional laboratory studies. Some procedures of clinical examination were also used.

**Results:** The study disclosed significant differences in biopotentials values the oral fluid pH were in 87% patients with «burning mouth syndrome» suffering from gastrointestinal tract diseases and in 71% patients with diseases of the endocrine system. There was no correlation between the studied indicators in individuals with neurological disorders and cardiovascular pathology. Threshold values of the difference in biopotentials for complaints and clinical manifestations in the oral cavity in patients were from  $50.2 \pm 2.3$  to  $78.9 \pm 3.1$  mV, the determination of the oral fluid pH: from  $5.6 \pm 0.4$  to  $6, 1 \pm 0.7$ . Two or more somatic diseases in the examined patients were revealed, gastrointestinal tract diseases dominated (in 81.2% patients) as well as endocrine pathologies (in 42.5% cases).

**Conclusions:** Biopotentiometry in combination with identification of the oral fluid pH is an effective method of diagnostics in «burning mouth syndrome» in patients with underlying somatic diseases.

[59]

### **Stress and its effect on the intensity of tooth decay among residents of Lugansk**

D. Hizhny, M. Trufanova, D. Astrakhantsev

baracastovar@gmail.com

SE "St. Luke Lugansk State Medical University"

**Trustee of the paper:** M. Trufanova

**Introduction:** Recently, many publications have appeared on the effect of stress on the intensity of caries development. To assess this information, we surveyed residents of Lugansk who stayed in the city during active hostilities in 2014.

**Aim of the study:** The aim of our study was to assess the increase in the intensity of caries in the residents of Lugansk before stressful events and shortly after.

**Material and methods:** We examined the dental status records of 60 people from 31 to 44 years old (at the time of the survey) for the period from 2011 to 2013 (before the outbreak of hostilities). They formed group A. As well as the dental status records of another 60 persons (stayed in the city for the duration of the hostilities) of the same age from 2015 to 2018 (after the end of hostilities). They were included in the group B. The results were processed statistically. To estimate the intensity of caries, we used the DMF (Decay-Missing-Filled) index. Also we conducted a survey among 102 people of the same age group who also lived through hostilities. The questionnaire was divided into points: the level of anxiety at the time of combat actions (from 1 to 10), how long the anxiety persisted after the cessation of hostilities, the assessment of sleep disorders during and after the hostilities, the presence/appearance of neurological pathology (trigeminal neuralgia, burning mouth syndrome, bruxism). For comparison, statistics was carried out using 55 dental status records for 2011–2013 (1K group) and for 2015–2018 (2K group) of residents of Shakhty and Donetsk (Rostov region, Russian Federation) cities that are located within a distance of 100 km from Lugansk, but there were no hostilities there.

**Results:** In the group B, DMF index was higher than that of the group A by 1.53 (14.97 vs. 13.44). In the control groups the same index on the contrary decreased by 0.13 (13.78 in 1K and 13.65 in 2K). The results of the survey were summarized. Thus, 34 out of 102 gave the maximum estimate (10) of their anxiety at the time of the hostilities (33.3%); 59 declared poor sleep quality for more than six months after the hostilities (57.8%); 6 people reported the development of neurological pathologies (5.8%).

**Conclusions:** Residents of Lugansk experienced chronic stress during the hostilities that did not pass without a trace, as evidenced by the results of the survey. These statistics prove the effect of stress on the intensity of caries increment.

[60]

### **Comparison of precision and repeatability of porcelain veneer preparation with various clinical techniques**

Karolina Kowalczyk, Sylwia Pichla, Aneta Konopelska, Daniel Surowiecki  
sylwia.pichla@poczta.onet.pl

Students' Scientific Group, Department of Prosthodontics, Medical University of Warsaw

**Trustee of the paper:** lek. dent. Marcin Szerszeń

**Introduction:** Tooth preparation is one of the keys to success rate and longevity of porcelain veneers. Various techniques are performed in order to obtain satisfying result of the procedure.

**Aim of the study:** The aim of this study was to compare precision and repeatability of two preparation methods, namely, horizontal-orientation-grooves technique and vertical bur with silicone index method.

**Material and methods:** Thirty identical artificial central upper incisors were divided into 2 groups and prepared by three operators aiming to reduce the labial thickness by 0,5mm. Fifteen typodont teeth were qualified to first group where two round ended tapers with different diameters (d016, d018) were used to perform longitudinal grooves. The depth of the cuts was controlled with silicone index. In second group precision marker (0.5mm protuberance) has been used to receive horizontal depressions as depth guides. In both groups polishing was performed. Teeth models were digitally scanned with 3Shape Intraoral TRIOS Dental System. Prepreparation and post-preparation images were examined in 3 measuring points: located in cervical area, in the middle of labial surface and incisal edge. The results were analysed using 3Shape TRIOS software.

**Results:** Tendencies of obtained results indicates higher repeatability of the method with precision marker. Final results with statistical analysis will be presented on WIMC. Study in progress (20 artificial incisor have been scanned so far).

**Conclusions:** Based on the findings of this study, horizontal-orientation-grooves technique ensures greater repeatability and precision of labial reduction among teeth prepared by one or different operators. Vertical-orientation-grooves technique depends on subjective assesment with silicone index. In comparison of precision marker, the method with tapers enables to obtain optimum and more anatomic tooth shape after grinding.

[61]

### **Association between TMD and personality type in Lithuanian students**

Iveta Jonikaitė

jonikaite.iveta@gmail.com

Vilnius University

**Trustee of the paper:** Rolandas Pletkus

**Introduction:** Stress is an integral part of everyday life in the modern world. Each person responds to external stimuli differently, depending on personal characteristics. The entirety of external factors and personal qualities affects the tendency to various diseases and promotes their manifestation. One such disorder is the dysfunction of the temporomandibular joint (TMD).

**Aim of the study:** Determine the spread of the temporomandibular joint dysfunction and the distribution of the Myer-Briggs personality types among Dentistry and Public Health students and compare the results among student groups from different study fields.

**Material and methods:** VU MF 1st-5th year Odontology and 1st-4th year Public Health students participated in the research. Questionnaires were submitted to assess the prevalence of the TMJ dysfunction and the distribution of the personality types. To determine TMJ dysfunction and personality types Fonseca questionnaire and personality test by Myers-Briggs type indicator was used respectively. The obtained data was processed using the statistical packet of SPSS 17.00 (Statistical Package for the Social Sciences), applying the Oneway ANOVA and Chi-Square criteria as well as descriptive statistics. Statistical reliability is determined when the value is less than or equal to 0.05 ( $p \leq 0.05$ ).

**Results:** 58,8% of Dentistry students and 66,3% of Public Health students were diagnosed with TMJ dysfunction. Majority of the questioned people had a consul personality type. TMD was most common in commander (80%), debater (80%) ir adventurer (77,8%) personality types. The manifestation of TMJ dysfunction was found to be independent of the personality types ( $p > 0.05$ ).

**Conclusions:** A high prevalence of mild TMD was found in student population. Various studies shows that psychosocial factors as stress, anxiety and depression had a statistically significant association with TMD. The study did not show a correlation between TMD and personality types.

[62]

**Study of the condition of the pressure dentine of the root channel of the teeth after instrumental and medical treatment during apical periodontitis**

Ekaterina Galanova, Tatiana Galanova

verazaytseva@yandex.ru

Tatina Galanova, PhD

**Introduction:** In endodontic treatment of chronic apical periodontitis, pathogenic microflora must be removed from the root canal system and parietal dentin of the root of the teeth with instruments and drug treatment of the root canals. It is important to evaluate effectiveness of various methods of instrumental and drug treatment of the root canals in terms of the quality of removing low-mineralized, infected dentin and creating conditions for a tight marginal fit of the "root filling".

**Aim of the study:** The aim of the study was to compare the quality of mechanical removal of the parietal dentin of the root canals with manual and rotating endodontic instruments Pro Taper.

**Material and methods:** The study involved 40 single-root teeth extracted for medical reasons and they did not have any previously endodontic treatment. The teeth were fixed in a special clamp, an endodontic access was created, the working length was determined. Root canals of 20 teeth (group 1) were processed with K-files using standard technique (master-file - №30). The root canals of 20 teeth (group 2) were machined with ProTaperUniversal rotating machines with tools up to the finishing tool F3 in accordance with the recommendations of the manufacturer (S1, S2, F1, F2, F3). Irrigation of the root canal during the instrumental treatment was performed with 3% solution of sodium hypochlorite. To assess the quality of removal of low-mineralized and destroyed dentin from the root canal walls, longitudinal and transverse root cuts, staining with caries detector, photo registration and analysis of the data obtained were performed.

**Results:** When assessing root canals treated with K-file hand tools (group 1) we revealed: the pulp fragments in the lumen of the root canal; insufficiently pronounced root canal taper; the presence of a significant amount of dentin sawdust in the lumen of the root canal; uneven contour of the root canal; partial soaking of the root canal wall with dye. When evaluating root canals processed with rotating machine tools, ProTaper Universal (group 2) noted: lack of pulp fragments in the root canal lumen; severe tapering and funnel-shaped root canal; lack of impregnation of the walls of the root canal dye.

**Conclusions:** The study reveals that instrumental treatment of root canals with Pro Taper Universal rotating nickel-titanium machine tools allows qualitatively removing parietal infected dentin and creating favorable conditions for irrigation and obturation of the root canal system in the course of treatment of chronic apical periodontitis.

[63]

**Training set for endoscopically assisted osteosynthesis of mandibular condylar fractures**

Wojciech Stopa

wojciech.stopa77@gmail.com

Medical University of Warsaw/Department of Cranio Maxillofacial Surgery, Oral Surgery and Implantology

**Trustee of the paper:** Zygmunt Stopa

**Introduction:** Condylar fractures are most frequent fractures of the mandible. Some maxillofacial surgical procedures can be performed with the use of an endoscope. One of them is reposition and osteosynthesis of condylar fractures of the mandible.

**Aim of the study:** The aim of this study was to create a training set for endoscopically assisted osteosynthesis of mandibular condylar fractures from affordable and easily accessible materials.

**Material and methods:** The chassis of the machine was made of an old safe from a scrapyards. In order to connect it with other parts, openings were cut at the front and side of the box. They provide enough space for a handle with a little endoscope camera that is put in there. The camera is connected to a computer screen, giving a live vision of the inside of the box. The safe has got special brackets inside in order to hold pieces of wood that are used for training.

**Results:** Using this set it is possible to train endoscopically assisted drilling, screwing and removing screws from pieces of wood located in the closed box with a live vision on the screen provided by the camera.

**Conclusions:** The training set creates an opportunity to train basic skills before taking part in a proper surgery.

[64]

### **Comparison of digital models of bones created based on the three dimensional scanning and the computer tomography**

Marta Czajkowska, PhD Łukasz Zadrozny

mrtczajkowska@gmail.com

Medical University of Warsaw, Dentistry Division

**Trustee of the paper:** PhD Łukasz Zadrozny

**Introduction:** Precision of digital model is crucial factor in surgical guides' design for edentulous patients. Inaccuracy of such surgical templates is clinically noticeable problem.

**Aim of the study:** 1. Estimate differences between actual bones dimensions and dimensions of their models received from the computer tomography.

**Material and methods:** Twenty humans mandibles was chosen for noninvasive study. First step was scanning this bones with professional 3D scanner (Rangevision, Russia). Next was performing computer tomography. Based on both procedures two models of every bone were prepared. Digital models were used as comparative material for preparing maps of deviation. The maps were prepared with the software HP 3D Scan Trial 5.4.0 (HP, USA) in 10 level of tolerance. Each sample was matched to one of deviation level. Statistical analyses were performed using Microsoft Office Excel for Windows (Microsoft 2018, USA). A P value < 0.01 was considered significant.

**Results:** Maps of deviation made by scans and computer tomography's imaging showed differences between models created based on CT and 3D scanning.

**Conclusions:** Within the limitations of this study, the following conclusion was drawn:

1. Limitations in CT resolution could affect accuracy of models which are used in the treatment planning.



# Dermatology

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 123, Library – CBI

**Jury:**

prof. dr hab. n. med. Sławomir Majewski  
prof. dr hab. n. med. Lidia Rudnicka  
prof. dr hab. n. med. Małgorzata Olszewska  
dr hab. n. med. Adriana Rakowska  
dr hab. n. med. Anna Baran  
dr hab. n. med. Hanna Myśliwiec  
dr hab. n. med. Agnieszka Żebrowska  
dr hab. n. med. Adriana Polańska  
dr hab. n. med. Anna Lis-Święty  
dr hab. n. med. Irena Walecka  
dr hab. n. med. Ryszard Galus  
dr hab. n. med. Małgorzata Młynarczyk-Bonikowska  
dr. n. med. Joanna Czuwara  
lek. Klaudia Dopytalska

**Coordinator:**

Aleksandra Pohadajło

**Scientific Patronage:**

National Consultant in Dermatology and Venereology Prof. Joanna Narbutt MD PhD  
Polskie Towarzystwo Dermatologiczne  
Stowarzyszenie Lekarzy Dermatologów Estetycznych  
Uriage



**URIAGE**  
EAU THERMALE

[65]

**The use of probiotics in topical treatment of atopic dermatitis – a systematic review**

Dominika Ambrożej, Karolina Dumycz, Katarzyna Kunkiel MD

dominika.ambrozej@gmail.com

Medical University of Warsaw / Department of Pediatric Respiratory Diseases and Allergy

**Trustee of the paper:** Wojciech Feleszko MD, PhD

**Introduction:** Atopic dermatitis (AD) due to its chronic course requires application of emollients on the skin, which rebuilds its impaired barrier function. Recently, there has been an increasing interest in promising, effective topical therapies. These therapies derive from the fact that the underlying pathology of AD involves not only the impaired skin barrier function but also the immune dysregulation, susceptibility to *Staphylococcus aureus* skin infection, and cutaneous dysbiosis.

**Aim of the study:** The purpose of this study was to review the extent and effectiveness of interventions with topical usage of probiotics in AD patients.

**Material and methods:** We have searched for all comparative prospective intervention trials that compare the topical application of probiotics, in comparison with any standard procedures or no intervention as a control, in PubMed, Embase, the Cochrane Reviews, and Cochrane Trials databases (January 1980 – December 2018). Trials published solely in abstract form were excluded because the methods and results could not have been fully analyzed. All trials included in the review had to be performed on patients with atopic dermatitis.

**Results:** Four relevant randomized controlled trials and two non-randomized trials were identified. Although the trials were performed on heterogeneous populations and different types of probiotics using unique application techniques, all the gathered data proved efficacy of the experimental treatment in measurable ways, e.g. Scoring Atopic Dermatitis Index (SCORAD). Moreover, there were no significant adverse effects reported in any of the studies reviewed. The bacteria used in those interventions included *Lactobacillus johnsonii*, *Roseomonas mucosa*, *Staphylococcus epidermidis*, *Staphylococcus hominis*, *Lactobacillus sakei*, and *Vitreoscillia filiformis*.

**Conclusions:** There is a growing interest in the potential application of probiotics in managing various inflammatory diseases, including allergies. There are attempts underway to implement this innovative approach into clinical practice. The preliminary trials report that even topical application of proper bacteria can alter the skin microbiome, contributing to the stabilization of a disturbed balance of the microbiome observed in the AD patients.

[66]

**Association between intestinal barrier integrity, severity of the disease and occurrence of gastrointestinal symptoms in patients with plaque psoriasis**

Albert Stec, Magdalena Chrabąszcz, Mariusz Sikora

amstec@interia.pl

Students' Research Association at the Department of Dermatology, Medical University of Warsaw, Poland

**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 significant role of mutualistic relationship with gut bacteria, intestinal barrier and immune system in pathogenesis of psoriasis. Therefore, enteric microbiota dysbiosis with gut barrier disruption may be important factor in the development of psoriasis.

**Aim of the study:** Assessment of stage of the psoriasis, severity of gastrointestinal symptoms and level of trimethylamine N-oxide (TMAO; bacterial metabolite) in patients with psoriasis with unaffected or disrupted gut barrier.

**Material and methods:** The analysis included 120 patients with plaque psoriasis. Gut barrier integrity was assessed by measuring markers: claudin-3 and intestinal fatty acid binding protein (I-FABP) in the blood plasma. The gastrointestinal events were determined with Gastrointestinal Symptom Rating Scale (GSRS). The TMAO levels were measured using high-performance liquid chromatography (HPLC).

**Results:** In the group of patients with disrupted intestinal barrier patients comparing to group with unaffected intestinal barrier gastrointestinal symptoms were noticed more frequent and higher GSRS scores were observed (28,3±3,1 vs 15,2±2,8 pkt., p<0,05). Furthermore, in this group increased severity of the psoriasis in PASI score was detected (18,9±1,9 vs 10,1±2,5 pkt., p<0,05). Also TMAO levels in patients with affected gut barrier were higher (193,4±17,8 vs 73,4±8.6 ng/ml, p<0,05).

**Conclusions:** Dysfunction of intestinal barrier causes translocation bacterial metabolites and toxins that may result in exacerbation of inflammatory response in psoriasis. It may lead to increasing severity of skin lesions. The impaired integrity of the intestinal wall is also accompanied by gastrointestinal symptoms.

[67]

### **Acne vulgaris prevalence amongst medical students of all study years in Riga Stradins University**

Zane Prikule-Rusina

prikule.zane@gmail.com

Riga Stradins University, Department of Infectology and Dermatology

**Trustee of the paper:** Zane Prikule-Rusina

**Introduction:** Acne is a chronic skin condition characterized by noninflammatory open and/or closed comedones (blackheads and whiteheads) and inflammatory lesions (papules, pustules, cysts or nodules) typically located on the face, neck, back, chest, and upper arms [Katy I. Burris]. It approximately affects 9.4% of the global population making it the eight most prevalent disease worldwide.

Acne is usually thought to be a disease of adolescents, however recent studies have shown that in Western cultures, due to their dietary habits and stress level, acne affects up to 95% of adolescents and persists into middle age in 12% of women and 3% of men. [Tan JK]

**Aim of the study:** According to medical student daily routine which includes many triggers for acne outburst such as stress, diet, lack of sleep ect., this survey was made to investigate what is the prevalence of the disease among medical students, which study year has the highest prevalence and if there are prevalence differences between study years.

**Material and methods:** An anonymous survey was conducted at Riga Stradins University, Latvia, among all study years of Faculty of Medicine. The original questionnaire had 22 questions. Results are based on the participant's own perception of the presence or absence of acne and was not evaluated clinically by certified dermatologist. Gradation, explanation of medical terms (papula, pustula, nodule) and photographs were added to the survey helping participants to grade their stage of acne more objectively. Data was processed by Microsoft Excel and SPSS programs. For statistical belief Pearson chi-square test was used.

**Results:** 303 Riga Stradins University medical students of all study years completed the survey, where 79,2% (n = 240) were female and 20.8% (n = 63) male students. 45.5% (n = 138) of all participants reported having acne, but 54.5% (n = 165) not.

Prevalence of acne depending on study year was as follows: 1st year 46% (n = 23), 2nd year 53,6% (n= 30), 3rd year 52,9% (n = 36), 4th year 34,1% (n= 15), 5th year 36,1%, (n= 13), 6th year 42,9% (n= 21). Data gathered between study years did not show statistically significant difference regarding prevalence of acne amongst different study years (p=NS). 49,3% (n = 68) from all the participants have ever received acne therapy, but 50,7 % (n=70) have not.

**Conclusions:** According to received and analysed data, acne is an actual problem and a common skin disease among medical students. Almost half (45.5%, n = 138) of the participants reported having acne. Highest prevalence was in the second study year.

The frequency of acne between study years differs, but there is no statistically significant difference between them (p = NS).

[68]

### **The analysis of the influence of yoga and breathing techniques on chronic skin diseases**

Paula Walczak, Anna Kisielnicka

paula.walczak@gumed.edu.pl

Medical University of Gdansk / Department of Dermatology, Allergology and Venereology

**Trustee of the paper:** Aneta Szczerkowska-Dobosz

**Introduction:** Yoga is an ancient form of physical and mental exercises consisting of specific position sequences and breathing techniques. Recent studies report a possible positive influence of yoga on overall body and skin condition. Yoga and mindfulness, combined with dermatological pharmacotherapy, may help to improve skin condition by mental stress reduction and greater self-acceptance. It is worth to consider yoga as a useful tool in skin diseases management.

**Aim of the study:** The aim of the study was to evaluate the influence of yoga and breathing exercises on the mental stress reduction, dermatological quality of life improvement and amelioration of skin lesions in patients suffering from most common chronic skin diseases: inflammatory (psoriasis and atopic dermatitis), autoimmune (vitiligo, alopecia areata) and of other etiology.

**Material and methods:** We performed an anonymous questionnaire collected via social media (Facebook groups dedicated to patients suffering from psoriasis, atopic dermatitis, vitiligo, alopecia areata and people practicing yoga.) The study involved 331 responders (51.1% aged 25-45 y/o, 92.7% women, 7.3% men). In order to assess patient's quality of life a Dermatological Life Quality Index was used. Moreover, to evaluate patients' mental stress level a Perceived Stress Scale test was performed. The respondents were asked about the frequency, duration, subjective body and skin influence of their yoga training.

**Results:** Almost half of the respondents (51.4%) suffered from chronic skin diseases and 75.9% of them practiced yoga and breathing techniques. Non-yoga-practicing patients with chronic inflammatory skin diseases showed impaired quality of life (DLQI=7) compared with yoga-practicing patients (DLQI=12,  $p=0,02$ ). In a group with autoimmune chronic skin diseases and of other etiology there was no statistically significant DLQI value difference between yoga and non-yoga practitioners. The mean scores in the PSS-10 test obtained both for patients with chronic inflammatory and autoimmune diseases regardless of their yoga practice were comparable (23-25 points).

**Conclusions:** Chronic skin diseases affect the entire life of patients with mental stress and unhealthy lifestyle additionally aggravating their skin condition. Yoga and mindfulness techniques became a popular method to cope with these factors, because of subjective well-being improvement. The influence of yoga on the quality of life is prominent in a group of patients with chronic inflammatory skin diseases such as psoriasis and atopic dermatitis.

[69]

#### **Atopic dermatitis: POEM and corticosteroids**

Austeja Zibudaite – First author, Inga Kisieliene – Corresponding author,  
Project Supervisor: Prof. Matilda Bylaite-Bucinskiene  
austeja.zibudaite@gmail.com

Vilnius University Faculty of Medicine

**Trustee of the paper:** Prof. Matilda Bylaite-Bucinskiene

**Introduction:** Atopic dermatitis (AD) is a chronic inflammatory skin disease that affects a large percentage of the world's population. Interest in this disease has been sparked by reports of its increasing prevalence and the significant adverse effects it can have on quality of life. Anti-inflammatory treatment of atopic eczema (AE) remains challenging due to 'corticophobia'. However, patient education program for AE patients and relatives can ameliorate AE management and quality of life.

**Aim of the study:** The aim of the study was to assess the impact of Eczema Education Program on Atopic Eczema control, use of glucocorticosteroids (GCS) and quality of life.

**Material and methods:** One hundred-ninety-two patients were enrolled in this study: 95 in the EEP group and 97 in the control group. All patients were asked to fill three questionnaires: The Patient Oriented Eczema Measure (POEM), The Infant's Dermatitis Quality of Life Index (IDQOL), The original Questionnaire.

**Results:** 54,17% (n=104) of participants were using topical corticosteroids: 58,95% (n=56) in EEP group and 49,48% (n=48) in control group. Although 70.11% (n=129) were recommended to apply GCS by dermatologist, 55,83% (n=91) avoided this treatment as felt apprehensive about sides effects 33,33% (n=50).

Participants who used GCS had a significantly higher POEM score (POEM 9,77  $\pm$  6,97), than those who did not (7,74  $\pm$  5,50) ( $p=0,028$ ).

Severity of AE was lower in EEP group compared to control group: participants in the EEP group had a significantly lower POEM score than controls with 7,68  $\pm$  5,68 and 9,97  $\pm$  6,89 respectively, ( $p=0,013$ ). According to the itching symptom score ( $p=0,043$ ) and happiness score ( $p=0,020$ ) obtained in both arms, the EEP group had superior quality of life.

**Conclusions:** Our data confirm the necessity of regular eczema education support program in Lithuania, which help to reduce "corticophobia" in patients as well as their relatives and has a positive effect on disease control.

[70]

### **Sexual functioning in female patients with systemic sclerosis – single centre study**

Aleksandra Knot, Magdalena Chrabąszcz, Jakub Lach, Mariusz Sikora  
ola.knot@gmail.com

Department of Dermatology of Medical University of Warsaw

**Trustee of the paper:** Mariusz Sikora, MD, PhD

**Introduction:** Systemic Sclerosis (SSc) is a chronic autoimmune disease characterized by abnormal fibrotic processes, inflammation and microvascular damage. Apart from the life-threatening organ involvement, sexual dysfunction is also an important issue with great impact on the quality of life.

**Aim of the study:** To assess the rates of sexual activity and to identify domains of sexual function driving impairment in SSc.

**Material and methods:** Female patients with SSc hospitalized in Department of Dermatology of Medical University of Warsaw, between February 2018 and January 2019, were asked to fill in the Female Sexual Function Index (FSFI) and the Mell-Krat Scale. The FSFI is the 19-item questionnaire that assesses sexual functioning in six domains (sexual desire, arousal, vaginal lubrication, orgasm, sexual satisfaction and pain) in the last 4 weeks, whereas the Mell-Krat Scale is a tool used in sexological diagnosis dedicated to polish population. Gender, age, comorbidities, clinical course, treatment and modified Rodnan Skin Score to evaluate patient's skin thickness were considered.

**Results:** 58,33% (28/48) women agreed to participate; 41,66% (20/48) disagreed to participate because of the following reasons: embarrassment - 45% (9/20), no current sexual relationship: 35% (7/20), not interested: 15% (3/20), other: 5% (1/20). We analyzed 28 women with the mean age  $52.27 \pm 10.2$  years old. Sexual dysfunction was found in 54% (15/28) of the SSc patients assessed by FSFI Scale, the most compromised domains being desire (mean score 2.8) and arousal (mean score 2.9). The mean score in Mell-Krat Scale was  $42.08 \pm 13.87$ . There was no significant correlation between FSFI scores and duration of disease ( $p=0,643$ ) and modified Rodnan Skin Score ( $p=0,616$ ). Sexual impairment was independently associated with older age ( $p<0,05$ ).

**Conclusions:** Sexual dysfunction are common problems in female patients with systemic sclerosis. Dermatologists should acknowledge the high prevalence of these problems among their patients and maintain the interdisciplinary cooperation with other specialists such as sexologists, physiotherapists and psychologists.

[71]

### **Safety of allopurinol – dermatological point of view. A 5-year retrospective study**

Joanna Zozula, Kinga Kołcz, Mariusz Sikora  
zozulanka@gmail.com

Department of Dermatology, Medical University of Warsaw

**Trustee of the paper:** Mariusz Sikora MD PhD

**Introduction:** Allopurinol therapy has high efficacy in reducing plasma concentration of urate, the product of purine metabolism. Increasing utilization of allopurinol exposes higher group of patients to the risk of cutaneous adverse drug reactions.

**Aim of the study:** The aim of the study was to assess the prevalence and clinical characteristics of severe skin reactions to allopurinol.

**Material and methods:** Retrospective analysis of patients with drug-induced skin reactions hospitalized in Department of Dermatology was conducted. 15 patients (10 women and 5 men) receiving allopurinol were included in the study. Diagnoses, treatment and duration of the lesions were compared.

**Results:** The majority of patients were diagnosed with maculopapular eruption (11 of 15, 73,3%). In two patients (13,3%) allopurinol induced Stevens-Johnson syndrome. One case of DRESS Syndrome (6,7%) and one of toxic epidermal necrosis (6,7%) were also reported. The average time of occurrence of lesions since allopurinol was used for the first time was 17 days. Depending on clinical diagnosis systemic steroids (12 of 15, 80%), cyclosporine A (1 of 15, 6,7%) or intravenous immunoglobulins (1 of 15, 6,7%) were introduced.

**Conclusions:** Adverse reactions to allopurinol are potentially life threatening. In the era of increasing usage of allopurinol, it is important to be aware of its potential skin toxicity.



# Endocrinology & Diabetes

**Date:**

Friday, May 10th, 2019

**Location:**

Room 123, Library - CBI

**Jury:**

prof. dr hab. n. med. Paweł Piątkiewicz  
dr hab. n. med. Agnieszka Szypowska  
dr hab. n. med. Lucyna Bednarek-Papierska  
dr hab. n. med. Przemysław Witek

**Coordinator:**

Julia Kościuk

**Scientific Patronage:**

National Consultant in Diabetology Prof. Krzysztof Strojek MD PhD  
Polskie Towarzystwo Hepatologiczne  
Polskie Towarzystwo Gastroenterologii  
Polskie Towarzystwo Diabetologiczne



Polskie Towarzystwo  
Gastroenterologii

POLSKIE TOWARZYSTWO  
DIABETOLOGICZNE



**POLSKIE TOWARZYSTWO HEPATOLOGICZNE**  
POLISH ASSOCIATION FOR STUDY OF LIVER



[72]

### **Predictors of achieving euthyrosis in hyperthyroid patients treated with radioiodine I131**

Albert Stachura, Tomasz Gryn, Bernadetta Kałuża

stachura.albert@gmail.com

Department of Internal Diseases, Endocrinology and Diabetology  
of the Central Clinical Hospital of Ministry of the Interior and Administration in Warsaw

**Trustee of the paper:** Bernadetta Kałuża MD PhD, Edward Franek MD PhD Prof.

**Introduction:** Radioiodine treatment (RIT) for hyperthyroidism is a very common modality, chosen by physicians worldwide. The outcome of the therapy, however, is not always predictable. While rendering a patient hypo- or euthyroid is meant as a therapeutic success, the latter does not require lifelong hormonal supplementation.

**Aim of the study:** The aim of our study was to determine factors contributing to achieving euthyrosis in patients who underwent RIT.

**Material and methods:** Medical records of 110 patients who had undergone RIT were examined. Patients had been diagnosed with either Graves' disease or toxic multinodular goiter. Demographic data, as well as clinical information were analyzed statistically. Ultrasonography findings, such as thyroid volume and nodules' characteristics had been collected at the beginning of the treatment and 6 months after the administration of radioiodine I131. After 2 weeks, 1, 2 and 6 months the serum concentrations of TSH, free T3 and free T4 had been measured. Moreover, scintigraphy data was taken into account - iodine uptake, distribution, type of nodules ('hot' or 'cold').

**Results:** Four factors contributing to rendering a patient euthyroid were found. Age (OR 1,06; 95%CI 1,03-1,11,  $p=0,0002$ ), thyroid volume (OR 1,03; 95%CI 1,007-1,047;  $p=0,008$ ) and iodine uptake (OR 0,94; 95%CI 0,9-0,97;  $p=0,0002$ ) have been shown to have a significant importance in predicting the outcome of RIT. Moreover, patients with toxic multinodular goiter have been proven to be more prone to achieving euthyrosis than patients with Graves' disease (OR 9,95; 95%CI 2,8-35,6;  $p=0,0004$ ).

**Conclusions:** The more advanced age, larger volume of thyroid gland and lower iodine uptake values contribute to rendering the patient euthyroid, especially in subjects with TMG.

[73]

### **Comparison of classification systems used in thyroid nodule evaluation**

Drazic Teodora, Bjelogrić Dunja

drazicteodora@gmail.com

Faculty of Medicine Novi Sad, Serbia

**Trustee of the paper:** Assist. Prof. dr Tijana Icin

**Introduction:** Thyroid nodules are a common finding during, with low incidence of malignant lesions, up to 5%. Ultrasonography is the diagnostic tool available for the initial work-up of thyroid nodules. A number of classification systems have been developed that use composite patterns of ultrasound findings to estimate the likelihood of malignancy and to identify nodules that should be scheduled for fine needle aspiration (FNA) biopsy.

**Aim of the study:** The aim was to evaluate the nodules based on their ultrasound features using ACR TI-RADS and EU TI-RADS scoring systems, notice the difference between these classifications when selecting nodules for FNA and to compare cytological results of FNA regarding the TI-RADS classification systems

**Material and methods:** The study is a retrospective analysis of the medical data obtained from subjects who have been referred to the Clinic for endocrinology, metabolic disease and diabetes of the Clinical Center of Vojvodina in Novi Sad, Serbia in order to do FNA. Prior to FNA, an ultrasound examination was conducted and TI-RADS was determined using both ACR and EU TI-RADS scoring systems.

**Results:** 30 (22.7%) nodules were put in different TI-RADS risk categories using the two systems. Indication for FNA differed in 12 (9.09%) cases of which in 8 also existed a difference in TI-RADS categories while using different classifications.

**Conclusions:** There is a statistically significant difference when assigning to TI-RADS categories between the systems. Though EU TI-RADS advised FNA in a significantly higher number of cases, in none of the cases where the recommendation for FNA differed, a pathological biopsy result was obtained. It can be concluded that the EU TI-RADS system is more strict than ACR TI-RADS system since it advises FNA more often, but doesn't contribute to higher rate of detection of the malignant nodules.

[74]

### **Vitamin D level and structural state of bone tissue in the population depending on the state of environment**

Anastasiia Hoian, Lopachuk Anna

anastasiahoian@gmail.com

Bukovinian state medical university, Department of clinical immunology, allergology and endocrinology

**Trustee of the paper:** Ivan Pankiv

**Introduction:** Nowadays a lot of studies show the multifaceted influence of vitamin D on the organs and systems of the human body. Vitamin D receptors are found in more than 30 organs and tissues and lots of illnesses are now connected with the lack of this metabolite. At the same time, vitamin D deficiency becomes a pandemic, which determines the importance of this study.

**Aim of the study:** To study the vitamin D level and the structural status of bone tissue in the population, depending on the state of the environment.

**Material and methods:** The vitamin D level was studied in summer in 103 people 19-78 years old, who was permanently residing in two regions (village Kiselev and Vyzhnytsia town). The Kiselev was subjected to the Chernobyl accident and was classified as the third radiation contamination zone as a result of this catastrophe. Determination of level 25 (OH) D was performed using the ECLIA immunochemiluminescence method on the Elecsys 2010 (Roche Diagnostics, Germany) analyzer using Cobas test systems. To evaluate the structural and functional status of bone tissue, an ultrasonic densitometry method was used. The standard statistical methods were used.

**Results:** Only in 9 cases (5.0%) the 25(OH)D serum level was normal and in other cases, there was a deficiency and lack of vitamin D. A severe form of vitamin D deficiency (below 10 ng/ml) was observed in 10 (5.5%) patients. The serum level of vitamin D was higher in residents of Vyzhnytsia compared with residents of radiation-contaminated Kiselev. The average 25(OH)D serum level in the radiation-contaminated area was  $16.2 \pm 0.8$  ng/ml.

There was established a correlation between BMI and 25(OH)D serum level among persons with BMI=25-29.9 kg/m<sup>2</sup>. At the same time, the average value of 25(OH)D level among obese patients (BMI>30 kg/m<sup>2</sup>) was practically the same as in individuals with normal body weight. There is an increase in the frequency of osteopenia and osteoporosis in the residents of Kiselev ( $p<0.05$ ) compared with the control group. Osteopenia was found in 36% of patients, osteoporosis - in 16%.

**Conclusions:** The vitamin D level was lower among the population of the radiation-contaminated area. There is a correlation between BMI and 25(OH)D serum level among persons with BMI=25-29.9 kg/m<sup>2</sup>. The population of the radiation-polluted area is at high risk of osteoporosis.

[75]

### **(Un)successful management of glycemia with standard medication in type 2 diabetic primary care patients**

Aistė Stapulionytė, Justina Kučinskaitė, Jūratė Pečeliūnienė, Irena Žukauskaitė

aiste.stap@gmail.com

Clinic of Internal Medicine, Family Practice and Oncology,

Institute of Biomedical Sciences of the Faculty of Medicine of Vilnius University, Vilnius, Lithuania

**Introduction:** Good diabetes mellitus control consists of patient's perception of the disease, therapeutic treatment and teamwork of the patient and the doctor.

**Aim of the study:** The aim of the study was to evaluate management of current glycemia in primary care (PC) diabetes mellitus (DM) patients with standard, guidelines-fitting antidiabetic medication metformin, gliclazide and insulin, and to compare with subjective patients' perception on their DM.

**Material and methods:** Cross-sectional pilot study was performed and 59 adult diabetic patients, were evaluated for DM management by general practitioner (GP) and outpatient endocrinologist during 1 month period. Data of fasting plasma glucose (FPG) were performed and data about antidiabetic drugs were collected from medical records. Subjective patients' opinion of good or bad glycemic control was obtained. Three outcomes were selected for comparative glucose controlling: 1st – patients with elevated FPG (>7mmol/L) and "poor" subjective DM control opinion, 2nd– patients with elevated FPG and "good" subjective glucose control, and 3rd– normoglycemic patients (according FPG) and "good" subjective diabetes control. For comparison of groups chi-square test was applied.

**Results:** The 1st group consisted of 26 patients, the 2nd group of 12 patients and the 3rd of 21 patient. 41 (69,5%) of metformin users were at the 3rd outcome (18 (85,7%)) comparing to the 1st (16 (61,5%)) and the 2nd (7 (58,3%)), however, the difference was not significant. Only a few of gliclazide users were in the 1st group (2 (7,7%)), and 3rd group (1 (4,8%)) comparing to the 2nd (4 (33,3%)), ( $p=0,034$ ). Of 22 (37,3%) insulin users 1st outcome (17 (65,4%)) was most frequent than 2nd (4 (33,3%)) and the 3rd (1 (4,8%)), ( $p<0,001$ ). When results compared in between of GP and endocrinologist, 10 (33,3%) of GP and 16 (55,2%) of endocrinologist patients formed the 1st group, 4 (13,3%) and 8 (27,6%) – 2nd group, 16 (53,3%) and 5(17,2%) – 3rd group ( $p=0,015$ ).

**Conclusions:** Results differ between subjective understanding of glycemic control in outpatient type 2 DM patients and current objective glycemia, evaluated by FPG. Patients with high FPG levels even feeling diabetes controlling as “good” also those which evaluated their diabetes control as “poor”, both, are more often supervised by endocrinologist – this discrepancy needs further evaluation.

[76]

### **Quantitative characteristics of glycemic excursions during defined level of physical activity leading to hypoglycemia and after its treatment with 20g of ingested glucose**

Marisa Nunes<sup>1</sup>, Jan Polák<sup>2</sup>, Marek Brabec<sup>3</sup>, Jan Brož<sup>4</sup>

silva.nunes.marisa@gmail.com

<sup>1</sup> Second Medical Faculty of Charles University, Prague, Czech Republic.

<sup>2</sup> Department for the Study of Obesity and Diabetes, Third Medical Faculty of Charles University, Prague, Czech Republic

<sup>3</sup> Institute of Computer Science, The Czech Academy of Sciences, Czech Republic

<sup>4</sup> Department of Internal Medicine, Second Medical Faculty of Charles University, Prague, Czech Republic

**Trustee of the paper:** assist. prof. Jan Brož

**Introduction:** Controlled levels of physical activity are recommended for all patients with diabetes mellitus. Physical activity in type 1 diabetes, however, is a major risk factor for the occurrence of hypoglycemia, a common, unpleasant and dangerous side effect of insulin treatment.

**Aim of the study:** To determine the speed of decrease of glucose concentration during the defined level of physical activity leading to hypoglycemia and the speed of its increase after ingestion of 20 g of saccharides.

**Material and methods:** 10 male patients with type 1 diabetes (mean age  $34,8\pm 8,1$  year, mean diabetes duration  $5,2\pm 1,8$  year, HbA1c  $56,6\pm 6,8$ ) participated in the study. Physical exercise was performed using an electrically braked ergometer at the target heart rate (THR) according to 50% of individual heart rate reserve, calculated following the Karvonen equation ( $THR = ((HR_{max} - HR_{rest}) \times \%Intensity) + HR_{rest}$ ). The test begun approx. 120 minutes after breakfast. The arterialised blood glucose (ABG) levels were monitored every 5 min during the exercise and for 60 min after hypoglycemia treatment. The exercise was interrupted when either symptoms of hypoglycemia occurred or glycemia of 3,5mmol/L was measured. Hypoglycemia was immediately treated by ingestion of 20g of glucose diluted in water (150ml). Generalized additive model with smoothing spline was fitted to the ABG data against time which was used to compute the glucose concentration curve during exercise and 60 min after.

**Results:** Individual training heart rate was reached and maintained by all subjects. The mean speed of decrease of glycemia during exercise was  $0,107\pm 0,028$  mmol/L.min<sup>-1</sup> (minimum: 0,074 mmol/L.min<sup>-1</sup>, maximum: 0,166 mmol/L.min<sup>-1</sup>). The mean speed of glycemia increase after glucose ingestion was  $0,128\pm 0,046$  mmol/L.min<sup>-1</sup> (minimum: 0,064 mmol/L.min<sup>-1</sup>, maximum: 0,186 mmol/L.min<sup>-1</sup>). The mean time of glycemia increase for 1 mmol/L after glucose ingestion was  $16,5\pm 5,4$  min.

**Conclusions:** Blood glucose levels are shown to decrease during exercise each minute by mean 0,107 mmol/L and increase after hypoglycemia treatment with ingested glucose by mean 0,128 mmol/L. The mean time of glycemia increase for 1 mmol/L was  $16,5\pm 5,4$  min. We believe a better understanding of the glycemic changes associated with physical activity may help patients keep better control over their glycemic excursions both as a preventive measure against development of hypoglycemia and for its better management.

[77]

### **The outcome of radioiodine therapy after five years in patients with subclinical hyperthyroidism**

Safiollah Shakibani, Paulina Lisiewicz, Aleksandra Jasonek, Natalia Królik, Michał Sankowski

lisiewicz.paulina1@gmail.com

Medical University of Białystok, Department of Nuclear Medicine

**Trustee of the paper:** dr n. med. Saeid Abdelrazek

**Introduction:** Subclinical hyperthyroidism is a common disease with a high rate of progression to overt hyperthyroidism. The radioiodine therapy is considered to be safe, cost-effective and non-invasive method of treatment; however, there is still no consensus regarding the most appropriate therapy.

**Aim of the study:** The aim of our study was to evaluate the short-term (5 years) effect of radioiodine therapy (RAIT) on the achievement of euthyroidism, and prevention of evolvement to overt hyperthyroidism.

**Material and methods:** We treated 150 patients, aged 30–70 years; 54 patients with multinodular goitre (MNG), and 96 patients with autonomous nodule (ATN). Malignant changes were excluded in all nodules by fine needle aspiration biopsy. All the patients had serum TSH levels  $<0.1$  mU/l and effective T-half measured by the use of T24 and T48 was more than 3 days at the time of treatment. The activity dose was calculated by the use of Marinelli's formula and ranged between 200 and 600 MBq. The absorbed dose (Gy) for MNG ranged between 150 and 260, and for ATN: 200–300. Follow up control was done every 6 weeks in the first year. Then every 6 months for 4 years.

**Results:** In general the success of treatment after 1 year was: 99% of patients with ATN and 92% of patients with MNG achieved euthyroidism. 1% of patients with ATN and 7% of patients with MNG developed hypothyroidism. 1% of the patients had persistent hyperthyroidism and received second dose of radioiodine therapy. After 3 years of RAIT 2% of patients with ATN and 8% of patients with MNG developed hypothyroidism. After 5 years of RAIT 2% of patients with ATN and 9% of patients with MNG developed hypothyroidism. In all the patients the symptoms and signs of subclinical hyperthyroidism disappeared (palpitation, tachycardia, atrial fibrillation, exercise tolerance improved, the blood pressure normalised and the quality of life improved).

**Conclusions:** The achievement of euthyroidism and the remission of the symptoms and signs of subclinical hyperthyroidism, were due to good diagnosis, well preparation of the patients; accurate measurement of administered activity, effective half-life, and well-organised follow up.

[78]

### **Type 1 diabetes mellitus and neurological disorders including autism spectrum – is there a link?**

Hanna Kuśmierczyk, Mariusz Olczyk, Martyna Supernat

hanna.kusmierczyk.umed@gmail.com

Department of Pediatrics, Diabetology, Endocrinology and Nephrology,  
Medical University of Lodz, Lodz, Poland

**Trustee of the paper:** Anna Hogendorf MD, PhD Assistant Professor

**Introduction:** Type 1 diabetes (T1D) is an autoimmune disease of a very heterogenous pathogenesis. It affects over 18 000 pediatric patients in Poland. The treatment with insulin injections or infusion is complicated and requires cooperation with the patient and its parents. What makes it harder, some of the children suffer from additional neurological and psychiatric conditions that can affect the whole process. It is possible T1D and these disorders might have common immune-mediated and/or genetic background.

**Aim of the study:** Evaluating the prevalence of neurological disorders in children with T1D

**Material and methods:** The study included children with both T1D and neurological disorders that were identified by a retrospective chart review of all children with T1D (n= 615) treated in Diabetes Outpatient Department of Konopnicka's Paediatric Centre of Medical University of Lodz. The data collected included age, age of diagnosis of both T1D and neurological conditions, level of T1D specific auto-antibodies (ICA, anti-GAD), level of glycated haemoglobin (HbA1c), other comorbidities as well as detailed family history. T1D was confirmed by the presence of autoantibodies in all included patients.

**Results:** Coexistence of both T1D and additional neurological disorder was identified in 18 children (3%). The most common was epilepsy (n=7) before autism spectrum disorder (n=4) and oligophreny (n=3). Other diagnoses included seizure disorders in EEG (n=2), De Grouchy Syndrome (n=2), ADHD, demyelinating polyneuropathy. In 2 children both epilepsy and oligophreny was diagnosed. The mean age was 12.3, Me=12, SD= 3.88. The mean duration of diabetes was 6.3 years [SD=4.15], mean age of diagnosis 5.8 [SD=4.59]. In 9 patients (45%) diagnoses were made before the onset of diabetes, 8 (40%) after and in 3 of them simultaneously with T1D. Boys constituted 56% of the group (n=10), 8 (80%) of them presented non-neurological comorbidities. 89% (n=16) positive had positive anti-GAD. 50% (n=9) of patients suffered from at least one immunological disease: subclinical hypothyroidism (28%), celiac disease (28%) and allergies (11%). Mean HbA1c was 7.99 [SD=1.46], which is worse than in Polish T1DM children population- 7.1 (p=0.01).

**Conclusions:** It seems that neurological conditions are more common among children with T1D than in general population.

Despite parents additional care, those children may have poorer metabolic control. It is important to take a closer look at this group regarding possible common pathogenesis as well as assessment of metabolic control in those patients.

[79]

**Diabetes control in primary care: what does the patient and his data speak?**

Justina Kučinskaitė, Aistė Stapulionytė, Irena Žukauskaitė, Jūratė Pečeliūnienė  
justina.kuc1@gmail.com

Vilnius university / Faculty of medicine / Clinic of internal medicine, family practice and oncology

**Trustee of the paper:** PhD Jūratė Pečeliūnienė

**Introduction:** Diabetic patients' disease awareness, knowledge and working in a team are essential for good diabetes control, especially in primary care (PC).

**Aim of the study:** To evaluate the relationship between fit of diabetes mellitus (DM) patients' perceived and objective glycemic control (GC), and applied treatment.

**Material and methods:** 59 patients with type 1 (14%) and type 2 (86%) DM evaluated subjective glucose controlling ("good"/"bad"). Data on diabetic status were collected from medical records, HbA1C%, and fasting plasma glucose (FPG) were assessed. For the comparison of groups chi-square test and ANOVA was applied.

**Results:** 26 (44%) patients evaluated their glycemic control as "bad" (BGC) and they all had high FPG (>7mmol/l). 33 (56%) evaluated glycemic control as "good" (GCG), but 12 (36.6%) of these patients had high FPG (GCG+HFPG) and 21 had (63.4%) normal FPG (GCG+NFPG). The grouping was not affected by gender or patients' age. 96.6% of study patients had glucometer for home self-assessed glucose control.

65.4% patients of BGC group were treated with insulin, while 33.3% in GCG+HFPG group and 4.8% of GCG+NFPG group ( $p < .001$ ). GCG+HFPG group was more often treated by gliclazide (33.3%), comparing to GCG+NFPG (4.8%) and BGC (7.7%) groups. Yet there were no differences between groups comparing their usage of metformin. Comparison of HbA1C% between groups revealed that BGC has higher results ( $M = 9.1\%$ ) than GCG+HFPG ( $M = 7.1\%$ ) or GCG+NFPG ( $M = 6.68\%$ ) groups ( $p < .001$ ).

**Conclusions:** Subjective patient's assessment of the disease management is not always consistent with the clinical picture. For those patients urgent intervention in diabetes training is needed.

# Genetics & Molecular Biology

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 127, Library – CBI

**Jury:**

prof. dr hab. n. med. Leszek Szablewski  
prof. dr hab. Paweł Golik  
prof. dr hab. Ewa Bartnik  
prof. dr hab. n. med. Dominika Nowis  
prof. dr hab. n. med. Jacek Malejczyk  
dr hab. n. med. Anna Wójcicka

**Coordinators:**

Jakub Lesiczka  
Jakub Pytlos

**Scientific Patronage:**

National Consultant in Clinical Genetics Prof. Maria Małgorzata Sąsiadek MD PhD  
Instytut Medycyny Doświadczalnej i Klinicznej im. M. Mossakowskiego PAN  
Polskie Towarzystwo Biologii Medycznej  
Polskie Towarzystwo Genetyczne



**POLSKIE TOWARZYSTWO  
GENETYCZNE**

[80]

### **A cell model for studying alpha-synuclein interactome in Parkinson's disease**

Dinara Sharipova

d.sharipova@g.nsu.ru

Novosibirsk State University, Faculty of Natural Science

**Introduction:** Parkinson's disease (PD) is one of the most common neurodegenerative disorders worldwide. It belongs to the group of proteinopathies, which means that the pathology is based on a structurally abnormal protein. Alpha-synuclein is a protein, forming intra- and extracellular aggregates during PD development. In spite of a large number of studies, the exact composition of the aggregates is unknown and the molecular mechanism of their pathology effect is still unclear.

**Aim of the study:** The aim of this project is to generate a model system for studying alpha-synuclein's pattern of interactions with other proteins and structures, based on PD-patient derived induced pluripotent stem cells (iPSC).

**Material and methods:** For the research, we got mononuclear peripheral blood cells of 50 PD-patients and carried out an exome sequencing for each patient. Episomal reprogramming was used for reprogramming of blood cells into iPSC. Plasmids for studying of alpha-synuclein interactome were created using genetic engineering methods and then were delivered into patient-specific iPSC by lipofection. The characterization of transgenic cell-lines included PCR, qPCR and western-blot.

**Results:** We worked out a protocol for obtaining patient-specific iPSCs and chose cells of one patient bearing PD-pathological mutations for the beginning of our research. We created plasmids encoding alpha-synuclein with 3xFLAG and 2xStrep-Tag II tags under a doxycycline-induced promoter. These transgenes were delivered into a safe-harbor locus AAVS1 of cells' genome. After antibiotic selection and PCR-screening we got eight transgenic cell clones. Western-blot analysis and qPCR proved that the expression of the transgene was reliably induced by doxycycline.

**Conclusions:** The transgenic patient-specific cell lines will be used for studying alpha-synuclein's interactome: the range of this protein's interactions will be identified using co-immunoprecipitation, western-blot and mass spectrophotometry. This model system can be used for getting new knowledge of molecular and genetic pathological mechanisms of PD and other synucleinopathies. In addition, with the help of our system it will be possible to find new targets for potential therapies.

[81]

### **The effect of xanthenes on the expression of estrogen $\alpha$ and $\beta$ receptors in breast cancer cells**

Jakub Rech, Aleksandra Kopytyńska, Wojciech Rogóż

rechjakub@gmail.com

Students Science Club BIOTECHMED, Department of Biotechnology and Genetic Engineering, School of Pharmacy with the Division of Laboratory Medicine in Sosnowiec, Medical University of Silesia, Katowice, Poland

**Introduction:** Xanthenes are organic compounds that have high potential as anti-cancer drugs. Natural xanthenes are obtained from plants found in eastern Asia. Breast cancer is the second most often diagnosed cancer in the world, and the first most common cancer in women: in 2012 there were 1.67 million new cases of this cancer type. The factors that can stimulate the development of cancer are estrogen hormones. They act through the specific receptors: ER $\alpha$  and ER $\beta$ . In the normal breast cells, ER $\beta$  expression prevails, whereas proliferating mammary cancer cells overexpress ER $\alpha$ . In many cases, the activation of ER $\alpha$  with estrogen is considered to be responsible for the growth and proliferation of cancer cells.

**Aim of the study:** The aim of the study was to analyse the influence of natural and synthetic xanthenes on the expression of estrogen receptors in breast cancer cells.

**Material and methods:** The analysis was carried out on the T-47D cell line. The study included natural xanthenes (gambogic acid and  $\alpha$ -mangostin), and three synthetic xanthone derivatives, described as Compound 1, Compound 2, and Compound 3, obtained from the Department of Bioorganic Chemistry, Collegium Medicum of the Jagiellonian University. All compounds were used at IC25 and IC10 concentrations. ER expression was measured by Real-Time RT-PCR.

**Results:** All xanthenes at both IC10 and IC25 concentrations led to increase in the expression of ER estrogen receptors in T-47D cells compared to untreated controls. Among xanthenes acting at the IC10 concentration, gambogic acid and Compound 2 decreased the expression of ER $\alpha$  receptors, while the other compounds

stimulated it. In turn, acting at IC25 concentration, gambogic acid, Compound 2 and Compound 1 decreased the expression of ER $\alpha$  receptors, whereas  $\alpha$ -mangostin and Compound 3 potentiated it. Expression of ER $\beta$  receptors increased under all xanthone stimulation: gambogic acid,  $\alpha$ -mangostin, Compound 1, Compound 2 and Compound 3.

**Conclusions:** These results suggest that xanthenes have therapeutic potential and further studies should be conducted to confirm our results. They can effectively reduce expression of ER $\alpha$  receptors responsible for the proliferation of cancer cells in estrogen-dependent breast cancer, and stimulate expression of ER $\beta$ , which may have significant therapeutic implications.

[82]

### **Expression of mRNA for gene products that regulate angiogenesis and vascular permeability in cardiac blood vessel endothelial cells from db/db mice**

Krzysztof Bartkowiak, Mateusz Bartkowiak

bartkowiak.krzys@gmail.com

Department of Histology and Embryology, Medical University of Warsaw

**Trustee of the paper:** dr n. med. Justyna Niderla-Bielińska

**Introduction:** Metabolic syndrome (MetS) is characterized by type 2 diabetes (T2D), a high plasma triglyceride level, low plasma HDL, abdominal obesity, and hypertension. Patients with MetS develop cardiac hypertrophy, which combined with impaired angiogenesis in the myocardium can result in heart failure. Db/db mice develop T2D and are obese with high plasma triglyceride and glucose levels. Myocardium of db/db mice is ischaemic with dysfunctional microvessels, however, the expression of VEGF and VEGF-R2, crucial for initiation and regulation of angiogenesis, is elevated. Our previous observation revealed that, in isolated vascular cardiac endothelial cells (ECs) from db/db mice the expression of mRNA for VEGF-A is increased. A VEGF-A-dependent pathway, which affects permeability of microvessels, involves activation of the SRC kinase, which subsequently influences the expression of VE-cadherin in ECs.

**Aim of the study:** There is limited data describing mechanisms of impaired microvessel angiogenesis and dysbalanced vessel barrier in MetS. Therefore, we aimed to study how cardiac microvessels are affected in db/db mice in situ, and to evaluate the expression of mRNA for proteins involved in angiogenesis and in regulation of vascular permeability (such as: VEGFR-1, VEGFR-2, and TAd, Src, Fak, Pxn) in cardiac blood vessel ECs isolated from db/db mice.

**Material and methods:** Control and db/db (BKS.Cg-Dock7m +/- Leprdb/J) mice at the age of 21 weeks were sacrificed. Hearts were dissected and either used for confocal microscopy studies, or for cell sorting. Cryosections were stained with the anti-CD31 antibody and the density of microvessels was evaluated. Single cell suspension obtained from heart was stained with anti-CD31 and anti-Lyve-1 antibodies and sorted with FASC. Isolated CD31+/Lyve-1- cells were used for Real-Time PCR analysis of mRNA expression for selected genes.

**Results:** The density of blood microvessels in hearts of db/db mice was found to be reduced in comparison to that in control mice. Furthermore, mRNA levels for VEGFR-1 and VEGFR-2 as well as TAd, Src, Fak, and Pxn in cardiac vascular endothelial cells derived from db/db mice were downregulated compared with those in controls.

**Conclusions:** The obtained results confirm that cardiac angiogenesis in MetS is impaired. Our experiments suggest that the SRC-dependent pathway involved in VEGF/VEGFR signalling may be dysregulated in cardiac blood endothelial cells in db/db mice; however, further experiments are necessary to confirm these observations.

[83]

### **Novel regulator of Natrium-Iodide Symporter and its use as potential therapeutic target**

Katarzyna Broniarek, Wojciech Gierlikowski, Marta Kotlarek, Jowita Grzędzicka, Anna Wójcicka

broniarekkatarzyna@gmail.com

Department of Genomic Medicine, Medical University of Warsaw

**Trustee of the paper:** Anna Wójcicka

**Introduction:** Papillary thyroid carcinoma (PTC) is the most common endocrine malignancy. Its treatment consists of two stages: surgical removal of the thyroid tissue followed by radioiodine treatment. Second stage is possible due to expression of several proteins and the leading role is fulfilled by natrium-iodide symporter – NIS,

product of SLC5A5 gene. Deregulation of microRNA (miRNA, miR) levels, molecules regulating gene expression post-transcriptionally, is typical for many types of cancers, including PTC.

**Aim of the study:** The aim of this study was to examine the level of miR-X and SLC5A5 in PTC tissue and to investigate an impact of miR-X on the level of SLC5A5 expression in model cell lines capable of iodine uptake: MCF7 and HEK-293-flhNIS, in context of PTC.

**Material and methods:** Tissue samples were obtained from 49 patients with PTC and expression of SLC5A5 and miR-X was measured employing SQ-PCR technique. The experiments were conducted using pcDNA3 vectors expressing miRNA (-ctrl, -X) and modified pGL3 vectors with synthetic microRNA sponge sequences. HeLa cells were co-transfected with mir- and sponge-expressing plasmids and subjected to luciferase assay to confirm binding of the miRNA to a corresponding sponge. HEK293-flhNIS, constitutively expressing NIS, and MCF7, stimulated with ATRA and hydrocortisone, were transfected with miR-ctrl vs. miR-X or sponge-ctrl vs. sponge-X. SLC5A5 expression was measured using SQ-PCR technique.

**Results:** In 43/49 tissue pairs, the expression of SLC5A5 was lower in tumor than control tissue. The overall decrease was 12.27-fold. The expression of miR-X in thyroid tissue pairs was increased by 27%. Luciferase reporter assays confirmed that luciferase activity expressed from miR-X sponge was decreased in the presence of miR-X by 22%, indicating binding of the miRNA to the corresponding sponge. Transfection of HEK293-flhNIS cells with miR-X led to decreased expression of NIS by 24%, transfection of MCF7 – by 43%. After transfection with appropriate sponge NIS expression increased: for HEK293-flhNIS by 11%, for MCF7 by 45%.

**Conclusions:** Our results indicate that miR-X is overexpressed in PTC and that this mechanism is one of contributing to SLC5A5 downregulation. Its product – NIS is indispensable for effective radioiodine treatment of PTC. Level of the miRNA can be modulated within the cells, making it? an interesting potential therapeutic target.

[84]

#### **Detection of MLH1, MSH2, and EPCAM copy number variations in HNPCC patients using MLPA**

Julius B. Garben

julius.garben@gmx.de

Riga Stradins University, Riga, Latvia / Faculty of Medicine

**Trustee of the paper:** Prof. Dr. biol. Edvīns Miklaševičs, MSc. biol. Egija Berga-Švītiņa,

**Introduction:** Hereditary nonpolyposis colorectal cancer (HNPCC) is an autosomal dominant disorder responsible for 2% to 4% of all colonic cancers. Underlying cause is the loss of function of DNA mismatch repair leading to microsatellite instability (Kumar et al. 2014). Knowledge about the underlying genes and molecular pathways is essential for identification and management of mutation carriers (Allain 2008). In screenings among HNPCC patients in various populations the incidence of copy number variations in for MLH1, MSH2, and EPCAM was up to 13% (Wehner et. al. 2005).

**Aim of the study:** The aim of this study was to screen for MLH1, MSH2, and EPCAM copy number variations in Latvian hereditary nonpolyposis colorectal cancer (HNPCC) patients.

**Material and methods:** DNA derived from peripheral blood of 25 patients with confirmed HNPCC diagnosis was identified in the DNA bank of Riga Stradiņš University Institute of Oncology. Samples were purified by spin column-based nucleic acid purification. Detection of copy number variations of MLH1, MSH2, and EPCAM genes was performed by multiplex ligation-dependent probe amplification (MLPA), which is a relative quantitative PCR based technique for detection of exon deletions and duplications (Schouten et. al. 2002). All corresponding patients meet the Amsterdam criteria. The results were analysed using coffalyzer.net and compared to results from literature.

**Results:** Two samples were excluded due to deficient DNA quality. 23 samples were analysed, and no copy number changes were found.

**Conclusions:** Despite occurrence in other populations analysed Latvian HNPCC patients do not carry copy number variants of MLH1, MSH2 and EPCAM genes. Further studies are necessary to elucidate the underlying genetics of HNPCC in the Latvian population.

[85]

#### **Molecular changes related to loss of membrane CD20 protein in non-Hodgkin lymphoma**

Ślusarczyk Aleksander, Bobrowicz Małgorzata, Stachura Joanna, Winiarska Magdalena

slusarczyk.aleksander@gmail.com

Department of Immunology, Medical University of Warsaw

**Trustee of the paper:** Magdalena Winiarska PhD

**Introduction:** The CD20 protein is a molecular target for monoclonal antibodies widely used in non-Hodgkin lymphoma and chronic lymphocytic leukemia immunotherapy. Regimens comprising anti-CD20 antibodies exhibit high efficacy, however resistance often develops during the courses of therapy. Interestingly, resistance towards anti-CD20 antibodies is associated with resistance towards other forms of therapy including chemotherapy.

**Aim of the study:** In the following study we have investigated molecular changes in tumor cells with CD20 knock-out.

**Material and methods:** CD20 knock-out cells were generated with CRISPR/Cas9 system. sgRNA for CD20 was designed using Brunello and Brie library and cloned into Lenti-CRISPR-V2 plasmid. B cell-lymphoma cell lines Raji and SU-DHL-4 were transduced and subsequently selected with puromycin. After fluorescent activated cell sorting, CD20 positive cells were selected. CD20 expression was determined using flow cytometry, western blotting and qPCR. CD20 knock-out cell lines were screened for changes in expression of other membrane proteins using flow cytometry. Cell lines' proliferation and response to venetoclax treatment has been determined using alamarBlue assay.

**Results:** We observed that loss of CD20 was associated with significant membrane CD37 downregulation in Raji and SU-DHL-4 cell lines. Other members of tetraspanin family such as CD9, CD63, CD81 and B cell receptor-associated proteins CD19, CD21 and CD22 remained roughly unchanged. Using, qPCR we demonstrated that CD37 level upon CD20 knock-out did not change on mRNA level. Cell proliferation rates did not vary between CD20 knock-out and wild-type cell lines.

**Conclusions:** We observed that loss of CD20 does not impact cell proliferation and does not increase venetoclax sensitivity. Interestingly, CD37 level is decreased upon CD20 knock-out. The mechanism that orchestrates CD37 membrane presence is more likely linked to CD20 protein. It has been already reported by others that CD37 level correlates with CD20 level, but interactions between these two proteins have never been studied before. Moreover, CD37 positivity predicts significantly better survival (despite high International Prognostic Factor) and constitutes strong prognostic factor in GCB-DLBCL. The mechanisms and the biological significance of this phenomenon requires further studies.

[86]

#### **Circulating microRNAs hold their prognostic capacity beyond the baseline assessment in patients with diabetes**

Aleksandra Soplinska, Daniel Jakubik, Justyna Pordzik, Dagmara Mirowska-Guzel, Agnieszka Kaplon-Cieslicka, Krzysztof J. Filipiak, Filip Szymanski, Marek Postuła, Ceren Eyiletlen  
ola@soplinska.pl

Department of Experimental and Clinical Pharmacology, Centre for Preclinical Research and Technology, Medical University of Warsaw, Poland

**Trustee of the paper:** dr vet. Ceren Eyiletlen

**Introduction:** Cardiovascular diseases are a leading cause of morbidity and mortality, worldwide. Despite the tremendous improvement in cardiovascular treatment, a number of cardiovascular events are still registered despite optimal treatment. Residual risk in patients under treatment is particularly relevant in diabetics. In addition, despite it is known that the residual risk tends to increase during the follow up for several reasons, most study are focused on risk assessment at baseline.

**Aim of the study:** The aim of study was to assess the prognostic ability of selected circulating microRNAs to predict cardiovascular complication during the follow up. A composite endpoint of cardiovascular death, acute coronary syndrome or cerebral ischemic attack was selected.

**Material and methods:** Three circulating microRNAs were selected by means of microRNA profiling on plasma samples obtained at baseline from patients enrolled in the AVOCADO study that had not developed any cardiovascular complication during the follow up, compared to patients that had developed a composite endpoint. RNA was extracted from plasma samples using the mirVANA PARIS Kit and quality of extracted material was assessed using a fluorometric assay. MiRNA profiling was performed using the Affymetrix platform. RT-PCR was performed using the Taqman advance protocol on a high throughput thermal cycler. MiRNA related to platelet function/antiplatelet treatment were chosen among those with the most relevant modulation between the groups.

**Results:** Finally, mir-223, miR-126 and Let-7e were selected for this study and measured in 238 patients three months after their study enrollment. Interestingly, we found that both miR-126 ( $p=0.001$ ) and let-7e ( $p=0.002$ ) were able to predict future occurrence of the primary endpoint. In contrast, no significant difference was found

for the miR-223 ( $p=0.122$ ). Of note, no significant differences in baseline cardiovascular risk was present between the study groups, in terms of traditional cardiovascular risk factors and co-morbidities.

**Conclusions:** These results suggest that selected circulating miRNA might be useful to assess the clinical risk during the follow up of high risk patients, such as diabetics, reflecting the residual risk to guide their clinical management.

[87]

#### **Detection of the genes determining the production of selected virulence factors by the *Staphylococcus aureus* strains isolated from patients with atopic dermatitis**

Martyna Paśnik<sup>1</sup>, Maciej Żochowski<sup>1</sup>, Leszek Blicharz<sup>2</sup>

martyna.pasnik13@onet.pl

<sup>1</sup> Students' Scientific Group, Chair and Department of Medical Microbiology of Medical University of Warsaw,

<sup>2</sup> Department of Dermatology of Medical University of Warsaw

**Trustee of the paper:** dr n. med. Ksenia Szymanek-Majchrzak, prof. dr hab. n. med. Grażyna Młynarczyk

**Introduction:** Atopic dermatitis (AD) is a chronic, recurrent dermatosis whose pathogenesis is not fully understood. Defects of the epithelial barrier and improper functioning of the immunological system predispose AD patients to microbiome dysbiosis which manifests as excessive colonization by *Staphylococcus aureus*. It is hypothesized that some virulence factors of *S. aureus* aggravate the course of AD.

**Aim of the study:** To identify the presence of the genes coding selected superantigens (sea, sec, seg, sel-i, sel-m, sel-o, sel-u, sel-x) in the strains of *S. aureus* isolated from patients with AD.

**Material and methods:** Strains isolated from lesional skin, nonlesional skin and anterior nares of 63 adult patients with AD were analyzed. Identification of *S. aureus* was confirmed by mass spectrometry system with VITEK MS, Biomerieux. The DNA was extracted using a commercial column set Genomic Mini, A&A Biotechnology and subsequently used as a template in conventional and multiplex polymerase chain reactions with using Thermal Cycler C-1000, Bio-Rad. After amplification of the sequences of interest, agarose gel electrophoresis was performed and the PCR products were visualized in the Molecular Imager Gel Doc XR+, BioRad.

**Results:** A total of 126 strains were analyzed. The mean value of identified genes per strain was  $1.31 \pm 1.66$  (range 0-7). In a total of 47 strains none of the investigated genes was identified. The prevalence of the genes was the following: sel-x (69/126, 54.8%), sel-o (23/126, 18.3%), sel-m (21/126, 16.7%), seg, sel-l, sel-u (15/126 each, 11.9%), sec (4/126, 3.2%) and sea (3/126, 2.4%). Detected genes were single or in combinations.

**Conclusions:** In most of the analyzed strains of *S. aureus* at least one of investigated superantigen genes tested was detected. Literature data suggest that staphylococcal superantigens can influence the course and immunology of AD. The results of this study will be complemented by analysis of other genes. Furthermore, a statistical analysis will be carried out to determine the association between the presence of the analyzed genes and disease severity.

[88]

#### **How different variants of apolipoprotein E effect on good aspect of life**

Wioletta Szywacz, Małgorzata Poręba, Agata Macionga

wiolettaszyszacz@gmail.com

Department of Internal Medicine, Nephrology and Diabetology, Medical University of Silesia in Katowice

**Trustee of the paper:** Nikola Szweda M. Sc., Beata Łącka-Gaździk PhD MD, Władysław Grzeszczak Prof. MD

**Introduction:** The apolipoprotein E (apoE) is glycoprotein which fulfils many functions in human body. It is a component of HDL, VLDL and chylomicrons. ApoE also protects from arteriosclerosis development. On chromosome 19 there is a gene of ApoE which is polymorphic with three common codominant alleles ( $\epsilon 2$ ,  $\epsilon 3$ , and  $\epsilon 4$ ). The most common allele is Apo $\epsilon 3$  without association with pathogenesis processes. Comparatively owning the Apo $\epsilon 4$  may carry high risk of arteriosclerosis and up to 11 times increased risk to Alzheimer's Disease (AD).

**Aim of the study:** The examination of the correlation between rs429358 and rs7412 (whose together respond for expression of specified variant of ApoE) and evaluation genotypes of our research group were goal of our study.

**Material and methods:** Using fluorescence-labelled probes it was conducted a Real Time PCR. Thanks to it selected DNA fragments amplification and marking could have been reached. It was done 1498 indications to examine the polymorphism of ApoE rs429358 and rs7412 of 749 patients.

**Results:** The group included 749 patients living in the Upper Silesian agglomeration- 416 women (55,54%) and 333 men (44,46%). The most common genotypes were  $\epsilon 2/\epsilon 2$  (n=215, 28,7%) and  $\epsilon 3/\epsilon 3$  (n=212, 28,3%). There were 79 patients (10,55%) with genotype  $\epsilon 3/\epsilon 4$  and 36 (4,81%) with genotype  $\epsilon 4/\epsilon 4$ .

**Conclusions:** In our group there are 36 patients with genotype  $\epsilon 4/\epsilon 4$ . Correspondingly to specialized literature these patients have an 11-fold increased in the risk of AD and also high risk of arteriosclerosis. This study shows how important carrying determined allele of ApoE is for patients. The subsequent studies in this area should be done.



# Gynecological Case Report

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 23, Library – CBI

**Jury:**

prof. nadz. dr hab. n. med. Włodzimierz Sawicki  
prof. nadz. dr hab. n. med. Piotr Roszkowski  
prof. nadz. dr hab. n. med. Krzysztof Czajkowski  
prof. dr hab. n. med. Mirosław Wielgoś  
prof. dr hab. n. med. Grzegorz Panek  
dr hab. n. med. Ewa Romejko-Wolniewicz  
dr hab. n. med. Paweł Derlatka  
dr n. med. Joanna Peradzyńska  
lek. med. Agnieszka Dobrowolska-Redo

**Coordinators:**

Barbara Malek  
Marta Wolska

**Scientific Patronage:**

National Consultant in Obstetrics and Gynecology Prof. Krzysztof Czajkowski MD PhD  
National Consultant in Gynecological Endocrinology & Reproductive Medicine  
Prof. Robert Spaczyński MD PhD  
National Consultant in Oncological Gynecology Prof. Zbigniew Kojs MD PhD  
Polskie Towarzystwo Ginekologów i Położników  
ENYGO- European Network of Young Gynae Oncologists  
Instytut Matki i Dziecka



**Instytut  
Matki i Dziecka**



[89]

**Acute fatty liver of pregnancy in twin gestation – case report**

Karolina Kurlenko, Magdalena Zgliczyńska

kkurlenko@gmail.com

Medical University of Warsaw, First Department of Obstetrics and Gynecology

**Trustee of the paper:** dr hab. n. med. Iwona Szymusik

**Background:** Acute fatty liver of pregnancy (AFLP) is a very rare obstetric condition. It manifests as maternal liver dysfunction or failure possibly leading to fatal complication, including death of a pregnant woman or a fetus. The etiopathogenesis of this disease is still unclear, however some risk factors have been identified, e.g. fetal long-chain 3-hydroxyacyl CoA dehydrogenase deficiency, multiple gestation, male fetal sex, low maternal BMI.

**Case:** We present a case of a 35-year-old woman, gravida 4, para 2. She was admitted to the Department of Obstetrics and Gynecology in 38th week of a twin pregnancy due to rupture of membranes. Caesarean section (CS) was performed and two male fetuses were delivered in good general condition. However, at the time of surgery initial lab tests revealed very low concentration of fibrinogen (52 mg/dl) with no signs of bleeding disorder. Shortly after CS vomiting, malaise, signs of jaundice and itchiness occurred. Performed blood tests showed hepatic failure (ALT: 74 U/L; AST: 120 U/L; GGT: 78 U/L; ALP: 389 U/L; INR: 1,8). The patient was immediately transferred to the Department of Hepatology due to the suspicion of Acute Fatty Liver of Pregnancy (AFLP). As it turned out, the patient fulfilled Swansea criteria for the diagnosis of AFLP. Due to the unstable state of the patient and alarming symptoms, such as flapping tremor and hypoglycemia, the patient was administered intravenous infusions of acetylcysteine and the procedure of urgent qualification for the liver transplant had been initiated. During the next few days blood tests revealed the improvement of liver function, but the patient was still anemic with acidosis and tendency to hypoglycemia. Moreover, laboratory premises of disseminated intravascular coagulation appeared. Doctors decided to perform the plasmapheresis procedure thrice with no complications. After 8 days, the patient had been discharged from the hospital with satisfying blood tests results and no need for a liver transplant.

**Conclusions:** AFLP is a potentially lethal complication of pregnancy, requiring immediate action - a prompt delivery and supporting maternal therapy. Although it is a very rare condition, obstetricians should be aware of the possibility of its occurrence, especially in patients with risk factors, which could help to quickly implement appropriate actions. In this case, plasmapheresis effectively helped to stabilize the patient's condition.

[90]

**38-year-old pregnant woman with immune thrombocytopenic purpura**

Karolina Brykowska, Kinga Kusyk

kingakusyk@wp.pl

Students' Scientific Group affiliated to 2nd Department of Obstetrics and Gynecology,  
Medical University of Warsaw, Poland

**Trustee of the paper:** Joanna Kacperczyk-Bartnik

**Background:** Immune thrombocytopenic purpura (ITP) is an acquired autoimmune disorder that might first appear during pregnancy, which poses a therapeutic challenge for obstetricians and gynaecologists. Despite the disease carrying little risk for the mother, the risk of the neonatal thrombocytopenia is substantial that may result in intracranial hemorrhage.

**Case:** We present a case of a 38-year-old primiparous patient diagnosed with ITP during the first month of her pregnancy. Her platelet count (PLT) was firstly of 70 G/L and quickly dropped to 30G/L. She received treatment with steroids and intravenous immunoglobulins (IVIG) which resulted in increase in platelet count to 121 G/L. The patient received 7 courses of IVIG treatment and methyprednisone. She was presented to the gynaecology clinic at 35th week of gestation with the platelet count of 4 G/L. She received one course of IVIG treatment and with the PLT raised to 41 G/L she was discharged. The doctor's recommendation was to receive treatment with IVIG for 5 days and steroids for 3 days prior to labour in order to reach the platelet count above 50 G/L to obtain favourable peri- and postnatal development. One week later she reported to the clinic due to preterm prelabor rupture of membranes. Patient's general condition was good, with no haemorrhagic symptoms and a platelet count of 53 G/L. At the 36 weeks pregnancy she gave birth by cesarean section in general anesthesia. No haemorrhagic events occurred during the surgery. The newborn PLT was within range.

**Conclusions:** Pregnancy in patients with hematological abnormalities requires highly specialized multidisciplinary approach which makes it possible to deliver a healthy child without complications.

[91]

**Giant uterine fibroids mimicking pelvic cavity cancer**

Eglė Bareikienė, Sabina Špiliauskaitė, Rūta Čiurlienė

egle.brokartaite@gmail.com

Vilnius University

**Trustee of the paper:** Eglė Bareikienė

**Background:** Uterine fibroids are benign smooth muscle tumours of the uterus. Large myomas, greater than 10 kg, are extremely rare. It may cause life threatening complications while pressing vital organs such as heart or lungs. Moreover, fibroids may press the bladder causing a frequent need to urinate, pain during sex, lower back pain, dysmenorrhea, abnormal bleeding. About 20% to 80% of women develop fibroids by the age of 50.

**Case:** We present a case of 48-year old woman who had been diagnosed with a gigantic intra-abdominal mass. The patient complained of increased abdominal circumference, shortness of breath, weakness, anemia and fever. Abdominal and pelvic CT scan revealed a multifocal 32 x 30 cm size mass and free fluid in abdominal cavity. Due to suspicion of the gynaecologic cancer such as uterine sarcoma, ineffective treatment with antibiotics, deteriorative patient's condition, increasing inflammatory markers and dyspnoea, laparotomy was performed. During the operation, a gigantic 35-40 cm diameter intra-abdominal mass, originating from the uterine fundus, with neovascularisation between mass, terminal ileum and mesentery of the sigmoid colon was observed. Also, adhesions with surrounding structures, 2000 ml of serous fluid in the abdominal cavity and enlarged to 2.5 cm paraaortic lymph nodes were found. Total hysterectomy, adnexectomy, selective paraaortic lymphadenectomy and adhesiolysis was performed.

**Conclusions:** A patient was successfully treated with total resection of a 35 cm x 40 cm diameter and 13 kg weight mass. Post operational histological examination revealed the final diagnosis of submucosal, intramural and subserosal uterine fibroids with necrosis and suppuration. Uterine fibroids have to be differentiated with adenomyoma, endometrial carcinoma, uterine sarcoma, pregnancy, ovarian cancer and tumours of gastrointestinal tract. Radiological investigations like sonography, CT scan and MRI are helpful in differentiating uterine fibroids from other masses, but they can be misleading at times. Increased inflammatory markers and dyspnoea could be first and only symptoms of large uterine fibroids. An individual treatment for every woman should be considered depending of the leiomyoma localization, size and performed symptoms.

[92]

**Severe nephrotic syndrome as a complication after vaginal cancer – patient with ADPKD**

Piotr Halicki, Weronika Lea Śliwińska

piotr.halicki93@gmail.com

Internal Medicine, Nephrology and Dialysis Clinic, Medical Military Institute Medical University of Warsaw

**Trustee of the paper:** prof. dr hab. n. med. Stanisław Niemczyk

**Background:** Cancer may induce occurrence of nephrotic syndrome (NS) (Jhaveri et al., 2015). Neoplasias which are linked with NS are e.g. ovarian, breast and lung cancer, lymphoma and other haematological diseases. To date, there is little data that it could be caused by squamous cell carcinoma of vagina. The concomitance of NS and autosomal dominant polycystic kidney disease (ADPKD) is also very rare (Visciano et al., 2012).

**Case:** A 51 years old woman with ADPKD after radical radiotherapy due to squamous cell carcinoma of vagina (after surgical treatment) was admitted to hospital with symptoms of a severe NS. In the clinical picture massive oedema with weight gain (+21 kg in a month) was dominant. In laboratory test following results draw attention: creatinine 3 mg/dl, urea 76 mg/dl, total cholesterol 417 mg/dl, triglycerides 258 mg/dl, albumin 1,7 g/dl and daily proteinuria approx. 14 g. In the diagnostic process of causes of NS, the evidence of past infection with hepatitis virus B was exhibited. A biopsy of kidney was not possible, because the ADPKD is a contraindication to it. In order to reduce severe oedemas, diuretic treatment was administered, and because of no effects- additional extracorporeal ultrafiltration. Low-Molecular-Weight Heparin was initiated in ultrafiltration and as a prevention of venous thromboembolism- it has led to heparin induced thrombocytopenia (HIT) and resulted in necessity of conversion to vitamin K antagonists. During the treatment of NS, decrease of immunoglobulin serum level was visible which manifested in herpes zoster infection of right pectoral region and urinary system infection-antibiotherapy, antiviral treatment and immunoglobulin infusion were administered. The inducing treatment with pulses of methylprednisolon (3 x 500 mg/d) was provided and as a continuation- prednisone treatment

(30 mg/d). After 6 months therapy, full remission of NS and improvement of kidneys function (creatinine 1,4 mg%) was achieved. After two years the patient still remains in remission.

**Conclusions:** The inability to perform kidney biopsy (ADPKD) made it impossible to make a full diagnosis of the cause of NS, but it seems that the most possible is the NS secondary to vaginal cancer.

### [93]

#### **A rare case of right diaphragmatic hernia of the fetus, complicating the pregnancy of a teenager**

Anastasiu Vlad Costin, Cirstea Evelin, Anastasia Abaitancei, Robert Chelaru, Tudor Andrei Iacovache  
anastasia\_abt@yahoo.com

Faculty of Medicine Brasov, Romania.

**Trustee of the paper:** Marius Alexandru Moga, MD, PhD

**Background:** Congenital diaphragmatic hernia consists of a tislular defect located in the diaphragmatic region, which allows the ascension of the abdominal organs into the thoracic cavity. This condition is characterized by high mortality and morbidity, bearing also many complications. The most important complication generated by congenital diaphragmatic hernia is represented by the pulmonary hypoplasia. The incidence of the right diaphragmatic hernia rises up to 15%, whereas the left congenital hernia of the diaphragm is more frequent. A bilateral defect in the diaphragm can be found in less than 1% of the cases. Usually, the newborn dies before birth or in the post-partum period. The diagnosis of diaphragmatic hernia can be established after 22 weeks of pregnancy.

**Case:** We describe the case of a 14 years old primiparous, carrying a 32 weeks pregnancy, who arrived in the emergency room of the obstetrics and gynaecology department. Before the current presentation, the patient was neither evaluated, nor followed up by an obstetrician. The complaints of the pregnant was pelviabdominal pain and fever.

Clinical exam was within the normal parameters.

The ultrasonographic examination showed a mono-fetal pregnancy, with the fetus in the longitudinal presentation, for whom the biometric measurements corresponded to 32 weeks of pregnancy. The imaging of the fetus's abdomen indicated the ascension of the liver and bowel into the thoracic cavity, in addition to the right lung and heart aplasia.

Due to the lack of intrauterine surgical treatments available, the therapeutic approach to this case was close monitoring.

The pregnant was informed about the risks and the complications of not presenting herself to the following visits. The patient had been discharged against medical advice, and future follow up was not performed. At 38 weeks of pregnancy, the patient presented to the hospital in an advanced stage of labor and she had a spontaneous delivery. The new baby born weighted 3100 grams and the APGAR score received was 2. The fetus died immediately after birth, due to respiratory complications induced by severe hypoxia.

**Conclusions:** In conclusion, the early diagnosis of congenital diaphragmatic hernia may be life- saving. The particularity of this case is the young age of the patient associated with a low level of compliance and understanding of the therapeutic plan.

### [94]

#### **A case of a pregnancy with pre-viable PPRM at 17 weeks complicated by GDM and anemia – unfavourable prognosis followed by a successful outcome**

Kinga Grzelak, Marta Bil  
kinga.g06@gmail.com

2<sup>nd</sup> Department of Obstetrics and Gynaecology in Warsaw

**Trustee of the paper:** Assoc. Prof. Ewa Romejko-Wolniewicz MD, PhD, Agnieszka Dobrowolska-Redo MD, Joanna Kacperczyk-Bartnik MD

**Background:** Premature rupture of membranes (PROM) is a relatively common pregnancy complication, with a frequency of approximately 8%. It severely contributes to preterm birth and intra-amniotic infections. However, cases of pre-viable PPRM, when the rupture happens before 24 weeks' gestation happen in less than 1% of pregnancies. Considering a very high mortality rate for neonates born after PPRM under 20 weeks of gestation and the fact that median latency after rupture is a little more than a week, a case of PPRM at 17 weeks followed by 19 weeks latency and a delivery of a healthy baby is a rare phenomenon.

**Case:** A 32-year-old woman, with one healthy child born by Caesarean section due to breech position, was first admitted to the local hospital due to PPROM which occurred at 17 weeks of gestation of her second pregnancy. She was experiencing a steady leakage of fluid from the vagina, but presented neither contractile delivery of the uterus nor a dilated cervix. Moreover, the pregnancy was complicated by type 1 of gestational diabetes mellitus and anemia. The patient was administered iron, diabetic diet and monitored closely. There was also an increased risk of umbilical collision due to triple nuchal cords described in an ultrasound examination. Thus, the patient received a course of steroids to accelerate lung maturity. She was then transferred to our clinic in a tertiary referral hospital in Warsaw at 28 weeks of gestation. During the stay at the labour ward the patient had a leakage of clean fluid from the vagina most of the time, without any contractions. The patient was given prophylactic antibiotics and spasmolytics. Her inflammatory markers were observed for any signs of infection. An ultrasound was performed twice a week to control the quantity of amniotic fluid and there was regular cardiotocography monitoring. The last ultrasounds before delivery showed AFI of approximately 4-5 cm. During 36th week of gestation the CTG showed decelerations with fetal heart rate 80 per minute. The patient had an emergency Caesarean section, which proceeded without complications. A healthy baby girl, weighing 2590 g and measuring 51 cm with Apgar score of 10 was born.

**Conclusions:** Despite poor prognosis for pre-viable PPROM, adequate treatment of both mother and the fetus can lead to a favourable outcome. The insufficiency of amniotic fluid resulting in the compression of the cord can cause fetal decelerations, thus requiring a close monitoring until delivery.

[95]

#### **The Takayasu syndrome in pregnancy: The diagnosis and successful treatment**

Piotr Prymas, Piotr Filberek

piotr.prymas0@gmail.com

Poznań University of Medical Sciences

**Trustee of the paper:** Katarzyna Kawka Paciorkowska

**Background:** The Takayasu syndrome is a chronic inflammation of the medium and large arteries of unknown aetiology. It occurs more often among women with a frequency of 1-3 cases / million / year. It is the most common vasculitis associated with pregnancy. The results of many studies proved that pregnancy reduces the inflammatory activity of the disease. However, changes in the circulatory system during pregnancy lead to a number of symptoms including increased aortic regurgitation, hypertension and heart failure.

**Case:** The presented case is a 36-year-old woman at 19th week of first pregnancy. The patient was transferred from the Department of Cardiac Surgery after an ascending aortic aneurysm surgery. Medical history revealed severe hypertension in pregnancy. Diagnostic procedures revealed: moderate aortic regurgitation, augmentation of the ascending aorta up to 56 mm, high level of CRP, positive ANA test (but negative ANCA test), vertebral steal syndrome and increased velocity flow in the carotid arteries and left subclavian artery. Histopathological examination showed thickened aortic wall and numerous inflammatory cell infiltration in tunica adventitia and media. Ultrasound examination of the fetus did not reveal any deviations Takayasu disease was diagnosed. The immunosuppressive and antihypertensive treatment was applied.

At 37 week of gestation the patient was admitted to the hospital in order to perform the caesarean section. During the Doppler examination, the features of centralization of fetal blood flow were observed. Patient's blood pressure was above the normal range. Eventually, caesarean section was performed and a female fetus was born with a mass of 2120, Ap 10,10. Further postoperative course was uncomplicated.

**Conclusions:** The described case is an example of the success of the diagnostic and therapeutic process. However, Takayasu disease during pregnancy is associated with a higher risk of aortic aneurysms, CNS bleeding, placental insufficiency, prematurity, low birth weight and preeclampsia. Pregnant with Takayasu syndrome should be conducted by a multidisciplinary team consisting of an obstetrician, cardiologist and rheumatologist. Additionally, the preconceptional assessment of each patient is very important to choose the optimal time to plan the pregnancy. The patient should be carefully monitored from the first trimester of pregnancy. However, it happens that Takayasu disease is diagnosed during the pregnancy and this is the subject of our case report.

[96]

#### **A patient with complete androgen insensitivity syndrome and 47,XXY karyotype**

Karolina Skalska, Maciej Ziótkowski

karolina.jolanta.skalska@gmail.com

Student's Scientific Association, Department of Gynecological Endocrinology, Medical University of Warsaw

**Trustee of the paper:** Monika Grymowicz MD, PhD, Prof. Roman Smolarczyk MD, PhD

**Background:** Klinefelter syndrome (KS, 47 XXY) is the most common aneuploidy of human sex chromosomes. Extra X chromosome leads to male phenotype with small testes, gynecomastia, tall height, wide hips, lack of facial and pubic hair, infertility and azoospermia. Testosterone level is lower than normal and levels of gonadotropins are higher.

Androgen insensitivity syndrome (AIS) is an X-linked recessive disease caused by mutation in AR gene which encodes androgen receptor (AR) on chromosome Xq12. In general, patients with AIS have normal male karyotype (46, XY). In complete androgen insensitivity syndrome (CAIS) patient's external female genitalia and breasts are well developed, while the uterus with fallopian tubes and the upper part of the vagina do not develop. Abdominal or inguinal testes are present.

We present a rare case of a patient with CAIS and Klinefelter syndrome.

**Case:** An 18-year-old woman was admitted to the Department of Gynecological Endocrinology to perform hormonal tests. The patient has three sisters, one of whom has androgen insensitivity syndrome (with karyotype 46, XY). At the age of 15, the patient was directed to genetic testing because of primary amenorrhoea. Results showed incorrect male karyotype with the present SRY gene (47, XXY) and tissue insensitivity to androgens. Uterus in the USG was not found. The patient underwent bilateral gonadectomy. Histopathological examination showed the presence of the male gonad in the prepubertal stadium. As a further treatment, estrogen supplementation was applied. A bone density test was performed in a female patient aged 18 (the result was normal). In hormonal tests, an increase in estrogen concentration and a significant reduction in testosterone levels after treatment were observed.

**Conclusions:** In women with KS and CAIS ovaries, vagina, uterus and fallopian tubes do not develop properly, which precludes physiological reproduction and maintenance of normal sex hormone levels. The gonadectomy is performed due to the risk of malignant testicular tumors. Supplementation with estradiol protects against osteoporosis.

[97]

#### **Selective intrauterine growth restriction in monochorionic-diamniotic twin pregnancy – a case report**

Agnieszka Palus

agnieszka.palus@o2.pl

Medical University of Warsaw / 1st Department of Obstetrics and Gynecology

**Trustee of the paper:** Asst. Prof. Iwona Szymusik M.D. PhD

**Background:** Multiple gestations are associated with high risk of pregnancy complications and stillbirth. Selective intrauterine growth restriction (sIUGR) is one of them – it occurs more often in monochorionic than in dichorionic twin gestations. In the majority of cases it is due to uneven placental share, which may be accompanied by vessel anastomoses, various in number and size. As a result one twin is growing significantly slower than the other. In utero demise of either of the twins may have tragic consequences for the other.

**Case:** A report of a case of 34-year old woman in monochorionic-diamniotic twin pregnancy complicated by sIUGR is presented.

The patient was referred to the hospital at 16 weeks of gestation due to the significant disproportion of intrauterine growth of fetuses. Initial ultrasound examination revealed sIUGR and oligohydramnios of the second fetus, not meeting the Quintero criteria of twin-to-twin transfusion syndrome. Next imaging tests also showed cardiomyopathy, pericardial effusion, abnormal blood flow and anhydramnios of the smaller fetus. There were no abnormalities in the properly growing co-twin. Moreover, there was a high risk of preeclampsia confirmed at 27th week of gestation in biochemical tests. At 28th week of gestation caesarean section was performed due to a very high risk of intrauterine demise of the second fetus.

The first female fetus with 220g of body weight was born in a critical condition and died 30 minutes after the delivery. The second female fetus was delivered in good general condition, weighing 1100g. During her stay at neonatal intensive care unit the newborn required mechanical ventilation, antibiotics, blood transfusion. She was diagnosed with bronchopulmonary dysplasia and 3rd degree intraventricular haemorrhage. The baby was discharged after 74 days of hospitalization in good general condition, weighing 3090g.

**Conclusions:** Multiple gestation carries an increased risk of adverse perinatal outcomes. Therefore, proper perinatal assessment based on ultrasonography is essential, especially in monochorionic pregnancies. In cases complicated by sIUGR the decision to deliver is especially difficult and requires wide clinical experience in order to increase the chances of survival for any of the two twins and to decrease the risk of complications resulting from prematurity.

[98]

**The ultrasonographic particularities of a partial molar pregnancy - a case report**

Cristian Andrei Arvatescu, Denisa Cristina Firu, Roxana Dragomir, Sabina Ioana Badila  
sabina.badila@gmail.com

Faculty of Medicine, Brasov, Romania

**Trustee of the paper:** Marius Alexandru Moga, MD, PhD

**Background:** The hydatiform mole, known as molar pregnancy, is a benign tumor, which involves a trophoblastic proliferation, associated with cystic degeneration of the chorionic villi. Molar pregnancy is categorized as follows: complete mole, when the embryo is not detected or partial mole, when there is an embryo. The frequency of molar pregnancy varies according to the geographical area and the age of the patient. In Europe, the incidence of molar pregnancy is 1 to 2000-3000 births, occurring more frequently in women at extreme ages (under 15 years old or over 35 years old).

**Case:** In this paper, we present the case of a 27-weeks partial molar pregnancy, diagnosed at an uninvestigated patient, during the presentation in the emergency room of the Hospital of Obstetrics and Gynecology "Dr. I.A. Sbarcea", Braşov. The pregnant was a 33-year old woman who had four spontaneous births in her medical history. The patient reports 27-weeks amenorrhea and no fetal movements. During the clinical exam, no vaginal bleeding was noticed. Transvaginal ultrasound exam revealed a uterine cavity fully containing placental echoes. The following aspects were observed: the characteristic appearance of "snowflakes" which occupied the entire uterine cavity, enlarged uterus (15/15 cm), and intrauterine non-homogeneous echoes, which appeared like small vesicles, suggestive of molar degeneration of the placenta. In the area of the inferior segment, strong hyperechogenic echoes were noticed, with the aspect of the fetal skeleton. A beta-HCG dosage and an uterine curettage were performed, and the uterine content revealed a devitalized, highly adherent pregnancy tissue with numerous serous containing vesicles with diameters of approximately 1,5 cm. The sample was sent to the histopathological examination.

**Conclusions:** Ultrasonography is the investigation with the most significant interest in the diagnosis of molar pregnancy, but it is also used in the follow-up of the patient after the discharge of the molar pregnancy. The particularities of this case consist of the medical history of the patient, the absence of other pathologies which could be associated with this disease as well as the observations made during the transvaginal ultrasound exam.

[99]

**Pharmacological treatment of cervical ectopic pregnancy - case report**

Tatiana Choroszun  
khoroshun1995@mail.ru

Medical University of Warsaw/1<sup>st</sup> Department of Obstetrics and Gynaecology MUW

**Trustee of the paper:** Barbara Suchońska MD, PhD

**Background:** Ectopic pregnancy is a severe complication of pregnancy, when the blastocyst implants and grows outside the uterine cavity. It accounts for about 1% of all pregnancies. Cervical pregnancy is a very rare type of ectopic pregnancy with an incidence 0,2% of ectopic pregnancies. Non-diagnosed cervical pregnancy is associated with a certain risk of mortality due to significant haemorrhage. It is considered that risk factors for this type of pregnancy include abortions, C-sections, IVF, surgical injuries, advanced maternal age, diethylstilbestrol, uterine myomas and Asherman's syndrome. In the past, the only way of treatment was hysterectomy due to women lost their fertility forever. Nowadays it's essential to choose an approach of management according to the current knowledge and keep a good cooperation between gynaecologist and patient.

**Case:** A 40-year-old primigravida was referred to the 1st Department of Obstetrics and Gynaecology MUW following 7 weeks of amenorrhea due to cervical ectopic pregnancy suspicion. Transvaginal USG revealed an empty uterine cavity and 12x7x6mm gestational sac with 2x3x2mm yellow sac in cervical canal. The level of b-HCG was 5116 mIU/ml. After obstetric counselling the decision of pharmacological treatment by methotrexate was made. The patient got 100mg s.c. in one dose. She expelled the tissue during intravaginal examination following her 6th day of treatment. The whole material was sent to pathomorphological test which confirmed it was trophoblast. Additionally, the patient got misoprostol and methylergonovine. The next day an empty cervical canal was shown in controlling USG. During next few days the level of b-HCG was decreasing and on the 10th day

of hospitalisation the woman was discharged in good general condition with 1639mIU/ml b-HCG level. It was required to control b-HCG level in one week and visit her doctor with the results.

**Conclusions:** 1. The success of pharmacological treatment by methotrexate allows to avoid surgical interventions saving woman's uterus and fertility.

2. The conditions for methotrexate therapy classifying can be less strict comparing with other types of ectopic pregnancies, because there are no alternatives for this kind of management attempting to save the uterus.

3. For successful and less traumatic treatment it's necessary to diagnose an ectopic pregnancy as early as possible, that's why it's very important to be alert with the patients from group of risk.

[100]

### **Monochorionic diamniotic pregnancy with twin reversed arterial perfusion sequence**

Dominika Paździor

dominika.p.1995@gmail.com

Medical University of Warsaw, Students' Research Group at the 1<sup>st</sup> Department of Obstetrics and Gynecology

**Trustee of the paper:** Asst. Prof. Iwona Szymusik MD PhD

**Background:** Twin reversed arterial perfusion (TRAP) sequence is a rare and severe complication occurring in monochorionic twin pregnancies. Found in approximately 1 out of 35000 pregnancies, TRAP sequence involves a presence of a vascular anastomosis between the so-called acardiac and a healthy fetus (pump twin). As blood flow is reversed, it leads to transfer of deoxygenated blood from umbilical artery of a pump twin to the acardiacus, which is responsible for its abnormal growth and finally heart failure of the healthy one.

**Case:** A 30-year old patient was referred to the Department at 23 weeks of monochorionic diamniotic gestation with a diagnosis of twin reversed arterial perfusion sequence accompanied by the signs of heart failure of the pump twin. Upon diagnosis confirmation, interstitial laser coagulation of the acardiac pelvic region was performed. Fetal karyotype from amniocytes drawn from amniotic fluid was normal (46, XY). In subsequent ultrasonograms the proper fetal growth of the pump twin was confirmed, while there was no blood flow in acardiac twin.

At 29 weeks of gestation the patient went into spontaneous labour. She delivered a male baby, weighing 1280g, with Apgar scores of 7-7. Acardiac acephalic twin was subsequently born, weighing 280g. The acardiac twin examination confirmed the absence of thorax and cephalic structures.

**Conclusions:** As in monochorionic pregnancies the risk of specific complications is substantially higher, TRAP sequence should be kept in mind while performing first trimester scan. Early diagnosis enables to implement proper treatment prior to heart failure of the pump twin and abnormal growth of the acardiacus. Such management allows to decrease the risk of preterm delivery.

[101]

### **Prenatal diagnosis of Turner syndrome based on two cases**

Oliwia Opacka, Michał Erazmus

oli.opacka@gmail.com

Department of Pediatrics and Endocrinology, Medical University of Warsaw

**Trustee of the paper:** dr hab. n. med. Anna M. Kucharska

**Background:** Turner syndrome is the most common sex chromosome anomaly in female fetus. The disease can be detected in 3% of fetus, but only 1% will survive the pregnancy. The suspicion can be made during fetal development by certain features found in ultrasound image, or noninvasive prenatal screening testing. However, only doing a karyotype can confirm the diagnosis. Although Turner syndrome is not considered a disability, and most women can have a normal, and productive life, termination rate after prenatal diagnosis varies from 44% up to 100% in some countries.

**Case:** In first case, signs of Turner syndrome was found during standard first trimester ultrasound examination. Ultrasound image showed edema fetalis, hygroma colli, increased nuchal translucency, ventriculomegaly and renal abnormalities. Chorionic villus sampling and amniocentesis confirmed the diagnosis. Termination of the pregnancy was not suggested. After delivery, echocardiography showed cardiac asymptomatic defects. The baby has a webbed neck, widely spaced nipples, and puffy hands and feet and is monitored by specialists.

In second case, suspicion of the disease was made in 12th week of pregnancy, when mother presented with symptoms of abdominal pain. Ultrasound examination was performed and showed hygroma coli, abnormal fluid accumulation in nuchal region, edema fetalis and renal abnormalities. The diagnosis of Mosaic Turner syndrome was made after amniocentesis. In this case, abortion was offered. The child was born by spontaneous delivery in 39 week. After delivery, echocardiography showed a normal image with possibility of asymmetric valves. A webneck, low-set ears, widely spaced nipples, high-arched palate and external swelling were found.

**Conclusions:** An early diagnosis of Turner syndrome can help in evaluation and monitoring for medical and mental health issues associated with the disease. However, prenatal diagnosis increased termination rate for pregnancies with Turner syndrome.

[102]

#### **Imaging appearance in Pregnancy-associated breast cancer: case report**

Indrė Grigaitė, Audrius Untanas, Rūta Briedienė

grigait1995@gmail.com

National Cancer Institute - Lithuania

**Trustee of the paper:** Indrė Grigaitė, Audrius Untanas

**Background:** Pregnancy-associated breast cancer (PABC) is determined as a breast malignancy, which is identified for woman while she is pregnant or within the first twelve postpartum months. PABC is a rare condition that appears as a malignancy in 1 per 3000 pregnant women. However, when the breast malignancy is diagnosed for women around the ages from 23 to 47, more than 3% of them are associated with the pregnancy. Because of it, it is extremely important to choose the right technique for detecting PABC in early stage.

**Case:** A 40-year-old female, at 36 weeks Gestational Age (G.A) presented to our National Cancer Institute with complaint of a palpable left breast mass of two months duration. Breast examination revealed a firm and non-tender left breast mass of approximately 11cm in diameter that was in upper and outer quadrant of the breast with associated skin erythema. The initial ultrasound showed the breast tumour with irregular shape, solid and hypervascular mass measuring 6cm x 5cm. All the findings being highly suspicious for malignancy and were rated to a score of 5 according to the Breast Imaging, Reporting and Data System (BI-RADS). The histological examination showed estrogen receptor positive, progesterone receptor negative, androgen receptor negative and human epidermal growth factor receptor 2 (HER2) negative invasive poorly differentiated (Grade 3) ductal Carcinoma. After pre-term Cesarean-section Breast MRI and CT were performed. On MRI, an extreme fibroglandular tissue with abnormal enhancement measuring 5x5x4,6cm, having irregular shape and irregular margins was found, leading to an BI-RADS 5 classification. CT scan was done and showed a 4,7x4,2cm left breast mass with liquid density areas. Patient received the first of four cycles of chemotherapy consisting of weekly paclitaxel and followed by adriamycin and cyclophosphamide (AC). Signs of the breast mass destruction were recorded after treatment and a left modified radical mastectomy was performed. Surgery was uneventful and the final report of the histology revealed invasive poorly differentiated (Grade 3) ductal carcinoma ypT3 (5,8cm) with a staging of T3N3M0. Chemotherapy, hormonal therapy and radiation therapy were performed after a surgical treatment for the patient.

**Conclusions:** The main radiological examination for a pregnant or lactating woman with a palpable breast mass is an ultrasound. Ultrasound should be performed for all pregnant or lactating women who detect a palpable breast mass that remains for 2 or more weeks.

[103]

#### **Septate uterus and a twin pregnancy – case report**

Martyna Rożek, Marta Hajbos

martahajbos@gmail.com

1<sup>st</sup> Department of Obstetrics and Gynaecology, Medical University of Warsaw

**Trustee of the paper:** Ass. Prof. Katarzyna Kosińska-Kaczyńska

**Background:** Septate uterus is a congenital defect of female reproductive organs associated with high percentage of obstetric failure, such as infertility, miscarriage, preterm delivery or malposition of the fetus. According to literature 60% of patients with septate uterus terminate miscarriage.

**Case:** A 26-years old woman, diagnosed with septate uterus, received antenatal care at the outpatient clinic at 1st Department of Obstetrics and Gynaecology, Medical University of Warsaw. She was 7 weeks pregnant. Dichorionic pregnancy presented with two gestational sacs located on both sites of the septum. From the

obstetrics history she had one pregnancy miscarried in 9th week. First trimester scan revealed two alive fetuses with low estimated risk of trisomy. A prophylactic pessary treatment was applied at 15 weeks and vaginal progesterone was implemented. Second trimester scan revealed no anatomical abnormalities of the first foetus and suspected clubfoot of the second one. Placenta previa was excluded. The length of the cervix was 20mm. The further course of pregnancy was uncomplicated. The patient was admitted to the Department at 37 weeks of pregnancy to perform a planned caesarean section. The first female fetus was born weighing 2945 g (50th percentile) and the second female fetus weighing 2595 g (48th percentile), both in a good general condition. During the caesarean section uterus with septum from fundus till 2/3 length of the corpus uteri was seen. Estimated blood loss during surgery was 600 ml. During hospitalization, one of the new-borns had thermoregulatory problems. Mother together with the children was discharged home on the 8th day after delivery.

**Conclusions:** Pre-pregnancy diagnosis of the congenital defects of female reproductive organs is essential providing adequate perinatal counselling and allows to decrease risks of perinatal complications.

[104]

**Mirror syndrome (Ballantyne syndrome, BS). Different symptoms, one cause – report of two cases**

Lukasz Rowicki, Magdalena Zgliczynska, Agata Majewska, Monika Zasztowt-Sternicka, Iwona Szymusik, Katarzyna Kosinska-Kaczynska

lukas.rowicki@gmail.com

1<sup>st</sup> Department of Obstetrics and Gynaecology, Medical University of Warsaw, Poland

**Background:** Mirror Syndrome (BS) was first described in association with fetal hydrops caused by rhesus immunization. Nowadays, it is a known fact that BS may occur with non-immune fetal hydrops due to structural and non-structural fetal anomalies like fetal arrhythmia or viral infection. Typical symptoms of BS include maternal edema, anemia, and hypoproteinemia. Prior to 2010, only 56 cases were reported. Mirror syndrome usually manifests between 16 and 34 weeks of gestation (GA).

**Case:** Case 1: A 22-year old female, G1P0 was referred to 1st Department of Obstetrics and Gynecology Medical University of Warsaw (Clinic) at 25 GA with anemia HGB-9.96g/dL and low platelet count PLT-113 10<sup>3</sup>/uL. Ultrasonography revealed generalized edema, polyhydramnios, hydrocephalus, and cardiomegaly. Laboratory tests showed high levels of ALT-241U/l; AST-199U/l; uric acid-7,9mg/dL; Upon admission, the patient revealed fairly stable vital signs: normal blood pressure (BP) 117/64mmHg; HR 80/min; body temperature 37,7. One day later the emergency cesarean section (CS) was performed. The female infant was live born weighing 1510g with an Apgar score 2/3/3 in a critical condition. The placenta was incomplete and grossly edematous. Girl died.

Case 2: 4 weeks later a 29-year old female, G3P3 was referred to Clinic at 29 GA with generalized edema of fetal in ultrasonography. The patient also developed severe preeclampsia and she started developing renal failure and HELLP syndrome. viral infection of parvovirus b19 was detected Laboratory tests showed increased levels of ALT-35U/l; AST-41U/l; uric acid-8,5mg/dL and decreased levels of HGB-10,4g/dL; PLT-66 10<sup>3</sup>/uL. The overall condition of the patient worsened and few hours later after admission CS was performed. The male infant was live born weighing 1300g in a critical condition. Major obstetric hemorrhage has occurred. During the puerperium, a biochemistry parameter, kidney function tests, and blood pressure were getting normalized. Boy died.

**Conclusions:** Described cases of Mirror syndrome (BS) shows that the pathogenesis and symptoms are not clear. Symptoms of BS like proteinuria, mild elevated BP, low PLT level, increased level of liver enzymes can be confused with preeclampsia except for anemia presented by both patients. Therefore, a great deal of attention should be devoted to further studies to developing protocols of care for pregnant patients with BS and investigate factors in the pathogenesis of this syndrome.

[105]

**Thyroid cancer in a 34-year-old pregnant patient – a case report**

Kinga Grzelak

kinga.g06@gmail.com

2<sup>nd</sup> Department of Obstetrics and Gynaecology in Warsaw

**Trustee of the paper:** Assoc. Prof. Ewa Romejko-Wolniewicz MD, PhD, Agnieszka Dobrowolska-Redo MD, Joanna Kacperczyk-Bartnik MD

**Background:** Thyroid nodules are quite common and their incidence varies from 4% to 7%. Despite their high occurrence thyroid cancer is relatively rare with only 1 in 20 nodules being malignant. Moreover, co-existence of neoplasm and pregnancy is a quite rare phenomenon, it happens in 0.05%-0.1% of all pregnancies. Among cancers during pregnancy, thyroid cancer is one of the most frequent and is estimated to appear in approximately 0,2-1,4 in 10000 of all pregnancies. Considering progressively increasing age at which women decide to have children and a constantly rising number of neoplasms, the incidence of future mothers diagnosed with cancer is expected to be growing.

**Case:** A 34-year-old patient was nine weeks pregnant when a routine thyroid test revealed an increased TSH level (4,39 mU/l). The ultrasound of the thyroid gland showed a hypoechogenic structure, sized 8x4x6mm, located in the right lobe. The patient was rushed for a biopsy along with a histopathological assessment which showed papillary thyroid cancer. The patient was qualified for surgery after delivery and was administered thyroxin. The pregnancy carried on without further complications. Only after a routine CTG in 41st week of pregnancy revealed decelerations, the patient was admitted to the hospital. She was qualified for labour induction using the Foley catheter and oxytocin. Vaginal delivery and postpartum period proceeded without complications. The patient may be recommended for a complementary radioiodine therapy after surgery, but not earlier than 6 weeks after the cessation of lactation.

**Conclusions:** Although prophylactic tests, such as pap smear, blood tests or routine dental check-ups are recommended for all women, the patients have a tendency to postpone them, which hinders diagnosing potential diseases. Pregnancy is a time of vigilant supervision of patients, thus allowing to diagnose neoplasms at their earlier stage. A routine TSH level test, followed by an ultrasound in necessary cases, can be a beneficial screening method for both diagnosing and monitoring the development of thyroid cancer among pregnant women. In case of papillary cancer, surgery remains the gold standard. It can be performed before or after delivery, depending on the differentiation of cancer. Because of its harmful effects on the fetus, potential supplemental radioiodine therapy must be postponed until 6-8 weeks after finishing lactation.

[106]

#### **Diastrophic dysplasia – from 1st trimester ultrasonographic prenatal diagnostics to perinatal pathologist report with post mortem imaging – a case report**

Karolina Mazurec<sup>1,2</sup>, Martyna Trzeszcz<sup>2,3</sup>, Maciej Mazurec<sup>2</sup>

carlos.mazurec@icloud.com

<sup>1</sup> Student Scientific Club at Woman's Health Center Corfamed Ltd, Wroclaw, Poland

<sup>2</sup> Woman's Health Center Corfamed Ltd, Wroclaw, Poland

<sup>3</sup> Department of Pathology and Clinical Cytology, University Hospital in Wroclaw, Poland

#### **Trustee of the paper:**

**Background:** A diastrophic dysplasia is an extremely rare (1/500000 pregnancies) skeletal dysplasia inherited in autosomal recessive way, caused by mutation in SCL26A2 gene. It is characterized by significant shortening of all long bones with preserved normal neurodevelopment.

**Case:** 35 y.o. woman with unremarkable family history for congenital anomalies, came for prenatal diagnostics in 12 6/7 week of gestation. An ultrasonographic examination revealed NT=1,2 mm and normal additional markers (low-risk of trisomy 21, 18 and 13 in FMF report). Cff-DNA examination was carried out at patient's request (negative result). Due to abnormally bent, moveless, shortened limbs check-up ultrasonographic examination in 2-3 weeks was recommended.

In 15 5/7 the following abnormalities were confirmed: both-sided extreme limbs' long bones shortening (<5 centile), abnormally bent limbs, practically moveless. Additionally, hitchhikers thumbs, clubfeet with deviated toe and micrognathia were revealed. A suspicion of diastrophic dysplasia was placed. The patient was directed for a genetic consultation followed by amniocentesis in 16 6/7 (in cytogenetic test – normal male karyotype). A molecular test was adequately directed and confirmed an initial diagnosis.

Parents made a decision about pregnancy termination after genetic consultation. In 21 0/7 a miscarriage was pharmacologically induced. A fetus with placenta were referred to a perinatal pathologist. In performed post mortem babygram an extreme (<5 centile) symmetrical limbs' shortening were confirmed. In macroscopic exam clubfeet was diagnosed and both-sided: toe deviation and hypoplasia of 1st metacarpal bone. Macrocephaly, extreme micrognathia, cleft soft and hard palate, left radial campomelia were also detected. In microscopic examination of long bones, lumbar section of spine and ribs II-V a smaller amount of extracellular substance with secondary mucosal transformation and minor-cystic changes without accompanying disorders of growth plates architecture were diagnosed consistent with diastrophic dysplasia.

**Conclusions:** A standardized 1st trimester sono examination remains an integral part of a modern prenatal diagnostics, fundamental in detecting of structural defects. Interdisciplinary diagnostic cooperation allows the

earliest detection of fetal defects. A perinatal pathologist's examination objectifies and expands ultrasonographic diagnostics in terms of structural disorders.

[107]

**Placenta accreta, a growing problem: Why is it so dangerous?**

Piotr Prymas

piotr.prymas0@gmail.com

Poznań University of Medical Sciences

**Trustee of the paper:** Katarzyna Kawka-Paciorkowska

**Background:** Placenta increta arises as a result of improper placental implantation. It occurs when the placenta penetrates the decidua and even myometrium. As a result of growing number of cesarean sections, the frequency of placenta increta increases, and concerns up to 1: 1000 pregnancies. This condition increases the risk of hemorrhage, uterine perforation, infection and even death, constituting one of the most serious medical conditions in obstetrics.

**Case:** he presented case is a 29-year-old pregnant woman at 31st week of third pregnancy. The patient was admitted to the hospital with suspicion of placenta increta. Past medical history revealed previous cesarean section. On ultrasound, a central placenta praevia with numerous lacunas and intense vascularisation was shown. Cystoscopy revealed discrete features of trophoblast overgrowth to the bladder, and eventually, the placenta increta was diagnosed. The decision of elective caesarean section and obstetric hysterectomy were made and planned for 36 week of gestation. Before the operation, balloon catheters for internal iliac arteries were positioned. During the operation, the features of placental overgrowth into uterine muscular layer were revealed. A male fetus with a mass of 3040 g, Ap 5,7,8,9 was born. After the procedure catheters were removed from the iliac vessels. Several hours after the operation, the patient became hemodynamically unstable and the decision of relaparotomy was made. During the operation, blood and hematoma of retroperitoneal space were visualized, with a total volume of blood loss of approximately 2000 ml. Due to the patient's severe condition, after bleeding control, abdominal packing was performed and the abdominal wall was closed with an operating foil. When the patient's condition stabilized, after 48 hours, relaparotomy was performed in order to remove dressings and to perform peritoneal cavity drainage. There were no active bleeding spots. Further postoperative course was uncomplicated.

**Conclusions:** Although, the described case was successfully treated, perinatal mortality in placenta increta is as much as 7%. In order to ensure the highest standards of care, despite diagnostic difficulties, it is necessary to determine the diagnosis before delivery and to implement appropriate pre- and post-operative procedures. The above-mentioned aspects, as well as others, have been addressed in this work in order to best describe the subject, which in recent years has become a relatively common condition in obstetrics.

# Infectious Diseases

**Date:**

Friday, May 10th, 2019

**Location:**

Room 123, Library – CBI

**Jury:**

prof. dr hab. n. med. Magdalena Marczyńska  
prof. dr hab. n. med. Andrzej Horban  
prof. dr hab. n. med. Alicja Wiercińska-Drapała  
prof. dr hab. n. med. Janusz Cianciara  
prof. zw. dr hab. n. med. Iwona Mozer-Lisewska  
dr hab. n. med. Dariusz Kawęcki  
dr hab. n. biol. Daniel Młocicki

**Coordinator:**

Karolina Twardowska

**Scientific Patronage:**

National Consultant in Infectious Diseases Prof. Andrzej Horban MD PhD  
National Consultant in Medical Microbiology Prof. Katarzyna Dzierżanowska-Fangrat MD PhD  
National Consultant in Maritime and Tropical Medicine Prof. Waław Leszek Nahorski MD PhD  
Narodowy Instytut Zdrowia Publicznego – Państwowy Zakład Higieny (NIZP-PZH)



[108]

**The attitude of Polish women planning pregnancy and having children towards vaccinations**

Carlo Bieńkowski, Agata Golik, Monika Kowalczyk

carlo.bienkowski@gmail.com

Student's Scientific Group affiliated to the 2nd Department of Obstetrics and Gynaecology, Medical University of Warsaw

**Trustee of the paper:** Joanna Kacperczyk-Bartnik, MD, Paweł Bartnik, MD, Agnieszka Dobrowolska-Redo MD, Assoc. Prof. Ewa Romejko-Wolniewicz, MD, PhD

**Introduction:** Vaccinations are currently the best method of preventing infectious diseases. Some infectious agents known as TORCH can cause serious fetopathy. Some of them can be avoided by implementing appropriate prevention while planning pregnancy. Every pregnant woman should be vaccinated against: influenza, MMR, dTap, varicella, Hepatitis B.

**Aim of the study:** The aim of the study was to examine the attitude of women planning pregnancy or having children towards vaccinations.

**Material and methods:** It was a cross-sectional survey study. The questionnaire investigated the socio-economic status of women planning pregnancy or having children, their attitude towards vaccinations and willingness to vaccinate their children. The attitudes towards anti-vaccine movements and "smallpox party" were also checked.

**Results:** The studied group consisted of 2402 women, age range was 16-54 years (median: 31 years). The most numerous group were women from cities > 100,000 inhabitants (49.7%) and with higher education (71.9%). Positive attitude towards vaccinations was more common among younger ( $p=0.002$ ), nulliparous ( $p=0.004$ ) women from big cities ( $p=0.01$ ). 80.4% of women were not vaccinated during pregnancy, and 86.1% did not vaccinate before pregnancy. 64.3% of women considered vaccination safe, and 79.3% said they were effective against infectious diseases. 74.1% knew that infectious diseases can cause fetal defects. Among the 5 most-feared pathogens, the following were distinguished: *Toxoplasma gondii* (78.3%), Rubella virus (66%), CMV (52.3%), *Treponema pallidum* (43.3%), HSV (34.4%). 55% of women totally disagreed with the anti-vaccine movements, 22.9% partially agreed, 11.8% had no opinion, and 6.2% fully agreed. Regarding the so-called "Smallpox party" as many as 80.4% of women considered this phenomenon to be dangerous for children's health, 12.3% had no opinion, and 3.9% considered it a good way for children to acquire immunity.

**Conclusions:** Most women in Poland have a positive attitude towards vaccination, consider vaccines safe and effective against infectious diseases. A significant proportion of women planning to become pregnant or being pregnant is not vaccinated, the role of physician leading the patient to be vaccinated is crucial in this matter. About 12% of women are the undecided fraction, and the educational role of physicians is essential to convince them of the importance of vaccination.

[109]

**Has the prevalence of cigarette smoking among HIV-positive patients in Poland changed over the last decade?**

Pola Tochman

pola.tochman@gmail.com

Students' Scientific Society of the Department of Infectious and Tropical Diseases and Hepatology, Medical University of Warsaw

**Trustee of the paper:** Tomasz Mikula MD, PhD

**Introduction:** According to WHO reports the prevalence of cigarette smoking in the world population was 22% in 2016 (28% in Poland) and the number of tobacco-related deaths reaches 7 million people every year. The serious health consequence risk is much higher for HIV-positive smokers, mostly due to the increased probability of developing cancers, infections, COPD and poorer response to antiretroviral therapy. Nevertheless, tobacco use among people living with HIV is still 2-3 times higher than in the general population. In the research conducted in 2009 among 116 HIV-positive patients in Poland, 87% had been smoking cigarettes longer than 5 years.

**Aim of the study:** The aim of this study was to evaluate the prevalence of cigarette smoking among HIV-positive patients in Poland comparing to the results from 2009.

**Material and methods:** We conducted a survey among 56 HIV-positive patients admitted to the Department of Infectious and Tropical Diseases and Hepatology, Medical University of Warsaw from November 2018 to January 2019. The characteristics included: gender; age; present and past smoking habits: the number of cigarettes

smoked per day, the number of years as a smoker; the influence of HIV diagnosis on the number of cigarettes smoked.

**Results:** Among all 56 patients, 48 (86%) were men and 8 (14%) were women with age median 39,5 years for men and 35,5 years for women.

In our results, 25 (45%) patients were current smokers (at least 5 years and 10 cigarettes per day) and 10 (18%) were ex-smokers (same criteria). Among current or ex-smokers, 30 were men (63% of all male patients) and 5 were women (63% of all female patients).

Among all smokers, 21 (60%) patients admitted that diagnosing the HIV infection had an impact on their smoking habits: 20 (95%) increased and 1 (5%) decreased the number of cigarettes smoked.

**Conclusions:** Comparing to the results from 2009 the prevalence of tobacco use among HIV-positive persons in Poland decreased, but is still much higher than in the general population. The outcome indicates the need to improve smoking education by HIV-providers. Smoking cessation treatment should become an integral part of HIV care for patients to fully benefit from antiretroviral therapy.

## [110]

### **HIV infection: assessment of awareness of the community in Russia**

Maxim V.Dmitriev, Anton A.Korotchenko, Natalya N. Osipov, Vera M. Zaytseva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Anna Krikova, PharmD, PhD

**Introduction:** In Russia there are 146 million residents and more than 900,000 of them are HIV-positive. Every hour in Russia 10 people become infected. Low awareness of the community of HIV infection leads to extensive spread of the socially significant disease.

**Aim of the study:** The aim of the study was to assess community awareness of HIV infection and all associated aspects.

**Material and methods:** The study involved 292 individuals at the age 13 - 88. We designed a questionnaire and conducted a survey by the Smolensk Regional Office called "Medical students volunteers". Our study was a part of the Russian National Project on Healthy Lifestyle Promotion.

**Results:** When asked "Are AIDS/HIV infection problems important for you?", 83,9% of respondents answered "Yes", 16,1% - "No". When asked "Is it necessary to isolate HIV-positive people or people with AIDS from society?", 14,7% answered "Yes", 85,3% answered "No". Respondent's attitude to the possibility of close communication with HIV-positive person: 86,3% respondents answered "Yes, I will communicate", 13,7% answered "No, I won't communicate". Question "Is it possible to identify HIV-positive people by their appearance?" The answers were distributed in the following way: 6,9% considered that they could detect HIV-positive person by appearance, 93,1% answered "No". 50,3 of respondents knew where they could have an anonymous test for HIV infection. 49,7% - didn't know. When asked "Would you like to pass the test for HIV infection?" 43,2% answered - "Yes", 56,8% - "No"

**Conclusions:** 1. More than a half of the respondents (83,9%) consider that it is really important to have information on HIV infection.

2. The majority of respondents (85,3%) consider there is no need to isolate HIV-positive people and they aren't against communication with them.

3. The vast majority of respondents (93,1%) can't identify HIV-positive people by appearance.

4. Half of the respondents don't know where to take an anonymous HIV test;

The results of the survey disclosed that preventive activities aimed at informing the community on HIV infection are of great significance and should be conducted on a regular basis. In teenagers and youth people the best results are achieved through trainings, thematic conversations with an opportunity to ask intimate questions and receive expert answers.

[111]

### **The most common complications in hospitalized children with varicella**

Klaudia Nowicka, Martyna Szewczyk  
nowicka.klaudia95@gmail.com

The Student Scientific Circle of the Department of Children's Infectious Diseases

**Trustee of the paper:** dr n. med. Ewa Talarek

**Introduction:** Varicella, caused by the varicella-zoster virus (VZV), is a childhood disease affecting those younger than 20 years in 95% of cases. In immunocompetent children it is generally relatively mild and self-limiting but complications resulting in hospitalization are reported.

**Aim of the study:** The aim of this study was to analyze the causes of hospitalization in the course of varicella in children and to describe the most common complications.

**Material and methods:** An analysis was performed of the medical documentation of children hospitalized for varicella in Department of Children's Infectious Diseases, Medical University of Warsaw, from 01.01.2015 to 31.12.2017. The complications were defined according to ICD-10 and were further analyzed.

**Results:** From January 2015 to December 2017, 473 varicella associated hospitalizations were reported.

There were 240 boys and 233 girls, the mean age was 3 years 10 months (range: 11 days - 17 years 11 months). 23 children were hospitalized because of their immunodeficient status and need of intravenous antiviral treatment. The remaining 450 patients were admitted because of complications and/or coincidence with other condition. Bacterial infections of the skin and soft tissue were the most frequent complications (286 cases; 60,47%), followed by respiratory tract infections (107 cases; 22,6%).

The most common clinical form of bacterial skin complication was pyoderma, which occurred in 280 children. Cellulitis was diagnosed in 56 patients. Abscess formation was reported in 7 patients. The mean length of hospitalization was 5 days (range: 1-15 days).

Among children with respiratory tract infection in 36 cases pneumonia was diagnosed, in 30 – URTI, in 28 – acute otitis media and in 13 - bronchitis. The mean length of hospitalization in this group of patients was 5 days (range: 1-20 days).

**Conclusions:** Bacterial skin infections are the most common complications of varicella among hospitalized paediatric patients. The clinical course may be severe and complicated resulting in prolonged hospitalization or need of surgical intervention.

[112]

### **The clinical course of *Listeria monocytogenes* meningitis compared to other community-acquired bacterial meningitis**

Carlo Bienkowski  
carlo.bienkowski@gmail.com

Department of Infectious Diseases for Adults, Medical University of Warsaw

**Trustee of the paper:** Marcin Paciorek, MD, PhD

**Introduction:** Bacterial meningitis (BM) is a life-threatening infectious disease in which not only subarachnoid space and meninges, but also brain parenchyma is involved in the inflammatory reaction (meningoencephalitis). *Listeria monocytogenes* is a gram-positive bacillus principally spread by contaminated food. The main risk factor for *Listeria meningitis* (LM) is age and immunodeficiency. Due to the resistance of *L. monocytogenes* to third generation cephalosporins (empiric treatment of BM), it is important to distinguish a group of patients with an increased risk of *Listeria meningitis* where the drug of choice is ampicillin.

**Aim of the study:** The aim of the study was to find differences in symptoms and signs, laboratory tests and comorbidities in order to distinguish irregularities characteristic of LM and to evaluate the results of treatment compared to non-*Listeria* bacterial meningitis (NLBM) patients.

**Material and methods:** Medical charts of all patients with BM diagnosed in Department of Infectious Diseases for Adults between 2010 and 2017 were analyzed. There were 337 patients with BM divided into two groups of *Listeria monocytogenes* meningitis (Group A; n=24) and non-*Listeria* bacterial meningitis (Group B; n=313). The diagnosis was based on the clinical manifestation, CSF tests, positive cultures or positive direct microscopy. All cases of LM were confirmed microbiologically. Symptoms and signs, incidence of comorbidities, deviations in blood and CSF laboratory tests, treatment results were studied in both groups.

**Results:** The age range was 17-93 years. Patients from group A were older compared to group B (62 years vs. 57 years,  $p=0.039$ ). The analysis showed no significant differences in symptoms and signs. Patients with LM were more likely to have tumors (29.17% vs. 8.59%,  $p=0.002$ ) and more often had any immunodeficiency (45.83% vs. 10.58%,  $p<0.05$ ). Laboratory tests showed a lower WBC level in blood (10.7 cells/mm<sup>3</sup> vs 15.5 cells/mm<sup>3</sup>,  $p=0.0036$ ), lower granulocytes% (62% vs. 90%,  $p=0.002$ ) and lower CRP level (150 mg/L vs 230 mg/L,  $p=0.02$ ) in group A. The CSF tests showed a lower cell count (531.5 cells/mL vs. 1230 cells/mL,  $p=0.01$ ) and a lower chloride level (113 mmol/L vs. 117 mmol/L,  $p=0.009$ ) in Group A.

**Conclusions:** Meningitis due to *L. monocytogenes* is a disease that occurs more often among immunocompromised and elderly individuals. Symptoms and signs are similar in both groups. Patients with LM have a lower cytosis in CSF and a lower WBC level in peripheral blood morphology.

[113]

#### **Evaluation of the focal changes in liver in patients with alveolar echinococcosis treated with albendazole**

Magdalena Radziszewska, Dominika Paździor

magda.17@o2.pl

Students' Scientific Society of the Department of Infectious and Tropical Diseases and Hepatology of Medical University of Warsaw

**Trustee of the paper:** Tomasz Mikuła MD, PhD

**Introduction:** Alveolar echinococcosis is a parasitic disease caused by *Echinococcus multilocularis* tapeworm larvae. After ingestion of invasive eggs by a human, the oncosphere hatches in the lumen of the small intestine and then penetrates the intestinal wall in order to enter the portal circulation. It localizes itself in the liver, usually forming a non-embossed structure. Alveolar echinococcosis occurs rarely in Poland (about 40 cases a year), but in recent years there has been an increase in the incidence among humans.

**Aim of the study:** The aim of the study was to evaluate the focal changes in liver in patients treated with albendazole based on the results of ultrasound examination and laboratory tests of the patients.

**Material and methods:** Our study took into account 11 patients (4 men, 7 women) admitted to the Department of Infectious and Tropical Diseases and Hepatology, Department X of Warsaw's Hospital for Infectious Disease, who were diagnosed with alveolar echinococcosis in the years 2015-2018. The results of laboratory and imaging examinations on the day of the diagnosis, the day of the first control visit (6 months later) and the second control (about 12 months later) were compared.

**Results:** In 3 patients there were no hepatic symptoms at the time of the diagnosis. In the abdominal ultrasound examination, the lesions in the liver were described in 6 cases as cysts, in 3 cases – as litho-fluid focal lesions/changes, and in 2 as infiltrations. Lesions in the liver varied from 6 to 110 mm in diameter. In laboratory findings, GGTP was elevated in 10 patients, whereas in 3 patients it was the only elevated hepatic marker. In 6 people, there was a suspicion of neoplastic process before confirmation of the echinococcosis.

One year after the diagnosis, 4 patients underwent resection of the liver segment, in 2 patients liver lesions decreased in size, while in the rest, despite the stabilization of laboratory markers, liver lesions were not significantly reduced.

**Conclusions:** Despite treatment with albendazole and stabilization of liver function (due to the normalization of laboratory markers), the lesions caused by *E. multilocularis* are not decreasing in size significantly. Due to that, patients require regular follow-up visits and control USG, CT or MRI scans in periods of minimum 6 months.

[114]

#### **The rate of peripheral intravenous catheters bacteriological contamination, etiology and risk factors**

I.Veckalns; V. Baltmane

veckalnsi@gmail.com

RSU Department of Biology and Microbiology

**Trustee of the paper:** Dr.med.I.Skadiņš

**Introduction:** According to WHO given data of every 100 hospitalized patients at any given time, 7 in developed countries will acquire at least one health care-associated infection. One of the causes leading to nosocomial infections is bacterial contamination of peripheral venous catheters. The risk of contamination is increased by such factors as immune suppression, age and prolonged and inappropriate use of invasive devices and antibiotics.

**Aim of the study:** The aim of this study was to identify the rate of peripheral intravenous catheter colonisation taken from patients and determine the microorganisms that cause it.

**Material and methods:** The peripheral venous catheters obtained in several hospital departments were transported to the laboratory in sterile container within one hour. The canules were sonicated for one minute at 44KHZ frequency. The obtained bacterial suspension was cultured on the following media – blood agar, trypticase soy agar, egg yolk salt agar, Sabouraud agar and McConkey (Oxoid, UK). The pure cultures were identified using Latex agglutination test and VITEK 2. Bacterial resistance to antibiotics was determined using VITEK 2 and Kirby-Bauer disc diffusion method.

**Results:** 63 intravenous catheters were obtained (25 female and 38 male patients). The average patient age of the patients with uncontaminated catheters group was 62.16 years as compared to the contaminated patient group of 73.08 years. Microbiological examination of the i/v catheters showed that 38% (24 catheters) of the 63 collected catheters were bacterially colonized (10 female patients – 42 % and 14 male patients – 58 %). From all i/v catheters inserted in ambulances 40% were colonized as compared to the contamination rate in hospital of 37%. Coagulase-negative staphylococci (CNS) were identified in 67% of the cases, in 8% of cases it was S.aureus. The peripheral catheters had remained in situ for the average of 3.3 days. No significant link between the insertion time and level of contamination was found. 26% of microorganisms were identified as antibiotic resistant. CNS showed resistance to gentamicin, fosfomycin, while 50% of S.aureus was resistant to B-lactam antibiotics.

**Conclusions:** The most common cause of i/v catheter colonisation was proven to be CNS. Prolonged i/v catheter localization in the body was not associated with a higher colonisation risk. Older age showed a higher risk of catheter colonisation.

[115]

#### **Analyzing Antibiotic resistance among Staphylococcus species as a model in Tver region (Russian Federation)**

Varun.S.A, Taneja.G, Kravchuk.E.S, Levchina.M.Y, Voevodina.V.A, Solovyeva.K.Y

varun.athreyas@gmail.com

TSMU, Tver, Russia, Department of Microbiology and Virology with a course of immunology.

**Trustee of the paper:** Professor Chervinets. Yu.V (D.sc)

**Introduction:** Antibiotics- one of the most important discoveries in medical sciences, will pose a big challenge to modern medicine in the near future. The world today is heading towards a pre-penicillin era, as many bacteria are resistant due to heavy antibiotic abuse.

**Aim of the study:** To analyze antibiotic resistance offered by Staphylococcus aureus & Staphylococcus epidermidis using serial dilution method among children of different age groups.

**Material and methods:** Our work involved a total of 95 healthy participants from the city of Tver and Torzok in Russia, comprising 35 new born, 32 children (8-12 years) and 28 teenagers (16-18years). Smears were taken from different biotopes of the body such as nose, pharynx, saliva and feces. Their samples were investigated by classic bacteriological method. API systems (BioMerieux, France) were used for identification of S. aureus & S. epidermidis. Serial dilution method was used to evaluate resistance against 11 antibiotics such as oxacillin, gentamicin, vancomycin, chloramphenicol, erythromycin, tetracycline, rifampacin, clindamycin, fusidic acid, ciprofloxacin and mupirocin with the help of EUCAST standards.

**Results:** Isolations of the strains were done according to the following groups:

- New born - 25 strains of S.aureus and 10 strains of S.epidermidis.
- Children - 20 strains of S.aureus from Tver and 12 strains from Torzok.
- Teenagers - 7 strains of S.aureus from upper respiratory tract (URT) and 21 same strains from gastro-intestinal tract (GIT).

As a result:

1. New-born: S.aureus have developed absolute resistance towards fusidic acid, gentamicin and rifampacin (>90%); S.aureus developed 43% more resistance towards clindamycin, mupirocin, and tetracycline compared with S.epidermidis.
2. Children: Strains of S.aureus from Torzok (41%) showed increased resistance to oxacillin than strains from Tver (10%). Strains showed no resistance to chloramphenicol and ciprofloxacin and less than 10% resistance to vancomycin.
3. Teenagers: S.aureus from the URT have an increasing trend in resistance (20%) compared to strains from the GIT.

**Conclusions:** All isolated staphylococcus strains showed low resistance chloramphenicol, ciprofloxacin and vancomycin. High resistance was shown to rifampicin, gentamicin and fusidic acid. The results suggest that the reason for high resistance to rifampicin, gentamicin and fusidic acid lies in the development of new protection mechanisms of protein synthesis by cells of *S.aureus* and *S.epidermidis*.

[116]

**Etiological structure of newborns' infectious diseases with a fatal outcome in Smolensk maternity hospitals**

Anna Mikheeva, Olga V. Azovskova

amikheevag@mail.ru

Smolensk State Medical University

**Trustee of the paper:** Olga V. Azovskova, PhD

**Introduction:** Infectious diseases (intrauterine and hospital-acquired (HAI) infections) are the leading causes of infant mortality. The frequency and etiological structure of intrauterine infections and HAI vary in different regions of Russia.

**Aim of the study:** Our aim was to analyze the etiological structure of newborns' fatal infections in maternity hospitals of Smolensk in 2016-2018.

**Material and methods:** Autopsy material and blood were investigated. The bacteriological study was carried out using a standard set of growth mediums; identification of the isolated microorganism - using the MALDI-TOF. Identification of antibiotic sensitivity was performed by disc diffusion method.

**Results:** 44 cases of fetal and neonatal death were investigated. The incidence of intrauterine infections among fatal infectious pathologies was 26.4%, HAI – 93.4%. Etiological structure of intrauterine infections: *S. agalactiae* (62.5%), *S. gallolyticus* (37.5%). Moreover, infections caused by *S. gallolyticus* in 100% of cases ended in fetal death with different terms of gestation. Structure of HAI: 52.2% cases - non-fermentative and intestinal microorganisms (*P. aeruginosa*, *A. baumannii*, *E. coli*, *K. pneumoniae*) in association or in monoculture; 47.7% - coagulase-negative *S. haemolyticus*. *Staphylococcus haemolyticus* was the HAI etiological factor in children with intraventricular hemorrhages in 100% cases. It participated in the development of both local (pneumonia-53% of cases) and generalized (sepsis - 47% of cases) processes. All such strains had multidrug resistance.

**Conclusions:** The number of deaths from intrauterine pathology was 26.4%; from HAI - 93.4%. Today the main causative agent of intrauterine infection among streptococci is considered to be *Streptococcus* group B (*S.agalactiae*). An etiological role can also play *Streptococcus* group D (*S. gallolyticus*). The HAI causative agents were characterized by multi-resistance. *S.haemolyticus* which has the evolutionary advantages over other pathogens is also among them.

In our study, the main causative agents of fetal and neonatal infections that ended in death were *Streptococci*: group B - 11.3%, group D - 7.4%; *Enterobacteriaceae* (*E. coli*, *K. Pneumonia*) – 31.8%; non – fermenting microorganisms (*A. baumannii*, *P. aeruginosa*) - 20.4%; and *S. haemolyticus* - 29.1%. Careful continuous microbiological monitoring of the etiological structure and antibiotic resistance of the isolated hospital strains will allow to develop a system of effective preventive measures and methods of treatment.



# Internal Case Report

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 8, Library – CBI

**Jury:**

prof. dr hab n. med. Zbigniew Gaciong  
prof. dr hab. n. med. Andrzej Deptała  
prof. dr hab. n. med. Małgorzata Wiśłowska  
prof. dr hab. n. med. Leszek Pączek  
prof. dr hab. n. med. Grzegorz Opolski  
prof. dr hab. n. med. Witold Tłustochowicz  
dr hab. n. med., prof. nadzw. Elżbieta Kramarz  
dr hab. n. med. Jacek Lewandowski  
dr hab. n. med. Cezary Szmigielski  
dr hab. n. med. Adam Przybyłkowski  
ppłk dr hab. n. med. Paweł Krześciński  
dr hab. n. med. Przemysław Witek  
dr n. med. Janusz Milewski

**Coordinators:**

Marta Perlik  
Kinga Pachowska

**Scientific Patronage:**

Towarzystwo Internistów Polskich  
Polskie Towarzystwo Nefrologiczne  
Polskie Towarzystwo Lekarskie  
Narodowy Instytut Geriatrii, Reumatologii i Rehabilitacji



NARODOWY INSTYTUT  
GERIATRII, REUMATOLOGII  
I REHABILITACJI

IM. PROF. DR HAB. MED. ELEONORY REICHER



[117]

**Satoyoshi syndrome-a case report from Warsaw**

Martyna Rożek, Aleksandra Biskup

a.biskup96@wp.pl

Department of Dermatology, Medical University of Warsaw

**Trustee of the paper:** Dr n. med. Tatsiana Damps

**Background:** Satoyoshi syndrome is a rare, multisystem disease of presumed autoimmune etiology. The diagnostic criteria for presented syndrome include alopecia, muscle spasms and diarrhea. Antinuclear antibodies are present in approximately 60% of patients with Satoyoshi syndrome. Glucocorticosteroids, azathioprine, cyclosporine and other immunosuppressive drugs are commonly used in general treatment.

In literature, less than 60 cases of patients with confirmed Satoyoshi syndrome have been reported. Two of them were treated in the Department of Dermatology, Medical University of Warsaw.

**Case:** The first patient, a 43-year old woman, presented with alopecia areata universalis of 7-year duration, reports painful muscle spasms and chronic diarrhea. She tested positive for antinuclear antibodies.

The second patient, a 41-year old woman, has been presenting alopecia areata ophiasis type and chronic diarrhea for 2 years. This patient has been diagnosed with myotonic dystrophy type 2. In her case, antinuclear antibodies have not been detected.

Treatment with immunosuppressive drugs in both patients resulted in improvement in spasms and partial hair regrowth.

**Conclusions:** It is worth emphasizing, that the promotion of knowledge of Satoyoshi syndrome is extremely important because patients afflicted with this disease are frequently misdiagnosed and are given the wrong treatment for many years.

[118]

**Immunotherapy and steroidotherapy at the same time? Case report of lung cancer with adrenal metastases**

Cyntia Szymańska, Ewelina Truszkowska

cyntia.jadwiga.s@gmail.com

Poznan University of Clinical Sciences

**Trustee of the paper:** dr n. med. Katarzyna Stencel

**Background:** Cancer immunotherapy uses elements of immune system such as CD8+ T cells to destroy tumor. In non-small cell lung cancer (NSCLC), there are two main goals: CTLA inhibition and PD-1 checkpoint blockade. When CTLA is concerned, it is an antigen expressed on the surface of T cells which prevents their activation. Consequently, the use of CTLA inhibitor allows T cells to fight with tumor. PD1, on the other hand, is expressed on tumor cells and also suppress T cells. Antibodies, which target PD-1/PD-L1, are pembrolizumab and nivolumab directed against receptor as well as atezolizumab against its ligand. In many clinical trials efficacy of those antibodies was proved as monotherapy and in combination with chemotherapy. Significantly, expression of these molecules occurs in half of NSCLC, so treatment is available for large group of patients.

**Case:** In February 2016 50-year old woman, non-smoker, started to suffer from pain in her shoulder, which was tried to cure with different analgesics. Then, in October, MRI was done and the reason of patient's complaint was revealed: tumor infiltrating Th3 vertebra and pleura as well as pathological fracture of the same vertebra. CT scan and fine-needle biopsy presented squamous cell carcinoma of right lung T4N2M1b. Patient underwent palliative radiotherapy (8 Gy in spine Th1-Th4, 1 fraction), followed by chemotherapy (carboplatin+taxol). In June 2017 proton therapy was done. Five months later, PET presented tumors in both adrenal glands, which in MRI were recognised as distant metastases. In March 2018 patient underwent bilateral adrenalectomy. Due to progressive ischemia, left nephrectomy was performed on the next day. In June patient was enrolled to TAIL clinical trial (atezolizumab in patients with IIIb/IV stage of NSCLC), even though she was taking corticosteroid substitution due to lack of adrenal glands. Partial response in RECIST was confirmed.

**Conclusions:** Lung cancer is often diagnosed as an advanced tumour, when surgery cannot be performed. However, in recent years immunotherapy emerged as a new method of treatment and it already have proven its clinical efficacy. Atezolizumab and other monoclonal antibodies are becoming more and more essential in lung cancer treatment. Taking corticosteroids, although often considered as a contraindication, may be accepted in cases when dose is low enough, equaling less than 10 mg prednisone.

[119]

**A patient with non-Hodgkin's lymphoma complicated by hemophagocytic lymphohistiocytosis**

Barbara Brzezinska

barbarab14@vp.pl

Poznań University of Medical Sciences, Department of Hematology and Bone Marrow Transplantation

**Trustee of the paper:** Monika Joks MD PhD

**Background:** Hemophagocytic lymphohistiocytosis (HLH) is a serious disease associated with an overwhelming cytokine storm and severe inflammation. It may develop due to genetic abnormalities, infection, autoimmune disorders or malignancies. It can occur as the first manifestation of disease. Due to the non-specific symptoms, HLH is underdiagnosed.

**Case:** A 37-year-old man was admitted to the hospital due to the fever, weakness, abdominal pain and peripheral oedema. USG, CT and blood count examination showed hepatosplenomegaly, ascites and pancytopenia. Due to the bad general condition, steroid therapy was included and the axillary lymph node was taken. Histopathological examination revealed changes after steroid therapy that caused the material was non-diagnostic. The patient fevered up to 40 degrees, ascites and peripheral oedema were detected. Laboratory test revealed elevated ferritin (14998ng/ml ref.=10-150) and transaminases, high CRP, hypertriglyceridemia and hypofibrinogenemia. CT scan showed fluid in pleural cavities, peritoneum cavity and hepatosplenomegaly. In the bone marrow examination hemophagocytosis and TCR-G rearrangement was detected. According to the Histiocyte Society guidelines, six of the eight diagnostic criteria was fulfilled for diagnosis HLH. Therapy based on the HLH-2004 protocol was introduced. It was decided to perform a splenectomy. In histopathology we found angioimmunoblastic lymphoma. The patient was qualified for chemotherapy in the CHOP protocol. Moreover, between the next series of CHOP, severity of symptoms HLH were observed: fever, oedema, hepatomegaly. After five cycles of CHOEP we confirmed refractory disease. The patient received the second line therapy: 2 x ESHAP. PET/CT scan revealed disease metabolic active lesions in bone marrow, liver, lymph nodes and omentum. After one course of IVE chemotherapy the patient died due to multiorgan failure.

**Conclusions:** HLH is mortal condition and may be undiagnosed due to non-specific clinical manifestation. Clinicians should be alert to patients presenting fever of unknown origin with pancytopenia, hyperferritinemia, hypertriglyceridemia who are not responding for antibiotics. When HLH is confirmed it should be performed diagnostics for infection, autoimmune disease and malignancy. The treatment of HLH is difficult and often leads to death, even if was carried out correctly.

[120]

**Primary malignant tumour mimicking hydatid cyst disease. A diagnostic challenge**

Esmira Gajiyeva

esmira.gajiyeva@gmail.com

Medical University of Bialystok, Department of infectious Diseases and Neuroinfection

**Trustee of the paper:** Prof. dr hab. n. med. Joanna Zajkowska

**Background:** Establishing the diagnosis of atypical brain lesions can be challenging, since parasitic infections sometimes mimic brain neoplasms. It underlines the pressing need to develop modern brain imaging techniques for improvement of noninvasive diagnosis and treatment monitoring to avoid unnecessary manipulations. Hydatid brain cyst is a rare form of parasitic infection with *Echinococcus granulosus*, but represents an important group for differential diagnosis, especially in endemic regions. Humans get infected with the larvae form, usually by ingestion of food or water contaminated with dog feces. By hematogenous route it seldom reaches the brain, causing slowly growing cysts with mass effect presenting neurological complications or possible rupture and anaphylactic shock. On MRI well-defined oval or cystic mass with an attenuation or signal intensity similar to that of cerebrospinal fluid, no associated edema as is typically seen.

**Case:** A 61-year old patient with a history of chronic diseases was admitted to hospital due to memory loss and headache complaints lasting for about 1 year. Patient was hospitalised at the Department of infectious Diseases and Neuroinfection with findings of a frontal lobe cyst. Serological tests negative for *Echinococcus* spp. No abnormalities on physical examination. On brain MRI cystic lesion with thin walls was detected, with single septum inside, and no edema. On PET-MRI lesion metabolically inactive. Treated with albendazole with further referral to neurosurgical department. Lesion was surgically excised and concluded to be primary malignant tumor.

**Conclusions:** Definitive diagnosis of brain lesions can only be made histopathologically. Because of high risk of complications brain biopsy is not recommended in HD. Therefore MRI is the modality of choice, PET-MRI gives metabolic activity information additionally. When serologically negative hydatid cyst disease suspected, initial treatment with albendazole is advisable in order to prevent spread of possible infection. The next step is surgery with total excision and histopathological investigation. Upon final diagnosis, either further treatment with albendazole in case of HD confirmation or initiation of oncological treatment is needed.

[121]

**Paradoxical embolism is a clinical phenomenon you have to keep in mind in presence of embolic stroke**

Gabrielė Juškytė, Eglė Kabašinskaitė, 6th year medical students

gabriele.juskyte@gmail.com

Vilnius University, Faculty of Medicine

**Trustee of the paper:** Assoc. prof. Birutė Petrauskienė, Vilnius University Hospital Santaros Clinics, Centre of Cardiology and Angiology

**Background:** Paradoxical embolism (PE) is a life-threatening condition with diverse clinical presentation. Intracardiac or pulmonary shunts detection is the main goal before any complications manifest. Patent foramen ovale (PFO) prevalence decreases with age. If PFO combines with another condition, such as atrial fibrillation, the risk of stroke increases.

**Case:** 73 years old female admitted to Santaros Clinics (SC) emergency room due to presyncope episode in the street. On-site ECG revealed atrial fibrillation. In the emergency room transesophageal echocardiography was performed and no thrombi were found which led to electrical cardioversion strategy. Sinus rhythm was restored, and next day patient released for an outpatient treatment with anticoagulative and antiarrhythmic agents. The same evening patient was admitted to SC again presenting with severe dyspnea and weakness. Due to signs of respiratory failure patient was transferred to intensive care unit (ICU). D-dimer and BNP concentrations were elevated. Chest CT angiography revealed no major pulmonary artery embolism. Echocardiography revealed right heart strain. Continuing the examination, on the next morning ICU staff noticed patient to be desoriented and lethargic with left hemiparesis. Stroke was suspected, cranial CT showed right middle cerebral artery infarction. Successful thrombectomy was performed and no neurological deficiency was observed afterwards. Due to repolarization abnormalities in ECG, the patient was transferred to cardiology department. On the arrival, she presented with dyspnea. Elevation of D-Dimer and troponine I concentrations were observed and PFO was discovered in echocardiography. Paradoxical embolism was suspected, so deep vein ultrasound was performed and origin of thrombi found in the left calf. All diagnostic criteria of PE were supported and PE diagnosed. Oral anticoagulation was restarted. Dyspnea disappeared on the following day. Patient was released for an outpatient treatment continuing long-term anticoagulation and antiaggregation and, possibly, foramen ovale closure in future.

**Conclusions:** PE diversity of clinical manifestation makes the approach to diagnosis challenging. It is essential to keep in mind, that one of the embolic stroke reasons can be paradoxical embolization.

[122]

**Foot burn injury in patient with diabetic polyangioneuropathy in primary care: a difficult clinical case report**

Eglė Kabašinskaitė, Gabrielė Juškytė, 6th year medical students

e.kabasinskaite@gmail.com

Vilnius University, Faculty of Medicine

**Trustee of the paper:** assist. Dr. Jūratė Pečeliūnienė, assoc. prof. Rita Šulcaitė

**Background:** Due to reduced peripheral sensation and impaired circulation in the lower extremities, accidental foot injuries may develop in patients with diabetic foot (DF). Severe DF burn case is shown in our clinical report of type 2 diabetes mellitus (2DM) primary care (PC) patient.

**Case:** 59 year old female 2DM patient visited PC doctor complaining on pain, light fever ( $t^{\circ}=37, 2^{\circ}\text{C}$ ), changed color, blisters of the right foot skin. Disease anamnesis: injury developed after warming it up next to the electric flat heater—patient did not feel the burning, only noticed it as changed skin color and blisters on the next morning. Her medical history documented 18 years (yrs.) of 2DM, lastly treated with insulin, early diabetic polyangioneuropathy, retinopathy (5 yrs.), bilateral Charcot joint (5 yrs.); nephropathy (1 yr.); poor glucose control (HbA1C 8,6%), several hypoglycemic comas (the last one - 3 weeks ago); repeating DF deep ulcers and wounds (2 hospitalizations during the last 10 months). Patient was cito! referred to the clinic of endocrinology

where swollen and flushed right foot up to the knee also wounds in the right sole (RS) and fingers (burning type) with partial skin necrosis documented; 2 deep unhealed ulcers in the left sole (LS), deformed joints (both ankles), absent pedal pulses and loss of sensation in both legs, and body mass index-48 kg/m<sup>2</sup> were stated. Treatment: injection of cefuroxime 750 mg every 12 hours; wound dressings with chlorhexidine, betadine solutions and dermazin cream were performed daily. Positive DF dynamic was seen in 20 days: body temperature normalized; right foot swelling, flush and pain decreased; LS ulcers almost healed, however huge skin defect covered with fibrin remained in the RS. Patient was discharged for an outpatient treatment to continue antibiotic therapy and wound dressing for 2 weeks, following the visit to the diabetologist nurse. Wounds and ulcers of both feet remained until patient has died from 2DM complications (sepsis→cardiopulmonary insufficiency) in 1, 5 year after admission to a hospital due this burning injury.

**Conclusions:** Severe clinical consequences of preventable DF burn injuries during warming or using heating devices for feet may occur in DM patients. Lack of patients' diabetes education may be the reason of such-alike injuries.

[123]

### **Drug Rash, Eosinophilia and Systemic Symptoms - DRESS Syndrome - Case Report**

Anna Krupa, Maja Draszczuk

anna.m.krupa@gmail.com

Department of Infectious Diseases and Allergology (Military Institute of Medicine), Medical University of Warsaw

**Trustee of the paper:** dr hab. n. med. Andrzej Chciałowski

**Background:** Severe cutaneous adverse reactions (SCAR) to drugs are a hypersensitivity reactions with different clinical manifestation. One of these form is drug reaction with eosinophilia and systemic symptoms is DRESS. DRESS is a severe idiosyncratic to drugs-induced reaction characterised by skin rash, fever, lymphadenopathy, hematologic and laboratory abnormalities, for example liver enzymes elevation. Due to the severe course leading in 10% of cases to death, rapid diagnosis and the initiation of suitable treatment is necessary.

**Case:** We are presenting a case of a 32-year old man with DRESS syndrome induced by anti-epileptic drugs – one of the most common cause of this reaction. High fever with widespread rash, lymphadenopathy, hepatomegaly, eosinophilia and elevated liver enzymes were the main symptoms and laboratory abnormalities. He was primary diagnosed in the Department of Infectious Diseases and Allergology (Military Institute of Medicine). Oral methylprednisolone 60 mg daily was used as a first line of treatment. Due to the lack of satisfactory posttreatment improvement, the intravenous immunoglobulin (IVIG) infusion (1 g/kg/day for 5 days) was added, without therapeutic effects. The patient was transferred to the Dermatological Department (Medical University of Warsaw), in which cyclosporine in a daily dose 2-5 mg/kg was applied, achieving gradual improvement and skin lesions resolution. There was also a need for a neurological consultation and changes to anti-epileptic therapy.

**Conclusions:** The presented case shows us students and doctors in a near future, that medical history should be thoroughly carried out and that the skin lesions may be considered as a reaction to the applied treatment. In this respect a cooperation between an allergologist, dermatologist and neurologist is very important.

[124]

### **Like a needle in a haystack: searching for the cause of AA amyloidosis. Case report**

Piotr Janicki

piotrjanicki000@gmail.com

Klinika Chorób Wewnętrznych, Nefrologii i Dializoterapii, Wojskowy Instytut Medyczny Warszawski Uniwersytet Medyczny

**Trustee of the paper:** prof. dr hab. n. med. Stanisław Niemczyk

**Background:** AA Amyloidosis is a rare disease which is a consequence of a chronic inflammation taking place in the body. As a result of the inflammation, acute phase proteins are produced. One of them, SAA (Serum Amyloid A), is synthesised in hepatocytes. From that protein a small portion, called the AA protein, separates and deposits in various tissues and organs, most commonly the kidneys, with proteinuria as the first symptom. The process of deposition leads to a wide array of clinical symptoms. Arguably the most important factor of its management is to determine the underlying illness.

**Case:** A 68-year old male with a history of tuberculosis, hemoptysis, type B hepatitis, esophageal reconstruction surgery after a lye burn in 1969 and family history of neoplasms presented in December 2013 with proteinuria of 2,7g/24h, haematuria and splenomegaly with lymphocytosis. Suspecting a systemic connective tissue disease, a kidney biopsy was planned. However, the patient did not give consent. In February 2015 the patient returned, with proteinuria higher than 5g/24h. Between hospitalisations, a splenectomy was performed due to a splenic diffuse red pulp lymphoma. This time, a kidney biopsy revealed

A amyloid deposits in all of the glomeruli. Additionally, stromal lymphocyte infiltration and tubular atrophy were found. Thus, the patient was diagnosed with AA amyloidosis. Then, in order to find the cause of this newly-diagnosed condition, differential diagnosis was introduced. The patient tested negative for antibodies including ANCA, ANA, anti-GBM. Various imaging techniques were used, to exclude neoplastic lesions, tuberculosis and rheumatoid arthritis to name a few. A trepanobiopsy examined by a hematologist proved that splenic lymphoma was not associated with amyloidosis. Finally, an esophageal X-ray and PET-CT scan showed inflammation in the esophageal anastomosis. The patient received a Methyprednisolone pulse treatment, and after 8 months additional Cyclosporin. A PEG tube was inserted regarding the patient's poor nutritional state.

**Conclusions:** Amyloidosis is a disease which continues to pose a challenge. Until there is a universal treatment available, patients often have to undergo long diagnostic processes and long hospitalisations, which often are a hardship on their own. It is worth noting that even after finding the primary disease there is little room for improvement. Further advancements are required to understand and treat this condition better.

[125]

#### **Emphysema as a possible complication of IRDS treatment leading to lung transplantation**

Maria Królikowska, Małgorzata Kowacka, Marcelina Łazaj, Damian Maruszak  
marysia.krolikowska@gmail.com

Department of Cardiac, Vascular and Endovascular Surgery and Transplantology, SDMZ in Zabrze, Medical University of Silesia in Katowice, Silesian Centre for Heart Disease in Zabrze, Poland

**Trustee of the paper:** Marek Ochman MD PhD, Mirosław Nęcki MD PhD

**Background:** Infant respiratory distress syndrome (IRDS) is developed among premature infants due to structural immaturity of lungs and insufficient production of pulmonary surfactant. Nowadays, treatment takes place under conditions of intensive care and includes oxygen therapy, mechanical ventilation and surfactant supplementation through exogenous preparation. The treatment of IRDS may lead to complications that may contribute to developing a severe dysfunction of respiratory system. In these instances, double lung transplantation is used as an ultimate therapeutic option.

**Case:** The woman was born as a preterm infant with IRDS and required mechanical ventilation without surfactant administration that impaired lungs and initiated emphysema. She also developed an asthma which has led to recurring respiratory infections in childhood. After she went into a labor with her first child a significant deterioration of the respiratory function occurred and a quickly progressing emphysema was revealed in the chest X-ray. In March 2015, a 33-year old woman with emphysema has been admitted to the Department of Cardiac, Vascular and Endovascular Surgery and Transplantology in Silesian Center for Heart Diseases in Zabrze. She demonstrated an end-stage lung dysfunction with FEV1 0,59l (21% predicted), FVC 1,2l (37% predicted) and FEV1/FVC 49%. Patient reached the distance of 189m during 6-minute walk test (6MWT).

In March, 2016 the patient has been admitted to above-mentioned unit in order to undergo a sequential double lung transplantation. Almost 3 years after the surgery the patient's results are satisfying as she reached FEV1 1,21l (44%), FVC 2,57l (81%), FEV1/FVC 47% and walked 463,4m in 6MWT.

**Conclusions:** Premature infants with an infant respiratory distress syndrome (IRDS) who were mechanically ventilated without intratracheally surfactant administration are exposed to the risk of emphysema development. At the time of her birth surfactant administration in Poland was not available. This should be taken into consideration during the differential diagnosis of emphysema.

Lung transplantation is an ultimate treatment for patients with end-stage lung disease due to emphysema.

[126]

**Unexpected chronic thromboembolic pulmonary hypertension in a patient referred as acute pulmonary embolism only – the case report**

Magdalena Piñasiewicz, Inga Mijas  
magdapilasiewicz@interia.pl

Students` Scientific Association by Department of Internal Medicine and Cardiology, Medical University of Warsaw, Poland

**Trustee of the paper:** Michał Machowski, Piotr Bienias

**Background:** Pulmonary embolism occurs in approx. 84/100000 people each year in Europe which may result in chronic thromboembolic pulmonary hypertension (CTEPH). Pathophysiology of CTEPH is based on the occlusion of pulmonary arteries by preserved thromboembolic material, resulting in high pulmonary artery pressure and progressive right ventricular failure. Five in one million subjects develop CTEPH every year, however approx. only one of them is accurately diagnosed and receives appropriate treatment. It is usually due to nonspecific symptoms that might mimic coronary artery disease. Proper diagnose is extremely vital as CTEPH is associated with high mortality up to 90% in a 5 year observation in patients with mean pulmonary artery pressure above 50 mmHg.

**Case:** We present a case of a 71-year-old man with multiple cardiovascular comorbidities including coronary artery disease, conduction and rhythm disturbances and also with history of venous thromboembolism in the past. The patient was referred to our department due to a diagnosis of acute pulmonary embolism with intermediate-high early mortality risk. He was in medium condition and presented typical clinical symptoms with right ventricle failure. However, performed echocardiography suggested rather chronic than acute condition, including right ventricle artery pressure 90 mmHg. CT scan results revealed large and old thromboembolic material in proximal segments of pulmonary arteries while possible recent embolism. Despite many past hospitalizations due to cardiovascular events, progressive dyspnoea and right ventricle failure, diagnosis of CTEPH was not raised before. The patient received low molecular heparin treatment in therapeutic dose as previous antagonist vitamin K therapy was evaluated as ineffective. After an improvement of clinical status he was discharged. Further diagnostic procedures including right heart catheterization were arranged with intention of future interventional treatment.

**Conclusions:** Symptoms of CTEPH may be misleading and are often neglected. Despite unfavourable prognosis, treatment may significantly improve patients' survival rate and quality of life. Progressive dyspnoea or heart failure after pulmonary embolism must be checked with echocardiographic assessment and sometimes with CT, scintigraphy and right heart catheterization too. New therapies including balloon pulmonary angioplasty and riociguat are now extensively implemented in treatment of CTEPH.

[127]

**34-year old patient with Gitelman syndrome - case report**

Maciej Ziółkowski, Karolina Skalska  
maciej.jerzy.ziolkowski@gmail.com

Medical University of Warsaw / Student's Scientific Group of Nephrology and Dialisotheapy, Military Institute of Medicine in Warsaw

**Trustee of the paper:** Prof. Stanisław Niemczyk MD PhD

**Background:** Gitelman's syndrome (GS), also known as familial hypokalemia-hypomagnesaemia, is an autosomal recessive disease. It is caused by biallelic mutations in the SLC12A3 gene encoding a thiazide-sensitive sodium and chloride symporter in the distal renal tubule (NCC). Although the disease is rare, it is the most common hereditary tubulopathy. It also manifests with hypocalcauria and metabolic alkalosis. The clinical picture is varied and requires differentiation with other internal and neurological diseases.

**Case:** The subject of the study is the case of a 34-year-old woman who experienced the following symptoms: faint without loss of consciousness, chest pain, dyspnoea, palpitations, headache and dizziness, weakness, weight loss, and nocturia. The patient was taking potassium because of the hypokalemia diagnosed during pregnancy. Laboratory tests revealed hypokalemia, hypomagnesaemia, metabolic alkalosis, hypocalciuria and increased magnesium excretion in urine. The image of the kidneys in the ultrasound was normal. The diagnosis of GS was confirmed by genetic testing. Such diagnostics was also made in a healthy son of a patient who turned out to be an asymptomatic carrier of one of the mutations leading to GS.

**Conclusions:** Symptoms and signs of GS may imitate life-threatening diseases. The patient had to first exclude myocardial infarction and dangerous arrhythmias. After the diagnosis, potassium and magnesium supplementation was applied as a treatment. Furthermore, spironolactone was implemented to reduce renal potassium loss and to reduce alkalosis. The treatment resulted in clinical improvement and normalization of ionic disorders.

[128]

**CNS Listeriosis in a patient undergoing immunosuppressive therapy leading to potentially life threatening complications – Case Report**

Adnan Amin

adnanqwerty@gmail.com

Infectious Disease and Neuroinfection in Medical University of Bialystok

**Trustee of the paper:** Prof. Dr.Hab. Joanna Zajkowska

**Background:** CNS listeriosis caused by *Listeria monocytogenes* is a potential fatal foodborne infection of the central nervous system. Especially due to aging of population and rising indications for immunosuppressive therapy increases the risk of CNS listeriosis. In some cases suggests that foodborne *Listeria Monocytogenes* pass through the mucosal epithelium of the upper gastrointestinal tract which allow invasion in the brainstem by axonal migration along various cranial nerves. Once in the brainstem, *Listeria monocytogenes* can spread to higher brain centers and caudally to the spinal cord along axonal connections leading to life threatening complications.

**Case:** A 23-years old female patient, underwent 6 years of immunosuppressive treatment with Azathioprine for Crohn's Disease. On admission patient presented with fever, headache, emesis, left facial nerve paresis and neck stiffness. Lumbar puncture revealed pleocytosis of 17 cells. Blood culture revealed *Listeria Monocytogenes*. Initial diagnosis was *Listeria meningitis* but due to the worsening of the patient's condition such as impaired consciousness and tetraparesis, was transferred to the Neurology Department. MRI and CT scan showed multiple lesions surrounded by edema with mass effect, midline shift and final diagnosed as CNS Listeriosis. With patient's deteriorating, worsening of conscious level, breathing but no speech was transferred to Intensive Care Unit. Several managing therapies were performed such as antibiotic therapy, antifungal therapy, intubation, oxygen therapy, central venous catheter, percutaneous endoscopic gastrostomy and mechanical ventilation. After 3 months of pharmacological coma she has regained self-breathing but still with tetraparesis and status like "lock in syndrome". She was transferred back to Infectious Disease and Neuroinfection Department for continuation of treatment and start rehabilitation. Physical rehabilitation is still continued in high professional (including 2x stem cell injections). Patient is communicative, oriented with physical disabilities.

**Conclusions:** This case reveals that patients undergoing long term immunosuppressive therapy can be at risk with *Listeria monocytogenes* infections, which poses absolute disastrous ability to invade deep structures of the brain directly from the digestive system and cause potential fatal complications with slow recovery.

[129]

**Diagnostic difficulties related to abdominal pain**

Anna Łomańska

ania.lomanska@gmail.com

Students' Scientific Group affiliated to I Department of Anaesthesiology and Intensive Care, Medical University of Warsaw

**Trustee of the paper:** PhD Dariusz Kosson

**Background:** Suddenly occurring severe somatic abdominal pain, the severity of which may increase within a few days, may suggest an acute disease requiring rapid medical management. The case below suggests an acute pancreatitis, but detailed analysis of the diagnostic examinations provide an unexpected diagnosis. This diagnosis has not been made in the current course of the study, perhaps because of the rarity of the cause-and-effect scheme. Abdominal pain is often associated with difficult and long-term diagnostic evaluation and suggests many diseases.

**Case:** A 63-year-old man due to severe abdominal pain radiating to his back and fever was admitted to hospital for a further diagnosis. On the basis of abdominal ultrasound, followed by computed tomography of the abdominal cavity and pelvis, edematous acute pancreatitis was diagnosed and exploratory laparotomy was performed. On the next admission to the hospital undefined acute pancreatitis was diagnosed and relaparotomy

was performed. After reassessment of the patient's imaging examination, the pancreatic tumor 30 mm in diameter, focal change of the 4a segment of the liver and right subcostal region were evaluated. Histological examination of the right subcostal focal lesion showed infiltration of glandular carcinoma. The patient was referred to a pain treatment clinic and an oncological center. Only after about 7 months the patient was suspected of pancreatic cancer with numerous metastases. The assessment of the case so far shows a delay in making the final diagnosis, which in the case of the above mentioned disease is of key importance.

**Conclusions:** Acute pancreatitis precedes the diagnosis of pancreatic cancer in 13% of patients. Many of the symptoms in these patients coincide with this case. Examples include severe abdominal pain, gastrointestinal obstruction, elevated serum CA19-9, and only slightly elevated serum lipase and amylase. Recently it has been described that acute pancreatitis may be an early symptom of pancreatic cancer, but these are rare cases. Most patients may be misdiagnosed as acute pancreatitis and delayed in cancer diagnosis. The management of patients with severe abdominal pain designated as unspecified acute pancreatitis with suspected pancreatic tumor and/or metastases requires a multidisciplinary team, including an internist gastroenterologist, surgeon, anaesthetist and oncologist.

[130]

#### **Expression of terminal deoxynucleotidyl transferase (TdT) in classical seminoma – case report**

Adrian Perdyan<sup>1</sup>, Michał Bieńkowski<sup>2</sup>, Rafał Pęksa<sup>2</sup>

aditre532@gmail.com

<sup>1</sup> Student Scientific Circle, Department of Pathomorphology, Medical University Gdansk, Poland

<sup>2</sup> Department of Pathomorphology, Medical University Gdansk, Poland

#### **Trustee of the paper:**

**Background:** Seminomas are the most frequent testicular tumors. Due to the variable morphologic features and antigen expression, the diagnosis of some cases may be challenging. Terminal deoxynucleotidyl transferase (TdT) is a DNA polymerase present in hematogones, thymic T cells, lymphoblastic lymphoma/leukemia (LBL), and in some cases of acute myeloid leukemia. It has recently been observed also in seminomas, so far there are only three reports on the expression of TdT in seminomas as a possible diagnostic pitfall.

**Case:** We present a case report of a 33-years old male who was admitted to emergency department with symptoms of dyspnea and abdominal pain. Computed tomography showed a large masses of lymphatic tissue in the mediastinum and the neck, along with a benign cardiac tamponade. Biopsy of neck lymph node showed a morphologically unclear cell infiltration with minor granulomas. The cells were large, round to polyhedral with distinct cell membranes, abundant clear cytoplasm and large, central nuclei with prominent irregular nucleoli. Immunohistochemistry detected the expression of TdT, podoplanin and CD117-/+ , which suggested follicular dendritic cell sarcoma. Patient started chemotherapy with Gemzar regimen (Gemcitabine + Docetaxel). Tissue samples were consulted in Center for Cancer Research, National Cancer Institute, Bethesda, USA. There, the expression of PLAP, OCT3/4 were observed, while, surprisingly, TdT was negative, which indicated a testicular neoplasms and seminoma was diagnosed. Left orchidectomy was performed and chemotherapy was switched to BEP (cisplatin, etoposide, bleomycin).

**Conclusions:** Diagnosing metastatic lymph nodes of unknown primary may sometimes be difficult. Here, the uncharacteristic histology along with TdT expression suggested a wrong diagnosis. What is noteworthy, the expression of TdT in seminomas may represent a diagnostic pitfall, leading to a different diagnosis (such as LBL). This observation was an incentive to investigate this marker in a large group of germ cell tumors, which is currently underway.

[131]

#### **Acute pulmonary embolism complicated with heparin induced thrombocytopenia treated with percutaneous catheter directed thrombectomy in a woman in post-partum period**

Antonina Ślubowska, Maksym Wróblewski

antonina.slubowska@gmail.com

Students' Scientific Group at the Department of Internal Medicine and Cardiology,  
Medical University of Warsaw

**Trustee of the paper:** dr hab. n. med. Marek Roik, dr hab. n. med. Piotr Bienias

**Background:** The most serious consequence of deep vein thrombosis (DVT) is acute pulmonary embolism (APE). In developed countries APE is the major cause of pregnancy-related maternal death. Thus in woman with

significant risk factors for venous thromboembolism preventive parenteral anticoagulation is recommended in this period. However, during this treatment immune-mediated complication of heparin can rarely occur i.e. heparin-induced thrombocytopenia (HIT), which is associated with paradoxical thrombotic events.

**Case:** A 40-year-old woman, 3 weeks after the Caesarean section, with a family history of factor V Leiden mutation and a one-week history of pain and oedema of the left lower limb, was referred to vascular surgery ward. DVT and intermediate-high-risk APE were confirmed by lower limb ultrasound and chest computed tomography, respectively. In addition, cardiac markers (troponin I and NT-proBNP) were positive and right to left ventricle index was >1. Full dose of heparin treatment was started. After 3 days of initial therapy progressive clinical deterioration was observed with persistent sinus tachycardia >120 bpm, systemic blood pressure <100 mmHg, signs of right ventricle dysfunction and hypoxemia with SpO<sub>2</sub> <90% indicating increased risk of APE-related in hospital complications (Bova Score 7). In addition, blood test revealed significant thrombocytopenia ( $41 \times 10^9$ /liter). After consultation with our local Pulmonary Embolism Response Team (PERT) the patient was referred to Cardiac Intensive Care Unit of our department. Due to contraindications to systemic fibrinolysis PERT decided to perform catheter directed thrombectomy (CDT) with Indigo system with CAT 8 thrombectomy catheter. Successful CDT was performed. The procedure resulted in improvement of patient's condition and decrease of right ventricular dysfunction. Serological tests confirmed HIT. Treatment with fondaparinux followed by vitamin K antagonists was initiated. On further observation patient's condition was good and echocardiographic signs of right ventricular overload disappeared. She was discharged with recommendation of regular controls in our hospital Antithrombotic Clinic.

**Conclusions:** Significant progress in interventional cardiology was made by percutaneous catheter directed thrombectomy (CDT) as an alternative to surgical embolectomy. In patients with contraindications to fibrinolysis, CDT should be a first line therapy of high-risk APE. This case demonstrates the usefulness of CDT in such cases.

[132]

#### **Diagnostics of skin lesions in solid organ transplant recipient**

Przemysław Kober

bulbusolfactorius@gmail.com

Medical University of Warsaw, Department of Transplantation Medicine, Nephrology and Internal Medicine

**Trustee of the paper:** Jolanta Gozdowska MD, PhD

**Background:** Solid organ transplant recipients are specific group due to taken immunosuppressive agents. This can result in side effects including infections caused by rare opportunistic pathogens.

**Case:** A 62-year old woman after orthotopic liver transplantation due to primary biliary cirrhosis and autoimmune hepatitis was admitted to hospital because of several infections. A painful lesion on lower leg was noticed 3 months after surgery, while the patient was hospitalized with pneumonia. The Doppler ultrasound showed no signs of deep vein thrombosis. In the course of next month, the inflammatory infiltration has increased and the patient was readmitted to the hospital. After another ultrasound and MRI, which revealed solid-cystic character of the lesion, erythema nodosum was suspected. However, no pathogens were detected in blood and tissue cultures. After empiric antibiotic therapy regression of the lesion were observed. Recurrence of inflammation of the skin, the subcutaneous tissue and the knee joint resulted in readmission to the hospital after 3 months. Empiric antimicrobial therapy was administrated again and the dose of immunosuppressive agent was reduced. Since there was no bacterial growth in another routine culture of blood and synovial fluid, samples were cultured for opportunistic bacteria - *Nocardia* spp, *Cryptococcus* spp, Nontuberculous mycobacteria. *Nocardia* abscessus has grown after few weeks. Ceftriaxone and trimethoprim-sulfamethoxazole (3x960mg for 6 months) was administered according to antibiogram. Treatment resulted in regression of the lesion, pain alleviation and simultaneous liver function improvement.

**Conclusions:** Cutaneous and subcutaneous nocardiosis is a rare infection. Solid organ transplant recipients are at risk of nocardiosis so it should be considered in differential diagnosis, especially when infections are hard to treat. Reduction of immunosuppressive agents dose should be considered. Adverse drug reaction should be controlled during the long-term antibiotic therapy .

[133]

**Genetically inherited pigment retinitis and its complications: cataract of the posterior capsule, macular edema**

Gabrielė Kalvelytė

gabrielek13@yahoo.com

Vilnius University

**Trustee of the paper:** Dr. Rasa Strupaitė

**Background:** Pigmentary Retinitis is a group of hereditary eye diseases that cause loss of nerve cells in the retina and a visible pigment in the retina of the eye. This disease can occur as a form of systemic disease or as a primary isolated disease. The pigment retinitis clinic is nyctalopia (night blindness), reduced contrast and color vision, as well as reduced peripheral and central vision, visual acuity.

**Case:** Patient in 2015, when she was 30 years old, complained of impaired vision, especially in the dark. After checking the vision, the ophthalmologist found that the patient with the right eye can see 0.1, the left eye 0.1 of a Snellen chart, and the eye pressure within the normal range. After viewing the slit lamp, cataracts are seen in both eyes. Visual examination of the eye bottom shows changes: waxy color optic nerve disc, on the periphery are visible bone bodies characteristic of pigment retinitis. Optical coherent tomography shows cystic swelling of the macula. In the same year, a genetic study was performed: determination of the nucleotide sequence of the gene and its fragment. It was found that pigment retinitis was also detected in the patient's mother. The genotype that proves pathology - pigment retinitis, hereditary autosomal dominant genotype - has been identified by coding and surrounding sequences of the RHO gene. The patient was subjected to electroretinography, during which wave b was not recorded, indicating photoreceptor damage. In 2016, the patient had cataract surgeries for both eyes and she was implanted with artificial intraocular lenses. Carbonic anhydrase inhibitors - Sol Trusopt - were used to treat macular edema.

The only effective treatment for pigment retinitis is the neuroprotease of the eye. The neuroprotease of the eye artificially replaces the elements of the damaged neurons that make the visual pathway. In this case, just complications were treated: cataract with surgery and Sol. Trusopt for macular edema.

**Conclusions:** This case illustrates the symptoms of suspected pigment retinitis and what tests to do to diagnose it.

[134]

**A case of possible hypertrophic cardiomyopathy (HCM) - a multimodal diagnostic stalemate**

Bardowska Klaudia, Królicka Anna, Królicki Tomasz

t.krolicki105@gmail.com

Medical University of Wrocław

**Trustee of the paper:**

**Background:** In the recent years the Cardiac Magnetic Resonance (CMR) has become a golden standard in the diagnostic of cardiomyopathies. Despite its high accuracy it may not always solve all our doubts but raise further questions.

**Case:** A 41 year old woman was admitted to the Gastrology ward for investigation of persistent anaemia. During colonoscopy she reported a short episode of dyspnoea and chest pain. Transthoracic Echocardiography (TTE) was performed in the local outpatient clinic. Apart from mild basal left ventricular hypertrophy (LVH) with maximal wall thickness of 14mm, a suspicion of apical aneurysm with apical thrombus was raised. Following immediate admission to the Chest Pain Unit, a 12-lead ECG showed T-wave inversion in V2-V6 leads and the 24h ECG-monitoring revealed multiple nsVT episodes. No reversible causes of arrhythmia were identified, serum troponin was negative. The patient denied regular physical exercise. She also has a family history of HCM, as her mother was diagnosed at 30 years old. Twice repeated TTE confirmed LVH, however due to poor apex visibility CMR imaging was performed to rule out the aneurysm and the thrombus.

The CMR ruled out both pathologies. The heart ejection fraction, chamber- and wall sizes were normal, thus excluding LVH. The LGE sequence did not show any areas of late enhancement. The only abnormality found was a massive (11mm in diameter) antero-lateral papillary muscle (PM) in the LV, modeling its lumen. The LV wall adjacent to its attachment point on the apical-lateral segment was thinner (6mm) than in the rest of LV. In an acute situation with poor TTE imaging this feature may have imitated an apical thrombus, as previously reported. After the CMR the patient requested self-discharge.

**Conclusions:** In the reported case the significant discrepancy between the TTE and CMR outcomes and an unusual heart morphology are of particular interest. The LVH described in TTE through three trained professionals, the clinical presentation and positive family history could be sufficient to diagnose HCM, yet CMR ruled out the following diagnosis. It is also unclear whether the diagnosed nsVT could have been the cause of the reported symptoms. If so, ICD implantation may be considered in the given case. Literature suggests that PM hypertrophy can be a part of HCM but has not been recognized as a diagnostic criterium in the ESC guidelines, which will require further investigation in the future.

[135]

#### **De Winter Syndrome**

Barbara Brzezinska

barbarab14@vp.pl

Poznań University of Medical Sciences, Department of Cardiology

**Trustee of the paper:** Rafał Dankowski, MD PhD

**Background:** De Winter syndrome is serious and uncommon myocardial infarction caused by occlusions in the proximal segment of the left anterior descending artery (LAD). It is characterised by exceptional electrocardiogram (ECG) pattern that include ST-segment depression at the J point, tall, symmetrically peaked T waves in the precordial leads and ST-segment elevation in the aVR lead.

**Case:** A 55-year-old man was admitted to the hospital with typical chest pain and angina. Symptoms were observed since a day before with escalating at night. The patient had a past medical history of anterior wall acute myocardial infarction treated with streptokinase (08.2004), percutaneous coronary intervention (PCI) with implantation stent in the middle left circumflex artery (LCx) (10.2004), PCI on left anterior descending artery (LAD) (12.2009) and ST-Segment Elevation Myocardial Infarction (STEMI) treated with PCI on LAD with implantation stent (09.2013). The patient suffered from hypertension, mixed dyslipidemia, nicotineism. Admission electrocardiogram (ECG) revealed a ST segment depression in leads I, II, III, aVF and V2-6 with tall, symmetrical T-waves in leads V2-5. Further, lead aVR showed a ST segment elevation. Troponin on admission was negative, but later was significantly positive. Due to the general clinical condition the patient was diagnosed with an acute coronary syndrome: myocardial infarction with ST segment elevation.

It was decided to perform a coronary angiography that showed a disseminated atherosclerosis with almost total occlusion of the left anterior descending artery (LAD). Successful coronary angioplasty was done using a drug-eluting stent.

Postprocedure ECG substantially improved. On the 7th postoperative day the patient reported a recurrence of the chest pain. Coronary angiography revealed recently formed thrombus in a previously stented segment. Restenosis was performed. Echocardiographic examination revealed left ventricular contractility impairment with deterioration of left ventricular ejection fraction (LVEF). After 14 days long hospitalization the patient was discharged home in good condition.

**Conclusions:** Clinicians should be alert to patients presenting chest pain and characteristic ECG changes that are not typical of STEMI. Failure to recognize de Winter syndrome may lead to undertreatment and delay in reperfusion therapy with catastrophic results.

[136]

#### **TAVI-in-TAVI: treatment for upcoming group of patients**

Szymon Jędrzejczyk

s.jedrzejczyk64@gmail.com

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

**Trustee of the paper:** Zenon Huczek

**Background:** Since the first procedure in 2002, Transcatheter aortic valve implantation (TAVI) has become safe and default treatment for inoperable or high surgical risk patients with severe symptomatic aortic stenosis, and established its position as option for moderate risk patients. However, despite proven excellent five year longevity of both balloon-expandable and self-expanding devices, bioprosthetic valve failure (BVF) is emerging clinical problem with transcatheter aortic valve implantation into previous transcatheter aortic valve implantation (TAVI-in-TAVI) as a possible solution.

**Case:** We report two cases of patients: First, 75-year-old woman (with significant history of cardiovascular diseases) that presented clinical and echocardiographical symptoms of BVF (Edwards Sapien XT 23mm, implanted 5 years ago, in 2013). Transfemoral TAVI-in-TAVI using the self-expandable Portico 23mm bioprosthesis was performed, resulting in accurate implantation. Post-operative echocardiography showed an excellent result without any para-prosthetic leak, patient reported symptom improvement and after 7 days was discharged home.

Second, 71-year-old man with clinical symptoms of heart failure (NYHA III, EF 27%) and echocardiographically confirmed severe aortic regurgitation caused by paravalvular leak (BVF of CoreValve 29mm, implanted into bicuspid valve 5 years ago, in 2013). The Heart Team decided to proceed with transfemoral TAVI-in-TAVI using the balloon-expandable Edwards Sapien 3 29mm bioprosthesis. Accurate implantation was achieved, post-operative echocardiography showed correct function of implanted bioprosthesis. The paravalvular leak disappeared and patient was discharged home after 6 days, with no post-operative complications and in good condition.

**Conclusions:** In the instance of BVF after TAVI, TAVI-in-TAVI deployment is an excellent option of treatment. Choice between using self-expandable and balloon-expandable devices in TAVI-in-TAVI depends on primarily used prosthesis and pathological cause of BVF.

With positive outcomes of consecutive clinical trials, the group of patients undergoing TAVI is continuously expanding to younger and lower risk ones. Taking into consideration rapid growth of number of TAVIs, longer life expectancies and possible unsatisfactory durability of already implanted valves, we must expect more and more BVFs along with development of TAVI-in-TAVI procedures.

[137]

**Dangers of OTC drugs advertisement: increased vitamin D intake – mediated hypercalcemia**

Zuzanna Steć, Katarzyna Królewicz, Łukasz Stopa

[zuzanna.aleksandra.stec@gmail.com](mailto:zuzanna.aleksandra.stec@gmail.com)

Students' Scientific Group affiliated to the Department of Internal Medicine, Nephrology and Dialysis Therapy, Military Institute of Medicine

**Trustee of the paper:** Professor Stanisław Niemczyk, MD, PhD

**Background:** Hypercalcemia is a common disorder presented by nephrologic patients. Primary hyperparathyroidism and malignancy are responsible for more than 90 percent of all cases. In general, 2 mechanisms can be distinguished: bone resorption and calcium absorption. Diseases predisposing to increased bone resorption include: hyperparathyroidism, malignancy, thyrotoxicosis, immobility, Paget disease, estrogen administration, and hypervitaminosis A. Calcium absorption can be related to increased calcium intake, chronic kidney disease, hypervitaminosis D, granulomatous disorders and milk-alkali syndrome.

**Case:** An 81-year old female patient presented herself to ER with dizziness and nausea. CT scan was performed, excluding CNS abnormalities as origin of her symptoms. She was submitted to the Nephrology Department due to suspected acute renal insufficiency (creatinine 4,1 mg/dl) and hypercalcemia (total calcium corrected for albumin 12,3 mg/dl). Her comorbidities included osteoporosis and diabetes type 2, treated with denosumab, calcitriol, metformin and linagliptin.

Rehydration, diuretics and hypocalcemic agents were administered and diagnostic of hypercalcemia was performed. Hyperparathyroidism (PTH 12,3 pg/ml) and multiple myeloma were excluded. No signs nor symptoms of other malignancies were detected. Laboratory testing and radioimaging indicated overdose of vitamin D as origin of hypercalcemia.

In further interview, the patient admitted overtaking calcitriol supplements of fear of fracture as osteoporosis consequence.

**Conclusions:** Drug induced hypercalcemia could result from supervised medical treatment (i.e. thiazide diuretics, lithium, teriparatide, abaloparatide, excessive vitamin A, theophylline toxicity), but also from OTC calcitriol supplements. Great number of medication and supplements advertisement leads to high consumption that lacks medical supervision. Excessive vitamin D intake might be also related to fast growing popularity of alternative medicine in Poland, with pseudo experts advising high calcitriol doses, multiplying recommended ones. Therefore, medical attention should be drawn to increasing patients' awareness.

[138]

**Combination of novel pathogenic variants in sarcomeric proteins genes and GLA gene in relatives with hypertrophic cardiomyopathy**

Karolis Vencevicius; Ieva Eitaviciute

karolis.vencevicius@gmail.com

Vilnius University, Institute of Clinical Medicine

**Trustee of the paper:** Egle Sadauskiene, MD PhD; Lina Venceviciene, Assoc. Prof. MD PhD

**Background:** Hypertrophic cardiomyopathy (HCM) is the most common cardiovascular genetic disorder. Screening of subjects with HCM of unknown aetiology reveals a high prevalence of Fabry disease (FD). When genetic variants of unknown significance (VUS) in the  $\alpha$ -galactosidase A (GLA) gene are detected, a diagnosis of FD may be uncertain. In such cases, genetic testing of sarcomere proteins genes should be performed. In most cases, single heterozygous pathogenic variant in sarcomere proteins genes causes the disease, whereas approximately 1 out of 20 HCM patients have two or more heterozygous pathogenic variants. It has recently been reported that multiple variants could be related to an earlier presentation of HCM with more severe phenotype and increased risk of sudden cardiac death (SCD).

**Case:** We report a case of 4 relatives with HCM phenotype. Since 2014 all the patients with HCM phenotype in our centre are being screened for Fabry disease, therefore dried blood spot testing was performed for all three alive relatives with HCM. A genetic variant of unknown significance (VUS) in  $\alpha$ -galactosidase A (GLA) gene c.937G>T p.(Asp313Tyr) was identified in 2 of 3 patients. Since classical clinical features and histological findings consistent with Fabry disease were absent, genetic testing of sarcomere protein genes was performed. Two heterozygous pathogenic variants were detected in all the patients: PLN gene c.26\_29dupGCTC p.(Ala11Leufs\*10) and MYBPC3 gene c.3530\_3531insG p.(Phe1177Leufs\*31). These alterations have not been previously reported in literature as causes of HCM. The results of in silico analysis predicted both variants to be disease causing. It was obvious that initial finding of GLA gene VUS was only incidental finding that could have mislead to wrong diagnosis and treatment with unnecessary enzyme replacement therapy. Due to high risk of sudden cardiac death, an implantable cardioverter defibrillator (ICD) was implanted for all three alive relatives with HCM.

**Conclusions:** Multidisciplinary team must cooperate in the process of determining the aetiology of HCM. Multiple variants could be related to an earlier presentation of HCM with more severe phenotype and higher risk of sudden cardiac death. Therefore, multiple variants in sarcomeric proteins' genes should be recommended as an additional biomarker in the assessment of SCD, and ICD implantation should be considered in HCM patients with double mutations.

[139]

**Transfemoral TAVI in a patient with complex vascular anatomy**

Kacper Wiszniewski, Piotr Leszczyński

kacpor94@gmail.com

1 Katedra i Klinika Kardiologii WUM

**Trustee of the paper:** Bartosz Rymuza

**Background:** The introduction of transcatheter aortic valve implantation (TAVI) in clinical practice has been a step forward in treatment of severe aortic stenosis in high surgical risk patients. TAVI contributes to significant mortality benefit if transfemoral access is applied.

**Case:** 84-year-old male with severe aortic stenosis and a history of coronary artery bypass graft (CABG), stroke and NSTEMI was referred to our Clinic due to exacerbation of heart failure. Other comorbidities included prostate cancer treated with transurethral resection of prostate, stage III chronic kidney disease and osteoporosis, which resulted in multiple spine deformations. Transthoracic echocardiography revealed severe aortic stenosis (AVAi 0,4 cm<sup>2</sup>/m<sup>2</sup>). Cardiac operative risk was evaluated for 19.36 % (EuroSCORE II). The patient had been disqualified from TAVI in another center due to a significant S-type bend in the descending aorta and tortuous iliac arteries. Transsubclavian approach was impossible, as the diameter of left subclavian artery was estimated for 3,5mm. Transaortic approach was considered dangerous because of the presence of vein grafts attached to the aortic arch during previous CABG. Transapical approach was impossible due to scar tissue in the apex seen on transthoracic echocardiography. Despite arterial tortuosity it was decided that due to appropriate vessel calibre it would be safe to approach this patient via transfemoral route. That procedure was performed under general anaesthesia with the use of Luderquist Extra Stiff guide wire. After crossing the aortic valve there were difficulties with delivering the bioprosthesis. Another Luderquist guidewire was introduced, which allowed straightening of

both iliac arteries and descending aorta. One of the stiff guidewires` tip was shaped circularly and placed in the heart`s apex to achieve backup. Once getting rid of tortuosity it was possible to deliver and implant a 29 Corevalve bioprosthesis with mild peravalvular regurgitation. Postoperative transthoracic echocardiography confirmed good procedural result (AVA 1,7 cm<sup>2</sup>). The procedure was not complicated by any major cardiovascular events. The patient was discharged after 7 days.

**Conclusions:** TAVI via transfemoral route should always be evaluated due to potential survival benefit in this subgroup of patients. “Buddy-wire” technique with the use of Luderquist Extra Stiff guidewires may help to tackle severely tortuous anatomy.



# Internal Medicine

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 119, Library – CBI

**Jury:**

prof. dr hab. n. med. Jolanta Małyszko  
prof. dr hab. n. med. Jerzy Przedlacki  
prof. dr hab. n. med. Katarzyna Życińska  
prof. dr hab. n. med. Rafał Krenke  
prof. dr hab. n. med. Zbigniew Gaciong  
prof. dr hab. n. med. Ryszarda Chazan  
prof. dr hab. n. med. Stanisław Niemczyk  
dr hab. n. med. Tadeusz Zielonka  
dr hab. n. med. Agnieszka Perkowska-Ptasińska  
dr hab. n. med. Lucyna Bednarek-Papierska

**Coordinators:**

Oliwia Wrotek  
Agata Toboła

**Scientific Patronage:**

National Consultant in the field of Lung Diseases Prof. Halina Batura-Gabryel MD PhD  
National Consultant in the field of Palliative Medicine Wiesława Pokropska MD  
National Consultant in the field of Nephrology Prof. Ryszard Gellert MD PhD  
National Consultant in the field of Clinical Toxicology Piotr Burda MD PhD  
Narodowy Instytut Geriatrii, Reumatologii i Rehabilitacji  
Polskie Towarzystwo Hepatologiczne  
Towarzystwo Internistów Polskich  
Polskie Towarzystwo Nefrologiczne  
Polskie Towarzystwo Lekarskie



NARODOWY INSTYTUT  
GERIATRII, REUMATOLOGII  
I REHABILITACJI  
IM. PROF. DR HAB. MED. ELEONORY REICHER



**POLSKIE TOWARZYSTWO HEPATOLOGICZNE**  
POLISH ASSOCIATION FOR STUDY OF LIVER



[140]

**The influence of aspirin desensitization on the quality of life in patients with Aspirin Exacerbated Respiratory Disease**

Anna Urbańska, Radosław Kacorzyk, Ewa Zabiegło, Paweł Somionka, Klaudiusz Bolt, Kinga Pajdzik  
anna.uurbanska@gmail.com

II Chair of Internal Medicine, Jagiellonian University Medical College, Cracow, Poland

**Trustee of the paper:** Katarzyna Ewa Tyrak MD, Lucyna Mastalerz MD PhD

**Introduction:** Aspirin Exacerbated Respiratory Disease (AERD) refers to asthma, chronic rhinosinusitis with nasal polyposis and hypersensitivity to aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs). Aspirin desensitization (AD) is regarded as an effective and well-tolerated therapy for patients with AERD.

**Aim of the study:** The aim of the study was to evaluate the influence of AD on the quality of life, asthma control and nasal symptom in patients with AERD.

**Material and methods:** This is a prospective study of eleven AERD individuals subjected to 52 weeks of AD with an overall daily aspirin dose of 650 mg. At baseline and in the 52nd week of AD the following evaluations were conducted: (1) the quality of life according to the Asthma Quality of Life Questionnaire (AQLQ), (2) asthma control according to Asthma Control Test (ACT) and (3) nasal symptoms on the basis of the 7-point scale. Collected data was analyzed using a Student's t-test. P values <0.05 were considered statistically significant.

**Results:** There was a statistically significant improvement in overall AQLQ ( $p=0.01$ ) in the 52nd week of AD. The positive changes were observed in all four domains of the AQLQ: symptoms ( $p=0.03$ ), activity limitation ( $p=0.02$ ), emotional function ( $p=0.046$ ) and environmental exposure ( $p<0.01$ ). A significant improvement was also observed in ACT score ( $p=0.02$ ) and overall nasal symptoms ( $p=0.04$ ) in 52nd week of AD.

**Conclusions:** Chronic AD resulted in significant improvements in the quality of life, asthma control and nasal symptoms in AERD individuals.

[141]

**The role of adipocytokines in the development of steatohepatitis of different etiology**

Khukhlina Oksana, Antofiihuk Tetiana, Kuzminska Olha, Antofiihuk Mykola  
taniantof@gmail.com

Department of Internal Medicine, Clinical Pharmacology and Occupational Disease Higher State Educational Establishment of Ukraine "Bukovinian State Medical University"

**Trustee of the paper:** Antofiihuk Tetiana

**Introduction:** The adipose tissue as an endocrine organ carries out an adipostatic function; the state of adipocyte dysfunction develops as a result of the prolonged positive energy balance and an increase in body weight; in turn, it has a negative impact on metabolic processes subsequently leading to the progression of steatohepatitis.

**Aim of the study:** To analyze the levels of leptin, adiponectin in patients suffering from steatohepatitis of different etiology.

**Material and methods:** 84 patients with steatohepatitis of different etiology were examined. Non-alcoholic steatohepatitis (NASH) was found in 57 patients, 27 patients had alcoholic steatohepatitis (ASG). 30 practically healthy people (PHIs), representing the certain age and gender (60% of women, 40% of men), were included in the control group. The levels of leptin and adiponectin were studied by conducting an immunoassay analysis.

**Results:** The level of leptin is significantly higher in women than in men, regardless of the type of steatohepatitis ( $p < 0.05$ ). In the patients with NASH, the concentration of leptin exceeds the corresponding rate of the patients with ASG by 25.39% ( $p < 0.05$ ). In addition, if the 3d degree of obesity is taken into account, the content of leptin is higher than in patients suffering from the 1st and the 2nd degrees of obesity, regardless of the gender. An increase in the index of leptin resistance in the NASH patients is higher by 23% ( $p < 0,05$ ) and in the ASG ones is increased by 11% ( $p < 0,05$ ). In contrast, the concentration of anti-inflammatory adiponectin in ASG is lower by 5.3 and 5.7% than in NASH ( $p < 0.05$ ).

**Conclusions:** The course of steatohepatitis of various etiology brings about the disruption of the secretory function of the adipose tissue and hyperleptinemia. The leptin level depends on the increased body weight. Some overweight patients often develop leptinoreistance.

[142]

**Estimation of risk factors impact on development of diseases of the respiratory system by computer bronhophonography**

Borisenko Aleksandra Andreevna, Dmitrieva Kseniia Sergeevna, Starostina Lada Sergeevna  
inkognito180795@mail.ru

I.M. Sechenov First Moscow State Medical University (Sechenov University)

**Introduction:** Today, diseases of the respiratory system are common among all age groups. One of the highly informative methods for assessing the condition of the respiratory tract is computerized bronchophoneography (CBPG). The main advantages of this method: short duration of the study ( $\approx 10$  sec) and no age restrictions.

**Aim of the study:** To identify the relationship between the risk factors of diseases of the respiratory system in adolescence (15-19 years) and the appearance of the asymptomatic bronchial obstruction (BO) at a young age (20-25 years).

**Material and methods:** 106 patients were included in the study. Inclusion criteria: age 20-25 years. Exclusion criteria: acute and/or chronic infectious and/or allergic diseases of the respiratory system at the time of the study. Based on the "Cough and its causes" questionnaire, the subjects were divided into two groups: group 1 (50 people) - without risk factors, group 2 (56 people) - with at least one risk factor for the development of respiratory system diseases in adolescence. Computer bronchophonography and evaluation of its results was carried out on the complex of CBPG "Pattern".

**Results:** Identified risk factors: 41.2% - an allergy from childhood. Active smokers -19.3%, passive - 45.9%. Hookah smokers - 41.7%. 33.3% live close to industrial plants. Frequent acute respiratory infections - 32.9%.

In the 1st group, changes in CBPG were detected in 52.9% of the subjects. Of these, ACR changes (the acoustic component of respiration) in the low-frequency range were observed in 35% (an increase in the ACRD to 300  $\mu$ J, N to 100  $\mu$ J); in 38% - in the mid-frequency range: an increase in the ACR to 83.58  $\mu$ J, N to 10.0  $\mu$ J.

In the 2nd group, changes in the CBPG were observed in all subjects: 57.5% showed changes in the ACR in the low-frequency range: in 25% increase in the ACR to 300  $\mu$ J, and in 32.5% decrease in the ACR to 3.69  $\mu$ J, N to 100  $\mu$ J. Changes in the mid-frequency range were observed in 37.5%: increase in ACR to 83.58  $\mu$ J, N to 10.0  $\mu$ J. In 42.5% there was a asymptomatic BO: an extension of the exhalation and an increase in the ACR in the high-frequency range up to 4.07  $\mu$ J, N to 0.2  $\mu$ J, which was not accompanied by complaints and symptoms. A link was found between smoking, frequent episodes of acute respiratory diseases in adolescence, and the appearance of latent asymptomatic BO in CBPG.

**Conclusions:** Asymptomatic BO in young patients is associated with smoking and frequent episodes of acute respiratory infections in adolescence.

[143]

**Evaluation of patients' satisfaction in bronchoscopy procedure – preliminary results**

Katarzyna Karoń, Katarzyna Januszewska, Aleksandra Karewicz, Joanna Ryl  
katarzkar@gmail.com

Medical University of Warsaw, Department of Internal Medicine, Pulmonary Diseases and Allergy

**Trustee of the paper:** Marta Dąbrowska M.D. PhD

**Introduction:** The bronchoscopy experience provokes anxiety and stress among patients. It can have a negative impact on the course of the procedure and on willingness to undergo next bronchoscopy in the future.

**Aim of the study:** We aimed to identify factors influencing satisfaction of patients undergoing bronchoscopy procedure.

**Material and methods:** The prospective study has been conducted since January 2019 and includes patients hospitalized in Department of Internal Medicine, Pulmonary Diseases and Allergy, who underwent planned bronchoscopy. Patients assessed their anxiety and satisfaction level in questionnaires completed 24 hours (h) before and 24h after the bronchoscopy. The surveys were created according to British Thoracic Society recommendations. The levels of anxiety and satisfaction were measured using the Visual Analogue Scale. Simultaneously, the data concerning the course of the bronchoscopy, complications and medical history of the patient was collected. All gathered evidence was analyzed using Mann-Whitney U and chi-squared tests.

**Results:** So far, 31 adults were included (median age 67 years; 48% females). 10 patients (30%) declared full satisfaction with their procedure (VAS 0/10), while 5 patients (15%) were very dissatisfied (VAS  $\geq 6/10$ ). Patients

who rated their bronchoscopy less positively (VAS  $\geq 3/10$ ) more often reported discomfort caused by sputum retention during the procedure. However, the correlations between dissatisfaction and patient's age, accompanying diseases, anxiety before the bronchoscopy, type and duration of the procedure and the dose of local anaesthetic and sedative were not significant. The most common causes of distress reported by patients included sputum retention, dyspnoea, nausea and local anaesthetic application. Complications affected 7 patients (23%), the most prevalent were haemoptysis and sore throat.

**Conclusions:** The results suggest that age, medical history, anxiety level before procedure, the dose of local anaesthetic and sedative, type and duration of bronchoscopy do not determine patient's satisfaction with the procedure. To verify this hypothesis more patients should be examined.

[144]

#### **Diagnostic potential of body plethysmography in patient examination with airway obstruction pathology**

Nikoletta Buzgan, Irina Piskunova

nikoletka1@rambler.ru

Smolensk State Medical University

**Trustee of the paper:** Alexandr Punin, MD, PhD

**Introduction:** In modern medicine it is extremely important to prevent the development of disabling forms of diseases by its early diagnostics and treatment. Body plethysmography is one of sensible methods of breathing function examination. It compares spirometry indicators with characteristics of mechanic oscillations of the thorax during breathing cycle.

**Aim of the study:** The aim of study was to investigate the deviations of body plethysmography indicators and to assess diagnostic capabilities of some of them in a group of patients with respiratory complaints, but normal spirometry indicators.

**Material and methods:** Our prospective study included 212 patients aged  $45,3 \pm 20,1$ . At the time of study all the patients had respiratory complaints of cough, expiratory dyspnea during exercises, decreasing in tolerance to exercises. Spirometry and body plethysmography were done to all the patients.

Examinations were carried out on an empty stomach, in the morning and while broncholytic therapy was canceled. No abnormalities were found according to spirometry results.

**Results:** Signs of obstruction processes in the lungs were found in 85,8% (182) patients.

Isolated increasing of residual volume (RV) were found in 7,6% (16) patients.  $\tau$  Increasing RV in total (combined and isolated) were revealed in 30,2% (64) patients. Combined increasing of RV and forced residual capacity (FRC) were occurred in 5,2% (11) patients. Combined increasing of RV, FRC and total lung capacity (TLC) were marked in 3,8% (8) patients.

Combined increasing of RV and effective airway resistance (Reff) were found in 2,8% (6) patients. Isolated increasing of Reff were revealed in 30,7% (65) patients.

**Conclusions:** Normal spirometry indicators do not exclude the possibility of obstruction processes in the lung, that demands additional examination of patients.

Body plethysmography is the reliable method in diagnostics of airway obstruction, that can complement spirometry results.

Residual volume is sensible indicator, changing in case of respiratory pathology at early stages and due to isolated small bronchi pathology. Furthermore, effective resistance of airways proved to be effective indicator of airway hyperresponsiveness.

[145]

#### **Phase angle measurement as a prognostic tool**

Samanta Plikaityte, Jurgita Pilvelyte

samanta.plikaityte@gmail.com

Vilnius University faculty of medicine

**Trustee of the paper:** M. Serpytis

**Introduction:** Phase angle is an indicator based on reactance and resistance obtained from bioelectrical impedance analysis (BIA) which is used as a general measure of cellular membrane integrity and provide

information about the state of a cell and the overall condition of a patient's body. A high phase angle is observed in healthy individuals and represents a large amount of cell membrane and body cell mass with high reactance. It is predictable that lower phase angle leads to greater morbidity and mortality and appears to have an important prognostic role.

**Aim of the study:** To compare healthy individuals phase angle to critically ill patient's phase angle in ICU (intensive care unit) in order to see a contrast between the potentials of the healthy cells and those with low metabolic activity using sensitive measurements of BIA.

**Material and methods:** The prospective observational study of 42 critically ill (mean age  $59 \pm 15$  years) patients in ICU and 40 healthy individuals ( $50 \pm 15$  years) was performed using bioelectrical impedance analysis. The phase angle was measured and observed every day for each critically ill patient. Data analysis was performed using SPSS software, p-value of  $< 0,001$  was considered statistically significant.

**Results:** Phase angle was significantly ( $p < 0,001$ ) lower in critically ill patients comparing to healthy individuals. The average phase angle in healthy patients was found  $7,45^\circ \pm 0,35^\circ$ . The average phase angle in critically ill patients was found  $4,08^\circ \pm 1,75^\circ$ . Phase angle was also found getting smaller everyday for patients with high risk of mortality comparing to those who was recovering from illness ( $p < 0,001$ ).

**Conclusions:** According to the literature phase angle is described as an independent predictor of cells state and can be used as a biological marker of patients' condition. Our study shows the benefit of using BIA in ICU and confirms that lower phase angle can be a useful tool as predictor of higher morbidity and mortality risk for critically ill patients.

[146]

#### **Why we should always measure blood pressure twice?**

Małgorzata Bieńko, Izabela Nawrocka, Anita Pietrzak, Radosław Pietrzak  
malgosiabienko94@gmail.com

Medical University of Warsaw

**Trustee of the paper:** Piotr Abramczyk

**Introduction:** Current guidelines on treatment and management of arterial hypertension recommend the methods of blood pressure measurements, which use multiple readings. Especially, automated blood pressure measurements and 24-h ambulatory blood pressure are powerful tools to diagnose white coat reaction related to the examination and deliver reliable values. Unfortunately, both methods are time consuming and are not easily available. In clinical practice, most of the physicians perform only one measurement.

**Aim of the study:** Our study is aimed to estimate a bias caused by only one measurement of blood pressure in comparison with two measurements.

**Material and methods:** The study was performed in patients without prior diagnosis of hypertension or other chronic disease. Blood pressure was measured twice with 1 minute interval using oscillometric device. The measurement of blood pressure was made with back and arm supported, and the cuff positioned at the level of the heart. All measurements were done by a student familiar with the methodology of blood pressure measurement under the supervision of experienced cardiologist. The classification of blood pressure values was performed on the basis of the current European Society of Cardiology guidelines. Paired Student t-test was employed for comparison. The difference was considered as significant, when  $p\text{-value} < 0.05$

**Results:** 52 consecutive subjects were enrolled into the study (26 females, 50%). The mean age of the subjects was  $50.1 \pm 13.6$  years. We found the difference between first and second measurement of blood pressure, according to the systolic blood pressure ( $142.4 \pm 15.7$  vs  $138.1 \pm 16.0$  mm Hg,  $p < 0.001$ ) and diastolic blood pressure ( $85.8 \pm 9.8$  vs  $83.9 \pm 9.9$  mm Hg,  $p < 0.001$ ). When only first blood pressure measurement was used, more patients were classified as hypertensive ( $> 140/90$ ) in comparison to use of the mean of both blood pressure measurements, respectively: 53.9% vs 48.1%.

**Conclusions:** The main finding is the fact, that about half of the enrolled patients were hypertensive. The study confirms that blood pressure values obtained from the first and the second measurement are different, what can result in improper diagnosis of hypertension or assessment of treatment efficacy. In real-life, despite illusory time-economy staying in-line to guidelines can protect the patient from over-treatment or and harm from adverse effects of the drugs.

[147]

**The course peculiarities of osteoarthritis combined with obesity, arterial hypertension and type 2 diabetes mellitus**

Ayush Abhinav ,Yuliia Ivanivna Serdulets

ayushabhinav11@hotmail.com

Bukovinian State Medical University

**Trustee of the paper:** - head of the Department of Internal Medicine and Infectious Diseases, MD, professor O.I.Fediv)

**Introduction:** Introduction. Osteoarthritis (OA) is the most common disease of joints and the leading cause of disability among the adult population. The main manifestations of OA are: progressive loss of articular cartilage, cartilage calcification, osteophyte formation, remodeling abnormality of subchondral bone and inflammation of the synovial membrane.

**Aim of the study:** The study objective is to examine the clinical indices of articular syndrome in patients with OA combined with type 2 diabetes mellitus, obesity and arterial hypertension.

**Material and methods:** Study methods and materials. The study involved 116 patients and the following clinical groups of case monitoring were distinguished: I group – 37 patients with OA; II group – 21 patients with OA combined with arterial hypertension; III group – 41 patients with OA with concomitant arterial hypertension and abdominal obesity; IV group – 17 patients with OA combined with arterial hypertension, abdominal obesity and type 2 diabetes mellitus; V rpyna – 25 practically healthy people.

**Results:** The study results. It was established that in the I group patients with mild OA prevailed; joining of arterial hypertension caused the percentage increase of patients with severe OA in the II group. However, an extremely severe course of OA 58,9% was found in patients of the IV group. The body weight increase has led to the percentage increase of patients with very severe and extremely severe OA. An increase in the intensity of arthrological pain, in particular, night pain, motility abnormality with a significant disturbance of daily activities was characteristic for patients with OA, AH, abdominal obesity with the joining of type 2 DM.

**Conclusions:** Conclusion. The combined course of OA, AH, obesity and type 2 DM is accompanied by an increase in the intensity of joint pain, disturbance of the motor function and the daily activities of patients.

[148]

**Prevalence and characterization of patients with severe asthma in population of all patients treated from asthma**

Petar Pavlovic

ppavlovic795@gmail.com

School of Medicine University of Belgrade

**Trustee of the paper:** Ass. Prof. Vladimir Zugic, MD, PhD

**Introduction:** Asthma is a heterogeneous disease defined by history of symptoms such as shortness of air, dyspnea, cough, tightness in the chest, which vary in time and intensity. It is also defined by variable airflow limitation. Severe asthma represents a major therapeutic challenge and it is defined by this criteria: major criteria: 1) asthma that demands high doses of inhalational corticosteroids added with another controller and/or systemic corticosteroid; 2) asthma that cannot be controlled even with intensive therapy; minor criteria: 1) height weight, body mass index (BMI); 2) results of spirometry tests; 3) presence of comorbidities; 4) blood levels of IgE and Eo; 5) computed tomography of chest; 6) length of treating asthma; 7) number of hospital treatments because of asthma exacerbations; 8) number of ER visits because of asthma exacerbations.

**Aim of the study:** Determining the prevalence of severe asthma and clinical, immunological and functional characteristics of patients with severe asthma.

**Material and methods:** This retrospective cohort study included 705 asthma patients treated for next diagnoses: J45.0, J45.1, J45.8, J45.9 (according to International classification of diseases – ICD 10). Eight patients that fulfill severe asthma criteria were extracted from the main group.

**Results:** Prevalence of severe asthma in population of patients with asthma was counted to be 1,13% (percentage of 8 patients that fulfill criteria for severe asthma compared to included population of 705 asthma patients).

**Conclusions:** Despite the fact that we did not get the results of all tests that could be of significance in proper investigating of all comorbidities, we think that these results are a good indicator of prevalence of this serious condition in Serbia. Also, this results could help in future planning of diagnostics and treatment of these patients.

[149]

**The circadian rhythm of blood pressure "non-dipper" is associated with ventricular arrhythmias in women with hypertension and sleep apnea**

Kseniya A. Sundukova, Sergei A. Tsarev, Valentina M. Tsareva

tsarev.al@mail.ru

Smolensk State Medical University

**Trustee of the paper:** Valentina M. Tsareva; MD, PhD.

**Introduction:** Prevention and treatment of diseases of the cardiovascular system is one of the priorities of health care. The most common disease is arterial hypertension (AH). More and more data on the importance of sleep apnea in the development of cardiovascular disease and fatal complications are accumulated.

**Aim of the study:** The aim was to study the correlation of the circadian rhythm of blood pressure (BP) with ventricular arrhythmias (VA) in women with AH and sleep apnea.

**Material and methods:** We studied 118 women with AH I–II degrees and sleep apnea (average age of  $66.5 \pm 7.1$  years), amounting to 2 groups. The first group included 98 patients with VA, the second group consisted of 20 women without VA. Patients underwent daily monitoring of blood pressure "BPLab Vasotens 24»" (Peter Telegin, Russia); Holter ECG monitoring ("Myocard –Holter", NIMP ESN, Russia). To characterize the VA, the Lown and Wolf classification was used in the Ryan modification. For evaluation of disorders of breathing during sleep was conducted respiratory monitoring ("Somnocheck micro", Weinmann, Germany).

**Results:** At the circadian rhythm of "non-dipper", the detection rate of VA was 20.4% higher compared to "over-dipper" ( $\chi^2 = 8.6$ ;  $p < 0.01$ ) and 26.6% higher compared to "dipper" ( $\chi^2 = 15.02$ ;  $p < 0.01$ ). VA I and II gradations were recorded without significant differences between groups ( $p > 0.05$ ). VA of high gradations ( $\geq$  III gradation) were significantly more common in patients with the type "non-dippers" (54.2%) compared with "dipper" (22.7%) – ( $\chi^2$  Yates correction = 4.84;  $p = 0.03$ ). The differences between "non-dipper" and "over-dipper" were 32.8%, ( $\chi^2 = 6.49$ ;  $p = 0.01$ ). Analysis of the structure of the VA showed that the III gradation was more common in women "non-dipper" (22.9%) compared with "dipper" (9.1%) and "over-dipper" (3.6%) – ( $p < 0.05$  on the Fisher test). Polymorphic paired VA was registered in 20.8% of patients with "non-dipper" and was absent in patients with "dipper" type. In the group of "dipper" and "over-dipper" significantly more often ( $< 0.01$ ) was dominated by low gradations (54.6% and 34.4%). In the group with "non-dipper" 54.2% of women had high gradations. The calculation of the odds ratio showed that the probability of developing high gradations of VA is 4.2 times higher at the daily rhythm of "non-dipper" (CI=1.72-10.40;  $p < 0.05$ ).

**Conclusions:** The circadian rhythm of "non-dipper" in patients with AH and sleep apnea is the most unfavorable, increasing the chance of developing VA of high gradations by 4.2 times.

[150]

**Evaluation of the syndrome of chronic fatigue in patients of the cardiological department**

M.A. Poroshin

Mikhail\_poroshin@bk.ru

Ural State Medical University / Department of Faculty Therapy and Geriatrics

**Trustee of the paper:** M.I. Fominykh

**Introduction:** In the world literature, the Chronic Fatigue Syndrome (CFS) is an independent disease, where the main symptom is debilitating weakness, limiting a person to perform everyday activity.

Hyposthenic form is characterized by development of brake action and reduced excitability. Therefore, the key symptoms of this form will be general weakness, tiredness and exhaustion.

In Russia, the questionnaire "Age is not a hindrance" was designed and validated for screening of asthenic syndrome.

**Aim of the study:** Aim of Research is to study the structure of Chronic Fatigue Syndrome among patients of the cardiology Department of City Clinical Hospital 7, Yekaterinburg.

**Material and methods:** In this study, the following methods were used:

1. The questionnaire – survey method using the questionnaire "Age is not a hindrance", the result of which each patient got the score from 0 to 7.
2. The functional research method of wrist strength – dynamometry. The evaluation was conducted according to the clinical recommendations of the Russian Association of gerontologists and geriatricians;

3. Assessment of the degree of asthenic syndrome was carried out in accordance with the scale Clinical Frailty; The study involved patients over 65 years old.

**Results:** 100 patients participated in this study, 62 are men and 38 are women. The age of the patients is from 65 to 98 years old. The average age is = 75,7±8,5.

During the study it was found that in the cardiology Department among patients older than 65 years old 30% with managing well, 25% with vulnerability, 15% with good health condition, 15% with Mildly Frail, 10% with moderately frail of CFS and 5% with severe asthenia syndrome.

The following complaints were reported by patients: 75% for hearing loss and vision disorder; 60% memory impairment; 40% have difficulty in climbing one floor; 35% complain of emotional instability and involuntary urination; 30% reported about weight loss more than 5 kg over the past six months; 15% of respondents registered injuries associated with the fall in the last six months.

**Conclusions:** 1. In the cardiology department of the hospital, the largest proportion of patients over 65 years old with a satisfactory state of health was found (3 points on the CF scale). In a quarter of patients, the state of "vulnerable" is in accordance with CFS. The number of patients with asthenia is found in 30% of all enrolled in the department.

2. The dysfunction of the visual-auditory analyzer, mnemonic disorders, emotional lability, characteristic manifestation of physical asthenia, weight loss were reported to be chief complaints.

[151]

#### **Fluid balances, type of infused fluids, impact on the outcome of Intensive Care Unit patients**

Karol Kocaj, Krystian Ślusarz, Paulina Kurdyś, Łukasz Surówka

kocajkarol.kk@gmail.com

Medical University of Silesia

**Trustee of the paper:** dr n. med. Ewa Trejnowska

**Introduction:** Fluid balance is the basis of an efficient treatment in the Intensive Care Unit. The therapy where fluids are administered is one of the most common interventions in intensive care medicine. Although many of the studies have been published in recent years, there are still no precise standards on the amount and type of administered fluids.

**Aim of the study:** The impact of fluid management bears significance for mortality in ICU patients. Our aim was to establish the interdependence between daily fluid balance, type of administered fluids and outcome in ICU patients.

**Material and methods:** The retrospective analysis of the population of 244 patients treated in the ICU was conducted at the Silesian Centre for Heart Diseases in Zabrze in the year 2015 and 2016, respectively. The entire amount of administered fluids (divided into crystalloids and colloids), as well as daily fluid balances, were analyzed in each patient during the first week of ICU stay. Descriptive statistics, Fisher's exact test and Mann-Whitney test were used.  $P < 0,05$  was considered as statistically significant.

**Results:** 174 patients (71,3%) received both crystalloids and colloids and 70 patients (28,7%) received crystalloids exclusively. During the first and second day of ICU stay significantly lower fluid balances were more frequent in the group of patients who received crystalloids only in comparison to the group of patients who received crystalloids and colloids (422 vs 1524 ml,  $p < 0,001$  and 497 vs 1015 ml,  $p < 0,001$ , respectively). Patients who received only crystalloids had less positive fluid balances during the first week of ICU stay (4741 vs 7976 ml,  $p < 0,001$ ). Nonsurvivors had a higher positive fluid balances in comparison to survivors on the second and third day of ICU stay.

**Conclusions:** Maintaining a restrictive fluid balance has a positive effect on mortality in ICU patients. Avoiding colloid fluids leads to retaining of restrictive fluid balance and results in improving the outcome.

[152]

**Evaluation of two different fecal calprotectin detection methods used in Pauls Stradins Clinical University Hospital**

Evija Tropiņa, Liene Sauša, Polina Zalizko

dr.e.klavina@gmail.com

Rīgas Stradiņa universitāte

**Trustee of the paper:** Evija Kļaviņa

**Introduction:** Fecal calprotectin is non-invasive and objective marker that helps medical practitioners to distinguish between inflammatory and non-inflammatory gastrointestinal tract conditions, monitor inflammatory bowel disease (IBD) activity and it also reduces the need for colonoscopy. Fecal calprotectin is protein released by neutrophils in GIT when there is inflammation in GIT. One of possible ways to detect fecal calprotectin is by using enzyme linked immunosorbent assay (ELISA) or immunochromatographic assay (rapid test). There is discussion whether both methods are equally precise.

**Aim of the study:** Aim of this study is to evaluate and compare two fecal calprotectin detection methods - Enzyme Linked Immunosorbent Assay (ELISA) (Alegria) and rapid test (CalFast).

**Material and methods:** This was a retrospective study. Patient stool samples were collected. Each sample was tested with both methods – Enzyme Linked Immunosorbent Assay (Alegria) and rapid test (CalFast). Cut off point for positive result in ELISA is  $>50 \mu\text{g/g}$  and in rapid tests  $>70 \text{ mg/kg}$ . Results of ELISA and rapid test were compared using SPSS and MS Excel.

**Results:** Altogether 37 samples were collected. In 18,9 % (n=7) results was negative. Within these results 85,7 % (n=6) were concordant and 14,3 % (n=1) was discordant. In 81,1 % (n=30) results was positive. Positive results were divided in two groups: group of positive results (for ELISA results from 50 to  $1000 \mu\text{g/g}$  and for rapid test results from 70 to  $300 \text{ mg/kg}$ ) and group of positive result but above detection level for chosen method. In 92,9 % (n=13) both tests was positive and in 43,7% (n=7) both tests was above detection level. In this study the biggest discordance was seen within results were ELSIA test was above detection level while rapid test showed only positive results (56,3 %; n=9). Pearson correlation between both methods was 0,754 ( $p < 0,001$ ).

**Conclusions:** Results of this study revealed that there is a significant, strong correlation between ELISA and immunochromatographic assay. Both methods showed equal results, giving preference to rapid test as it is more cost-effective.



# Laryngology

**Date:**

Friday, May 10th, 2019

**Location:**

Room 124, Library – CBI

**Jury:**

dr n. med. Sławomir Okła  
prof. dr hab. n. med. Henryk Skarżyński  
prof. nadzw. dr hab. n. med. Piotr Skarżyński  
prof. dr hab. n. med. Krzysztof Kochanek  
prof. dr hab. n. med. Ewa Osuch-Wójcikiewicz  
dr hab. n. med. Lidia Zawadzka-Głós  
prof. dr hab. n. med. Andrzej Kukwa  
dr hab. n. med. Eliza Brożek-Mądry  
dr n. med. Paweł Dobrzyński

**Coordinators:**

Jakub Zygańło  
Anna Krawczyńska

**Scientific Patronage:**

National Consultant in Pediatric Otolaryngology Prof. Grażyna Mielnik-Niedzielska MD PhD  
Towarzystwo Otolaryngologów, Foniatrów i Audiologów Polskich  
Polskie Towarzystwo Otolaryngologów Chirurgów Głowy i Szyi



[153]

**Comparison of otoacoustic suppression in children and adults – preliminary results**

Włodarczyk K.<sup>1</sup>, Rajchel J.<sup>2</sup>, Nykiel K.<sup>1</sup>, Piłka E.<sup>2</sup>, Skarżyński P. H.<sup>2,3,4</sup>, Jędrzejczak W.W.<sup>2</sup>  
kingawlodarczyk01@gmail.com

<sup>1</sup> Interdisciplinary Student's Scientific Society at the Institute of Physiology and Pathology of Hearing and Medical University of Warsaw, Warsaw/Kajetany, Poland

<sup>2</sup> Institute of Physiology and Pathology of Hearing, World Hearing Center, Kajetany, Poland

<sup>3</sup> Institute of Sensory Organs, Kajetany, Poland

<sup>4</sup> Department of Heart Failure and Cardiac Rehabilitation, Second Faculty of Medicine, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Prof. nadzw. dr hab n. med. Piotr H. Skarżyński

**Introduction:** One of the interesting areas in experimental audiology research is the study of otoacoustic emission (OAE) suppression, which happens if the evoking sound is preceded by another sound. The analysis of OAE suppression provides insights in to nonlinearity of cochlear dynamics. Although this phenomenon has been studied in adults and neonates, the data on its characteristic in young children are still lacking.

**Aim of the study:** The aim of the current study was to analyze the OAE suppression in nursery children, comparing their results with young adults.

**Material and methods:** The OAE evaluation was conducted in a single nursery school in Warsaw, Poland. The evaluated group consisted of similar number of boys and girls (42.9% vs. 57.1%). The child's aged range from 5 to 6 years and was  $M=5.71$ ,  $SD=0.47$  on average. After receiving the informed consent from the child's parents, the audiometric evaluation took place to confirm the normal hearing of the child. Hearing screening was conducted using a well-established screening method called "Sensory Examination Platform". After confirming the hearing status of the child, the OAE suppression was measured twice, subsequently, without taking the probe out of the ear. The evaluated parameters included the measurement of response level, signal to noise ratio (SNR) and suppression value. The obtained results were compared with the reference values derived from young normally hearing adults aged up to 25 years.

**Results:** Children with SOAE had similar OAE suppression as adults, however their SNR was significantly higher than adults without SOAE in comparison to adults with SOAE. No significant differences were observed in OAE suppression value between children with  $SNR > 12$  and  $SNR < 12$  as well as children and adults with  $SNR > 12$  and  $SNR < 12$ .

**Conclusions:** Our preliminary results suggest that a similar OAE suppression can be observed in children and young adults. To further confirm these findings, we still collect the material to provide statistical analysis on a bigger group of participants.

[154]

**Preliminary results of hearing screening in nursery school children aged 5-6 years**

Nykiel K.<sup>1</sup>, Włodarczyk K.<sup>1</sup>, Rajchel J. J.<sup>2</sup>, Skarżyński P. H.<sup>2,3,4</sup>  
katnykiel@wp.pl

<sup>1</sup> Local Student's Scientific Society at the Institute of Physiology and Pathology of Hearing and Medical University of Warsaw, Warsaw/Kajetany, Poland

<sup>2</sup> Institute of Physiology and Pathology of Hearing, World Hearing Center, Kajetany, Poland

<sup>3</sup> Institute of Sensory Organs, Kajetany, Poland

<sup>4</sup> Department of Heart Failure and Cardiac Rehabilitation, Second Faculty of Medicine, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Nykiel K.

**Introduction:** Hearing screening enables early diagnosis of hearing impairments and implementation of its most effective treatment. Nowadays, there are many reports on the results of hearing screening in infants and schoolchildren; however, the results of children from nursery schools are lacking.

**Aim of the study:** The aim of the current study was to evaluate the hearing of nursery school children using self-constructed survey and a well-established screening tool: Sensory Examination Platform (SEP).

**Material and methods:** Nursery children attending a single kindergarten in Warsaw, Poland, were included in the analysis. The eligibility criteria were child's age  $\geq 4$  years old, child being mature enough to undergo a pure-

tone audiometry using SEP and being healthy on the examination day. The audiometric measurement were conducted in a separate room in the quiet part of the kindergarten. Self-constructed survey consisted of questions regarding the existence of hearing problems in a child, the occurrence of child's asking for repetitions of questions or information, the existence of tinnitus, the existence of hearing loud music by a child, previous history of otological treatment and complaining of the child to excessive noise at nursery school. Every question had two possible answers: "yes" or "no". The survey was filled in by a parents before completing the audiometric measurement. The positive hearing screening result was established when a hearing threshold of at least 25dB HL was observed for at least one frequency in at least one ear. All statistical analyses were conducted using IBM SPSS v. 24.

**Results:** Into the preliminary study we included 18 randomly selected children aged 5 to 6 years. There were 40% of girls and 60% of boys. Normal hearing was observed in 88.9% of children. Based on the self-report survey, none of the parents noticed a hearing problems in the child. However, quite a big number of parents (33.3%) reported that the child frequently asks for repetition of questions and had otological treatment in the past. Interestingly, none of the parents reported that the child complains about tinnitus or listens to the loud music, although almost 30% indicated that a child complains about excessive noise in the nursery school. Among two children with positive result of hearing screening, only one parent noticed that the child frequently asks for repetition of questions. The other parent did not indicate any difficulties.

**Conclusions:** The current results should be analyzed with a special caution due to its preliminary character. Based on our preliminary findings, hearing screening in nursery schools could enable even earlier diagnosis of hearing impairments in children. It is especially important considering observed lack of awareness about the hearing loss existence in nursery children among parents.

[155]

#### **Results of pilot hearing screening in schoolchildren from selected Asian countries**

Cyran O., Rajchel J. J., Świerniak W., Skarżyński P. H.

olivia.cyran@gmail.com

Local Student's Scientific Society at the Institute of Physiology and Pathology of Hearing and Medical University of Warsaw, Warsaw / Kajetany, Poland

**Trustee of the paper:** Prof. nadzw. dr hab. n. med. mgr zarz. Piotr Henryk Skarżyński

**Introduction:** According to the World Health Organization's (WHO) global estimates, the current prevalence of disabling hearing loss in children is above 32 million, being the highest in South Asia, Sub-Saharan Africa and Asia Pacific. Children with hearing impairments are likely to show delays in the production of speech as well as in nonverbal development. As a result of the European Scientific Consensus agreement, a number of pilot hearing screening programs were started by the Institute of Physiology and Pathology of Hearing in various countries, promoting hearing-loss detection and treatment of communication disorders in young school-age children.

**Aim of the study:** The aim of the study was to evaluate the hearing status of schoolchildren from selected Asian countries and to further raise awareness among parents, schools and governments on the need of conducting hearing screening programs.

**Material and methods:** Hearing screening was performed in group of 1027 children aged from 6 to 12 years, in four Asian countries. The study was carried out with the use of the Sensory Examination Platform. The threshold values for air conduction were determined in the frequency range of 0.5-8 kHz. The eligibility criteria were: a good cooperation with the child, low noise level during the examination and the ability to measure hearing thresholds for all evaluated frequencies. The positive hearing screening result was established when a hearing threshold of at least 25dB HL was observed for at least one frequency in at least one ear. All statistical analyses were conducted using IBM SPSS v. 24.

**Results:** Based on the eligibility criteria, the results of 876 children were found suitable for statistical analyses. Among them, 35% were from Kyrgyzstan, 31.6% from Armenia, 22.6% from Azerbaijan and 10.7% from Russia. In 74.3% children normal hearing was observed. Unilateral hearing loss was observed 14.4% of children and bilateral in 11.3%. Hearing loss was the most prevalent in Azerbaijan – 47% of children had positive hearing screening results. The lowest occurrence of hearing loss was observed in Russia (14.9%). The frequency of hearing loss in the evaluated study group turned out to be higher than that observed so far in the countries of Europe, the United States or Canada.

**Conclusions:** The high incidence of hearing loss in children from selected Asian countries indicates the need of conducting hearing screening programs in this part of the world, which would allow for earlier diagnosis of hearing problems a child and enhance the possibility of introducing a proper diagnostic and therapeutic approach leading to the best results.

[156]

### **Intranasal trigeminal stimuli perception in the smoking population**

Zuzanna Steć, Zofia Burska, Karolina Olech, Matylda Zakrzewska  
zuzanna.aleksandra.stec@gmail.com

Students' Scientific Group affiliated to the Department of Otolaryngology, Faculty of Medicine and Dentistry

**Trustee of the paper:** Eliza Brożek-Mądry MD, PhD

**Introduction:** The intranasal trigeminal nerve system is a sensory mechanism, detecting irritating substances in the upper airways, alerting us that potentially toxic substances are entering airways. Nasal mucosa is innervated with branches of maxillary nerve (V2). Intranasal trigeminal nerve is known to affect olfactory perception, possibly interacting in numerous locations, from olfactory epithelium to olfactory bulb. It is likely that toxic substances in cigarette smoke could damage sensory receptors of nasal mucosa, impairing this mechanism.

**Aim of the study:** The aim of this study was to assess the influence of smoking on intranasal trigeminal stimuli perception.

**Material and methods:** A total number of 60 patients aged from 19 to 26 were evaluated: 30 smokers, 30 non-smokers. Assessment of trigeminal nerve function was performed using modified set based on the olfactory test called 'Sniffin Sticks', containing felt-tip pens, filled with trigeminal nerve stimulating substances. Trigeminal stimuli threshold, discrimination and lateralization were evaluated respectively. Initially the patient was asked to describe his or her sensation to the following stimuli: ethanol, menthol, eucalyptol and camphor, in order to identify nasal trigeminal stimuli perception. Threshold was assessed with a set of increasing menthol concentrations presented to the patient in a triple selection mode. The discrimination test was performed for all 4 initial substances. The patient's task was to determine trigeminal stimulus in a triple selection mode. Lastly, the lateralisation test was performed during which the patient was asked to identify to which nostril the trigeminal stimulus was presented. The sum of the scores from the three subtests (Threshold, Discrimination, Lateralisation) resulted in the total score with a maximum of 34 points; with 10, 4 and 20 points for each subtest respectively.

**Results:** A number of 60 patients were evaluated using trigeminal 'Sniffin Sticks'. The highest average score was obtained by the non-smoking population, the lowest by the smoking population, with the largest divergence in lateralisation subtest score. Statistical significance was estimated using p-value.

**Conclusions:** The preliminary results of this study identify cigarette smoke as a possible factor damaging nasal trigeminal nerve receptors.

[157]

### **Influence of age on the results of Dichotic Digit Test (DDT) based on analysis of hearing screening in school-age children**

Maria Gocel<sup>1</sup>, Weronika Świerniak<sup>1</sup>, Krzysztof Tarczyński<sup>1</sup>, Piotr H. Skarżyński<sup>1,2,3</sup>  
m.gocel@ifps.org.pl

<sup>1</sup> World Hearing Center, Institute of Physiology and Pathology of Hearing, Warsaw/Kajetany, Poland

<sup>2</sup> Heart Failure and Cardiac Rehabilitation Department, Medical University of Warsaw, Warsaw, Poland

<sup>3</sup> Institute of Sensory Organs, Warsaw/Kajetany, Poland

**Introduction:** The main purpose of hearing screening programs is early detection of hearing defects, including the risk of auditory processing disorders. Central Auditory Processing Disorders (CAPD), according to American Speech-Language-Hearing Association (ASHA), refers to difficulties in the perceptual of auditory information in the Central Nervous System (CNS). Undetected and untreated, CAPD affects the child's quality of life, social skills and causes many school problems. One of CAPD test is Dichotic Digit Test (DDT), which assesses binaural integration skills.

**Aim of the study:** The aim of this study was to estimate the effects of age on the results of the Dichotic Digit Test (DDT) and to estimate medium results for 7/8 years old and 12/13 years old children.

**Material and methods:** Screening was performed in Warsaw (Poland), from February to June 2018, using the Sense Examination Platform, developed by the Institute of Sensory Organs and the Institute of Physiology and Pathology of Hearing. In the present study results based on the audiogram test and the dichotic digit test were investigated. From almost 18 000 tests, 2500 results were randomly selected. Due to bad acoustic conditions and lack of cooperation, 89 participants were excluded. In this study only children with normal hearing sensitivity were taken into consideration (427 were eliminated). Eventually, out of 1984 pupils, two age groups were

selected: first 7/8 years old (first grade) and second 12/13 years old (sixth grade). Afterwards the percentage of correct DDT test answers were compared in each group.

**Results:** 7 and 8 years old children obtain poorer results compared with children aged 12 and 13 years. Average DDT results in younger group was 73,9% for right ear (SD=16,17) and 51,54% for left ear (SD=23,98). The mean outcomes in 12/13 years old children were: 84,52% for right ear (SD=12,3) and 73,42% for left ear (SD=18,7). Moreover, in the group of older children scatter of results was much smaller than in the group of younger children.

**Conclusions:** Age has a significant impact on the results of the Dichotic Digit Test. Analyzing DDT results, specialists should take into consideration factors that may affect the results, including age and studied ear. Research in the group of older children is characterized by greater credibility and stability.

[158]

#### **Repeatability of otoacoustic emissions' suppression in young adults – preliminary results**

Pyrzyk K.<sup>1</sup>, Rajchel J.<sup>2</sup>, Piłka E.<sup>2</sup>, Skarżyński P. H.<sup>2,3,4</sup>, Jędrzejczak W. W.<sup>2</sup>

klaudiapyrzyk@onet.eu

<sup>1</sup> Interdisciplinary Student's Scientific Society at the Institute of Physiology and Pathology of Hearing and Medical University of Warsaw, Warsaw/Kajetany, Poland

<sup>2</sup> Institute of Physiology and Pathology of Hearing, World Hearing Center, Kajetany, Poland

<sup>3</sup> Institute of Sensory Organs, Kajetany, Poland

<sup>4</sup> Department of Heart Failure and Cardiac Rehabilitation, Second Faculty of Medicine, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** prof. P. Skarżyński

**Introduction:** The evaluation of otoacoustic emission (OAE) aims to determine the status of hair cells in the cochlea. The OAE test is very useful especially in neonatal screening and differential diagnosis of hearing loss. One of the new directions of research in the field of OAE is the study of its suppression by contralateral noise and whether this phenomenon is repetitive.

**Aim of the study:** The aim of the current study was to evaluate the repeatability of otoacoustic emissions' suppression in adults with normal hearing.

**Material and methods:** Into the study we included young adults who voluntarily agreed to participate. The main eligibility criteria were: normal hearing in both ears (based on the interview and screening pure-tone audiometry) and participant's age being 18 to 30 years old. There were similar number of male and female participants in the study population. The mean age of the participants was M=20.9, SD=2.22. After signing an informed consent, participants underwent a pure-tone screening audiometry to confirm their hearing status. Next, the repeatability of OAE's suppression was conducted according to the protocol consisting of two subsequent measurements of otoacoustic emission suppression with a probe in the ear. Additionally to OAE suppression, the presence of spontaneous OAE was measured. All measurements were conducted in the quiet study room.

**Results:** No differences were observed between two measurements in terms of signal to noise ratio and suppression, even when controlling for the SOAE occurrence. Interestingly, significant differences regarding the signal to noise ratio were observed between subjects with SOAE and without SOAE. Participants with SOAE had about two times bigger signal to noise ratio than participants without SOAE. However, no such differences were observed regarding the OAE suppression value.

**Conclusions:** Based on the current findings we conclude that OAE suppression is repetitive, which proves in favor of further consideration of the use of this method in clinical practice.

[159]

#### **Prevalence of tinnitus in children from selected Asian and African countries – the preliminary results**

Woźniczko K.<sup>1</sup>, Rajchel J. J.<sup>2</sup>, Świerniak W.<sup>1</sup>, Skarżyński P. H.

kornelia.wozniczko@gmail.com

<sup>1</sup> Interdisciplinary Student's Scientific Society at the Institute of Physiology and Pathology of Hearing and Medical University of Warsaw, Warsaw/Kajetany, Poland

<sup>2</sup> Institute of Physiology and Pathology of Hearing, World Hearing Center, Kajetany, Poland

**Trustee of the paper:** prof. nadzw. IFPS dr hab. n. med. mgr zarz. Piotr Henryk Skarżyński

**Introduction:** Tinnitus is defined as a phantom perception of sound, which can resemble buzzing, ringing or other noises. This symptom occurs not only in adults, but can be also found in paediatric population. It may affect normally hearing children and these with otological disorders such as hearing loss. Although tinnitus can be a demanding experience for a child, the literature on its prevalence, frequency, impact and treatment is scanty.

**Aim of the study:** The aim of the present study is to present preliminary data on the prevalence of tinnitus in children from selected Asian and African countries and establish its relationship with hearing status and to further explore this topic in this population.

**Material and methods:** The preliminary study included children aged from 5 to 12 year's old coming from three countries; two Asian – Kazakhstan and Tajikistan (40.9% of participants) and one African – Nigeria (59.1%). The study was carried out with the use of the Sensory Examination Platform, which is a well-established tool used worldwide for hearing screening purposes. Pure tone audiometry was performed and hearing threshold values for air conduction were determined in the frequency range of 0.5-8 kHz. The abnormal test result was stated the threshold value for air conduction was of 25dB HL or more for at least one frequency in at least one ear. Tinnitus existence was assessed using a self-constructed survey, which was filled in by children's parents. Only pupils whose parents responded to the survey were included in the final analysis.

**Results:** The study participants consisted of 230 children, 51.9% of which were boys. Based on the screening pure-tone audiometry, normal hearing was observed in 77.6% of children from Nigeria, 76.3% from Tajikistan and 66.2% from Kazakhstan. Tinnitus was the most prevalent symptom in Nigeria (66.2% of parents indicated its occurrence in their child), being less prevalent in Kazakhstan (23.1%) and Tajikistan (13.4%). Additionally, in every country tinnitus was significantly more prevalent in children with hearing loss than in children without hearing loss.

**Conclusions:** Based on the current findings, tinnitus is a common symptom among children from selected Asian and African countries, being significantly more prevalent in children with hearing loss than in children with hearing impairment. The results indicate an urgent need to conduct hearing screening programs in these region of the world. Considering the preliminary nature of the study, more studies are needed to further explore this important topic.

[160]

#### **Analysis of clinical cases of phlegmons of the neck**

Ahneshka Zholik, Veranika Burchyk, Andrei Shchetko, Katsiaryna Shostak  
agnieshkazholik@gmail.com

Grodno State Medical University / Department of otorhinolaryngology and ophthalmology

**Trustee of the paper:** Prof. Aleh Khorau MD, PhD

**Introduction:** Phlegmon of the neck represents a significant danger to the life of patient. This is due to the anatomical features of this area, the ability to quickly spread the process across the interfascial spaces in mediastinum and generalization of infection.

**Aim of the study:** To analyze the etiology of phlegmons of the neck and assess the results of their treatment in patients who were treated on the basis of the purulent ENT department for adults of Grodno Regional Clinical Hospital.

**Material and methods:** Retrospective analysis of 17 medical records of patients who were in the specified department in the period from 2014 to 2018 was carried out.

**Results:** Among the 17 patients there were more males – 12 patients (70.6%), women – 5 (29.4%). In the age structure patients from 33 to 49 years were dominated – 10 people (58.8%). Causes of phlegmons of the neck were peritonsillar abscess – 10 patients (58.8%), retropharyngeal abscess – 2 patients (11.8%), epiglottic abscess – 2 patients (11.8%), neck cyst, lateral neck abscess, inconsistency of esophago-pharyngeal anastomosis – 1 (5.9%), respectively. The development of mediastinitis was detected in 4 cases (23.5%), submandibular phlegmon, purulent pleurisy, sepsis – in 1 (5.9%), respectively. The majority of patients – 12 (70.6%) were operated in 1 day after diagnosis, 4 (23.5%) – in 2 days, 1 (5.9%) – in 3 days. Surgical treatment was the lancing of neck spaces in all patients. Tonsillectomy was performed in 8 cases (47.1%), lancing of the peritonsillar abscess – in 4 (23.5%), lancing of the parapharyngeal abscess – in 3 (17.6%), lancing of the epiglottic abscess – in 2 (11.8%), lancing of suppurative neck cyst, retropharyngeal abscess, pharyngeal abscess, thoracotomy and lancing of the mediastinum, Bjork flap tracheostomy, pleurectomy – in 1 (5.9%), respectively. According to the data of microbiological study in 11 patients (64.7%) there was no pathogens identified. The association of 3 pathogens was identified in 2 cases (11.8%). Most patients were prescribed the third-generation cephalosporins, metronidazole, fluoroquinolones – 5 patients (29.4%), reserve group antibiotics – in 2 cases (11.8%). The duration of treatment in most cases ranged from 21 to 30 days – 9 people (52.9%), up to 20 days – 5 (29.4%), 31-40 days – 2 (11.8%), more than 40 days – 1 (5.9%). There were no lethal cases.

**Conclusions:** In our study the main cause of phlegmon of the neck was peritonsillar abscess. Urgent surgery and proper antibiotic therapy are important in successful treatment.



# Lifestyle Medicine

**Date:**

Friday, May 10th, 2019

**Location:**

Room 125, Library – CBI

**Jury:**

prof. nadzw. dr hab. n. med. Andrzej Fal

prof. dr hab. Zbigniew Gaciong

dr hab. Tomasz Mazurek

dr hab. n. med. Piotr Tyszko

dr inż. Jan Sobótka

**Coordinators:**

Magdalena Gajewska

Anna Pierzak

**Scientific Patronage:**

Polskie Towarzystwo Nauk Żywnościowych



**Polskie Towarzystwo Nauk Żywnościowych**

**Polish Society of Nutritional Sciences**

[161]

### **Study on antioxidant activities of resveratrol and caffeic acid**

Cristina Ștefania Adochițe, Adelina Luciana Jinga, Marius Moga, Mihaela Badea  
cristina.adochite@yahoo.ro

Transilvania University of Brașov, Faculty of Medicine

**Trustee of the paper:** Cristina Ștefania Adochițe

**Introduction:** The importance of medical research on antioxidant activity in our diet has increased in recent years because we tend to have a healthier lifestyle rich in nutrients and beneficial substances for a good functioning of the body.

Resveratrol is the active ingredient of red grapes, peanuts, berries, and a Japanese Ko-Jo-Kon plant (*Polygonum Cuspidatum*). Resveratrol is a powerful antioxidant that has cardioprotective and anti-inflammatory properties.

Caffeic acid is found in fruits, oil, vegetables and coffee. It is a phenolic compound recognized by its antiviral, antihypertensive, and antioxidant properties.

**Aim of the study:** The aim of the work is to optimize electrochemical detection methods for analysis of presence and the antioxidant activities of resveratrol and caffeic acid in different samples (wine samples and dietary supplements).

**Material and methods:** Different Pulse Voltammetry was performed using PalmSens3 potentiostat, and DRP 110 carbon screen-printed sensor. Experimental data was processed using PS Trace 3.2. Software. All the experiments were carried out in dark conditions in order not to influence the antioxidant properties.

**Results:** The most relevant results for the resveratrol solution were obtained at the pH of 8.0, 6.6, and 5.8. The most relevant results for caffeic acid solution were obtained at pH 7.0, 5.8, and 4.0. There were analyzed the dependence of the signals measured by the pH of samples: higher slope indicated higher sensitivity of electrochemical detection.

The obtained calibration curves were used for the qualitative and quantitative analysis of resveratrol and caffeic acid from real samples.

**Conclusions:** The results obtained concerning the detection of these compounds and their antioxidant activities were promising for the potential healthcare application. The chosen method is a fast, cheap, reproducible method and it offer a good alternative to identify and quantify antioxidants as resveratrol and caffeic acid.

[162]

### **Vegan diet impact on blood parameters in healthy male athletes**

Nikola Siekierko, Emilian Snarski  
n.siekierko@gmail.com

Department of Hematology, Oncology and Internal Medicine, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Emilian Snarski

**Introduction:** The vegan diet is becoming more and more popular, also among athletes. Despite relatively high popularity, there is no data in the literature describing the impact of the vegan diet on blood parameters among athletes.

**Aim of the study:** This study aimed at comparison of blood parameters in subjects with or without VD.

**Material and methods:** A retrospective, single-centered study was performed on a group of 98 healthy male athletes, including 44 subjects on vegan diet. We analyzed the impact of vegan diet on chosen blood parameters in vegan and non-vegan diet group. The final analysis includes the following blood parameters: RBC, HGB, MCH, WBC, vitamin D, ferritin and others.

**Results:** The study showed that vegan athlete group had significantly lower red blood cell count (4.760 vs 4.893,  $p=0.076777$ ) and hemoglobin levels (14.605 vs 15.115,  $p=0.019104$ ) than non-vegan sportsman group. Moreover, vegan athletes had lower lymphocyte count (1.843 vs 2.013,  $p=0.333062$ ) as well as lower ferritin levels (63.701 vs 98.703,  $p=0.034472$ ). The vitamin D levels were 26.382 and 21.044 ( $p=0.583887$ ) in vegan and non-vegan group, respectively. Other blood parameters did not differ. Significantly between those two analyzed groups.

**Conclusions:** The study showed lower RBC, HGB and ferritin levels in athletes on vegan diet group. We conclude that if the vegan diet is not properly balanced, it can lead to an unfavorable change in RBC parameters, which can potentially change the oxygen capacity and thus the training endurance.

[163]

### **Tobacco during pregnancy – still a burning problem?**

Martyna Rożek, Zuzanna Śmiech

zuzanna.smiech@gmail.com

1<sup>st</sup> Department of Obstetrics and Gynecology, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Ass. Prof. Iwona Szymusik

**Introduction:** Smoking during pregnancy is a growing problem of public health. E-cigarettes or IQOS are commonly used in Poland as an aid in the treatment of nicotine dependence in non-pregnant women. However, there is no sufficient data concerning its use during pregnancy.

**Aim of the study:** The purpose of this study was to determine the awareness about the risks associated with the use of tobacco products during pregnancy amongst women of childbearing age. It also aimed to determine whether the level of awareness varies with regard to conventional cigarettes or e-cigarettes and IQOS.

**Material and methods:** The research tool was an original questionnaire that consisted of 8 open and 48 closed questions covering demographic data, current or past pregnancy and knowledge about the potential impact of conventional cigarettes, e-cigarettes and IQOS on pregnancy and a growing fetus. It was available for two months on a social network.

**Results:** 188 correctly completed questionnaires were analysed. The mean age of the participants was 27.8 years (SD=5.06). The number of current tobacco products users was 63 (32.8%). 20.7% (39) of respondents were pregnant at the time of the study; 2 (5.1%) of them smoked during current pregnancy. Moreover, 18.3% (30) of participants used tobacco products during previous gestations. Finally, 26.7% (8) of respondents changed the type of the used tobacco products at the time of pregnancy. Usually they substituted conventional cigarettes with the novel tobacco products such as e-cigarettes. 86.1% (161) of women answered that smoking cigarettes during pregnancy may increase the risk of intrauterine growth restriction. Similar question about e-cigarettes and IQOS was positively answered by 63.4% (118) (p.=0,001) and 43.9% (81) (p.=0,001) of respondents respectively. Comparable was the distribution of the answers to the question about the risk of spontaneous miscarriage associated with tobacco products use during pregnancy was comparable. 82.4% (154) of respondents stated that the abovementioned risk was increased by smoking conventional cigarettes, but only 59.7% (111) (p.=0,001) and 46.2% (86) (p.=0,05) recognised the risk associated with, e-cigarettes and IQOS, respectively.

**Conclusions:** Polish women of reproductive age are not sufficiently aware of the risks associated with the use of tobacco products during pregnancy. Thus, there is an urgent need for raising public awareness in this area. The special emphasis should be placed upon educational campaigns about the risks associated with novel tobacco products.

[164]

### **Comparison of nutritional features and lifestyle of Lithuanians living in Lithuania and Germany**

Gabrielė Kalvelytė

gabrielek13@yahoo.com

Vilnius University

**Trustee of the paper:** Dr. Edita Gavelienė

**Introduction:** The World Cancer Research Fund has conducted research to determine what nutritional and lifestyle features affect the onset of various cancers. The biggest negative impact on liver, colorectum, breast, stomach tumors is caused by adult body fatness, alcoholic drinks and red meat. Eating non - starchy vegetables are prevention of aerodigestive cancers, dairy products are prevention of colorectum cancer, coffee - liver and endometrium cancers, physical activity can protect against colorectum, breast postmenopause and endometrium cancers.

**Aim of the study:** To evaluate the peculiarities of Lithuanian nutrition and lifestyle and to compare the differences between Lithuanians living in Lithuania and Germany.

**Material and methods:** A questionnaire was conducted with 10 questions: gender, age, weight, height, red meat, frequency of vegetable eating, frequency of consumption of alcohol, coffee and dairy products, and physical activity. 400 Lithuanians, 200 people living in Lithuania and 200 living in Germany were interviewed.

**Results:** The average age of the first Lithuanian group living in Germany was  $37.8 \pm 11.3$  years, and the average age of the second group living in Lithuania was  $46.9 \pm 17.5$  m. The average of body mass index in the first group was  $25.9 \pm 5.8$ , in the second -  $26.1 \pm 4.5$ . In the first group, red meat is eaten 1 - 2 times a week by 80 (40%), in

the second - 10 (5%),  $p < 0.05$ . Three and more times a week, red meat is eaten in the first group by 90 (45%), in the second group by 64 (32%),  $p = 0.06$ . In the first group, three alcoholic drinks a week and more were consumed by 18 (9%), and by 76 (38%) in the second group,  $p < 0.05$ . In the first group does not eat vegetables 2 (1%), in the second - 16 (8%),  $p = 0.017$ . In the first group 86 (43%) were physically inactive, in the second - 34 (17%),  $p < 0.05$ . Exercises three times a week and more often in the first group 26 (13%), in the second group - 60 (30%),  $p = 0.004$ . Dairy products are used in the first group 3 times a week and more often by 106 (53%), in the second group - 162 (81%),  $p < 0.05$ . In the first group, two cups of coffee and more are consumed by 92 (46%), in the second group - 120 (60%),  $p = 0.048$ .

**Conclusions:** Lithuanians living in Germany are statistically significantly more likely to eat red meat. Lithuanians living in Lithuania use alcohol significantly more, eat less vegetables, but are more physically active, use dairy products and drink coffee more often.

[165]

### **Epidemiology of obesity in primary schoolchildren of the city of Smolensk (Russia)**

Daria Avchinnikova, Ekaterina Tsukareva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof.Andrey Avchinnikov MD, PhD

**Introduction:** Obesity is one of the most common chronic diseases in children and it reaches the scale of a non-infectious epidemic. Practically worldwide, including Russia, there is an increase in the number of children suffering from overweight and obesity. Progressive increase in the number of patients with obesity requires the adoption of emergency measures, primarily in children of school age, since during this period the origins of cardiovascular system diseases, type 2 diabetes and other diseases are formed.

**Aim of the study:** The aim of our study was to identify the prevalence of overweight and obesity among primary school children in the city of Smolensk (Russia).

**Material and methods:** The study involved 3,696 schoolchildren of 1–4 grades from 10 schools of Smolensk (1836 girls and 1860 boys). To diagnose overweight and obesity, the SDS (standard deviation score) body mass index was determined using the WHO program (2009). To determine body composition and fat mass, bio-impedancemetry was used. Statistical proceedings were performed with the Statistica 7.0 software package (StatSoft, USA).

**Results:** In 592 (16,1%) schoolchildren an overweight was revealed and in 338 (9,2%) schoolchildren we detected varying degrees of obesity. Overweight was revealed in 260 girls and 339 boys. Obesity was detected in 109 and 230 girls and boys respectively. Regardless of gender, the frequency of overweight prevalence increases from the 1 to 4 grade: in girls from 12,9% to 18,7% ( $\chi^2 = 8,359$ ;  $p = 0,040$ ), in boys from 16,2 % to 25,2% ( $\chi^2 = 27,887$ ;  $p < 0,001$ ). Besides overweight was registered with equal frequency in boys and girls and obesity in boys was twice as often than in girls ( $\chi^2 = 43,86$ ;  $p < 0,001$ ).

**Conclusions:** Epidemiological study in schoolchildren of 1–4 forms revealed a significant number of overweight and obesity individuals. Every fifth child aged 7-10 has this problem. There are also gender differences: in boys obesity was detected significantly more often than in girls. Overweight and obesity are common in primary schoolchildren and require a comprehensive assessment of the risk factors for their development in terms of preventive measures.

[166]

### **The effects of energy drink intake on blood pressure and heart rate**

Małgorzata Bieńko, Kamila Słomka, Aleksandra Urban

malgosiabienko94@gmail.com

Medical University of Warsaw

**Trustee of the paper:** Piotr Abramczyk

**Introduction:** In recent years increasing use of energy drink (ED) in adolescents and adults is observed. The potential effect of ED consumption on the haemodynamic profile is widely debated. Accurate assessment of the potential adverse effects of EDs has important implications for the prevention and management of cardiovascular and metabolic diseases. We decided to evaluate impact of ED intake on hemodynamic

parameters, including central blood pressure, which is well-known predictor of cardiovascular mortality and morbidity.

**Aim of the study:** Our trial was aimed to assess the impact of ED on central and peripheral blood pressure and heart rate in healthy young individuals.

**Material and methods:** This is a randomized, cross-over study controlled with placebo. In the study 9 men, 11 women, aged  $25.3 \pm 2.4$  years volunteers were enrolled. The health status of investigated participants was established on the basis of the past medical history and physical examination. Each subject received 500 ml of ED (160 mg of caffeine) and similar in taste and smell placebo (500 ml) without caffeine. Central and peripheral systolic [SBP], diastolic [DBP] blood pressure and heart rate [HR] were measured using Mobil-O-Graph device in resting position. The measurements were made in 15 minutes intervals from consumption of ED until 180 minute. The impact of the ED and placebo on the hemodynamic parameters was assessed in period from 60-180 minute after consumption. The quantitative variables are presented as mean followed by standard deviation. The comparison between groups were made using paired t-test.

**Results:** There was no difference in baseline peripheral SBP and DBP ( $121.8 \pm 14.4$  vs  $120.2 \pm 11.3$  mmHg,  $p=0.5$ ;  $76.7 \pm 7.0$  vs  $76.6 \pm 8.00$  mmHg,  $p=0.9$ ), central SBP and DBP ( $111.4 \pm 12.2$  vs  $110.5 \pm 10.5$  mmHg,  $p=0.5$ ;  $78.7 \pm 6.8$  vs  $78.2 \pm 8.2$  mmHg,  $p=0.6$ ), HR ( $71.6 \pm 10.5$  vs  $72.7 \pm 13.1$  /min.,  $p=0.7$ ) before consumption of ED and placebo.

Consumption of ED in comparison with placebo resulted in higher peripheral and central SBP ( $123.9 \pm 13.4$  vs  $120.3 \pm 13.8$  mmHg,  $p<0.001$ ;  $112.7 \pm 10.9$  vs  $109.8 \pm 11.1$ ,  $p<0.001$ ) and DBP ( $79.3 \pm 7.6$  vs  $76.3 \pm 7.7$  mmHg,  $p<0.001$ ;  $81.1 \pm 7.8$  vs  $77.8 \pm 7.8$  mmHg,  $p<0.001$ ).

The consumption of ED in comparison with placebo resulted in lower HR ( $69.6 \pm 10.7$  vs  $70.9 \pm 11.7$  /min.,  $p=0.05$ ).

**Conclusions:** The intakes of ED is related to increase in SBP and DBP and decrease in HR in period 60-180 minutes after consumption.

[167]

#### **The impact of implementation comprehensive mobile medical system in surgical pathway of morbid obesity: 6-months follow up**

Alicja Dudek, Patrycja Lichoń

ala.ddudek@gmail.com

Jagiellonian University Medical College

**Trustee of the paper:** dr. inż. Klaudia Proniewska

**Introduction:** Conservative treatments of obesity, based only on a proper diet and physical activity, without the support of an interdisciplinary team of specialist does not bring satisfactory results, i.e. improving the patient's condition. Morbid obesity patients are qualified for surgery treatment. There are lack of studies presenting the impact of continuous monitoring of bariatric patients in the perioperative period, supported by efficient algorithms of medical data interpretation and harmonized with medical advice (physical activity, keeping a balanced diet, vitamin supplementation) on the better treatment effects.

**Aim of the study:** We aimed to assess the influence of constant monitoring and subsequent motivational alerts for post-operative effects in the bariatric patients. To identify factors conducive to application usage, analysing patients' environment and urge to commitment towards changing lifestyle after surgery.

**Material and methods:** The prepared application comprises patient communication centre, data transfer module, electronic patient records, central data management and data repository with a comprehensible interface. Prospective study enrolled patients to continuous monitoring program during a 6-month period along with typical follow-up visits. After six months all of the patients were examined by telephone questionnaire. A control group consisted of retrospective patients who participated only in scheduled follow-up visits at 1 and 6 months postoperatively.

**Results:** Both groups consisted of 31 patients. There were 20 active users of the proposed monitoring system during the entire duration of the study. After six months 24 patients took a part in a control by telephone questionnaires. Among them 75% confirmed that the application concept was an important element in the treatment. Active users of the application indicated as the most valuable features: motivation to continue treatment (11), graphical presentation of weight loss and other parameters (7), the ability to contact a doctor (3). The three main drawbacks are technical errors (9), tedious questionnaires inside the application (5) and time-consuming tasks (2) inside the system.

**Conclusions:** Constant monitoring and successive motivational alerts to continue treatment is an appropriate tool in the treatment after bariatric surgery, mainly in the early post-operative period. Graphic presentation of data and continuous connection with a clinical staff seemed to be an element of motivation to continue treatment and a sense of security.

[168]

**Alcoholism in a medical and economical context**

Daria Bezborodova, Olga Matyukhina, Vladislav Didenko, E.V.Ivanishkina, N.A.Konyshko, A.V.Krikova, E.V.Dmitriyeva, V.M.Zaytseva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Anna Krikova, PharmD, PhD

**Introduction:** Alcoholism with its consequences is an urgent medical and social problem concerning all groups of population. Its annual consumption in Russia is about 10 liters of alcohol per individual. The alcohol abuse leads to increased morbidity and mortality and decrease of the life span; being a risk factor for premature aging and disability and alcohol liver disease.

**Aim of the study:** The aim of the study was to make content-analysis of the official sources of information and reports on postmortem studies.

**Material and methods:** The study was organized from September 2018 till January, 2019 with official medical reports and assessment of 127 postmortem documents.

**Results:** According to data of Ministry of Public Health of Russian coefficient of liver diseases was 61.2 per 100,000 in 2017. According to data of federal state statistics service the amount of the adult population in Russia equaled 114,566,000 people. The cost of one finished clinical case, according to the rates of the National Medical Service, is 23,247.89. Hospitalization rates were 3.3 per 1000 people. There were 70.114 patients with the pathology in total. 378,000 patients were admitted to hospital. In total (283,550 cases) hospitalizations were connected with alcohol abuse, the treatment costs were 6,591,706,610 Russian rubles; the cost of ambulatory treatment of with liver disease was 61,700,320 rubles. The total sum of expenses, connected with liver diseases was 6,653,406,930 rubles.

Analysis of reports on postmortem examination give an opportunity to conclude that the social and demographic portrait of the dead with the postmortem diagnose of liver disease – males - 77%,CI: (69,7-84,3), on average of 49.9 ±1,2 years old, who lived in Smolensk - 73%,CI: (65,3-80,7), single - 57%,CI: (48,4-65,6), with secondary - 29%,CI: (21,1-36,9) or general education - 32%,CI: (23,9-40,1), unemployed - 44%,CI: (35,4-52,6).

**Conclusions:** Our study disclosed that alcoholism and related to it diseases, particularly alcohol liver disease are significant and urgent problems both in a medical and economical context as national budget commits billions money to their consequences.If the problem is neglected is can result to even more irriversable consequences.

[169]

**Pre-medical rescue: competence of community in life-saving procedures**

Moldovanov Nikita, Mikheeva Maria, Sergey Nikolaev

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Sergey Nikolaev, PhD

**Introduction:** Life is full of various dangerous situations and any person can become in danger and put at a stick. In time and properly rendered pre-medical rescue can save a human life. It goes without saying that competence of any person in the procedures is of vital significance.

**Aim of the study:** The aim of our study was to assess if the community has any competences in pre-medical rescue procedures. We also had a practical goal in mind when performing the study: to assume the people to learn basic life-support procedures.

**Material and methods:** The study involved 200 university students aged 16-24. The young people were from different higher schools. On the basis of special documents on rendering premedical rescue and basic life-support procedures as well as medical books we designed a questionnaire with false and correct statements and questions with multiply choice. Particular attention was given to the most widespread mistakes when rendering the pre-medical rescue. Questioning was carried out both in electronic and in writing forms.

**Results:** Having analyzed the obtained information, we disclosed that the ratio of the correct and wrong answers was 54% correct to 46% wrong answers. Questions concerning management of wounds (70% of the wrong answers) were the most difficult to answer, competence in pre-medical care in myocardial infarction (66% wrong answers), and also on the procedures in stings of insects (58% wrong answers). The most exciting thing was both the study and the spirit of all these people involved into the study, asking questions about their mistakes and

greatly interested in the right answers. Undoubtedly, people really cared about the quality of the competences in rescue procedures they have. Practical skills in basic life-support procedures are very poor.

**Conclusions:** Unfortunately, our community is poorly informed and trained in pre-medical life-saving procedures. The good point is that people are interested in these rescue procedures and in the situation can be improved. It is important to educate the community because nobody is insured from danger of the world around. We consider that the situation can be improved with medical students' volunteer activities.

[170]

#### **Dietary habits of pregnant women – can gestational diabetes mellitus be prevented?**

Aleksandra Symonides<sup>1</sup>, Joanna Kowalczyk<sup>1</sup>, Maria Kania<sup>1</sup>

asia.kowalczyk95@gmail.com

2<sup>nd</sup> Department of Obstetrics and Gynaecology, Medical University of Warsaw

**Trustee of the paper:** Joanna Kacperczyk-Bartnik MD<sup>2</sup>, Agnieszka Dobrowolska-Redo MD<sup>2</sup>, Ewa Romejko-Wolniewicz MD PhD<sup>2</sup>

**Introduction:** Gestational diabetes mellitus (GDM) is one of the most common medical complications among pregnant women, causing both maternal and neonatal adverse effects, for example fetal macrosomia and thus the need of resolving the pregnancy via Caesarean section. Since GDM may affect generally healthy patients, it is very important to evaluate factors which might lead to this pathology.

**Aim of the study:** The aim of our study was to assess a number of certain dietary factors which would entail an increased risk of GDM.

**Material and methods:** The data was collected among 143 pregnant patients admitted to an out-patient clinic in a tertiary referral hospital in Warsaw. The patients received questionnaires, which included questions about the course of the current pregnancy, whether GDM was diagnosed, the method of GDM management, past medical history, and dietary habits. Data was analysed and compared between groups of women with and without GDM during the current pregnancy.

**Results:** The mean age of patients enrolled in the study was 33 years. Among 143 patients participating in the survey 56 (39.2%) were diagnosed with GDM. The study showed that although 54.9% of patients with GDM began eating more since becoming pregnant, this factor was not statistically significant [ $p=0.200$ ], however 80.0% of them reach for snacks at least once thorough the day [ $p=0.081$ ] and 75.0% of them admitted to regular consumption of fast-food [ $p<0.001$ ].

**Conclusions:** While many factors may lead to developing GDM in a patient, a cautious and detailed interview including questions about patient's dietary habits may establish whether she might be in a higher risk group. Raising patient's awareness of GDM and the effects this condition may have on both her future pregnancy and on the child's health may help better prepare the patient for pregnancy by changing her dietary habits, including moderate physical activity in her daily schedule and thus lowering the risk of her actually developing GDM by healthy lifestyle.

[171]

#### **Nutrition at medical schools - knowledge, dietary patterns and lifestyle medicine attitudes' implications**

Alicja Baska, Piotr Długołęcki, Anita Grochowska, Zuzanna Osica, Adriana Durczak, Magdalena Goryszewska

alicebaska@gmail.com

3<sup>rd</sup> Department of Internal Medicine and Cardiology, Medical University of Warsaw

**Trustee of the paper:** Daniel Śliż, MD, PhD

**Introduction:** Poor nutrition is one of the main risk factors for developing lifestyle-related diseases. Thus, nutritional counselling is essential to address effectively their underlying causes.

**Aim of the study:** As nutrition education at medical schools has been recently widely discussed, one of the study's aims was to assess Polish medical students' knowledge in this field.

Taking into account importance of health professionals' own health-promoting behaviours, students' dietary patterns were examined as well as their opinions regarding significance of lifestyle medicine.

**Material and methods:** Lifestyle medicine attitudes, self-perceived proficiency in nutrition field and eating habits were measured using online questionnaire between April and May 2018. Study sample consisted of 1451 medical

students (51,1% Medical University of Warsaw, 48,9% other universities). Among them 55,9% studied medicine, 9,1% dietetics, 8,2% nursing and 5,7% physiotherapy. Participants represented all study years.

**Results:** On average students scored 55% in nutrition-related part of the quiz. There was a significant difference between results of the students who claimed to take great care of nutritional values of their meals (G1) and those who expressed no interest in the quality of their diet (G2) (respectively 70% vs. 56% above average,  $p=0.002$ ).

Only 28% and 16% of students respectively met daily requirements for vegetables and fruits consumption. At least one of these requirements was met by 79% of G1 students (vs. 10% in G2,  $p=0.002$ ).

77% of students believe that health professional's own lifestyle influences frequency of undertaking conversation on lifestyle change and affects patient's motivation. This view was more frequently expressed in G1 (76% vs. 59%,  $p=0.002$ ).

**Conclusions:** There was a discrepancy between students' expectations and needs and the curricula content in regards to lifestyle medicine education.

Taking into account prevalence of lifestyle-related diseases - a framework for questions, quiz results display unsatisfactory level of students' knowledge.

Correlation between taking greater care of one's own nutrition and the level of nutrition knowledge, as well as conviction that healthy lifestyle among health professionals benefits patient's attitudes should encourage promotion of healthy behaviours among medical students as a part of their education process.

[172]

#### **Lifestyle challenge – a student**

Piotr Długołęcki, Alicja Baska, Anita Grochowska, Zuzanna Osica, Adriana Durczak, Magdalena Goryszewska  
piotrekdlugolecki2.6@gmail.com

3<sup>rd</sup> Department of Internal Medicine and Cardiology, Medical University of Warsaw

**Trustee of the paper:** Daniel Śliż MD, PhD

**Introduction:** Lack of physical activity, smoking and alcohol abuse cause a significant number of noncommunicable diseases. Lifestyle medicine, especially by shaping future health professionals, has the potential to counteract these unfavorable factors.

**Aim of the study:** Study analyzed health behaviours among students of Polish medical universities and connections between level of activity and use of legal, harmful substances.

**Material and methods:** Data were collected using an online questionnaire between April and May 2018. Study sample consisted of 1451 medical students (51,1% Medical University of Warsaw, 48,9% other universities). Among them 55,9% studied medicine, 9,1% dietetics, 8,2% nursing and 5,7% physiotherapy. Participants represented all study years.

**Results:** World Health Organisation "Global Recommendations on Physical Activity for Health" were at least partly met by 65,9% of students. Surveyed men were more likely to exercise than women (76,4% vs. 64,2%;  $p=0.001$ ). Almost every fourth participant was a smoker. Particularly future nurses used cigarettes (31,1% vs. 22,1% comparing to future doctors,  $p=0.03$ ). E-cigarettes turned out to be unpopular ( $n=38$ ).

Rate of former smokers varied between active ( $n=956$ ) and inactive ( $n=495$ ) participants (9,2% vs. 4,6%;  $p=0.003$ ), but not the number of smokers itself. Division into occasional and daily smoking was the same for both groups – about 75% declared irregular contact with tobacco.

Heavy-episodic drinking occurred more often in exercising group (18,3% vs. 13,5%;  $p=0.025$ ) – result mostly affected by men. The number of abstainers ( $n=119$ ) was similar to the the number of students consuming alcohol at least twice a week ( $n=115$ ). Physical activity didn't affect these patterns.

**Conclusions:** Every fourth student may suffer from effects of smoking and every third from lack of physical exercise. In most cases even active lifestyle seems to have no positive influence on harmful substances usage. However, the association with smoking cessation is worth emphasizing. The study shows that a lot is missing for future health professionals to become health role models and indicates a challenge for lifestyle medicine.

[173]

### **Nutrition and Lifestyle Affecting Colorectum Cancer**

Gabrielė Kalvelytė

gabrielek13@yahoo.com

Vilnius University

**Trustee of the paper:** Dr. Edita Gavelienė

**Introduction:** The American Institute for Cancer Research in 2018 has done research on cancer prevention and survival. Data on the risk of colorectum cancer have been reported to be increased by eating red meat, drinking alcohol, overweight, and the risk is decreasing of using milk and its products and being physically active.

**Aim of the study:** To evaluate the diet and lifestyle of patients with colorectum cancer.

**Material and methods:** Based on a research on cancer prevention and survival study, I conducted a questionnaire and interviewed 50 patients with colorectum cancer, and a control group of 50 non-cancer patients. Patients were asked about diet and lifestyle habits before the disease. According to the data, patients with colorectum cancer were evaluated with the control group.

**Results:** The age of the first group of patients with colorectum cancer was 44-80 years, the average -  $67.4 \pm 12$  years. The age of the second group is 25-79 years, the average of  $46.7 \pm 17.6$  years. The constant weight average of the first group before the colorectum cancer was  $76.4 \pm 9.7$  kg, the second group -  $80.9 \pm 14.4$  kg. The average of BMI of the first group was  $26.24 \pm 2.1$ , the second -  $26 \pm 4.8$ . Red meat was eaten three times a week and more in the first group 26 (52%), in the second group - 21 (42%),  $p = 0.32$ . Seven (14%) were consuming three alcoholic drinks a week and more in the cancer group and 17 (34%) in the healthy group,  $p = 0.02$ . Non-starchy vegetables were eaten three times a week and more in the first group by 19 (38%), in the second group by 35 (70%),  $p = 0.001$ . There were 23 (46%) physically inactive in the first group, 7 (14%) in the second group,  $p = 0.001$ . In the first group exercised one or two times a week 3 (6%) research participants, in the second group - 20 (40%),  $p < 0.05$ . In the first group, 14 (28%) of respondents did not use dairy products, in the second group - 5 (10%),  $p = 0.02$ . Dairy products were used three and more times a week in the first group by 7 (14%) respondents, in the second group by 38 (76%) respondents,  $p < 0.05$ .

**Conclusions:** The group with colorectum cancer had a significantly lower alcohol consumption than the second group. Non-starchy vegetables were statistically significantly more commonly consumed by the second group. The respondents who do not have colorectum cancer were physically more active. Dairy products were statistically significantly more frequent in patients without colorectum cancer.

[174]

### **Healthy living: new aspects of adolescent nutrition**

Anna Grechanaja, Olga Shtikova, Tatiana Legonkova

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Tatiana Legonkova, MD, PhD

**Introduction:** Healthy nutrition is a foundation of healthy living both in children and adults. Imbalanced diet without essential elements such as zinc (Zn), iron (Fe), vitamin D can have a negative impact on growth and development, occurrence of disease and result in child fatal outcome.

**Aim of the study:** The aim of the study was to assess the amount of essential nutrients (vitamin D, Zn, Fe) in children and define a link between them in organism of adolescence.

**Material and methods:** For one year we had been monitoring 104 children aged 12-13 age and performed clinical and laboratory studies to assess Zn level, Fe level and vitamin D level in blood serum. We also had a survey of children and their parents.

**Results:** Assessment of actual nutrition that based on 7-days menu of surveyed children installed inadequate intake of vitamin D, C, B and  $\beta$ -carotene. Children ate with food only 9% by recommended amount vitamin D that probably can be linked with inadequate intake of eggs, dairy produce and fish. Children have inadequate intake of Zn, Mg, Ca and P (accordingly 82%, 65%, 87% and 84% by recommended norms).

During definition 25(OH) D in blood serum of all surveyed children installed reduction of vitamin D level (less 30 ng/ml). Installed a positive correlation relationship between vitamin D and Zn in blood serum ( $r=0.75$ ;  $p<0.05$ ). The children with Zn deficiency in blood serum average 25(OH)D was reliably below than in blood serum of children with normal Zn level ( $12 \pm 0.88$  и  $19 \pm 1.52$ , accordingly;  $p<0.01$ ). In the study 37% children had normal Zn

level (more 13 micromole/l), Zn deficiency was in 63% children. Assessment of the nutritional status of children with Zn deficiency showed lack of consumption of Zn (82%). Children with normal Zn level in blood serum consumed sufficient amount of Zn with food products. There was positive correlation between Zn intake with food and its content in blood serum ( $r=0,67$ ;  $p<0,05$ ). Determination of the content of Fe in blood serum linked with due to the fact that Zn and Fe are antagonists, Fe deficiency was not identified except in those children who had pharmacological correction deficiency of Zn. Assessment of the children regular nutrition disclosed that they had Fe intake within normal rates.

**Conclusions:** The study revealed imbalance in essential micronutrients and vitamins in children, their close correlation and influence on contents of nutrients in the blood serum that requires correction to contribute to healthy living.

[175]

### **Study of motivation to healthy lifestyle in pregnant women and its impact on their children**

Amaliia Balalaeva, Irina Petrova, Vera Zaytseva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Vera Zaytseva, PhD, Irina Petrova

**Introduction:** One of the most significant competences for newly qualified pediatricians and clinical psychologists are skills in efficient education of population and its motivation to have healthy life style. Healthy lifestyle of the young parents and pregnant women, in particular, is very important.

**Aim of the study:** The aim of the study was to analyze correlation of healthy lifestyle in pregnant women, their motivation to keep their health, their abilities in positive thinking and the health of the newborns.

**Material and methods:** The study involved 30 pregnant women in the first trimester of pregnancy. We used various methods of clinical psychology such as questioner, conversation, analysis and synthesis of the data obtained.

**Results:** Despite intensive national propaganda of healthy life style, really few (48%) pregnant women are really focused on doctors' requirement and recommendations. Many future mothers have bad habits like smoking (51%), alcohol (38%); have imbalanced diet (71%), do not visit doctors regularly (64%). Some respondents (32%) confirmed that in the stressful situations they drink beer and wine. However, women who had already children follow doctors' recommendation more carefully and precisely. Really few pregnant women are concentrated on positive thinking on upcoming delivery, health of newborns (49%). Many pregnant women (42%) have low drug compliance, for example in gestational hypertension. Only a part of pregnant women gives positive assessment of competences developed by Schools for Future Mothers (55%).

**Conclusions:** Unfortunately, despite popularity and a great number of Centers for Future Mothers, they do not provide really successful effect on the healthy life style, behavior, and healthy thinking of future parents. Positive thinking about the life plays is the main motivation for future mother. Psychological training in positive thinking and efficient education in healthy life style among pregnant women, particularly of a younger age must be more aggressive to be able to improve general situation with health parameters in mothers and their children.

# Nephrology & Renal Transplantation

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 124, Library – CBI

**Jury:**

prof. dr hab. n. med. Marek Krawczyk  
prof. dr hab. n. med. Sławomir Nazarewski  
prof. dr hab. n. med. Stanisław Niemczyk  
prof. dr hab. n. med. Artur Kwiatkowski  
prof. dr hab. n. med. Rafał Paluszkiewicz  
prof. dr hab. n. med. Krzysztof Zieniewicz  
prof. dr hab. n. med. Magdalena Durlik  
prof. dr hab. n. med. Joanna Matuszkiewicz-Rowińska  
dr hab. n. med. Maciej Kosieradzki

**Coordinators:**

Zuzanna Steć  
Weronika Lea Śliwińska

**Scientific Patronage:**

POLTRANSPLANT



**POLTRANSPLANT**

[176]

**Problem of early diagnoses of polycystic kidney disease in conditions of developing of family medicine**

Koval Nataliia

nataliakoval526@gmail.com

National Medical University n. a. O. Bogomolets

**Trustee of the paper:** Krasiuk Iryna. Candidate of medical sciences. Associate professor of the department of propedeutics of internal medicine N2

**Introduction:** Polycystic kidney disease (PKD) is one of the most common genetic disorders, which are life-threatening conditions.

Pertinence of the topic is defined by the problem of early diagnosis of PKD in conditions of development of family medicine. Correctly collected and analyzed anamnesis and results of physical examination are the base for adequate prescription of analyses and for a regular check for the patients with this disorder.

**Aim of the study:** Finding the abilities of diagnosis of PKD on early stages with the help of physical methods on the level of the first medical help and studying the link between a quality of life and its components with the progression of the disease in patients with PKD.

**Material and methods:** Anamnesis, interviewing and results of physical examination of twenty patients. Questionnaire, which was used in this part, was made on the base of American questionnaire Kidney Disease Quality of Life Short Form. Questionnaire was modified and enlarged by including symptoms of complications of PKD.

**Results:** Results of research showed that in all cases of PKD the patients' parents had PKD. Those patients who did not know the parents' diagnose described symptoms of kidney disease that appeared in their parents.

It is known that PKD appears more often in male patients but it was noticed in research that female patients have this disorder more often. Usually mother passes this disorders to her children. It was noticed, that the age of appearing first symptoms of PKD and setting a diagnose is getting younger. It was found that most of the indicators of quality of life are significantly deteriorating with the progression of PKD. Mostly indicators of physical activity and emotional state didn't vary in different patients. General symptoms and somatic pain has different state of influence. In 95% cases hypertension was found, in 65% kidney stones were diagnosed and 30% had a recent urinary tract infection.

**Conclusions:** Taking anamnesis may allow a doctor to find out the factors associated with appearing of PKD. Mainly it is a family history. The efficacy of collecting of anamnesis and physical examination of patients with family history of PKD was assessed. Early diagnoses helps to prevent rapid development of symptoms of PKD and decreases influence of the disease on patient's quality of life. It was found that mainly influence on quality of life has specific symptoms of complications of PKD. Patients with at least one case of PKD in their family anamnesis should be educated about risks and first symptoms of this disease.

[177]

**Dynamics of serum antioxidants of ceruloplasmin and transferrin in chronic pyelonephritis patients**

Zagubnaia Ekaterina, Elena Ivanishkina, Kuleshov R.V

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof. Elena Ivanishkina, MD, PhD

**Introduction:** Incidence of chronic pyelonephritis is rather high and comprises 1-4 cases per 1000 adult population, in many cases resulting in chronic renal failure. In pathogenesis of chronic pyelonephritis an important part is assigned to free radical oxidation of lipids - antioxidant protection that can lead to the damage in structure and functions of cellular membranes.

**Aim of the study:** The aim of the study was to investigate serum antioxidants of ceruloplasmin and transferrin in chronic pyelonephritis and influence of traditional medication on indicators of anti-oxidizing potential to increase efficiency of therapy.

**Material and methods:** The study involved 120 individuals: 30 patients with chronic pyelonephritis aged 20-60 and 90 healthy individuals. We assessed indicators of the antioxidant status of serum of blood; dynamics was estimated laboratory and instrumentally. We studied parameters of the antioxidant status of serum of blood before treatment. For therapy antibacterials like amoxicillin, ciprofloxacin and cefalexin were used. Action of the main serum antioxidants: ceruloplasmin (C), transferrin (TR) and the total antioxidant activity of these proteins

(AOS TsP/TR) was investigated with the EPR-spectroscopy. Degree of expressiveness of antioxidant (autonomous area) imbalance in serum of blood was estimated with K1 coefficient (the relation of anti-oxidizing activity (AOA) at % to norm to AOS TsP/TR in % to norm) that reflected body ability to resist to free radical oxidation of lipids.

**Results:** Initial EPR-indicators of blood serum were lower: ceruloplasmin signal level on 21,1 relative units, transferrina on 20,4 relative units of rather control indicators. The initial coefficient of K1 (an integrated indicator of an antioxidant imbalance) has been lowered and has made 0,77. EPR a blood serum after treatment revealed a tendency to decrease in signals of ceruloplasmin (-5,38) transferrina (-7,25). The activity of AOS TsP/TR did not changed. The coefficient of K1 decreased from 0,77 to 0,44 confirming antioxidant insufficiency. The remaining imbalance in the antioxydative status even in clinical remission of the disease promoted keeping chronic inflammatory process, creating favourable conditions for strengthening free radical reactions and maintenance of a situation of readiness for an exacerbation.

**Conclusions:** Antibacterial therapy eliminates an antioxidant imbalance in chronic pyelonephritis. Methods of correction of the imbalance in oxidizing metabolism to increase the efficiency of treatment should be studied.

[178]

### **Endovascular treatment of transplant renal artery stenosis**

Janusz Świeczkowski-Feiz, Ewa Ropińska

feiz.janusz@gmail.com

SKN Graft at the Department of General, Vascular and Transplant Surgery  
Medical University of Warsaw, Poland

**Trustee of the paper:** Dr n. med. Grzegorz Szostek

**Introduction:** Transplant renal artery stenosis is one of many possible complications, after renal transplantation. Between 04.11.2011 – 18.04.2017 in our dept in follow-up after kidney transplantations, in 80 patients, 93 different intravascular proceedings were performed due to various arterial stenosis or occlusions of transplant renal artery.

**Aim of the study:** The aim of the study was to evaluate the effectiveness of endovascular interventions in the treatment of transplant renal artery stenosis and the effectiveness of treatment of complications of these interventions.

**Material and methods:** The research analyses treatment outcomes of 80 patients with a stenosis of arteries in renal grafts into right and left iliac fossa. Stenoses occurred after end to end anastomosis as well as end to side anastomosis. Preliminary diagnosis was made after detecting arterial hypertension and/or increase of renal function markers. All patients had a Doppler ultrasonography of a renal graft artery. Final indication to the procedure was done basing on CT angiography used to assess the stenosis.

The procedures were conducted from a different vascular accesses, most frequently: unilateral, ipsilateral and also contralateral and bilateral. The angioplasty+stent was done in 51 cases, in 3 cases 2 stents were used. The rest of the interventions were performed with an angioplasty. In 6 cases only the angiography was necessary. However, in 4 cases this examination indicated no need for a treatment.

During the procedures the heparin was administered in doses ranging from 2500U to 10000U. In postoperative care patients were given an adjuvant treatment – dual antiplatelet therapy. In 53 cases the femoral artery closure was done using an Angioseal and in 24 cases using a pressure dressing. In 6 cases postoperative complication were observed once again. They were successfully treated with a repeat intravascular procedure.

**Results:** There were 93 intravascular interventions aiming to treat stenosis of arteries in renal grafts. Complications occurred only in 6 procedures. Afterward, patients presenting these complications were qualified to reintervention by proceeding intravascular dilatation of renal arteries in renal grafts, resulting in no further complications.

**Conclusions:** Due to good results, we can recognize with great certainty that intravascular procedures of anastomotic stenosis in transplanted kidneys is a treatment of choice. Moreover, complications after those procedures can be treated also endovascular.

[179]

### **Renal dysfunction in patients with chronic hepatitis: diagnostic opportunities and causes of development**

Demchuk O.V., Kvasnytska O. B.

demol7@ukr.net

Bukovinian State Medical University

**Introduction:** In patients with chronic hepatitis (CH) in the period of exacerbation the development of edema-ascites syndrome is possible. It should be borne in mind that in the emergence of water-electrolyte imbalance plays not only hypoproteinemia, but also changes in the function of the kidneys. Today there is no doubt that in the pathogenesis of the progression of liver diseases of different etiologies, a significant role belongs to the free radical processes (FRP) and the syndrome of endogenous intoxication (SEI).

**Aim of the study:** Establish changes in renal function in patients with CH, as well as clarify the role of FRP and the SEI on the development of renal dysfunction.

**Material and methods:** 22 patients with low-active CH of non-viral etiology with disease duration from 3 to 6 years were examined. Clinically peripheral edema was diagnosed in 21% of patients. The functional state of the kidneys was studied under conditions of 12-hour spontaneous diuresis and when conducting a water load in the amount of 0.5% of body weight. FRP were assessed by the level of malonic aldehyde in the blood (MA), the degree of endotoxicosis by the level of medium molecular peptides (MMP). The control group consisted of 20 healthy persons of the corresponding age.

**Results:** The results of the study showed that under conditions of spontaneous diuresis, significant changes in the function of the kidneys in patients were absent. At the same time, during the water loading, the diuresis was reduced, both absolute and standardized; glomerular filtration (GF) was reduced by 3 times ( $p < 0.05$ ) in relation to a group of healthy individuals. There was also a significant impairment of the ion-regulating function of the kidneys: if in healthy individuals, sodium excretion increased by 50% in relation to spontaneous diuresis, then it was to decrease in patients with CH ( $p < 0.05$ ). Similar changes were observed regarding the excretion of ammonia and titrated acids ( $p < 0.05$ ).

Correlation analysis showed the relationship between the MA indicator in the blood and the specific gravity of urine ( $r = 0.81$ ,  $p < 0.05$ ), as well as GF ( $r = -0.56$ ,  $p < 0.05$ ); and the level of MMP 280 correlated with the level of sodium in the blood and its excretion ( $r = -0.54-0.58$ ,  $p < 0.05$ ).

**Conclusions:** In patients with chronic hepatitis in the early stages of the disease during the water load, there is a violation of the adaptive properties of the kidneys by reducing GF. At the same time, both FRP and the SEI may have a certain role in the development of these disorders, which requires further study.

[180]

### **Causes of hypercalcemia at Nephrology Department patients – preliminary report**

Katarzyna Królewicz, Zuzanna Steć

kakrolewicz@gmail.com

Students' Scientific Group affiliated to the Department of Internal Medicine, Nephrology and Dialysis Therapy, Military Institute of Medicine

**Trustee of the paper:** Professor Stanisław Niemczyk, MD, PhD

**Introduction:** Hypercalcemia is increasingly common among Internal Medicine Unit's patients, which results from incidence of malignancies, excessive vitamin D and calcium supplements intake, hyperparathyroidism, sarcoidosis, or treatment with certain medications. Hypercalcemia can lead to dangerous consequences since it may result in acute and chronic renal insufficiency, pancreatitis, osteopenia and even coma.

**Aim of the study:** The aim of this study is to assess the incidence of hypercalcemia as main cause of hospitalisation and identify its origin and clinical implications.

**Material and methods:** We have retrospectively analysed data of patients admitted to the Department of Nephrology between years 2017-2018, with mean rate of admissions at 1500 patients/year. After scrutinizing 1/4 of all data, our analysis has hitherto revealed a total of 20 hypercalcemic patients. Subsequently, levels of calcium (total and ionized), phosphor, PTH and albumins were evaluated, and the total calcium levels corrected for albumin were calculated. Afterwards, we identified hypercalcemia etiologies, based on laboratory findings and patients' medical history.

Further analysis is being continued.

**Results:** Our analysis uncovered 20 cases of hypercalcemia, 5 of which were iatrogenic, 4 were idiopathic, 3 were a result of sarcoidosis, 2 were due to multiple myeloma, 2 were result of metastatic tumour, 1 was connected to hyperparathyroidism and 1 was a result of idiopathic absorptive hypercalciuria type II. 2 of the patients refused diagnosis.

Acute renal insufficiency occurred in all the patients (some with creatinine level at 4 mg%) and it reduced significantly during hospitalisation.

The total calcium values were in the range 9.4 mg/dl to 21.2 mg/dl (mean value 12.39 mg/dl).

The highest level of calcium (21.2 mg/dl) was detected in the blood of a patient with disseminated pancreatic adenocarcinoma.

Our research has not been completed yet.

**Conclusions:** The number of clinically symptomatic hypercalcaemia increases. Hypercalcaemia is an important cause of kidneys' function deterioration.

[181]

**Influence of the dialysis method on long term outcomes in kidney transplant recipients - a retrospective cohort study**

Bardowska Klaudia, Drabik Aleksandra, Królicki Tomasz, Zajdel Karolina

t.krolicki105@gmail.com

Medical University of Wrocław

**Trustee of the paper:** Letachowicz Krzysztof, Kamińska Dorota

**Introduction:** Peritoneal Dialysis (PD) and Haemodialysis (HD) are two equivalent methods of renal replacement treatment in patients with End Stage Renal Disease (ERSD). Yet the main therapeutic target in this group of patients is the Kidney Transplantation (KTx), which is connected with better life quality, lower annual costs for the healthcare system and better outcome compared to any form of dialysis.

**Aim of the study:** The study purpose was to determine the influence of dialysis method on the late outcomes in KTx recipients.

**Material and methods:** We performed a preliminary, single-centre, retrospective, cohort study, in which we analysed 207 patients with functioning kidney graft, who underwent a routine visit in the local outpatient clinic in the first two weeks of March 2015. Patients dialysed through Sheldon catheter and with pre-emptive KTx were excluded from the study. Demographic and clinical data were gathered and all of the patients were followed for a median time of 36 months, when regular creatinine and eGFR measures were taken. Necessary statistical analysis (U-Man-Whitney, Chi-square, and linear regression tests) were performed using Statistica Software v.13.

**Results:** Patients were divided into the PD-group (PDG, n=30) and the HD-group (HDG, n=177). The PDG was younger than HDG (48,03±12,03 vs 52,63±13,19, p=0,0805), but the age difference appeared to be statistically insignificant as well as other demographic and clinical data. The groups did not differ significantly regarding the immunosuppressive protocols and the number of taken antihypertensive drugs. The mean dialysis time and the time from KTx to visit, were comparable in both groups. Throughout the whole follow-up period the serum creatinine levels were significantly lower (1,25±0,302 vs 1,78±0,71, p=0,00117 and the eGFR was significantly higher (58,75±16,23 vs 49,89±16,62, p=0,0091) in the PD-Group. The multivariate analysis showed that the prevalence of oedema was the only independent predictor of graft function. Despite better graft function in the PD-Group, the overall survival, mortality and graft function time remained similar in both groups.

**Conclusions:** Our study suggests that the type of dialysis does not influence the long term outcomes in KTx recipients. The discrepancy between filtration function of kidney graft in both groups may be connected with factors we could not analyse in the study and a relatively underrepresented PD-Group count and thus a statistical bias.

[182]

**The optimal method of kidney asymmetry assessment in the diagnosis of renal artery stenosis**

Katarzyna Cienszkowska, Marta Ludwiczak, Maciej Wrzaszczyk

k.cienszkowska@gmail.com

Medical University of Warsaw, Department of Internal Medicine, Hypertension and Vascular Diseases

**Trustee of the paper:** Bartosz Symonides MD PhD, Łukasz Artyszuk MD PhD

**Introduction:** Renal artery stenosis (RAS) is a frequent and potentially reversible cause of secondary hypertension. According to the guidelines, discrepancy in size between the kidneys of greater than 15 mm is a clinical indication for the diagnosis of RAS. Doppler ultrasonography is a non-invasive first choice examination in RAS diagnostics allowing assessment of RAR (renal aortic ratio, proportion of the peak systolic velocity in the renal artery to that of the abdominal aorta). RAR above 3.5 is commonly used marker of renal artery stenosis.

**Aim of the study:** The aim of the study was to verify the arbitrary cut-off value of kidney size difference of 15 mm as clinical indication for the diagnosis of RAS and to find the optimal method of kidney asymmetry assessment.

**Material and methods:** The analysis included 1175 of patients (mean age: 52 years IQR (38-66), males/females: 597/ 578) who underwent Doppler examination of renal arteries and have measured both kidneys size and renal aortic ratio (RAR). Significant difference in renal dimension was set at more than 15 mm.

Significant renal artery stenosis was defined as RAR greater than 3,5. Receiver operating characteristic (ROC) curves were created and analyzed for both absolute and relative differences in kidney size (proportion of kidney size). We calculated area under the curve (AUC), optimal cut-off values and compared the both methods.

**Results:** 169 patients had significant difference in renal dimension and 61 patients had significant renal artery stenosis. In 44 patients both significant size discrepancy and renal artery stenosis were observed. According to ROC curve analysis the optimal renal asymmetry index was 12 mm, not 15 mm as it is suggested in guidelines. The sensitivity and specificity for this method was 82.0% and 83.3% respectively and AUC 86.3%.

The ROC curve analysis for relative difference of kidney size with cut-off value of 1.1 revealed higher sensitivity 85.2% with specificity 82.0% and better performance with greater AUC 86.9% ( $p < 0,01$ ) comparing with the absolute difference.

**Conclusions:** Changing the definition of significant difference of kidney size according to our results may improve the diagnosis of RAS.

[183]

### **The number of HLA mismatch and peri-transplant dialysis increase the rate of acute rejection of transplanted kidney: a single-center case-control study**

Michał Zawistowski, Karola Warzyszyńska MD, Natalia Dziewa, Edyta Karpeta

Michal.Zawistowski@mail.com

Department of General and Transplant Surgery, Medical University of Warsaw

**Trustee of the paper:** Maciej Kosieradzki MD, PhD

**Introduction:** Biopsy proven acute rejection (BPAR) is a significant cause of transplanted kidney dysfunction. The incidence of BPAR in the first year after transplantation is observed in 8-10% of patients. There are many well-known factors which increase its risk, such as high number of incompatible human leukocyte antigens (HLAs) between donor and recipient as well as delayed graft function defined as the need for hemodialysis (HD) within 7 days after transplantation.

**Aim of the study:** The aim of the study was to evaluate the effect of HLA-mismatch level and peri-transplant HD on BPAR occurrence in various post-transplant periods.

**Material and methods:** We conducted a case-control study and analyzed 505 patients who underwent kidney transplantation (Ktx) in Jan 2010 – Jul 2015. The group consisted of 61.65% of males and was in mean age of  $48.8 \pm 14$  years with median length of hospital stay of  $15 \pm 12$  days. The Transplantation Registries and patient records were searched for BPAR in the first year post-transplant.

Missing data or loss to follow-up were handled by available-case analysis method. A logistic regression was used to evaluate predictors of BPAR. P value  $< .05$  was considered statistically significant. Analysis was performed with STATISTICA 13.3 software. The reporting of this study conforms to the STROBE statement.

**Results:** BPAR affected 23.5% ( $n=112$ ;  $N=476$ ) of patients in the first year of the follow-up. It was diagnosed in 9.4% of cases ( $n=47$ ;  $N=498$ ) in the first month and in 17.2% ( $n=81$ ;  $N=472$ ) in subsequent months.

Regression model evaluating incidence of BPAR in one year post-transplant included such predictors as: HLA-mismatch (OR 1.3, 95%CI: 1.1-1.6,  $p=.006$ ) and peri-transplant HD (OR 1.3, 95%CI: 1.3-1.2,  $p<.001$ ). For first 30 days after Ktx results are as follows: HLA-mismatch (OR 1.3, 95%CI: 1.0-1.7,  $p=.084$ ), peri-transplant HD (OR 1.4, 95%CI: 1.2-1.5,  $p<.001$ ). Between 1-12 months post-transplant: HLA-mismatch (OR 1.3, 95%CI: 1.1-1.6,  $p=.016$ ), peri-transplant HD (OR 1.1, 95%CI: 1.0-1.2,  $p=.061$ ).

**Conclusions:** The increased risk of BPAR in the first year after Ktx is correlated with greater HLA-mismatch and the need for peri-transplant HD. The role of the last is statistically significant in early post-operative time (first 30 days), whereas in the period of 1 to 12 months the meaningful factor is the number of mismatching HLAs. We suggest that the level of HLA incompatibility as well as the need for peri-transplant HD are significant prognostic variables for BPAR in the population of renal transplant recipients.

[184]

### **Cognition in patients with end-stage renal disease: a role of quality of life**

Karolis Vencevicius; Ieva Eitaviciute

karolis.vencevicius@gmail.com

Vilnius University, Institute of Clinical Medicine

**Trustee of the paper:** Laurynas Rimsevicius, MD PhD

**Introduction:** Cognitive impairment is common in end-stage renal disease patients. It contributes to functional dependence and decreased medical care compliance. These negative consequences result in poor treatment outcomes and lower quality of life.

**Aim of the study:** To evaluate cognitive functions of hemodialysis patients (HDP), predialysis patients (PDP), healthy controls (HC) and determine the relationship between cognition and quality of life in HDP.

**Material and methods:** A case-control study of 139 subjects (43 HDP, 46 PDP, 50 HC) was performed at Vilnius University hospital Santaros klinikos in 2017-2019. Cognitive functions of subjects were evaluated with 2 tests: Montreal Cognitive Assessment (MoCA) (0-30) and Mini-Mental State Examination (MMSE) (0-30), higher results indicating better cognition. Quality of life (QOL) of HDP was evaluated by Kidney Disease and Quality of Life instrument (KDQOLTM-36), higher results indicating higher QOL. All subjects completed an anonymous 12-questions questionnaire to determine their demographic, epidemiological characteristics. Statistical analysis was performed using Student's t-test,  $\chi^2$  test, Mann-Whitney, Kruskal-Wallis, ANOVA tests, Pearson correlation by IBM SPSS 23.0.

**Results:** The three study groups did not differ regarding sex, age and education. Mean MoCA and MMSE scores were lower in HDP group than in PDP and HC: MoCA ( $26,53 \pm 2,88$ ;  $28,12 \pm 1,29$ ;  $28,94 \pm 1,65$  accordingly;  $p=0,022$ ), MMSE ( $27,76 \pm 1,98$ ;  $28,84 \pm 1,07$ ;  $29,52 \pm 1,18$  accordingly;  $p=0,004$ ). Mean MoCA scores of HDP with sleep disorders were significantly lower than HDP without any sleep disorders ( $24,98 \pm 3,12$  vs.  $28,35 \pm 1,44$ ;  $p=0,018$ ). Mean KDQOLTM-36, MoCA and MMSE scores did not differ statistically significantly between HDP with arteriovenous fistula vascular access and HDP with central venous catheter vascular access. A statistically significant positive correlation between HDP KDQOLTM-36 and MMSE scores was determined ( $r=0,533$ ;  $p=0,008$ ), but statistical significance was not observed between HDP KDQOLTM-36 and MoCA scores. A statistically significant positive correlation between HDP KDQOLTM-36 physical subscale (SF-12 measure of physical functioning) and MMSE scores was determined ( $r=0,425$ ;  $p=0,038$ ).

**Conclusions:** HDP cognitive performance was worse than PDP and HC. Cognitive functions were more impaired in HDP with sleep disorders than HDP without any sleep disorders. Vascular access did not have a significant impact on HDP cognition or QOL. Cognitive performance was better in HDP with higher QOL and better physical functioning.



# Neurology & Neurosurgery

**Date:**

Friday, May 10th, 2019

**Location:**

Room 127, Library – CBI

**Jury:**

prof. dr hab. n. med. Anna Członkowska  
prof. dr hab. n. med. Urszula Fiszer  
prof. dr hab. n. med. Sergiusz Jóźwiak  
prof. dr hab. n. med. Jan Kochanowski  
prof. dr hab. n. med. Bogdan Cizek  
prof. dr hab. n. med. Zbigniew Czernicki  
prof. dr hab. n. med. Waldemar Koszewski  
płk prof. dr hab. n. med. Andrzej Koziarski  
prof. dr hab. n. med. Jan Krzysztof Podgórski  
prof. dr hab. n. med. Marcin Roszkowski  
prof. dr hab. n. med. Tomasz Trojanowski  
płk prof. dr hab. n. med. Grzegorz Zieliński  
płk prof. dr hab. n. med. Marek Harat  
prof. dr hab. n. med. Lech Polis  
prof. dr hab. n. med. Irena Nalepa  
prof. dr hab. n. med. Teresa Wierzba-Bobrowicz  
prof. dr hab. n. med. Dagmara Mirowska-Guzel  
dr hab. prof. SGH Ilona Błaszczak-Przybycińska  
dr hab. prof. SGH Adam Szulc  
ppłk dr hab. n. med. Kazimierz Tomczykiewicz  
dr hab. n. med. Dorota Dziewulska  
dr hab. n. med. Małgorzata Gawęł  
dr hab. n. med. Przemysław Kunert  
dr hab. n. med. Małgorzata Bednarska-Makaruk  
dr hab. n. med. Iwona Kurkowska-Jastrzębska  
dr hab. n. med. Radosław Rola  
dr hab. n. med. Beata Zakrzewska-Pniewska  
dr hab. n. med. Anna Potulska-Chromik  
dr n. med. Marta Banach

**Coordinators:**

Aleksandra Kołtuniak

Aleksandra Hus

**Scientific Patronage:**

National Consultant in Pediatric Neurology Ewa Emich-Widera MD PhD

Polskie Towarzystwo Neurofizjologii Klinicznej

[185]

**Preoperative identification of the initial burr hole site in retrosigmoid craniotomies: A teaching and technical note**

Chuan Zhou, Alexander I. Evins, Andrea Boschi, Yinda Tang, Shiting Li, Łukasz Przepiórka, Shaan Sadhwani, Philip E. Stieg, Tao Xu, Antonio Bernardo  
przepiorka@mp.pl

Weill Cornell Medicine, Neurological Surgery, New York, New York

**Trustee of the paper:** Alexander I. Evins MD

**Introduction:** When fashioning a retrosigmoid craniotomy, precise placement of the initial burr hole is crucial to avoid iatrogenic sinus injury and to facilitate a corridor that allows for minimal cerebellar retraction.

**Aim of the study:** To present a novel and easy technique to preoperatively identify the location of the initial burr hole using 3D computed tomography (CT) reconstruction using open source software.

**Material and methods:** 3D CT reconstructions of 16 cadaveric sides were used to identify and measure three discrete anatomical points. These three points and distances between them were plotted onto the surface of the skull using a digital caliper to identify the optimal burr hole location. This technique was subsequently applied in 20 clinical cases.

**Results:** Optimal burr hole placement was achieved in 87.5% of specimens and, with minor refinement, 100% of clinical cases with no significant increase in operative time. Preoperative planning took an average of 10 minutes.

**Conclusions:** This technique for localizing the location of the initial retrosigmoid burr hole is a simple, safe, reliable, rapid, and inexpensive solution for surgeons who do not have regular access to neuronavigation.

[186]

**Post-stroke patients modulate tonic EEG during EEG-Neurofeedback rehabilitation of their cognitive functions**

Szymon Tyras

szymon.tyras@gmail.com

Collegium Medicum, University of Warmia and Mazury, Olsztyn

**Trustee of the paper:** PhD Dorota Mroczkowska, Collegium Medicum, University of Warmia and Mazury, Olsztyn

**Introduction:** EEG-Neurofeedback training (EEG-NFT) is a form of the cognitive rehabilitation therapy following stroke. However, impact of this therapy on the resting-state EEG, and the resting-state EEG role in the cognitive outcome remains unclear.

**Aim of the study:** The study goal was to evaluate the EEG-NFB training impact on the patients' tonic EEG as a test for the ability to modify baseline EEG during the course of the therapy, and to determine at what level changes in the tonic EEG correlate with patients' cognitive benefits.

**Material and methods:** Study population included 30 ischemic stroke patients. All patients received EEG-NFT employing a standard C3  $\theta/\beta$  : C4  $\theta$ /SMR protocol (15 sessions á 20 min.). Cognitive outcome was defined as the dMMSE rate which was a difference between the Mini-Mental State Examination (MMSE) score after and before the therapy. Patients' abilities to modulate tonic EEG were evaluated using the Wilcoxon signed-rank test to compare the  $\theta/\beta$  coefficient in the C3 lead and the  $\theta$ /SMR in the C4 lead before and after the training. The post-pre differences of electrophysiological indices (d $\theta/\beta$  and d $\theta$ /SMR) were entered into multivariate linear regression analyses to explore their possible impact on cognitive changes (expressed as the dMMSE coefficient).

**Results:** Comparison of the coefficient values of  $\theta/\beta$  in the C3 lead and the  $\theta$ /SMR in the C4 lead before and post-therapy showed statistically significant changes ( $Z=2,212$ ;  $p=0,027$  and  $Z=2,028$ ;  $p=0,043$ , respectively). The multivariate linear regression model indicated that the d $\theta/\beta$  in the C3 lead and d $\theta$ /SMR in C4 lead significantly predicted the effectiveness of the EEG-Neurofeedback rehabilitation of cognitive functions ( $F(2,27)=4,692$ ;  $p=0,036$ ;  $R^2=0,107$  for the model).

**Conclusions:** The results of this study show that the EEG-NFB training using the selected protocol can influence the tonic EEG of post-stroke patients according to a way pre-set by a training protocol, and changes in baseline values of the  $\theta/\beta$  and  $\theta$ /SMR coefficients are responsible for only 11% of the therapy effect ( $R^2=0,107$ ) on patients' cognitive functions.

[187]

### **Venous anatomy in the pineal region and its significance in neurosurgery**

Karolina Brzegowy, Michał P. Zarzecki, Hasina M. Aziz

karolina.brzegowy@gmail.com

Department of Anatomy, Jagiellonian University Medical College

**Trustee of the paper:** Jerzy A. Walocha, MD, PhD

**Introduction:** The pineal gland is located inferiorly to the internal cerebral veins (ICVs), which more posteriorly converge into the great cerebral vein (GV, the vein of Galen). The basal (BV) and internal occipital vein (IOV) course laterally to the gland, and both have highly variable termination points. Venous anatomy in the pineal region is of significant interest to neurosurgeons, as a surgical strategy may require alteration when an anatomical variant is encountered. The deep location of pineal tumours makes cerebral veins coursing its proximity prone to injury during dissection.

**Aim of the study:** Because of its importance in neurosurgery, this study's objective was to evaluate the venous anatomy in the pineal region using computed tomography angiography (CTA).

**Material and methods:** Head CTAs of 250 Polish patients were evaluated in this study. We identified the presence in the pineal region and termination points of the BV and IOV. We also assessed the relationship of the ICV-ICV union to the splenium of corpus callosum. The presence of the GV narrowing was also evaluated.

**Results:** The basal vein was present in the pineal region in 88% of the hemispheres. We recognized 8 different BV termination points in this area. Typically, it joined the GV (34.8%), the ICV (23.2%), or the point where two ICVs unite (21.8%). We identified IOV in 90.2% of the hemispheres. The IOV most commonly terminated at the GV (51.80%), followed by the GV-BV junction (14.20%) and the BV (13.0%). ICVs usually converged behind the splenium (46.0%). In 3% of the hemispheres, the ICVs did not unite but individually terminated at the straight sinus. The narrowing of the great cerebral vein was identified in 51.20% of the hemispheres, with nearly equal prevalence in women as in men.

**Conclusions:** As variations in the location of the ICV-ICV union and terminations of IOV and BV are relatively frequent, detailed knowledge of the venous anatomy in the pineal region is essential for developing optimal surgical strategies. Iatrogenic injury to the veins may result in postoperative neurological deficits. Thorough knowledge of the deep cerebral veins may also enable surgeons to use them as surgical landmarks. Finally, cerebral veins are of considerable significance because venous abnormalities such as the GV narrowing may contribute to pathophysiology in several neurological conditions.

[188]

### **Anosognosia and emotional disorders in the structure of deficits in stroke**

Maslov Nikita

atickinwallsome@gmail.com

Smolensk State Medical University

**Trustee of the paper:** Marina Agafonova, MD, PhD

**Introduction:** The incidence of stroke is expected to increase by 11% in the next decade in Russia. It will entail social and economic losses. Cognitive disorders and motor deficiency result in significant disability slowing down patients' recovery. It is worth noting the lead negative role of anosognosia in the compliance failure.

**Aim of the study:** To perform a comprehensive general psychological and neuropsychological examination of patients in the acute period of ischemic stroke assessing the severity of neurological motor deficits and to present data on the prevalence of emotional, cognitive impairment and anosognosia in these patients.

**Material and methods:** The study involved 33 65.5±11.6 year-old patients in the acute period of ischaemic stroke (15 men and 18 women) who were treated in Smolensk regional hospital. MRI, CT were used to confirm ischaemic stroke. NIHSS and modified Rankin Scale were used to evaluate neurological deficiency; Hospital Anxiety and Depression Scale, the 14-item Starkstein Apathy Scale - to analyze the emotional sphere; «A method to assess self-awareness deficit for motor and cognitive abilities in patients with brain damage» - to evaluate the level of anosognosia, the Dembo-Rubinstein Method - the level of self-esteem.

**Results:** White matter ischaemia was established in 3.0% of patients, cerebellar ischaemia – 6.0%, pons – 3.0%, stem – 6.0%. Right hemisphere stroke was observed in 9.0% of cases: temporal lobe - 3.0%, occipital lobe – 3.0% and frontal lobe also in 3.0% of cases. Left hemisphere stroke in occipital lobe was found in 3.0% of patients and in the parietal area in 9.0% of patients.

The average NIHSS score was  $7.0 \pm 4.5$ , the mRS -  $3.0 \pm 1.3$ . The average HADS score for anxiety was  $5.7 \pm 4.1$ , for depression -  $7.6 \pm 5.8$ . Simultaneously, subclinically and clinically expressed level of anxiety was observed in 36.4%, depression - 39.4%. Anxiety was situational in most cases. The average level of apathy was  $12.6 \pm 10.0$ . Anosognosia for motor impairment was revealed in 3.0% of cases, while anosognosia for cognitive deficits - in 18.2%.

**Conclusions:** Thus, emotional disorders often exclude or significantly reduce the degree of patients' participation in physical and cognitive rehabilitation. Proper work in this direction will allow to achieve a more adequate self-assessment of patients' condition, involving them in the rehabilitation process more effectively.

[189]

#### **Surgery after surgery for vestibular schwannoma**

Łukasz Przepiórka, Przemysław Kunert, Wiktoria Rutkowska, Tomasz Dziedzic, Andrzej Marchel  
przepiorka@mp.pl

Department of Neurosurgery, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Przemysław Kunert MD, PhD

**Introduction:** Vestibular schwannoma (VS), the most common tumor in the cerebellopontine angle (CPA), can be treated with surgery, radiosurgery or can be observed. Although benign, failure to remove it completely may result in a regrowth. Management of tumor recurrence after gross total resection (GTR) or progression after non-GTR is much more difficult to treat than initial VS and remains controversial as well as challenging, both for the surgeon and the patient.

**Aim of the study:** The aim of the study was to evaluate the oncological and functional effectiveness of revision surgery for recurrent VS (rVS).

**Material and methods:** Twenty-eight consecutive patients operated for rVS were analyzed. Analyzed group included 16 women and 12 men (mean-42.5 y.o.). Ten of them were previously operated at our department and GTR using retrosigmoid approach (RSA) was initially performed. The mean time to recurrence in this group was 9.3 years.

Eighteen patients were referred from other centers with tumor progression after less than total resection (RSA in all), including 4 patients after additional radiosurgery treatment and 3 patients who have had multiple previous surgeries. The mean time for revision surgery was 6 years.

All patients presented with unilateral hearing loss (AAO-HNS class D) and with a different grade of facial nerve (FN) weakness (House-Brackmann (HB) grades: II-VI), including deep long-lasting FN paresis (HB grades: IV-VI) in 60,7%. The size of recurrent tumor ranged from 8 to 51mm (mean: 26.6mm). Seven patients had neurofibromatosis type 2.

**Results:** GTR has been accomplished during revision surgery in all cases. Translabrynthine approach (TLA) was the most common (13 small to medium tumors arising from IAC bottom) followed by RSA (10 large tumors as well as smaller ones located predominantly in CPA) and by the combination of TLA and RSA in 4. Middle fossa approach was employed for 1 tumor progressing to the petrous apex.

In 14 patients FN anastomosis was performed, 8 of them had hemihypoglossal-FN anastomosis (HHFA) simultaneously with reoperation. In follow-up only 1/3 of patients still had deep FN paresis (HB grades IV-VI). All patients after HHFA improved from HB grade VI to HB grade III, except for one who improved to grade IV. No subsequent tumor recurrence was noted during the mean follow-up of 3,2 years.

**Conclusions:** Complete tumor removal via tailored approaches together with modern FN reconstruction techniques yield durable oncological effect and may restore satisfactory FN function.

[190]

#### **Platelet extracellular vesicles as first liquid biopsy biomarkers to diagnose acute ischaemic stroke**

Aleksandra Soplinska, Aleksandra Gąsecka, Edwin van der Pol, Kinga Pluta, Rienk Nieuwland, Krzysztof J. Filipiak, Iwona Jestrzebska-Kurowska, Anna Czlonkowska, Dagmara Mirowska-Guzel, Marek Postuła, Ceren Eyiletlen

ola@soplinska.pl

Department of Experimental and Clinical Pharmacology, Centre for Preclinical Research and Technology, Medical University of Wars

**Trustee of the paper:** dr vet. Ceren Eyiletlen

**Introduction:** Acute ischemic stroke is the second most common cause of death in Europe, accounting for almost 1.1 million deaths annually. Diagnosis of stroke relies on neurologic deficits and brain imaging. Because time is brain, stroke is preferably already diagnosed in the ambulance, which requires a liquid biopsy biomarker.

**Aim of the study:** Our aim was to determine whether EVs from platelets, leukocytes and endothelial cells can be used as biomarker to diagnose stroke.

**Material and methods:** The study was approved by the medical ethics committee. Venous blood was collected at days 1 (acute phase) and 7 (late phase) after the onset of stroke from fasting patients (n=19, mean age 53.8±5.4 years, 55% male) and controls (patients with Parkinson or Alzheimer disease, n=9, mean age 57.1±3.2 years, 53% male). Flow cytometry (Apogee A60 Micro) was used to determine plasma concentrations of EVs labelled with antibodies for activated platelets (CD61, CD62p; PEVs), leukocytes (CD45; LEVs) and endothelial cells (CD146; EEVs). Flow cytometry data files were processed using in-house developed, automated software (MATLAB R2018a), enabling flow rate stabilization, diameter and refractive index determination, MESF calibration, fluorescent gate determination and application, and statistics reporting. To standardise and differentiate EVs from small platelets and lipoproteins, only events between 200 nm and 700 nm and with a refractive index <1.42 were included.

**Results:** Concentrations of PEV were elevated in stroke patients compared to controls, both at day 1 and day 7 (p=0.035, p=0.059, respectively). Concentrations of LEVs were comparable at day 1 (p=0.83) and decreased at day 7 (p=0.059), whereas concentrations of EEVs decreased at day 1 (p=0.048) and normalized to control levels at day 7 (p=0.91).

**Conclusions:** Concentrations of platelet EVs are elevated in patients with stroke both at day 1 and day 7, compared to controls. In follow-up studies, we are going to validate platelet EVs as the first liquid biopsy biomarker to diagnose ischemic stroke. Concentrations of LEVs and EEVs fluctuate between day 1 and day 7 after stroke, likely reflecting activation of immune system and endothelium following brain damage.

[191]

#### Platelet microparticles as biomarkers of ischaemic stroke

Szymon Jędrzejczyk<sup>1</sup>, Katarzyna Pieniak<sup>1</sup>, Olaf Domaszek<sup>1</sup>, lek. Aleksandra Gąsecka<sup>1,2</sup>, Prof. Krzysztof J. Filipiak<sup>1</sup>  
s.jedrzejczyk64@gmail.com

<sup>1</sup> 1<sup>st</sup> Chair and Department of Cardiology, Medical University of Warsaw;

<sup>2</sup> Laboratory of Experimental Clinical Chemistry, Amsterdam University Medical Center, University of Amsterdam, Meibergdreef, Amsterdam, The Netherlands

**Trustee of the paper:** Aleksandra Gąsecka

**Introduction:** Stroke is a major global cause of death and disability, with 25.7 million stroke survivors from 1990 to 2013, as the Global Burden of Diseases 2013 study shows. About 71% of stroke is ischaemic stroke (IS). However, at present there is no relevant and clinically applicable biomarker to diagnose ischaemic stroke, so that the diagnosis relies only on neuroimaging. Activated platelets, leukocytes and endothelial cells release platelet microparticles (MPs). Because cardiac embolism or rupture of atherosclerotic plaque are the most common aetiology of ischaemic stroke, and because activation of platelets plays a pivotal role in embolization and thrombosis, we hypothesized that MPs could serve as the first early biomarker of IS.

**Aim of the study:** We compared the concentrations of platelet microparticles (PMPs), leukocytes microparticles (LMPs) and endothelial cells microparticles (EMPs) in patients with IS and in patients with other neurological disorders.

**Material and methods:** Venous blood samples were drawn from patients with IS at day 1 after the onset of stroke (n=19, mean age 53.8±5.4 years, 55% male) and from patients diagnosed with Parkinson or Alzheimer disease (n=9, mean age 57.1±3.2 years, 53% male). Analysis of plasma concentrations of microparticles marked with antibodies for activated platelets (CD61, CD62p; PMPs), leukocytes (CD45; LMPs) and endothelial cells (CD146; EMPs) was performed using flow cytometry.

**Results:** Concentrations of PMPs increased in stroke patients, compared to controls (p=0.024). There were no significant differences in concentrations of LMPs between the groups. In turn, concentrations of EMPs decreased in patients, compared to controls (p=0.048).

**Conclusions:** Elevated concentration of PMPs and decreased concentrations of EMPs differentiate patients with IS from controls, suggesting that PMPs and EMPs could potentially be used as biomarkers in IS. Whereas increased concentrations of PMPs likely reflect increased platelet activation in IS, decreased concentrations of EMPs likely reflect endothelial dysfunction. Further studies with larger and more diverse populations are needed to confirm the clinical usefulness of PMPs and EMPs as biomarkers of IS.

[192]

**Modern Machine Learning Algorithms as newly developing tool to predict risk of Anterior Communicating Artery Aneurysm's rupture based on clinical characteristics**

Aneta Myszka<sup>1</sup>, Mikołaj Stryja<sup>2</sup>, Michał Bugaj<sup>2</sup>, Anna Starowicz-Filip<sup>1,3</sup>, Roger Krzyżewski<sup>4</sup>, Borys Kwinta<sup>4</sup>  
anetamyszka95@gmail.com

<sup>1</sup> Jagiellonian University Medical College, Krakow, Poland

<sup>2</sup> University of Science and Technology AGH Kraków, mechanical engineering and robotics department

<sup>3</sup> Department of Psychiatry, Jagiellonian University, Krakow, Poland

<sup>4</sup> Department of Neurosurgery and Neurotraumatology, Jagiellonian University, Krakow, Poland

**Trustee of the paper:** Aneta Myszka

**Introduction:** As the most frequent site of aneurysms related to the circle of Willis, the anterior communicating artery (ACoA) accounts for approximately 30% of all aneurysms. Moreover, ruptured ACoA aneurysms remain the main source of 40% of aneurysm-related subarachnoid hemorrhages (SAH). Among patients diagnosed with SAH, the reported rate of mortality is approximately 40% within the first 30 days. These statistics stress the importance of detailed identification of risk factors that lead to aneurysmal rupture. The field of computer science known as Artificial intelligence (AI) allows algorithms to learn patterns based on datasets and to predict outcomes without being explicitly programmed. AI has increasing meaning in the medical field and has been tested in a variety of clinical applications from diagnosing to predicting outcomes of medical procedures.

**Aim of the study:** To analyze and determine the impact of the clinical characteristics and anatomical variations of the ACoA complex contributing to ACoA aneurysm rupture. We created and optimized a ML algorithm based on our dataset to predict ACoA aneurysm rupture.

**Material and methods:** For our algorithm to learn how to classify patients into predicted ruptured or unruptured groups, we obtained data from 266 individuals (47.77% women) including: age, risk factors related to SAH, previous chronic disease, and medication status. Moreover, based on CTA/DSA we identified 8 types of anatomical variations of ACoA complexes. In order to create an advanced model to predict aneurysm rupture, we used Microsoft's lightGBM algorithm with different types of booster: Drop Additive Regression Trees (DART), Gradient-based One-Side Sampling (GOSS), and Gradient Boosting Decision Trees (GBDT). With this diversity, we achieved three different accuracies and found the accident accuracy, define as the arithmetic average of three results.

**Results:** The accuracy (AUC) for DART, GROSS, and GBDT were respectively 82.16%, 83.07% and 80.3%. Moreover, we achieved full Average AUC 83.41 % that implied a good performance and fit of the ML model.

**Conclusions:** In conclusion, based on the anatomy of an ACoA complex, demographic factors, and the patients' medical and behavioral histories, our LightGBM models was designed to predict the rupture risk of an ACoA aneurysm. The designed ML algorithms presented good performance and may help to further identification and to facilitate the management of unruptured ACoA aneurysms. LightGBM has very high efficiency in binary data analysis even in a small dataset as applied in this study.

[193]

**High stroke risk influence on general knowledge about stroke**

Evija Kļaviņa, Evelīna Korsaka, Keciņa Strazdina, Evija Miglāne  
dr.e.klavina@gmail.com

Rīgas Stradiņa universitāte

**Trustee of the paper:** Evija Kļaviņa

**Introduction:** It is a well-known fact that stroke is one of the leading cause of an adult disability and mortality. Despite active educational work by healthcare professionals acute stroke rates are still very high worldwide. Based on data given by CDC webpage every 40 seconds someone suffers from stroke and every 4 minutes someone dies from stroke. It also states that up to 80% strokes could be prevented by reducing risk factors. The outcome of stroke is more favorable if it is recognized early and interventions are done.

**Aim of the study:** Determine if participants with increased stroke risk factors are more knowledgeable about stroke.

**Material and methods:** Study was done in 29th October, 2018 during "Stroke day" campaign held in Pauls Stradins Clinical University Hospital. This was a cross-sectional study. Each participant filled non-standardized questionnaire about stroke, its main signs and symptoms, risk factors and further actions if someone is having a

stroke. Also blood pressure, finger-prick glucose level, body mass index (BMI) and 5 year stroke risk was measured. All data was collected and analyzed via SPSS program.

**Results:** Altogether 104 responses were collected. High blood pressure was detected in 59,8 % (n=61), high glucose level in 55,7% (n=49). 50 % (n=50) of participants were overweight and 27,5 % (n=28) were obese. Knowledge about stroke in 61,2 % (n=63) was average, in 24,3 % (n=25) poor and in 15 % (n=15) good. No significant association was observed between elevated risk factors and general knowledge about stroke.

**Conclusions:** Half of participants had elevated blood pressure, blood glucose and most of the participants had increased BMI. Despite increased risk factors of stroke amongst participants general knowledge is mostly average or poor. This study shows that more educational campaigns should be organized and also bigger emphasis should be put on risk factor reduction.

[194]

#### **Headache in children and adolescents: prevalence and features**

Anna Mikheeva, Nikita Maslov, Vladimir V. Bekezin  
amikheevag@mail.ru

Smolensk State Medical University

**Trustee of the paper:** Prof. Vladimir V. Bekezin, MD, PhD

**Introduction:** Headache is one of the most common symptoms that can disturb people, not only adults but also children and adolescents. It can be both primary and secondary. And if the secondary headache is a consequence of another disease; the primary doesn't depend on anything and it is a separate subject for study.

**Aim of the study:** The aim of our study was to evaluate the prevalence of headache among children in Smolensk, its features and impact on daily activity and quality of life.

**Material and methods:** Children and adolescents (age: 10 – 18) were interviewed. HIT-6 and PedMIDAS questionnaires were used for the survey. All results were processed statistically.

**Results:** 122 children were interviewed (including 26 boys and 96 girls). Children noted the appearance of headaches in the age of 14 most often. At the same time, 21.3% (26 people) of respondents claim that they don't suffer from headaches. In addition, we can't say that the headache is primary in 26.2% of cases (32 people). Endocrine pathologies, craniocerebral traumas, vegetative-vascular dystonia caused headache most often.

Among children with primary headache debut age varies from 6 to 15 years (average -12.1). Girls predominate in this group (84.6% of respondents). The most common type of primary headaches were tension headaches (84.8% of cases). Children rated their pain on the VAS by 4-5 points most often (50% of cases). The most frequent concomitant symptoms: vertigo (53.8% of cases), lacrimation (14.4% of cases). At the same time, 30.7% of respondents with primary headache didn't notice any associated symptoms. The most frequent localization of headache is the frontal-temporal area (46.15% of cases). Fatigue (84.6%), lack of sleep (65.3%), weather changes (46.15%), stress (38.4%) were most frequent provoking factors. The results of PedMIDAS ranged from 0 to 51 (average – 12,54); HIT-6 – from 48 to 69 (average - 59).

**Conclusions:** Among all the interviewed children 78.7% suffer from headaches. Primary headaches can be expected in 56,2% of the respondents. In girls headaches occurs significantly more often than in boys. The strength of pain, as a rule, increases with age. It is necessary to understand that headache affects daily activity of the children (19.7% - heavy impact) and quality of life (in 42.6% of cases - heavy impact). That's why headache in children is related both with Pediatrics and Public Health.

[195]

#### **When flow diverting stents can be safely used in ruptured intracranial aneurysms?**

Szymon Baluszek  
szymonbaluszek@gmail.com

Clinical Department of Neurosurgery, Central Clinical Hospital of the MSWiA in Warsaw

**Trustee of the paper:** Michał Zawadzki

**Introduction:** Ruptured intracranial aneurysms are the leading cause of atraumatic subarachnoid hemorrhage (SAH). Current guidelines recommend their aggressive treatment within 72 hours, despite poor prognosis. Blood blister-like aneurysms (BBAs) pose a significant challenge due to fragile wall, rapidly changing morphology, 20-25% morbidity and 5-15% mortality with classical endovascular or surgical approaches. Flow diverting stents (FDSs) have been initially used to treat complex, unruptured aneurysms of internal carotid artery (ICA) but

recently indications have broadened. Implantation of FDS aims at causing immediate or delayed thrombosis of the aneurysm lumen and epithelialization of the stent surface, usually with preservation of perforating vessels. Although FDS implantation is feasible in bleeding aneurysms, risk of stent thrombosis, perforator infarct and rise of aneurysm intraluminal pressure due to vasospasm should be kept in mind.

**Aim of the study:** SAH occurs in relatively young patients, peaking in the fifth decade of life. Providing safe and effective treatment for them is of paramount importance. This research focuses on small subpopulation of patients with SAH from blood blister-like aneurysm, who suffered unproportionate mortality and morbidity with traditional approaches.

**Material and methods:** Clinical records since 2013 to 2018 were screened for patients who underwent FDS implantation as treatment of bleeding aneurysm. Seventeen such patients with 19 aneurysms were identified. R programming environment was used for data analysis and visualization and Kaplan-Meier model of survival with Mantel-Haenszel test was used to assess clinical features influence on time to aneurysm occlusion.

**Results:** Seven patients were females, age range was 27-70 (mean 57). Majority of aneurysms was located on the internal carotid artery, predominantly in cavernous and ophthalmic segments and displayed features of BBAs. Median time from bleeding to intervention was 2.5 days and 5 lesions were coiled during the primary intervention and one during follow-up. Aneurysm neck size was best predictor of time to occlusion which was angiographically confirmed in 12 cases. Thirteen patients had modified Rankin Score lower than 2 at follow-up. One patient died due to pneumonia.

**Conclusions:** Implantation of flow diverting stents is modern, safe and minimally invasive treatment approach in some aneurysmal SAH cases, that can significantly extend life duration and quality in this patient population.

# Obstetrics, Perinatology & Gynecology

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 141/142, Didactics Center

**Jury:**

prof. dr hab. n. med. Mirosław Wielgoś  
prof. dr hab. n. med. Bronisława Pietrzak  
prof. dr hab. n. med. Krzysztof Czajkowski  
prof. dr hab. n. med. Włodzimierz Sawicki  
prof. dr hab. n. med. Artur Jakimiuk  
prof. dr hab. n. med. Włodzimierz Baranowski  
prof. dr hab. n. med. Leszek Bablok  
dr hab. n. med. Zoulikha Jabiry-Zieniewicz  
dr hab. n. med. Dorota Bomba-Opoń  
dr hab. n. med. Ewa Romejko-Wolniewicz  
dr n. med. Zbigniew Lewandowski

**Coordinators:**

Dominika Paździor  
Agnieszka Palus

**Scientific Patronage:**

National Consultant in Obstetrics and Gynecology Prof. Krzysztof Czajkowski MD PhD  
National Consultant in Gynecological Endocrinology & Reproductive Medicine  
Prof. Robert Spaczyński MD PhD  
National Consultant in Oncological Gynecology Prof. Zbigniew Kojs MD PhD  
Polskie Towarzystwo Ginekologów i Położników  
ENYGO- European Network of Young Gynae Oncologists  
Instytut Matki i Dziecka



**Instytut  
Matki i Dziecka**



[196]

### **What do Polish mothers know about the methods of labour pain management?**

Maria Falis, Kinga Żebrowska

mfalis04@gmail.com

Student Scientific Society of First Department of Obstetrics and Gynaecology, Medical University of Warsaw

**Trustee of the paper:** Bartosz Godek, MD; Assoc. Prof. Katarzyna Kosinska-Kaczynska, MD, PhD

**Introduction:** According to ministerial decree of 16 August 2018 each woman in Poland during childbirth has the right to the pharmacological and non-pharmacological labour pain management (LPM). Since 1.07.2015 epidural is free of charge for all pregnant women in Poland, but availability of this method is limited.

**Aim of the study:** The aim of the study was to assess the knowledge of Polish mothers about pharmacological and non-pharmacological LPM, to investigate which methods they chose and their satisfaction of chosen ones.

**Material and methods:** A prospective cross-sectional study was performed among women, who gave birth between 2015 and 2018. The self-composed questionnaire was distributed via Internet in October 2018. Statistical analysis was performed with Mann-Whitney U-test for continuous variables and chi-squared test for categorical variables.

**Results:** 13 727 women participated in the study. 75% have learned about LPM from the Internet and 42% from childbirth classes. 68% of them did not gain any information on LPM from doctors during their prenatal appointments. Safety of the newborn (46%), midwife's advice (40%) and the chance of the immediate pain relief (39%) were the most important issues while choosing LPM. Respondents used a wide range of non-pharmacological methods, such as assistance of partner during labour (81%), physical activity (58%), immersion in water (37%), relaxation techniques (15%), manual methods (14%), biofeedback (13%), TENS (4%) and aromatherapy (1%). 11% of mothers did not use any of the LPM methods. 52% of women declared, that they wanted to use the pharmacological anaesthesia, while 49% had it performed (28% epidural, 16% inhaled anaesthesia, 5% parenteral opioids). Pharmacological methods were unavailable due to lack of anaesthesiologist in maternity ward (41%) or inaccessibility of the chosen methods in the hospital (31%) and too advanced labour (43%). 48% of respondents did not decide to use pharmacological methods, because pain was bearable (29%), anxiety of child's health (17%), or belief that the pain is natural and it should not be avoided (16%). 83% of respondents believed that epidural analgesia have no influence on time needed to gain a full cervix dilatation and 81% of them claimed that serious spinal cord injury is a common side effect of epidural. 51% believed that epidural increases the risk of caesarean section.

**Conclusions:** The knowledge about the methods of LPM is not satisfactory. We should focus on well-maintained education guided by doctors, midwives and media.

[197]

### **Role of amnioinfusion in perinatal outcomes improvement in patients with oligohydramnios during the II trimester of pregnancy**

Baranova Ekaterina, Spiridonov Dmitrii

fomina.katka@yandex.ru

Pirogov Russian National Research Medical University

**Trustee of the paper:** Shalina Raisa

**Introduction:** Almost 5.0% of pregnancies complicates with moderate oligohydramnios. As a rule, it does not affect perinatal outcomes. Severe oligohydramnios accompanies from 0.7% to 5.5% pregnancies, 8.3% of which ends with antenatal death. Amnioinfusion is one of the promising methods for prolonging pregnancy and differential diagnosis managing of the oligohydramnios cases. This is our first attempt to analyze the efficiency of this procedure.

**Aim of the study:** To determine the diagnostic value of amnioinfusion in patients with severe oligohydramnios of unknown etiology in the second trimester of pregnancy and to evaluate the outcomes of their children.

**Material and methods:** Six patients with singleton pregnancies, complicated with severe oligohydramnios (maximum vertical pocket of amniotic fluid from 6 mm to 17 mm), were studied. In all cases amnioinfusion was performed. Oligohydramnios was diagnosed at the 16-31 week of gestation; amnioinfusion was carried out at the 20-31 week. The effectiveness of the procedure was measured by the number of live birth children. The cause of oligohydramnios in 3 patients was placental insufficiency (PI). Congenital malformation of the fetus (polycystic kidney disease) was diagnosed in 1 case. Preterm premature rupture of membranes (PPROM) at 19 and 20 weeks were suspected in 2 patients. It is important to note that in these patients the AmniSure® test before the

amnioinfusion was negative. Method of the procedure: anterior abdominal wall was punctured with an amniocentesis needle under control of the ultrasound. Ringer's solution was injected into the amniotic cavity in a volume of 400 to 800 ml.

**Results:** In three patients with PI the period of pregnancy prolongation was 2-10 weeks. Two of them delivered at 28 and 36 weeks. The third child was stillborn. In a patient with renal pathology the period of pregnancy prolongation was 5 weeks (from 31 to 36 week), the child survived. In both patients with suspected PPRM the leakage of amniotic fluid was confirmed after amnioinfusion. As the result, both patients refused to prolong the pregnancy. Labor occurred at the 20 weeks of gestation after the induction.

**Conclusions:** Our experience of amnioinfusion in patients with oligohydramnios at the second trimester of pregnancy showed that it is a good method for PPRM diagnosing; there is a therapeutic and prophylactic potential in cases with PI or congenital malformation of the fetus. In 2 out of 3 patients with PI the pregnancy finished with the birth of a live child.

[198]

#### **Prognostic value of biochemical screening in pregnant women**

Anna Lopachuk, Anastasiia Hoian

a.v.lopachuk@gmail.com

Bukovinian State Medical University, Department of Obstetrics and Gynecology

**Trustee of the paper:** Irina Marinchina

**Introduction:** To study a prognostic value of the concentrations of pregnancy-associated plasma protein-A (PAPP-A) and human chorionic gonadotropin (HCG) concerning the origin of the primary placental dysfunction in pregnant women with hyperandrogenism, to estimate the endocrine function of the placenta in these individuals as the basis in the diagnostics of pathological conditions of the intrauterine fetal state.

**Aim of the study:** Detect the risk of a number of pregnancy complications (not just defects) that can help in developing an individual program of pregnancy.

**Material and methods:** The core group (60 patients) - included pregnant women with hidden forms of HA diagnosed before pregnancy. The control group consisted of 30 pregnant women without gestational complications, aggravated gynecological and obstetric history. These are the results of the first biochemical screening. Pregnant women of "risk group" as to the placental dysfunction in 16-18, 20-24 weeks of gestation were examined for placental lactogen (PL), estriol (E3) and progesterone (PR) by standard methods.

**Results:** The most common reason for the diagnosis (RD) were the findings of dopplerometry.

In the statistical analysis of the results of the first biochemical screening, we noted that the level of HCG in the blood averaged  $24198 \pm 0,5$  mIU / ml in the study group, which is 36,7 % lower than the same index in the control group. The level of PAPP-A in the serum of pregnant women with hyperandrogenism was  $1960 \pm 0,9$  mIU /ml, which is 45,8% less than in the control group. According to some authors low levels of PAPP-A leads to reduced activity of growth factors involved in placentation and spiral artery remodeling. Reduction of free HCG may indicate a threat of spontaneous miscarriage and pregnancy termination.

We have established that in pregnant women "at risk" on the origin of placental dysfunction, mean values of reproductive hormones were significantly lower during their whole pregnancy. PR level in 16-18 weeks was  $34,58 \pm 0,48$  nmol/L in 20-24 weeks -  $72,16 \pm 3,67$ ; ( $p < 0.0001$ ). The most significant difference between the groups of PL (more than 3-fold) occurred at 20-24 weeks (control group -  $3,48 \pm 0,04$  mg/l, the main group -  $1,13 \pm 0,02$  mg/l;  $p < 0.0001$ ), and estriol concentration after 20-24 weeks of gestation it was 3 times lower -  $28,06 \pm 0,39$  nmol/L than in the control group ( $p < 0.0001$ ).

**Conclusions:** Based on the results of the first biochemical screening in pregnant women with hyperandrogenism we can detect the risk of a number of pregnancy complications (not just defects) that can help in developing an individual program of pregnancy.

[199]

#### **Phagocytic function of monocytes and neutrophil granulocytes before and after surgery in endometriosis**

Luca Lukács, Anna Rebeka Kovács MD

lukacsluca1995@gmail.com

University of Debrecen, Department of Obstetrics and Gynecology and Department of Preventive Medicine

**Trustee of the paper:** Rudolf Lampé MD, László Pál PhD

**Introduction:** Endometriosis is estimated to affect 10-15% of reproductive-aged women and it is also one of the leading cause of infertility worldwide. The symptoms are significantly worsening the quality of life in the affected population. Pathophysiology of endometriosis is still unclear but immunological disorders became conspicuous recently. Although adaptive immune system is in the focus of research, only few data are available about innate immune system. For this reason, we examined phagocytic function of peripheral leukocytes.

**Aim of the study:** Our aim was to investigate whether the phagocytic activity of monocytes and neutrophil granulocytes are affected by the presence or removal of the endometriotic lesions.

**Material and methods:** We examined peripheral blood samples from patients with endometriosis on the day before surgery (n=26) and on the 7th postoperative day (n=13). We also investigated pre- and postoperative samples (n=14-14) from surgical control group and samples from healthy women (n=23). After separation of monocytes and granulocytes, the cells were incubated with opsonized fluorescein isothio-cyanate-labeled zymosan A particles as a target of phagocytosis. We calculated the phagocytic index by using fluorescence microscope. Analysis of variances method and paired-sample T-test were used as statistical analyses.

**Results:** Preoperative phagocytic indexes of both monocytes and granulocytes derived from patients with endometriosis were significantly lower than phagocytic indexes of these cells from healthy women. Phagocytic function of leukocytes from postoperative patients' samples increased significantly compared to preoperative values and did not differ from the phagocytic indexes of cells from healthy women. In the surgical control group there were no significant difference between preoperative and postoperative values.

**Conclusions:** Based on our results we assume that endometrial lesions and/or their microenvironment may produce factors which depress the phagocytic function of monocytes and granulocytes. Since postoperative phagocytic index of patients with endometriosis increased significantly we assume that these factors were reduced or eliminated after removal of the lesions. Considering the results of the surgical control group, the surgical intervention has no influence on phagocytic function.

[200]

#### **Patient's refusal of trial of labor after a cesarean delivery (TOLAC) – maternal and neonatal outcomes**

Patryk Rudziński, Katarzyna Pieniak, Daria Stelmach, Inga Łopuszyńska  
patryk.rudzinski19@gmail.com

Students' scientific group affiliated to 2nd Department of Obstetrics and Gynecology, Medical University of Warsaw

**Trustee of the paper:** Joanna Kacperczyk-Bartnik, Agnieszka Dobrowolska-Redo, Ewa Romejko-Wolniewicz

**Introduction:** In Poland women who had undergone the Cesarean section (CS) were entitled to refuse the trial of labor after a cesarean delivery (TOLAC) in the following pregnancy. The legal situation of this procedure has changed since 1st January 2019.

**Aim of the study:** This study aims to examine maternal and neonatal outcomes of pregnancies delivered through CS following a patient's refusal of TOLAC.

**Material and methods:** Records from tertiary referral obstetric center were searched for women who underwent a CS following the patient's refusal of TOLAC between 1st January and 31st December 2018. 3000 births were delivered during this period, 1336 of which were delivered through a C-section (44.53%). The total of 234 patients did not give consent to TOLAC (17.51% of C-sections and 7.8% of all childbirths).

**Results:** The average gestational age at which women delivered was 38.64 weeks. The total of 88 women (37.61%) developed complications, 79 of which suffered from a postpartum anemia (33.76%), 12 from a peripartum hemorrhage (PPH) (5.13%) and 6 from a delivery injury (2.56%) - 3 from a uterine rupture and 3 from a hematoma following the C-section. Average hospitalization period was 6.51 days, one patient required readmission. 8 births (3.42% of patients in the study) were delivered preterm. 21 births were complicated by PROM. 13 births were accompanied by uterine contractions. Mean birth weight was 3507.39g. Of 234 neonates, 19 (8.12%) required ventilation with continuous positive airway pressure (CPAP) and 5 (2.14%) required ventilation with positive end-expiratory pressure (PEEP) using Neopuff™. Mean Apgar scores in the 1st, 3rd, 5th and 10th minute were 9.80, 9.82, 9.88 and 9.96, respectively. 3 (1.28%) of neonates had to be hospitalized in the Neonatal Intensive Care Unit, 36 (15.38%) in the Neonatal Pathology Unit. Mean hospitalisation period was 5.62 days (ranging from 3 to 15 days).

**Conclusions:** The results show that patient's refusal of TOLAC was a popular indication often preferred by pregnant women. As a surgical procedure, it carries a risk of complications influencing both maternal and neonatal condition.

[201]

**Women's knowledge about breast cancer prevention, with particular attention to pregnancy and lactation period**

Magdalena Pawłowska, Weronika Knap

pawmagda2@wp.pl

Medical University of Warsaw

**Trustee of the paper:** Asst. prof. Iwona Szymusik M.D. PhD

**Introduction:** Pregnancy-associated breast cancer (PABC) affects approximately 1 in 3000 pregnant women. The diagnosis of PABC is particularly challenging. Therefore women, also pregnant or breastfeeding, should be educated about the importance of the preventive actions they should take to increase the chances of avoiding this disease or at least diagnosing it at an early stage.

**Aim of the study:** To assess the knowledge of women between 20 and 50 years of age about breast cancer (BC) prevention, with particular attention to gestation and lactation periods.

**Material and methods:** A questionnaire survey consisting of 54 question, divided into 4 sections concerning: demographics, respondents' knowledge about BC and its prevention, individual risk factors and performed preventive actions, also during pregnancy and lactation. The questionnaire was available in social media from November till December 2018.

**Results:** 1336 properly filled out questionnaires were obtained, including 911 filled out by women pregnant at present or/and in the past. 85.8% of respondents are aware that BC is the most common malignancy among women in Poland. Internet is the source of information for 91.4% of women, doctors –for 50.8%.

According to respondents the most important risk factors of BC were: genetics –94.8%, hormonal contraception –43.2%, older age –30.2%, unhealthy diet –48%, obesity –24%.

Breast self-examination is performed by 69.3% of respondents, however, once a month only by 40%.

63.5% of women have never had breast examination performed by a doctor, 44.6% -have never had breast ultrasound.

88.9% of respondents know BC may occur during pregnancy and/or lactation. 99% declare breast self-examination should be performed during pregnancy, 97.3% -during lactation. However, only 51.8% of women pregnant at present and/or in the past and 54.8% of 704 women with a history of breastfeeding, were actually performing breast self-examination during those periods. 21% of respondents had their breast examined by gynaecologists during obstetric appointments. 16.2% of women had breast ultrasound during pregnancy, 17.2% -during lactation.

**Conclusions:** Women's knowledge about risk factors of BC is not sufficient. Even though most of them are aware of preventive actions, this knowledge is not put into practice, unfortunately -also by gynaecologists. There is a constant need for educational actions about BC prevention. Considering the majority of women claimed Internet as their primary source of information, social media appear to be an appropriate channel to reach them.

[202]

**How does childbirth affect women's sexuality? Female sexual function index before pregnancy and after delivery**

M. Zgliczyńska, M. Zasztowt-Sternicka, I. Szymusik, K. Kosińska-Kaczyńska, A. Majewska, Ł. Rowicki, A. Durmaj, D. Paździor, M. Szlachta

monika.zasztowt@gmail.com

Students Scientific Association of the 1<sup>st</sup> Department of Obstetrics and Gynaecology of the Medical University of Warsaw

**Trustee of the paper:** Iwona Szymusik MD PhD

**Introduction:** Female Sexual Function Index (FSFI) is a self-report that provides information about six domains of sexuality: desire, arousal, lubrication, orgasm, satisfaction and pain. A large impact of motherhood on women's sexuality has been proven but the results of available research are inconsistent and insufficient.

**Aim of the study:** The aim of the study was to compare the quality of sexual life before pregnancy and after delivery and to find out whether and how selected factors associated with pregnancy and childbirth affect women's sexuality.

**Material and methods:** The study group consisted of 537 women. The survey included 60 questions concerning demographic data, health and retrospective FSFI regarding a four-week period before pregnancy and current FSFI (referring to past four weeks). It was distributed between June and November 2018. The inclusion criteria were: term delivery, a period from 10 weeks to 2 years after the delivery and resumption of vaginal intercours. Statistical analysis was carried out using STATISTICA software.

**Results:** Mean age of patients was 26.8 ( $\pm 4.48$ ). The total FSFI score and all of the studied aspects of sexuality worsened after the delivery. It was observed both after VL and CS delivery ( $p < 0.01$ ). We observed a decrease by at least 10% of the initial FSFI score in 39.66% ( $n = 219$ ) of women after childbirth (median = -7.8), but also an increase of at least 10% in 12.67% ( $n = 68$ ; median = 4.55). The time that has passed since birth did not correlate with the changes in FSFI ( $p = 0.347$ ).

In women who underwent episiotomy, the decrease in FSFI was greater than in women who gave vaginal birth without episiotomy ( $p < 0.01$ ). Female Sexual Dysfunction (FSD), defined as a result in FSFI below 26.55, also appeared statistically more frequent in the group after the delivery (20.48% [ $n = 110$ ] before pregnancy vs. 42.64% [ $n = 229$ ] after childbirth;  $p < 0.01$ ). Women in whom FSD was diagnosed before pregnancy and who did not have contraindications to intercourse during pregnancy, earlier ceased to have vaginal intercourses in pregnancy than those without the diagnosis of FSD before (respectively, average 28th and 32th week;  $p < 0.01$ ).

**Conclusions:** Childbirth has an undeniably huge impact on women's sexuality. Prevention of sexual dysfunctions and their immediate treatment is very important, especially in this crucial period of life. More insightful, prospective studies are needed to explore the topic precisely.

[203]

#### **Variety of menopausal symptoms and their impact on self-esteem and life quality of middle aged lithuanian women**

Rūta Maželytė, Greta Mitrikaitė

gretamtr@gmail.com

Vilnius University / Faculty of Medicine

**Trustee of the paper:** Kristina Norvilaitė

**Introduction:** Nowadays women in Lithuania live quite a long life after the menopause. Since the life expectancy is getting longer, our aim was to identify the frequency of menopausal symptoms in a group of middle aged Lithuanian women and evaluate their impact on self-esteem and quality of life.

**Aim of the study:** To identify the frequency of menopausal symptoms in a group of middle aged Lithuanian women and evaluate their impact on self-esteem and quality of life.

**Material and methods:** A cross-sectional study was carried out involving 266 women aged 40 to 66 years in Lithuania.

**Results:** Mean age of women was 56. The survey questionnaire included 28 different symptoms of menopause comprising vasomotor (hot flashes, sweating, tachycardia, etc.), psychological (anxiety, mood swings, forgetfulness etc.), urogenital/sexual (dyspareunia, loss of libido, urinary incontinence, etc.) and skin (dryness of skin and mucosa, brittle nails, etc.). Sweating was the most frequent symptom (50%), followed by hot flashes (49,6%), fatigue (38%), increasing body weight (37,9%), and sleep disorders (33,8%). In majority of subjects (78,1%) menopause triggered no unfavorable effect on their self-esteem and 79% of them did not notice any significant changes in the quality of life at the onset of menopause. Meanwhile, the remaining proportion of women (respectively 21,8% and 20,7%) claimed that they felt their quality of life and self-esteem deteriorating. The majority of women (60-70%) who perceived menopause as a self-esteem and quality of life affecting process were likely to link their psychological symptoms such as depressive mood and irritability with the menopause period.

**Conclusions:** Among Lithuanian women, vasomotoric menopausal symptoms were the most frequently reported. Only slightly more than one fifth of women expressed a negative view of menopause, while a vast majority of women did not notice any changes in life quality or a decline in their self-esteem. Similar studies are important for women to become familiar with the diversity of menopausal symptoms and consequently enable them to improve the quality of their life.

[204]

### Factors influencing the prevalence of dysmenorrhea in adolescent women

Dārta Krēsliņa

kreslinadarta@gmail.com

Rīga Stradiņš University/ Department of Obstetrics and Gynecology

**Trustee of the paper:** MD Svetlana Jagodkina

**Introduction:** A common complaint of menstrual problems in adolescent women is dysmenorrhea. In different studies dysmenorrhea varies between 16% and 91% of women in reproductive age. The most common prevalence in adolescent is around 60%. Dysmenorrhea is associated with several contributing factors and it plays huge role on quality of life, such as impact of social activity, school absenteeism and others

**Aim of the study:** To find out the prevalence of dysmenorrhea among high school students in Latvia, to see if there are some joint factors, which lead to painful menstruation.

**Material and methods:** The survey was carried out from November 2018 to February 2019 in several high schools of Latvia. 300 students in age 16 to 18 years were voluntary and anonymous replied to originally created questionnaire about their body parameters, menstrual cycle and daily activities. Obtained data was statistically analyzed in Microsoft Excel 2013 and IBM SPSS software, version 20.0.

**Results:** 63.0% (n=189) of participants were having dysmenorrhea. It was found out that adolescent, whose menarche started at the age <12 years old, more often has painful menstruation – 78,6% (n=33), p<0,05 (p=0.007). Girls with menstrual cycle 6 to 8 days are much more likely to have dysmenorrhea - 72,8% (n=75), p<0.05 (p=0.009). 85,2% (n=144), p<0,05 of women who marked menstrual flow as heavy had menstrual pain, conversely, only 34,4% (n=45) of those who marked menstruation as normal had dysmenorrhea. Only 39,7% (n=75) of adolescence with painful menstrual cycle and 53,2% (n=42) of those with dysmenorrhea and sexual relationship have visited gynecologist. There were found no other significant relevance between age groups, body parameters, other characteristics of the menstrual cycle or daily activities.

**Conclusions:** The prevalence of dysmenorrhea between adolescent women is high. According to the study, only 39,7% of girls does not have painful menstruation. Considering the low attendance of the gynecologist among girls who have dysmenorrhea and had been in sexual relationship, it is necessary to educate girls about sexual health and to inform them to check out their reproductive health by a specialist.

[205]

### Predictors of Caesarean Delivery in Preterm Premature Rupture of Membranes

Cynthia Smeding, Maisa Alwan, Liran Kobi Ash MD

cynthia.smeding@gmail.com

Carol Davila University of Medicine and Pharmacy

**Trustee of the paper:** Samantha McKenzie Stancu MD

**Introduction:** Preterm premature rupture of membranes (P-PROM) exerts a tremendous influence on pregnancy prognosis. Although P-PROM only complicates between 2-3% of pregnancies, it is the single most common identifiable cause of preterm births. Additionally, it is a major public health concern, as it is the cause of up to 40% of all preterm births.

**Aim of the study:** The aim of the study was to identify predictors of Caesarean delivery in singleton pregnancies complicated by P-PROM.

**Material and methods:** This is a retrospective observational study of all consecutive singleton P-PROM deliveries (24-37 weeks) over an 18-month period at a tertiary referral centre. Pertinent data was collected comprising demographics, obstetric history, pregnancy-associated pathology and delivery from electronic patient records. Univariate statistical analysis comprised Odds Ratio, 95% Confidence interval and Chi-square test with subsequent p-value with statistical significance set at p<0.05.

**Results:** A total of 240 women delivered singletons following P-PROM with a total of 239 live births registered, yielding a 99.6% live birth rate. Maternal age ranged between 12-41 years with an average age of 28±6.27 years. Gestational age ranged between 24-37 weeks with an average of 35.1±2.76 weeks. Vaginal delivery was the predominant delivery mode, accounting for 52.9% (n=127) of deliveries. The highest proportion of preterm neonates were delivered during the late preterm period (n=170, 70.8%). Statistical significant differences were obtained between modes of delivery at weeks 31 and 36 of gestation for Caesarean delivery and vaginal delivery, respectively. The following parameters were identified as predictors of Caesarean delivery in P-PROM: vaginal

infection ( $p=0.04$ ), previous Caesarean delivery ( $p<0.0001$ ), primiparity ( $p=0.004$ ), gravidity  $>5$  ( $p=0.009$ ), university education ( $p=0.0006$ ) and prenatal care ( $p<0.0001$ ).

**Conclusions:** The advantage of Caesarean delivery over vaginal delivery is expedited delivery of the distressed fetus, while that of vaginal delivery entails avoiding postoperative morbidity. However, large multi-center randomised-controlled studies are needed to elucidate this dilemma definitively.

## [206]

### **The course and outcomes of pregnancy in women with anemia**

Hrazhyna Zholik, Nastassia Samets

grazhina\_zholik@mail.ru

Grodno State Medical University / Department of Obstetrics and Gynecology

**Trustee of the paper:** Natalia Smalei PhD

**Introduction:** It is proved that trace element deficiency takes a leading position in the etiological structure of reproductive losses. Iron deficiency is the most common nutritional deficiency and in 75% of cases it causes anemia in pregnant women. According to the definition of the World Health Organization, a decrease of hemoglobin level less than 110 g/l is considered anemia during pregnancy. During normal pregnancy a woman additionally needs about 1.24 mg of iron per day. According to some researchers, iron deficiency anemia during pregnancy is associated with the risk of premature birth and low birth weight.

**Aim of the study:** To analyze the course and outcomes of pregnancy in women with anemia.

**Material and methods:** The retrospective analysis of 102 medical records of pregnant women with anemia.

**Results:** The average age of women was  $27.8\pm 0.5$  years. 2 (2.0%) cases of anemia was diagnosed in the 1st trimester, 35 (34.3%) – in the 2nd trimester, 65 (63.7%) – in the 3rd trimester of pregnancy. The absolute majority of patients had mild anemia – 100 (98.0%), 2 (2.0%) patients had moderate anemia. The mean hemoglobin level was  $100.7\pm 0.5$  g/l. 95 (93.1%) women took iron preparations. The most commonly prescribed preparations were Sorbifer Durules – 34 (33.3%), Ferrum Lek – 26 (25.5%), Maltofer – 26 (25.5%), Tot'hema – 18 (17.6%). Complications of pregnancy such as placental disorders, fetal hypotrophy, threatened abortion, preeclampsia were diagnosed in 27 (26.5%) women. Among extragenital pathology, 45 (44.1%) women had urinary system diseases, 41 (40.2%) – cardiovascular diseases, 19 (18.6%) – chronic infection, 12 (11.8%) – thyroid disorders, 8 (7.8%) – digestive system diseases. Among gynecological diseases, cervical pathology occurred in 50 (49.0%), STIs – in 16 (15.7%), vaginal infection – in 12 (11.8%) patients. The average gestational age at delivery was  $275.9\pm 0.7$  days. There was not preterm birth. Cesarean section was performed in 26 (25.5%) patients. Anemia after Cesarean section was registered in 14 (13.7%) of cases. The blood transfusion was conducted in 1 case. The average weight of newborns was  $3486.9\pm 47.2$  grams. Apgar score was normal in all newborns.

**Conclusions:** The most common period of development of anemia during pregnancy is the 3rd trimester. The presence of anemia and the high frequency of comorbidity undoubtedly aggravates the course of pregnancy. This requires a careful choice of antianemic therapy and monitor of its effectiveness.

## [207]

### **Postpartum depression in the Riga Maternity hospital**

Sandija Skribāne, Darja Maksimova, Judīte Lukša, Liene Rucka, Santa Smilga

sandija.skribane@gmail.com

Rīga Stradiņš University, Faculty of Medicine; Rīga Stradiņš University, Faculty of Continuing Education

**Trustee of the paper:** Dr. Ilze Meldere, Dr. Artūrs Miksons

**Introduction:** Postpartum depression (PPD) is a complication of childbirth which affects approximately 10-15% of women. About 50% of cases it remains undiagnosed and untreated, causing long-term consequences for mother and child. PPD may affect the mother-infant bonding, leading to attachment insecurity, developmental delays and social-interaction difficulties. Furthermore, mothers with PPD are at the 50% higher risk to experience future episodes of depression over five-year period.

**Aim of the study:** Clarify the incidence of PPD in Riga Maternity hospital (RMH) and determine possible risk factors.

**Material and methods:** The cross-sectional study was done from March till September (2018) including 59 women in RMH. Data were collected using Edinburgh Postnatal Depression Scale (EPDS) and questionnaire about demographic, obstetric and social data. Data analysis was done using MS Excel and IBM SPSS v24.

**Results:** The mean age of mothers was  $30,3 \pm 4,7$  at RMH. The mean gestational age was  $39,5 \pm 1,6$  at RMH. The incidence of possible PPD ( $>10$  points in EPDS) in RMH was 22,0%.

Due to observed risk factors, type of childbirth had significant impact on the development of PPD ( $P=0,015$ ). Women who had assisted or instrumental vaginal deliveries had higher risk for development of PPD – 75% of them had possible PPD. On the other hand, only 5% of women who had vaginal delivery had possible PPD.

In addition, 7% of all mothers in RMH had suicidal thoughts.

**Conclusions:** The incidence of possible PPD in RMH (22%) is higher than compared to similar studies on topic. Higher risk of development of PPD can lead to long-term consequences for mother and child, including effects on child development and maternal death due to suicide.

Assisted or instrumental vaginal deliveries have statistically significant impact on the development of PPD, it can be assumed as a risk factor.

[208]

### **Abnormal cytology results and HRHPV status among sexually active women under the age of 25 from an urban area in Poland – prevalence, genotypes and phenotypes**

Karolina Mazurec<sup>1,2</sup>, Martyna Trzeszcz<sup>2,3</sup>, Maciej Mazurec<sup>2</sup>, Piotr Barcikowski<sup>2</sup>, Krzysztof Bielicki<sup>2</sup>, Izabela Kotkowska-Szeps<sup>2</sup>, Marek Maslak<sup>2</sup>, Agnieszka Zabielska<sup>2</sup>, Michal Jelen<sup>4</sup>

carlos.mazurec@icloud.com

<sup>1</sup> Student Scientific Club at Woman's Health Center Corfamed Ltd, Wroclaw, Poland

<sup>2</sup> Woman's Health Center Corfamed Ltd, Wroclaw, Poland

<sup>3</sup> Department of Pathology and Clinical Cytology, University Hospital in Wroclaw, Poland

<sup>4</sup> Department of Pathology and Oncological Cytology, Wroclaw Medical University, Poland

**Introduction:** HRHPV testing is rapidly replacing Pap smear cytology as the primary cervical cancer modality except women under 30, where cytology alone is recommended.

**Aim of the study:** The aim of our retrospective study was to investigate a prevalence and a distribution of a high-risk human papillomavirus (HRHPV) among sexually active women under the age of 25 (the age range between 16 and 24) with abnormal cytology results in Wroclaw, Poland.

**Material and methods:** A study group was selected among 268 sexually active women who were attending opportunistic cervical cancer screening, outside the public health system in Wroclaw (Poland) between August 2015 and January 2019. Endocervical samples for HRHPV detection were collected together with material for liquid-based cytology in all patients. A real-time PCR for genotyping HPV types 16 & 18 and phenotyping 12 non-16 & non-18 types was used. All cytology samples were processed using an automated laboratory preparation.

**Results:** Of the 81 women with abnormal cytology, 66 were infected with at least one HRHPV genotype. The mean age in group was 22,5 years. The prevalence of HRHPV infection among these women was 81,5%. Data for each cytology result are given in the following order: % of all cytology results/% of HRHPV-positive cases/% of types 16 or (and) 18+/% of types non-16 & non-18-positive for ASC-US: 13,1/68,6/58,3/41,7; LSIL: 16,1/90,7/30,8/69,2; ASC-H 0,8/100,0/100,0/0,0 and HSIL: 0,4/100,0/0,0/100,0 were detected. The most frequent were 12 non-16/non-18 HPV types (57,6%).

**Conclusions:** Types non-16/non-18 are the most common HRHPV phenotypes in the group of Polish women <25 from an urban area with abnormal cytology results. Simultaneously, in this group HPV-positivity in ASC-US & LSIL results is higher compared with women over 30. A larger study with a more representative sample would be needed to investigate predominant oncogenic genotypes and phenotypes in the age-group under 25.



# Oncology & Hematology

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 123, CBI - Library

**Jury:**

prof. dr hab. n. med. Andrzej Deptała  
prof. dr hab. n. med. Piotr Rutkowski  
prof. dr hab. n. med. Anna Raciborska  
prof. dr hab. n. med. Grzegorz Basak  
dr n. med. Anna Stachurska  
dr n. med. Hanna Koseła-Paterczyk  
dr n. med. Tigran Torosian  
dr n. med. Lech Kraj  
mgr Agnieszka Segiet

**Coordinators:**

Daria Kamińska  
Zuzanna Dryżałowska

**Scientific Patronage:**

National Consultant in Clinical Oncology Prof. Maciej Krzakowski MD PhD  
National Consultant in Pediatric Hematology and Oncology Prof. Jan Styczyński MD PhD  
Polska Liga Walki z Rakiem  
DKMS  
Stowarzyszenie Wspierające Chorych na Chłoniaki "Sowie Oczy"



[209]

**β-Catenin expression in colorectal cancer and its prognostic value in determining tumor malignancy**

Sophie Charlotte Reiser, Jonas Tellermann

023309@rsu.edu.lv

Rīga Stradiņš University, Medical Faculty, Latvia

**Trustee of the paper:** Dr. Inese Briede, Rīga Stradiņš University, Department of Pathology, Latvia

**Introduction:** β-Catenin is a key protein in the Wnt signaling pathway. Deregulated pathway is a major contributor to colorectal carcinogenesis (Sebio et al., 2014). As a part of catenin-cadherin complex β-catenin maintains cell-cell adhesion and cell polarity (Hur et al., 2013). Accumulation and nuclear translocation of β-catenin leads to activation of target genes stimulating neoplastic growth (Wong et al., 2004).

**Aim of the study:** β-Catenin expression analysis in different colorectal cancer (CRC) areas and its relation to tumor parameters.

**Material and methods:** The retrospective study included 23 cases of CRC, which were stained with a cancer stem cell marker β-catenin. Tumor type, grade and spread (pTN) were assessed by WHO classification (Bosman et al., 2010; Edge et al., 2010). Additionally, age, gender, anatomical site, invasion into blood vessels, lymphatic vessels and nerve structures was noted. Expression of β-catenin in the tumor center (TC) and invasion site (IS) was qualitatively evaluated in 5 vision fields. Expression was characterized by relative extent (RE), % and intensity I in a 0–3 scale (0: absent, 1: weak, 2: moderate, 3: strong) as the sum of REI. Data were analyzed using IBM SPSS 25.0. Descriptive and non-parametrical statistical methods were used. Results were considered statistical significant, if  $p < 0.05$ .

**Results:** Majority of 23 CRC cases presented with pT3 (47.6%[95%CI:28.6-71.4]) and pT4 (42.9%[19.2-61.9]), as well as Grade 2 (61.9%[42.9-81.0]). The intraneural invasion (INI) of CRC was detected in 33.3 % [14.3-52.4] of cases. Overall, mean β-catenin expression in TC was 2.2 [2.01-2.37] and in IS 1.93 [1.72-2.13]. Statistical significant correlation (Spearman test ( $p = 0.6$ ,  $p = 0.004$ )) was found between cases with INI 1,87 [1.54-2.2] in TC, and cases without INI 2,34 [2.16-2.51]. No statistical significance regarding other tumor parameters was detected. The IS showed positive statistical significant correlation compared to grade ( $p = 0.53$ ,  $p = 0.013$ ), with insignificance to other tumor parameters. The positive correlation between high expression ( $> \text{mean} = 2.2$ ) in TC and pT ( $p = 0.49$ ,  $p = 0.025$ ) proved to be statistical significant. No significance was observed comparing pN, grade and invasion parameters.

**Conclusions:** Our results displayed that varying expressions of β-catenin are related to a more aggressive tumor phenotype. β-Catenin may have a predictive value in clinical prognosis and a targeted therapeutic approach.

[210]

**Assessment of the effect of low-level laser therapy using the LightWalker laser (Nd:Yag and Er:Yag) on the frequency of occurrence, severity, and duration of oral mucositis in patients undergoing hematopoietic stem cell transplantation – open prospective, randomized study**

D. Duřak, K. Hařko

dominikadulak@gmail.com

Medical University of Gdansk/ Department of Hematology and Transplantology

**Trustee of the paper:** A. Irga-Staniukiewicz, MD; Professor J.M.Zaucha, MD, PhD

**Introduction:** Oral mucositis (OM) is one of the most common complications in patients undergoing hematopoietic stem cell transplantation (HSCT). It is a result of toxic myeloablative conditioning regimen performed before HSCT. OM leads to increased pain requiring opioids use and interferes with oral nutrition. It can cause prolonged hospitalization due to the risk of secondary infections and worsening of the patient's quality of life. Preliminary results suggested that the use of diode laser therapy (LT) in patients undergoing high-dose chemotherapy decreased the severity of OM. However, there is no report on the efficacy of the newest generation lasers (LightWalker) on the incidence of OM in transplant recipients.

**Aim of the study:** To determine if low-frequency LT performed with LightWalker laser (Nd:Yag and Er:Yag) would decrease the incidence, duration, and severity of OM in patients undergoing HSCT.

**Material and methods:** It is an open, prospective and randomized study carried out in the Department of Hematology and Transplantology at the University Clinical Centre in Gdansk from January until June 2019. Every eligible patient undergoing HSCT is informed about the possibility of being enrolled in the study. Those who give their informed consent are randomly assigned to an experimental or control group. The control group receives a standard symptomatic treatment, whereas the experimental group receives prophylactic LT in addition to the

standard care. LT is performed daily starting from the first day of conditioning until the second day following HSCT. The incidence and severity of OM are evaluated during 21 days after HSCT using WHO Grading Scale of Mucositis, VAS scale, need for opioids and total parenteral nutrition.

**Results:** The study is in progress. The comparison of results from the first pair of patients with the same conditioning has shown that patient with LT had mucositis grade 1, whereas patient without LT had grade 4 mucositis with a need for continuous iv morphine. Until submission of the abstract, 12 patients were eligible for the study: 8 were assigned to the experimental and 4 into the control group. Until the end of June, we are planning to include 30 patients.

**Conclusions:** The results obtained so far are promising. However, further analysis of a bigger group of patients is essential for final conclusions.

## [211]

### Changes in coagulation profile at the moment of diagnosis of Acute Lymphoblastic Leukemia

Radosław Kober, Bartosz Wolański, Arkadiusz Michalak  
r.k170795@wp.pl

Medical University of Łódź

**Trustee of the paper:** Joanna Trelińska, Wojciech Młynarski

**Introduction:** It is known that patients with acute lymphoblastic leukemia face increased risk of bleeding, associated not only with the disease but also with the treatment. Although thrombocytopenia at onset is common, not much is known about coagulation abnormalities at this stage of the disease and their relationship with other laboratory findings.

**Aim of the study:** We tried to find any abnormalities in coagulation profile at the moment of diagnosis ALL and establish if these abnormalities correlate with the age, blood test, liver function tests.

**Material and methods:** A retrospective review was conducted in patients treated in Department of Pediatrics, oncology, Hematology and Diabetology, Medical University of Lodz between 2013 and 2017. Collected data included type of leukemia and basic laboratory tests (coagulation, liver and biochemical panel, complete blood count) performed before the start of treatment

**Results:** We found 67 patients (F - 31, M – 36; B-cell ALL – 52, T-cell ALL - 15) eligible for analysis. In 92.5% of patients we found at least one abnormality in coagulation profile, the most common being lowered APTT (31,34% of patients), increased INR (31,34% of patients) and increased fibrinogen (44,77% of patients) and D-dimers (73,13% of patients). INR was positively correlated with age ( $R=0.49$ ,  $p<0.001$ ), WBC ( $R=0.33$ ,  $p=0.007$ ), bilirubin concentration ( $R=0.49$ ,  $p<0.001$ ), LDH ( $R=0.28$ ,  $p=0.027$ ) and ALT ( $R=0.27$ ,  $p=0.03$ ). APTT was correlated only with prothrombin time ( $R=0.39$ ,  $p=0.001$ ) and D-dimers showed weak positive correlation with CRP ( $R=0.27$ ,  $p=0.029$ ). Fibrinogen was positively correlated with CRP ( $R=0.42$ ,  $p<0.001$ ) and total protein ( $R=0.28$ ,  $p=0.031$ ) and negatively correlated with ALT ( $R=-0.37$ ,  $p=0.002$ ) and AST ( $R=-0.28$ ,  $p=0.022$ ). We noted significantly higher INR in boys vs girls [median 1.15 (IQR: 1.06-1.21) vs 1.08 (0.99-1.14),  $p=0.014$ ].

**Conclusions:** Abnormalities in coagulation profile occur commonly at ALL onset. They may be related to leukemia severity (leukocytosis and cell turnover) and reflect liver function.

## [212]

### Investigating the angiogenesis in colorectal cancer

Alicja Prawdzic Seńkowska, Paweł Kiczmer, Miriam Dawidowicz, Agnieszka Kula  
alicja.senkowska@gmail.com

Medical University of Silesia, School of Medicine with the Division of Dentistry in Zabrze,  
Department of Medical and Molecular Biology

**Trustee of the paper:** dr hab. n. med. Elżbieta Świątochowska

**Introduction:** Colorectal cancer is the third most common type of tumor all over the world. Large percentage of patients present with metastasis at the time of diagnosis or relapse after a few months, which does not allow for radical treatment. Chemotherapy is regarded as standard treatment for patients with colorectal cancer, however, it has some limitations: low selectivity, insufficient concentrations in tumor tissues, and systemic toxicity. Therefore, we should pin our hopes on biological therapy.

According to current knowledge, chemerin mediates angiogenesis and formation of tumor microenvironment via activation of its receptor, CMKLR1. However, this topic has never been investigated before with regard to colorectal cancer.

**Aim of the study:** To assess the CMKLR1 level with concentrations of two markers of angiogenesis: MMP-9 and VCAM-1, in tumor and margin tissue of colorectal cancer in relation to histological grade and TNM classification.

**Material and methods:** The study comprised 49 samples of tumor and margin tissue derived from colorectal cancer patients. To determine the concentration of CMKLR, MMP-9 and VCAM we used commercially available ELISA test kit.

**Results:** Significantly higher concentration of CMKLR1 and MMP-9 in tumor tissue was noted. CMKLR1 level in tumor tissue correlated with tumor MMP-9 and margin CMKLR1 concentrations. Regarding the concentrations in the margin tissue, CMKLR was found to be associated with both MMP-9 and VCAM-1 levels. VCAM-1 concentration correlated with MMP-9 level in the margin. CMKLR1 and MMP-9 levels in tumor tissue correlated significantly with T parameter value. VCAM-1 concentration in margin tissue was significantly higher among patients with distant metastases.

**Conclusions:** Our results indicate that the process of angiogenesis in tumor environment of colorectal cancer is associated with CMKLR-1 concentration. Further research may verify whether chemerin/CMKLR1 axis could be a suitable target in novel molecular therapies.

[213]

### The possible role of latent membrane protein 1 in the expression of carbonic anhydrase IX in classical Hodgkin's lymphoma

Áron Vajda

mrvajda.aron@gmail.com

University of Debrecen / Department of Pathology

**Trustee of the paper:** Orsolya Matolay M.D.

**Introduction:** Classical Hodgkin's lymphoma (cHL) is a rare, monoclonal B-cell derived malignant lymphoma. The hallmark neoplastic cells are known as Hodgkin- and Reed-Sternberg cells. cHL is divided into four histological subtypes: nodular sclerosis (NS), mixed cellularity (MC), lymphocyte-rich (LR) and lymphocyte-depleted (LD). Epstein-Barr virus is likely to play an aetiological role with latent membrane protein 1 being the main culprit, contributing to hypoxia related changes via the hypoxia inducible transcriptional factor 1 $\alpha$  (HIF-1 $\alpha$ ). Hypoxia exerts a profound impact on many aspects of cancer biology, such as metabolic adaptation. A key enzyme in the metabolic adaptation of tumour cells is the carbonic anhydrase IX enzyme, which is highly HIF-1 $\alpha$  dependent.

**Aim of the study:** The aim of our study was to establish a connection between the expression of LMP-1 and CAIX and to determine whether LMP-1 has an effect on the metabolic adaptation of tumour cells via the LMP-1 – HIF-1 $\alpha$  – CAIX route.

**Material and methods:** Histological samples were taken from lymph nodes of 80 patients diagnosed with cHL between 1999-2018 in the Department of Pathology, University of Debrecen. Tissue samples were analysed with routine pathological staining (H&E, PAX5, CD20, CD30) and with LMP-1 and CAIX immunohistochemistry. Both LMP-1 and CAIX immunohistochemistry were available in 35 cases. The representative slides were digitalized with Panoramic MIDI-Automatic Brightfield Scan (3DHitech, Budapest, HU) slide scanner and analysed with the help of the DensitoQuant module of the QuantCenter software. Finally, statistical analysis was performed.

**Results:** Our patient cohort consisted of 60% (21/35) male and 40% (14/35) female cases. The mean age of the patients was 37.29. 25/35 (71.43%) NS, 8/35 (22.86%) MC, 1/35 (2.86%) LR and 1/35 (2.86%) LD histological subtypes were identified. Necrosis was present in 25.71% (9/35) of all cases. Consecutive tissues sections were analysed with LMP-1 and CAIX staining. LMP-1 expression was found positive in 51.43% (18/35) of all cases and interestingly, only 22.22% (4/18) were also positive for CAIX. Semiquantitative measurements were performed with DensitoQuant. The H-score of LMP-1 (0.01 – 115.81) and CAIX (0.01 – 37.57) were highly variant.

**Conclusions:** The findings of our study concluded that no connection could be found between the expression of LMP-1 and CAIX and that little is known about the relation between the two factors, therefore further research should be considered.

[214]

**Perivascular epithelioid cell tumor (PEComa) - single-center clinical analysis of 21 cases with emphasis on surgical treatment**

Sobiborowicz Aleksandra Maria, Jastrzębowska Katarzyna, Teterycz Paweł, Czarnecka Anna Maria  
ola.sob96@gmail.com

Medical University of Warsaw

**Trustee of the paper:** Czarnecka Anna Maria, Rutkowski Piotr

**Introduction:** Perivascular epithelioid cell tumors (also known as PEComas) are mesenchymal neoplasms composed of spindle cells expressing both melanocytic and smooth muscle markers, with no physiological equivalent described. Heterogeneous PEComa family includes renal angiomyolipomas, lymphangiomyomatosis of the lungs, as well as a variety of tumors originating from different anatomical sites which are referred to as 'PEComa not otherwise specified' (PEComa-NOS). It is an extremely rare disease, due to which there is still little data on proper management of patients diagnosed with PEComa and assessment of prognosis.

**Aim of the study:** The aim of this study was to analyze PEComa treatment modalities, in order to improve our understanding of factors influencing effectiveness of the therapy.

**Material and methods:** 21 (15 females and 6 males) consecutive PEComa patients (pts) diagnosed and treated in Department of Soft Tissue/Bone Sarcoma and Melanoma, Maria Skłodowska-Curie Institute-Oncology Center in Warsaw between 1999 and 2018 were included in the study. Clinical and pathological data as well as treatment outcomes were analyzed. Kaplan-Meier estimator and log-rank test were used in the survival analysis.

**Results:** The median age in the patients group was 43 (range: 21-67). The median observation time was 33 (range: 3.2-220) months (m) and in this period 3 deaths occurred. 2 cases were unresectable at diagnosis, 16 underwent non-radical resection before reference to our center. The most common localization of primary tumor was uterus in females (6/15, 40%) and retroperitoneal space in males (3/6, 50%). The median disease free (DFS) survival reached 55m (95% confidence intervals, CI: 35.9 - NA) in the whole group while local relapse free survival (LRFS) was 81m (95% CI: 81-NA). The tumor size, primary localization or pts' gender did not affect DFS or LRFS. 2-year DFS rates reached 100% when the primary surgery was performed in reference center, 50% (95% CI: 19%-100%) if it took place in regional hospital and 67% (95% CI: 42%-100%) if after primary resection in regional hospital radicalization in reference center was performed. This values showed trend toward statistical significance ( $p = 0.059$ ).

**Conclusions:** To our best knowledge, this is the second largest single-center database concerning PEComa-NOS. High quality resection, performed by experienced surgeon, gives best chance of radical treatment.

[215]

**Human cytomegalovirus infection effect on lung cancer prognosis after surgical resection**

Javier Cortón Ruiz, Lennart Luecke, Lukasz Minarowski, Oksana Kowalczyk  
j.cortonruiz@hotmail.es

UMB/Molecular Biology

**Trustee of the paper:** Javier Cortón Ruiz

**Introduction:** Human cytomegalovirus (HCMV) can cause life-threatening infections in immunocompromised patients. HCMV is an ubiquitous virus in humans with very high prevalence rates. Despite its proven effect on immune senescence, oncogenicity has not been proven so far.

**Aim of the study:** The aim of this study was to assess the impact of active human cytomegalovirus infection on lung cancer prognosis.

**Material and methods:** 84 lung cancer tissue were collected during surgical removal of the tumor. DNA was extracted and analysed using Real Time-PCR for specific HCMV DNA fragments. 12 samples proved HCMV positive while 72 were HCMV negative. Statistical analysis was performed to correlate HCMV infection and several clinical outcome parameters.

**Results:** No correlation was found between active HCMV infection and: age group, smoking, TNM classification, relapse time, survival time or death rate ( $p > 0.05$ ).

Correlation was found between lung cancer relapse times and high HCMV concentration in the samples: (Mantel-Cox=3.705, df=1,  $p=0.052$ ). The results state that active HCMV infection is associated with an early relapse in post-surgery lung cancer patients.

**Conclusions:** Results may have clinical relevance. Early treatment of active HCMV infection in lung cancer patients could improve relapse times. Further studies are recommended.

[216]

#### **The clinical significance of hypoxia associated factors in neuroblastoma**

Nóra Tárkányi, Orsolya Matolay MD., Gábor Méhes MD, PhD, DSc.

nora.tarkanyi@gmail.com

Medical University of Debrecen, Hungary / Pathology Department

**Trustee of the paper:** Orsolya Matolay MD.

**Introduction:** Hypoxia plays a pivotal role in the pathogenesis of solid tumors. Tumor cells respond to low oxygen levels by activating the hypoxia-inducible transcriptional factor-1 $\alpha$  (HIF-1 $\alpha$ ), which activates several adaptive mechanisms, e.g. the transcriptional factor influences the expressional pattern of carbonic-anhydrase IX (CAIX), which has an essential role in the survival of malignant cells.

Neuroblastoma is a rare childhood malignancy. The presence of hypoxia is common in these tumors, however there are limited number of studies, which has investigated the link between neuroblastoma and hypoxia.

**Aim of the study:** The aim of the study was to determine the expressional levels of the hypoxia associated factors, namely HIF-1 $\alpha$  and CAIX in neuroblastoma cases.

**Material and methods:** Histological samples were taken from 22 patients diagnosed with neuroblastoma between 2003-2018 in the Department of Pathology, University of Debrecen, Hungary. Tissue samples were analyzed with routine pathological stainings (e.g. H&E, chromogranin, synaptophysin) and with HIF-1 $\alpha$  and CAIX immunohistochemistry. Furthermore the mitosis-karyorrhexis index (MKI) and the H-score (histoscore) values were estimated.

**Results:** Our patient cohort consisted of 7 female and 15 male cases.

At the beginning of our study we determined two groups: early stage and advanced stage. Six of our cases belonged to the early stages group, while the rest of the cases was sorted into the advanced stages group.

The H-score values for HIF-1 $\alpha$  (5-270%) immunohistochemistry was found to be positive in all cases. However, we found only 9 (41%) of the cases to be positive for CAIX (0-180%).

Patients with early stages were younger and also their H-score values for both factors – CAIX (mean: 10%  $\pm$ 6,3), HIF-1 $\alpha$  (mean: 86%  $\pm$ 49,5)-were lower, and moreover they had lower proliferation activity (MKI mean: 7,2), comparing to the cases in the advanced stages category (HIF-1 $\alpha$  H-score mean: 128%  $\pm$ 42; CAIX H-score mean 34%  $\pm$ 30; MKI mean: 16,4).

In the early stages group there were no mortalities contrary to the advanced stages, where we found 6 deaths.

**Conclusions:** According to our results, tumors with advanced stages had increased proliferational activity, higher H-score values of hypoxia associated factors, and increased numbers of mortalities. According to our data we concluded that disseminated tumors are more sensitive for hypoxia than the isolated forms.

[217]

#### **Characteristics of patients with breast cancer in the Grodno region in 2016**

Nastassia Samets, Aleh Navitski, Hrazhyna Zholik

asecka@yandex.ru

Grodno State Medical University / Department of Oncology

**Trustee of the paper:** Yury Lagun

**Introduction:** According to the World Health Organization, about 1.4 million new cases of breast cancer are detected annually in the world, accounting for 23% of all cases of cancer in women and 14% of deaths from cancer. In the Republic of Belarus breast cancer takes the second place in the structure of cancer incidence in the female population (17.6%) and the first place in the structure of female mortality from malignant neoplasms (16.9%).

**Aim of the study:** To characterize the patients and study the structure of surgical interventions of breast cancer.

**Material and methods:** The retrospective study of 566 medical records of women with breast cancer who were treated in the Grodno Regional Clinical Hospital in 2016 was conducted.

**Results:** The age structure of patients: up to 40 years – 5.5%, 41-50 years – 14.8%, 51-70 years – 53.2%, over 70 years – 26.5% of women. The one-year lethality rate was 4.2%. According to the histological structure, the main forms were infiltrating ductal carcinoma (63.1%) and lobular carcinoma (17.3%). According to the tumor grade, the most common were moderately differentiated (G2) – 28.2% and poorly differentiated tumors (G3) – 50.7%. I and II cancer stages were predominant: I – 35.2%, II – 45.9%, III – 15.0%, IV – 3.9%. Most often the tumor was localized in the upper outer quadrant of the breast – 38.5% of cases. 467 operations were performed: radical mastectomy – 58.7%, radical resection – 34.4%, simple mastectomy – 1.3%, subcutaneous mastectomy with a mammoplasty – 5.6% of cases.

**Conclusions:** There is a predominance of moderately and poorly differentiated ductal carcinoma, often localized in the upper outer quadrant of the breast in women older than 50 years. Based on the obtained data, taking into account the continuous increase of the incidence of the disease, mass screening of breast cancer in women aged from 50 to 70 years seems to be the most effective, that will make it possible to diagnose breast cancer at earlier stages. As a result, the number of organ-preserving operations will increase, that will improve the quality of life of patients after the treatment.

## [218]

### **Efficacy of the PET/MR in GTV delineation in patients with locally advanced squamous-cell cancer of the oral cavity and the oropharynx during radiotherapy planning**

Konrad Zuzda, Natalia Samołyk-Kogaczewska, Patryk Gugnacki

konrad.zuzda@outlook.com

Medical University of Białystok / Department of Oncology

**Trustee of the paper:** Ewa Sierko

**Introduction:** Modern radiotherapy (RT) is based on various imaging modalities to adequately determine gross tumour volume (GTV). The first results indicate that PET/MR (positron emission tomography/magnetic resonance) may contribute to treatment personalization and provides better accuracy than other methods in GTV determination in head and neck cancer (HNC) patients (pts).

**Aim of the study:** The purpose of the study was to assess the possibilities offered by innovative hybrid PET/MR in the GTV definition of primary tumours during RT planning in pts with locally advanced carcinoma of the oral cavity and the oropharynx.

**Material and methods:** A group of fifteen pts with locally advanced squamous cell carcinoma of the oral cavity and oropharynx was included in the study. Based on standard diagnostic imaging evaluation (CT / computed tomography, ultrasound, MRI), pts were in clinical stages III or IV of the disease. The GTVs were delineated using two different methods. The first was a visual interpretation of CT (GTV-CT), MR (GTV-MR) and PET (GTV-PETvis) images. Next, based on CT, MRI and PET scans GTVs were delineated by two methods: “halo” method – gaining GTV-CT, GTV-MR, GTV-PET and quantitative automatic method based on a chosen threshold value: 20%, 30%, 40%, 50% of SUVmax (maximal SUV) and gaining: GTV-PET20%, GTV-PET30%, GTV-PET40%, GTV-PET50%. A statistical analysis of differences in GTV values obtained from CT, PET and MR studies was performed. GTV-CT was used as a reference. The level of significance was  $p < 0.05$ .

**Results:** In 87% of GTV-MR and 80% of GTV-PETvis volumes were larger than the reference GTV-CT. Statistical analysis showed that the primary tumour volumes obtained from GTV-PETvis ( $p = 0,0691$ ) and GTV-PET30% ( $p = 0,8927$ ) were the most closely related to the referenced GTV-CT. Conversely, GTV-MR ( $p = 0,0010$ ), GTV-PET20% ( $p = 0,0409$ ), GTV-PET40% ( $p = 0,0309$ ) and GTV-PET50% ( $p = 0,0018$ ) diverge significantly from the volumes based on CT images. The volumes obtained from PET images with the visual-based delineation method were inside the GTV-MR contours in about 73% of cases. In 27% of cases, the increased FDG uptake was present outside the GTV-MR boundaries.

**Conclusions:** The hybrid PET/MR is feasible in GTV delineation in pts with the oral cavity and oropharyngeal cancers. This innovative imaging technique may facilitate better accuracy of RT planning. Further studies on a larger population are needed.

## [219]

### **Analysis of symptomatic surgical treatment of pancreatic cancer**

Ahneska Zholik, Hrazhyna Zholik, Anton Skers

agnieszkazholik@gmail.com

Grodno State Medical University / Department of oncology

**Trustee of the paper:** Iryna Karputs, Prof. Konstantin Uglyanitsa MD, PhD

**Introduction:** The growth of pancreatic cancer is observed in recent decades. Despite the achievements of current medicine, more than 80% of patients undergo only symptomatic surgical interventions.

**Aim of the study:** To analyze the symptomatic surgical treatment of pancreatic cancer as a single method of treatment, and in combination with adjuvant chemotherapy in patients of Grodno and Grodno region.

**Material and methods:** Retrospective analysis of 662 medical records of patients was conducted with pancreatic cancer in period from 2012 to 2017. Symptomatic surgical treatment was performed in 164 (24.8%) patients, there were more men – 90 (54.9%) than women – 74 (45.1%) aged 40 to 88 years. Depending on type of performed symptomatic surgical treatment, all patients were divided into two groups: group 1 – patients who underwent symptomatic operations aimed at decompression of biliary tract (n=138; 84.2%), 1A – internal drainage (n=101; 61.6%), 1B – external drainage (n=37; 22.6%); group 2 – patients operated on to restore the passage through gastrointestinal tract (n=26; 15.8%). Early postoperative lethality was 10 (6.1%) cases.

**Results:** According to results of pathohistological study, it was established that in most cases the tumor was localized in head of pancreas – 138 (84.1%) patients, in head and body – 12 (7.3%), in body – 8 (4.9%), in body and tail – 4 (2.4%), in tail – 2 (1.2%). Adenocarcinoma prevailed among morphological variants – 156 cases (91.5%), undifferentiated carcinoma – 7 (4.3%), glandular squamous cell carcinoma – 1 (0.6%). Among operated during the researched period 117 (79.6%) patients died of underlying disease, from complications of treatment – 1 (0.7%), from non-pancreatic causes – 29 (19.7%). Survival over 1 year after symptomatic surgical treatment is experienced by patients with the I-II stage. Patients who have used a combination of surgical treatment with adjuvant chemotherapy have experienced a period over 18 months. And at the same time, a sharp decline in life expectancy of more than 6 months was observed in two groups in the absence of adjuvant chemotherapy.

**Conclusions:** The predominant histological form of cancer is adenocarcinoma with a lesion of pancreatic head. The main type of symptomatic surgical treatment are operations aimed at decompression of biliary tract. Overall 2-year survival rate of patients after symptomatic surgical treatment is quite low (2.22%). The life expectancy of patients after performing symptomatic operations is increased with the combined use of adjuvant chemotherapy.

[220]

### **Esophageal cancer**

Sigitas Zaremba, Renatas Aškis, Agota Piščikaitė, Giedrė Smailytė, Saulius Cicėnas

agota.piscikaite@gmail.com

Vilnius University

**Trustee of the paper:** Saulius Cicėnas

**Introduction:** Esophageal carcinoma is the eighth most common cancer, and the sixth most common cause of cancer related deaths worldwide. Despite many advances in diagnosis and treatment, the 5-year survival rate for all patients diagnosed with esophageal cancer ranges from 15% to 20%.

**Aim of the study:** To analyze esophageal cancer patients treated at the National Cancer Institute since 2008 to 2017 yr., the results of operative, conservative and palliative treatment, determine the life expectancy of patients.

**Material and methods:** From 2008 to 2017, 512 patients with esophageal cancer were treated in NCI. Patients received operative, palliative operative, chemoradiotherapy, radiotherapy, chemotherapy or symptomatic treatment. Statistical analysis was performed using STATA 11 statistical software.

**Results:** 512 patients (mean age 61.8 years) were analyzed: 63 women (12.3%) and 449 men (87.7%). 25 patients (4.9%) had I stage cancer, II stage - 74 (14.4%), III stage - 258 (50.4%), IV stage - 155 (30.3%). The prevalent morphology - flat cell carcinoma - 445 cases (86.9%) and adenocarcinoma 48 cases (9.4%). There were 75 (14.6%) radical operated and 271 palliative treated patients. Chemoradiotherapy was applied in 97 (19.0%) patients, radiotherapy - 81 (15.8%), chemotherapy - 111 (21.7%), symptomatic - 148 (28.9%). After radical operations, the rate of complications was 46.17% and mortality was 10.67%. The most common complication - fistula.

Total life expectancy: 1 m. - 33.91%; 3 m - 13.84%; 5 m - 9.0%. Depending on the type of treatment, 5m. life expectancy: after radical surgery - 26.53%, after chemoradiotherapy - 17.95%, after radiotherapy - 5.36%, after chemotherapy - 1.92%, after symptomatic treatment - 1.92%.

**Conclusions:** 1. The average age of the patients was 61.8 m, the majority - males, radically operated 14.6%. 2. In the Radical Operational Treatment Group, the incidence of postoperative complications was 46.17% and mortality rate 10.67% as reflected in the literature analysis. 3. Compared to conservative treatment methods 5y. life expectancy after radical surgical treatment was the highest.

# Ophthalmology

**Date:**

Friday, May 10th, 2019

**Location:**

Room 125, Library – CBI

**Jury:**

prof. dr hab. n. med. Jacek Szaflik  
dr hab. n. med. Piotr Skopiński  
dr hab. n. med. Justyna Izdebska  
dr hab. n. med. Anna Święch-Zubilewicz  
dr hab. n. med. Joanna Brydak-Godowska  
dr n. med. Piotr Maciejewicz  
dr n. med. mgr mat. Zbigniew Lewandowski

**Coordinator:**

Dominika Siemianowska

**Scientific Patronage:**

National Consultant in Ophthalmology płk. prof. dr hab. n. med. Marek Rękas



[221]

**Possibilities and prospects of contact correction of refraction anomalies in prematurely born infants on the basis of refractometry and a keratometry data**

Yu.V. Taranova, I.B. Astasheva, I.V. Lobanova, O.V. Zakharchenko, M.L. Navoyan

tarashik\_yulia@mail.ru

Pirogov Russian National Research Medical University

**Introduction:** Prematurely born infants has the higher risk of refraction anomalies development. Not in all cases it is possible to choose glasses with the correct position, so the performing a contact correction becomes more common and relevant. During the selection of contact lenses, it is necessary to take into account the conditions of refraction, features of the cornea structure, its curvature and diameter.

**Aim of the study:** The aim of the study is to determinate refractometry and a keratometry data among prematurely born infants according to the age and the endured retinopathy of prematurity (ROP).

**Material and methods:** We examined 119 children which had been born up to 34 weeks of gestation. 58 of them infants did not have ROP in anamnesis or the course of disease was mild with independent regress (I group), 61 infants had severe form of ROP (II group). The groups were divided into subgroups due to the age at the time of examination: before 1 year, 1-3 years, 3-7 years. Refractometry was carried out with a retinoscopy method. For a keratometry portable avtorefkeratometer was used.

**Results:** Children of I group had an average refraction: before 1 year (+)3.5±0.29 D, 1-3 years (+)2.34±0.35 D, 3-7 years (+)2.23±0.47 D. An average front surface curvature of a cornea was: before 1 year – 7.32±0.03 mm, 1-3 years – 7.5±0.06 mm, 3-7 years – 7.5±0.12 mm. Children of II group had an average refraction: before 1 year (+)0.09±0.25 D, 1-3 years (-)1.07±0.36 D, 3-7 years (-)1.78±0.22 D. An average front surface curvature of a cornea was: before 1 year – 7.33±0.18 mm, 1-3 years – 7.35±0.11 mm, 3-7 years – 7.44±0.04 mm. In 24.2 % of cases an anisometry was revealed. The diameter of cornea in both groups was from 10,0 mm to 11,5 mm.

**Conclusions:** In children of II group the myopic refraction prevails since a year. 24,2 % of examined infants have an anisometry. Keratometry data of both groups increase with age. Considering the indices of cornea diameter and curvature at prematurely born infants, in 80 % of cases contact correction is possible with the lenses presented at the Russian marketplace.

[222]

**IRIS – clips intraocular lens implantation results in patients after intraocular lens dislocation**

Natalija Berzina

nsosnovska@gmail.com

Riga Stradins University

**Trustee of the paper:** Prof. Guna Laganovska

**Introduction:** Posterior chamber intraocular lens (IOL) dislocation is a well-known late complication following cataract surgery. In most cases it is a result of factors during the original surgery, trauma to the eye, or diseases that affect the stability of the capsular bag. In such cases, alternative methods of IOL fixation must be considered. More often iris-fixated Artisan IOL implantation in the method of choice.

**Aim of the study:** To assess the visual outcome of eyes undergoing iris – clips Artisan lens implantation in patients with IOL dislocation and evaluate possible risk factors for late IOL dislocation after routine cataract surgery.

**Material and methods:** A prospective study was done in a single university hospital from December 2018 – February 2019. We examined 10 patients (10 eyes) before and two days after iris-clips intraocular lens implantation. Only patients with IOL dislocation were included in research. Visual acuity was determined by using Snellen chart and intraocular pressure was measured by contact tonometer. Also an analysis of medical records of 46 patients (46 eyes) who were treated in the university hospital between 2016 and 2018 for late IOL dislocation was performed. All data were analysed by SPSS 20.0.

**Results:** From 46 patients there were 20 (43%) males and 26 (57%) females. Median age was 77 years. Possible risk factors for IOL dislocation were identified in this study. Pseudoexfoliation was present in 30 (65,2%; 95% CI=50,7-77,3%) eyes, zonular laxity in 6 (13%; 95% CI=6,1-25,7%) eyes. 5 patients (10,9%; CI=4,7-23%) had an eye trauma. There was high grade myopia in 5 eyes (10,9%; CI=4,7-23%) and chronic uveitis was identified in 9 cases (19,5%; 95% CI=10,6-33,2%). There were no identifiable factors for dislocation in 4 eyes (8,7%; 95% CI=3,4-20,3%).

From 10 patients examined before and after Artisan lens implantation, 8 achieved a final visual acuity better than the pre-operative and 2 patients had an equal results. Newly formed astigmatism was found in 4 patients. Intraocular pressure reduction was seen in 6 patients and in 4 cases it was raised in comparison with pre-operative results.

**Conclusions:** 1)Pseudoexfoliation syndrome is the main cause for late IOL dislocation after routine cataract surgery.

2)Astigmatism is one of the main factors influencing visual outcome after Artisan iris-clips lens implantation. A study with a larger number of participants should be done.

3)There is statistically significant improvement of visual acuity after iris-clips Artisan IOL lens implantation.

## [223]

### "Eye dryness – a comparative analysis of subjective symptoms and diagnostic tests' results"

Ewa Fudalej, Karolina Jasińska

ewa.fudalej@wp.pl

Medical University of Warsaw

**Trustee of the paper:** dr n. med. Dorota Kopacz

**Introduction:** Dry eye syndrome is a result of tear amount reduction, its improper composition or excessive evaporation. It affects approximately 11-17% of the adult population. It can occur among the elderly, smokers, after eye surgery or after inflammations of the eye surface. It can be a result of many diseases, medical treatment or hormonal disorders.

**Aim of the study:** The aim of the study was to analyze correlations between subjective (Ocular Surface Disease Index - OSDI) and objective (diagnostic tests by The Sjögren's International Collaborative Clinical Alliance -SICCA) effects of dryness obtained among patients undergoing cataract surgery. Moreover, the influence of clinical disorders (hypertension, diabetes, immunological diseases, immunosuppression, glaucoma and eye surgery) on the subjective assessment and results of diagnostic tests was assessed.

**Material and methods:** The study included patients qualified for cataract surgery (N=78, 46 women, 32 men - i.e. 156 eyes) aged 22-93 (average 74.3 ±10.9). A medical interview was conducted and the ocular surface disease index (OSDI) was calculated. Diagnostic tests included: staining of the eye surface with fluorescein and lissamine green, tear film break up time (BUT) and the Schirmer I test. The study excluded patients with ongoing inflammations and injuries of the eye. Chi-square tests for categorical variables and the Student-T test for parametric continuous variables or Whitney U tests for non-parametric continuous variables were used.

**Results:** The mean result of OSDI was 30.53 ±19,55; 59% over 22 (DES diagnostic level). Mean values of diagnostic tests were: 1) BUT 7.19mm ±3,45; 61.5% less than 10 mm (DES diagnostic level), 2) SICCA SCORE 1.08 ±1,66; 17.3% over 2 (DES diagnostic level), 3) Schirmer I 13.69 mm ±9,97; 19.23 % less than 5 mm (DES diagnostic level). OSDI higher than 22 was observed 52,2% in men - more often than in women (47,8%) (p=0.038). Among women, an increased OSDI correlated with a higher SICCA SCORE

(p=0.048). Subjective symptoms of DES were reported less often by people with hypothyroidism

(p=0.005). A correlation between psychotropics and lissamine green staining was confirmed (p=0,02). No influence of the most common diseases (diabetes, hypertension, immunological disorders) on diagnostic tests was observed.

**Conclusions:** OSDI score does not necessarily correlate with diagnostic tests results. To validate our results, a study among patients with diagnosed dry eye syndrome should be performed.

## [224]

### Comparison of habits and awareness of safe use of contact lenses between medical and non-medical university students

Dominika Miszewska

dominika.miszewskaa@gmail.com

Medical University of Warsaw/Department of Ophthalmology, First Faculty of Medicine

**Trustee of the paper:** Maciejewicz Piotr MD, PhD

**Introduction:** Contact lenses are worn by young people mainly to correct vision defects, but also for aesthetic and cosmetic reasons. Despite the spread of knowledge about contact lenses hygiene and care, cases of

ophthalmological disorders leading to severe complications resulting from improper use of contact lenses are still diagnosed.

**Aim of the study:** The study was conducted in order to assess and compare the awareness of safe use of contact lenses between medical students and young people who do not have daily contact with medicine.

**Material and methods:** The original, structured, anonymous, online survey was used. The survey included both open and closed questions. The data was analyzed separately for each participant and in two selected comparative groups. 376 responses were received, of which 16 (4.25%) were rejected because they did not meet the study conditions, i.e. wearing contact lenses during the last 3 months. 97.22% of the participants were living in Poland and 2.78% abroad. The mean age of the respondents was 23.28 +/- 2.43 years.

**Results:** In the study 206 medical university students were involved, 174 (84.47%) of them were women and 32 (15.53%) men. The comparative group consisted of 154 non-medical university students, among them 128 (83.11%) women and 26 (16.88%) men. 69.41% of medical university students' group had their first contact lenses chosen by an ophthalmologist, compared with 54.54% in the second group. 45.33% of medical university students with astigmatism used cylindrical contact lenses, whereas only 32.83% of participants in the second group did so. Medical university students performed similarly to non-medical university students in questions about the daily care of lenses and resulting ophthalmological disorders. 68.9% and 72.01% of respondents in both groups respectively wore contact lenses more than 8 hours a day and 45.14% and 49.35% had a feeling of dryness in their eyes when wearing contact lenses.

**Conclusions:** Medical university students have more knowledge and more frequently attend periodic examinations, seek medical advice before changing the contact lenses or when searching for ophthalmological treatment. They are also more aware of the type of lenses they wear. Although medical university students appear to be more acquainted with the care principles, the answers concerning rules' application in both groups were unsatisfactory. Hygiene practice compliance and contact lenses' adequate use require further improvement.

[225]

#### **The effect of proxymetacaine on the thickness of the cornea and its influence on the intraocular pressure measurements**

Anna Nowak, Dominika Miszewska, Julia Derdulska, Łucja Niezgodna, Marta Korsak

dominika.miszewskaa@gmail.com

Medical University of Warsaw

**Trustee of the paper:** MD Agnieszka Lach

**Introduction:** Proxymetacaine drops are commonly used for anaesthesia during various ophthalmic procedures, including contact tonometry, which is an essential examination in the diagnosis and treatment of many ophthalmic diseases, including the glaucoma.

**Aim of the study:** To investigate the possible changes in the corneal thickness after the use of proxymetacaine and its resulting influence on the results of the corrected intraocular pressure.

**Material and methods:** Air-puff tonometry and pachymetry examinations were performed. The study consisted of three consecutive measurements: the initial one taken just before the administration of the drug (Alcaine Eye Drops 0.5% Proxymetacaine Hydrochloride), then two-three and fifteen minutes after. The study is still ongoing, 52 eyes tested, at least 50 more are planned by the end of April. The results of the measurements performed on persons whose ophthalmic and/or chronic diseases affected the corneal thickness and/or intraocular pressure were rejected.

**Results:** The differences between the initial and post-anaesthetic corneal thickness and corrected intraocular pressure were found. The mean corneal thickness was more pronounced between the first and the second measurement. Also, the mean change in the corrected intraocular pressure differed between the trials.

**Conclusions:** According to the study, the use of proxymetacaine appears to have influence on the results of the IOP measurements. However, due to the statistically insignificant variations in CCT, different mechanism inducing the change should be considered.

[226]

### **Symptoms of dry eye syndrome related to isotretinoin therapy**

Anna Nowak, Magdalena Kułak, Jacek Dziędziak  
nowania.a@gmail.com

Medical University of Warsaw / Department of Ophthalmology, First Faculty of Medicine

**Trustee of the paper:** Piotr Maciejewicz MD, PhD

**Introduction:** The primary indication for isotretinoin is the treatment of severe acne. The main effect of this drug is the inhibition of sebaceous glands, as well as Meibomian glands. Consequently, the secretion of the glands may be lost and it can result in ophthalmological complications. Among them, the dry eye syndrome is the most common one.

**Aim of the study:** The aim of this study is to evaluate the effect of isotretinoin therapy on the development of symptoms of dry eye syndrome and its severity which occurred prior to the therapy. Furthermore, it was also assessed whether the patients were informed about the possible side effects.

**Material and methods:** The data used in this study was collected by means of an online survey. The parameters evaluated presence of pre-therapy and post-treatment symptoms, and also their severity. Usage period, dose of the drug, presence of other ophthalmological and systemic diseases also have been taken into consideration.

**Results:** The majority of respondents complained of the occurrence of new ophthalmological symptoms that did not exist prior to the therapy. Predominant symptoms were burning eyes and eye redness. Additionally, 25 percent of the respondents had not been informed about possible ophthalmic side effects of the therapy.

**Conclusions:** The development of symptoms of dry eye syndrome during isotretinoin therapy is a serious problem which can lead to the development of severe ocular complications among young patients. In addition, an alarmingly large number of respondents were not informed about the possibility of the above mentioned symptoms.

[227]

### **Analysis of the functionality of different types of moisture drops bottles in the evaluation of patients with rheumatic diseases**

Jacek Dziędziak  
jacek.dziedziak94@gmail.com

Medical University of Warsaw / First Department of Ophthalmology

**Trustee of the paper:** Piotr Maciejewicz MD PhD

**Introduction:** Systemic connective tissue diseases and progressive changes in the bone-joint system, often lead to reduction in the patient's dexterity. In Sjögren syndrome, the secreting function of lacrimal glands is damaged. It's secondary form may occur with other autoimmune diseases, mainly rheumatoid. Approximately 30% of patients with rheumatoid arthritis also suffer from Sjögren syndrome. The nagging symptom of Sjögren syndrome is dry eyes sensation. Lack of a stable tear film may lead to permanent eye surface damage. Patient requires a systematic moisturisation, but co-existing rheumatic changes in finger or wrist joints can hinder correct application of moisture drops.

**Aim of the study:** The purpose of this work was to run tests which will enable the evaluation of functionality and self-application comfort of pharmacy-available' moisture drops in 6 different types of packaging by patients with different exacerbation of rheumatic changes of fingers and hand.

**Material and methods:** The study included 24 patients (21 women and 3 men) ophthalmologically-consulted in the rheumatological ward. Patients completed the OSDI questionnaire to obtain a subjective assessment of the dry eye syndrome. Schirmer and SICCA tests were performed. Next, patients applied 6 different moisture drops in practice, evaluating them with 5 grade scale: ease of opening the package, comfort and grip's confidence, how easy is to squeeze and to instil the drops. Patients also assessed the importance of bottle transparency. The examiner has also evaluated the effectiveness of the application.

**Results:** In terms of ease of the package opening, drops number 4 in a large bottle with a vertical pump and side handle have been assessed to be the best. Drops No. 6 in a small, traditional bottle were considered to be the most comfortable in grip and were the easiest to instill to eye. The transparency of the package was proved to be important for patients, this criterion had been fulfilled by drops number 3 in a small soft transparent bottle. Drops number 2 in the minims package have been considered the easiest to squeeze out.

**Conclusions:** An effective moisture drops application among patients with the dry eye syndrome is an important part of treatment which reduces risk of complications and improves the quality of life. Rheumatic changes in the joints and deterioration of the coordination may hinder the proper instilling technique. The differences in structure, size and hardness of the bottle vary in patients evaluation . There was no correlation of the advancement of rheumatic changes with the preference of any applicator.

[228]

### **Correlation between AMT, RNFL, cup-to-disc ratio and visual field defects in early glaucoma patients**

Jurgita Pilvelyte, Samanta Plikaityte

samanta.plikaityte@gmail.com

Vilnius university, faculty of medicine

**Trustee of the paper:** S. Galgauskas

**Introduction:** Glaucoma is known as a disease which causes a progressive structural and functional damage to the optic disc complex. The disease affects midperipheral vision function in early stages and can cause an irreversible visual loss in late stages of the disease process. The diagnosis of glaucoma is based on a specific anatomical and functional changes. It has long been recognized that early glaucomatous damage can affect the macula. However, early macular damage has been ignored as a diagnostic tool.

**Aim of the study:** To compare the average macular thickness (AMT) measured by optic coherence tomography (OCT) to visual field parameters as markers of visual function in early stage glaucoma patients and those who are followed as glaucoma suspects. In addition, we evaluated the correlation between visual field parameters and average RNFL thickness, average cup-to-disc ratio parameters.

**Material and methods:** Retrospective analysis of 93 eyes (55 patients with mean age  $65,2 \pm 9,4$ ) were made. Macular and optic disc cube scans data from OCT and standart automated perimetry (visual field) parameters such as MD, PSD were obtained. Eyes were divided into 3 groups by AMT thickness: 1st group included thin ( $<270$  mm) eyes, 2nd group - intermediate thick (270-300 mm) eyes, 3rd group – thick ( $>300$  mm) eyes. Patients with retinal pathology and other conditions which can affect macular or RNFL thickness were excluded from the study. Data analysis was performed using SPSS software. A p-value of  $<0,01$  was considered statistically significant.

**Results:** AMT correlated significantly with all measures of visual field: MD ( $r = 0,445$ ,  $p < 0,001$ ), PSD ( $r = -0,335$ ,  $p = 0,001$ ). Significant correlations were found between the cup-to-disc ratio and MD ( $r = -0,359$ ,  $p < 0,01$ ), PSD ( $r = 0,363$ ,  $p = 0,0001$ ), also between RNFL and MD ( $r = 0,412$ ,  $p < 0,01$ ), PSD ( $r = -0,370$ ,  $p < 0,01$ ). Average visual field parameters in 1st (thin) eyes group: MD=-5,47, PSD=5,01; 2nd (intermediate thick) eyes group: MD=-2,71, PSD=3,12; 3rd (thick) eyes group: MD=-1,71, PSD=1,92.

**Conclusions:** The study showed a significant correlation between AMT and visual field parameters (MD, PSD) in early and suspected glaucoma patients. This correlation between visual field defects and macular thickness, RNFL, cup-to-disc ratio can help specialist in confirming the early stages of glaucoma.

# Pediatric Case Report

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 141/142, Didactics Center

**Jury:**

prof. dr hab. n. med. Maciej Karolczak  
prof. dr hab. n. med. Piotr Albrecht  
prof. dr hab. n. med. Urszula Demkow  
prof. dr hab. n. med. Janusz Książyk  
prof. dr hab. n. med. Piotr Socha  
prof. dr hab. n. med. Maria Respondek-Liberska  
dr hab. n. med. Ernest Kuchar

**Coordinators:**

Antonina Ślubowska  
Joanna Ryl

**Scientific Patronage:**

National Consultant in Pediatrics Prof. Teresa Jackowska MD PhD  
National Consultant in Neonatology Prof. Ewa Helwich MD PhD  
National Consultant Pediatric Cardiology Prof. Jacek Białkowski MD PhD  
National Consultant in Pediatric Urology Tomasz Koszutski MD  
National Consultant in Pediatric Lung Disease Andrzej Pogorzelski MD PhD  
National Consultant in Pediatric Nephrology Prof. Danuta Zwolińska MD PhD  
Polskie Towarzystwo Neonatologiczne  
Polskie Towarzystwo Wrodzonych Wad Metabolizmu  
Fundacja Rozwoju Pediatrii



Fundacja Rozwoju Pediatrii

[229]

**Systemic-onset juvenile idiopathic arthritis complicated by the macrophage activation syndrome in a 14-month old boy – a case report**

Patrycja Iwańczyk, Karolina Klee, Fanny Arnhold, Ahmed Zuhair

patrycja.iwanczyk@gmail.com

Wrocław Medical University

**Trustee of the paper:** Daiva Gorczyca, MD, PhD

**Background:** Juvenile idiopathic arthritis (JIA) is a common rheumatic disease in children. Systemic onset JIA (sJIA) is the rarest form of JIA. Macrophage Activation Syndrome (MAS) is a potentially life-threatening complication of systemic autoimmune disorders. We present the diagnosis and treatment of sJIA complicated with MAS.

**Case:** A 14-month old boy, diagnosed with sJIA, manifested by quotidian fever up to 40°C, maculopapular rash, hepatosplenomegaly, and arthritis of the ankles, which was confirmed by an ultrasonography of the joints. After exclusion of infection, other autoinflammatory diseases and malignancy, the diagnosis was made on the 20th day of fever. Immunosuppressive therapy with methylprednisolone was started, 30 mg/kg/day for three days and then switched to oral prednisolone 2 mg/kg/day. Already at admission, hyperferritinemia 3338 ng/ml was observed. Although the boy received repeated pulses of methylprednisolone with the addition of cyclosporine (6 mg/kg/day), he developed MAS. The fever and rash recurred, with an increase in the levels of acute-phase reactants. Additionally, the boy became apathetic, sleepy and reluctant to walk. The laboratory tests revealed hyperferritinemia (>40000 ng/ml), hypertriglyceridemia (625 mg/dl), hemoglobin concentration 8.9 g/dl, platelets count 106,000 per µl.

Methylprednisolone pulses were switched to dexamethasone, peroral cyclosporine was continued and one time infusion of intravenous immunoglobulin (2g/kg) was added. This therapy resulted in clinical and laboratory improvements in the 11th week from onset of the disease. The patient remained stable and without relapse of MAS during the follow-up period of three months.

**Conclusions:** This case reports a rare and life-threatening systemic complication like MAS during sJIA in an approximately 1-year old child. Hyperferritinemia in combination with clinical findings can be a precious indicator and enables to start a prompt diagnosis and treatment.

[230]

**Pleural empyema of probable odontogenic origin in a 14-year-old immunocompetent patient**

Julia Dudkiewicz

juladudkiewicz@gmail.com

Medical University of Warsaw, Department of Pediatric Respiratory Diseases and Allergy

**Trustee of the paper:** Wojciech Feleszko MD PhD, Joanna Zielińska MD

**Background:** Dental caries is considered the most prevalent human disease, affecting 60-90% of schoolchildren. In Poland only 14% of 6-year-olds and 4% of 18-year-olds are caries-free. Commensal bacteria inhabiting oral cavity, such as Streptococcus anginosus group, are postulated as major players in caries development frequently complicated by metastatic infections. Streptococcus intermedius, the most pathogenic member of this group, has been reported as a cause of sinusitis, brain and liver abscesses, endocarditis and appendicitis. This case represents the first description of S. intermedius empyema of odontogenic origin in a child.

**Case:** A 14-year-old boy was referred to our Department with suspicion of right lung pneumonia complicated by an abscess. He had a thirteen-day history of fever up to 39,5°C and presented with dyspnea, right-sided chest pain, fatigue and non-productive cough. Clinical examination revealed diminished vesicular breath sounds over the right lung, 8kg body mass loss, advanced caries, skin pallor and signs of dehydration. Laboratory tests revealed microcytic anemia, leukocytosis with neutrophilic dominance, thrombocytopenia, hypoalbuminemia, elevated CRP level. Chest imaging was performed (X-ray, USG and CT) and the patient was diagnosed with pneumonia complicated by empyema of the right pleural cavity. He was treated with IV ceftriaxone and vancomycin, fluids, analgesics, albumin and furosemide. The right pleural cavity was drained passively for 7 days, resulting in 1890ml fluid collected. Fluid culture revealed the presence of S. intermedius, which was sensitive to the empiric antibiotic therapy. Due to the formation of fibrous septa, intrapleural alteplase was administered. The infection was further complicated by bilateral superficial vein thrombosis of upper extremities which was treated with fraxiparine and resolved without sequelae. After 20 days of treatment the patient was discharged

home in good general condition, and was prescribed fraxiparine for 14 days, and amoxicillin with clavulanic acid for 7 days. A follow-up lung USG and chest X-ray were performed after 5 weeks, showing residual pleural thickening.

**Conclusions:** The presented case highlights an underestimated danger associated with untreated caries. During the medical evaluation of abscesses, empyema or sinusitis, it is necessary to consider odontogenic origin of the infection. Parents of pediatric patients should be cautioned about potential complications of neglected oral health.

[231]

**Extreme overhydration in a boy with nephrotic syndrome: a case report**

Andrzej Szydłowski, Agata Krzykus, Anna Smolarczyk

andrzej.szydowski@gmail.com

Medical University of Silesia in Katowice / Department of Nephrology Dialysis Unit of Children

**Trustee of the paper:** Maria Szczepańska MD PhD, Agnieszka Jędzura MD

**Background:** Nephrotic syndrome in children (NS) is a clinical state characterised by proteinuria, edema, hypoalbuminemia, hypoproteinemia and hyperlipidemia. The key factor to establish the diagnosis NS is a protein loss exceeding >50mg/kg/day, as well as albumin level at  $\leq 2,5$  g/dl. The prevalence of NS in children is 16/100000 and the incidence 2-7/100 000 per year. Initial diagnostics consists of clinical and laboratory evaluation. Glucocorticoids treatment is preferred to obtain the remission of NS. Diuretics and albumin infusions are used to edema reduction. In cases of extreme overhydration it is advised to consider introducing renal replacement therapy (RRT).

**Case:** Authors describe the case of 16 years old boy, admitted to hospital in critical condition due to massive, increasing edema since approximately 3 weeks and current anuria. The patient has never been hospitalized before and had no significant past medical own or family history. On admission, a therapy typical for NS was introduced. Due to patient's critical state, he underwent continuous haemodialysis and isolated ultrafiltration therapy, combined with loop diuretics and albumin administration. A total of 36 l of ultrafiltrate was obtained. After a month of hospitalization, a complete reduction of edema was noted, with a maximum body weight loss of 25kg. The patient was discharged from the hospital in good condition with remission of NS, to be further treated in specialistic ambulatory. Within 6 months from the discharge relapse was not observed.

**Conclusions:** The presented case of a boy suffering from idiopathic NS is unusual due to the extreme edema, reaching approximately 30% of the initial body weight, which led to a vital clinical problem. The use of a continuous RRT combined with steroid therapy allowed for a safe evacuation of the edema and obtaining the remission.

[232]

**Endoscopic management of grade III pancreatic injury in children: a case series**

Martyna Renata Marczuk, Jan Stanisław Bukowski, Marek Wolski, Marcin Dziekiewicz, Jan Pertkiewicz, Aleksandra Banaszkiwicz

martynasiedlce@poczta.onet.pl

Department of Paediatric Gastroenterology and Nutrition, Medical University of Warsaw

**Trustee of the paper:** Aleksandra Banaszkiwicz

**Background:** Pancreatic injury is rare in children. The condition of the pancreatic duct is one of the factors in grading the injury. The low grade injuries without the pancreatic duct disruption (grade I and II according to American Association for the Surgery of Trauma; AAST) are treated nonoperatively, what is widely acceptable. Grade IV and V are usually managed surgically. However, there are some reports of grade III pancreatic injuries treated successfully with stenting during endoscopic retrograde cholangiopancreatography (ERCP).

**Case:** The aim of the study is to present patients with grade III pancreatic injury who were treated with stenting during ERCP in the Department of Paediatric Gastroenterology and Nutrition supported by examples from available articles.

**Conclusions:** We carried out a retrospective chart review of all patients with pancreatic injury hospitalized in our institution. Simultaneously, a systematic search of articles was conducted using Medline and Embase (both bases up to February 2019). All studies on ERCP stenting due to grade III pancreatic injury in patients  $\leq 18$  years old were included into our study.

[233]

**Cerebral sinovenous thrombosis in neonatal practice**

S. Dvorkina<sup>1,2</sup>, E. Pisareva<sup>1</sup>

sofydvorkina@gmail.com

<sup>1</sup> The State Education Institution of Higher Professional Training The First Sechenov Moscow State Medical University under Ministry of Health of the Russian Federation

<sup>2</sup> Federal State Institution "National Medical Research Center for Obstetrics, Gynecology and Perinatology named after Academician Kulakov V.I." Ministry of Healthcare of Russian Federation

**Trustee of the paper:** PhD Ushakova L.V.<sup>1</sup>, PhD Krogh-Jensen O.A.<sup>1,2</sup>

**Background:** Cerebral sinovenous thrombosis (CSVT) in newborns is a rare condition and one of the causes of childhood disability and mortality. The nonspecific clinical presentation of CSVT in premature newborns determines the priority of paraclinical and laboratory diagnostic approach. The urgency of early diagnosis of CSVT determines timely start of anticoagulants (low molecular weight heparins) for the prevention of severe vascular complications and neurological disorders.

**Case:** To describe this rare disease in premature newborns on the example of 2 clinical cases with different outcomes.

**Conclusions:** 2 premature babies (gestational age 31 and 32 weeks) inborn in perinatal center.

[234]

**When obesity hides another disease, i.e. pulmonary hypertension in the background**

Michał Sieniawski, Kamil Kondracki

msieni07@gmail.com

Student Scientific Circle of Child Cardiology, Institute „Pomnik – Centrum Zdrowia Dziecka”

**Trustee of the paper:** dr n. med. Małgorzata Żuk

**Background:** Pulmonary hypertension is defined as an increase in mean pulmonary artery pressure above 25 mmHg at rest. The diagnosis depends on the right heart catheterization performance, however, other examinations such as X-ray, ECG, and in particular ECHO can be helpful. Typical symptoms reported by pediatric patients include: shortness of breath, fatigue, weight loss. Untreated pulmonary hypertension can lead to sudden cardiac arrest. It may occur before right ventricular failure with clear symptoms so it is important to pay attention to any symptoms from cardiovascular system. It is easy to overlook them if the patient suffers from another chronic disease and obesity.

**Case:** Case is about an 11-year-old patient who, since September 2017, has been reporting a worsening of the effort tolerance, resulting in the need to take a break after passing a few steps, retrosternal pain and cyanosis. Symptoms were associated with obesity, so physical exercise was recommended. The patient also had been diagnosed with autoimmune thyroiditis. In the evening in February 2018 there was an episode of syncope, with head injury but without nausea. Before the incident the boy had dry cough and rhinitis for a few days. On admission the physical examination showed that the boy's condition was stable, saturation at rest was found 93%, but after climbing the first floor there was SAT drop to 84%. The patient had a persistent dry cough, but the lungs were auscultatorically unchanged. ECG recording was abnormal, overloading and hypertrophy of the right ventricular were found. X-ray revealed a slightly enlarged heart shape, while in ECHO the enlarged right ventricle with flow as it was in pulmonary hypertension. The atrial wall was thin with a small left flow in the middle part. In March 2018 cardiac catheterization and static atrioseptostomy were performed. Severe pulmonary hypertension was diagnosed. There were no complications after the surgery. The patient received pharmacotherapy according to the Sildenafil and Stayveer drug programmes and tolerated it well.

**Conclusions:** The cause of symptoms such as reduced effort tolerance, retrosternal pain and cyanosis should be diagnosed even though the patient suffers from obesity and autoimmune thyroiditis.. In this case, a thorough initial physical examination with saturation measurement may have given a suspicion of cardiovascular or respiratory pathology. According to the results of ECG and X-ray, the cardiological cause seemed to be more probable.

[235]

**Coincidence of Wilms Tumor and Phelan – McDermid syndrome in 6 – year – old boy with congenital kidney and urinary disorders**

Kamila Sośnicka, Joanna Rychter

k.h.sosnicka@gmail.com

Warszawski Uniwersytet Medyczny / I Wydział Lekarski

**Trustee of the paper:** lek. Piotr Krych

**Background:** Wilms tumor is the most common kidney cancer among children under the age of 15. Most often it is manifested by an abdominal mass. In some cases it may arise as a part of congenital syndromes, especially Denys – Drash and WAGR syndromes. In our case the tumor coexists with Phelan – McDermid syndrome, which is caused by 22q13.3 deletion and characterized by a development delay, hypotonia and autism spectrum disorders.

**Case:** A 6 – year – old boy with right kidney cirrhosis and Phelan – McDermid syndrome was admitted to the hospital with enlargement and numerous focal lesions of the left kidney in CT imaging. Based on a surgical biopsy result, Wilms tumor was diagnosed. The patient was qualified for stage V chemotherapy. Due to no improvement, increasing hypotonia and respiratory disorder, the chemotherapy dosage reduction was required. After 7 months the progression was noticed.

Neoadjuvant chemotherapy, the resection of the main tumor, coagulation of minor lesions and regional lymph nodes biopsy were performed. Ultrasonography and CT follow-up examination revealed a progressive lesion of significant diameter. Relaparotomy, resection and peritoneal cavity drainage were performed. Facing no possibility of peritoneal dialysis, decision about radiotherapy was taken.

A month later CT showed 3 prominent lesions and an enlargement of lymph nodes in the retroperitoneal space. During another chemotherapy cycle the patient presented to the hospital with vomiting and blood glucose level 43 mg%. CT scan showed duodenal obstruction caused by the enlarged lymph nodes, increasing pressure on pancreas and stomach. The patient underwent a surgery in order to decompress the GI tract. The underlying disease remained in progress.

Patient's parents decided to continue palliative chemotherapy, which was ceased due to severe adverse effects of treatment. Patient was carried out to palliative care unit.

**Conclusions:** The coexistence of Wilms tumor and Phelan – McDermid syndrome was described in literature only once until now. The tumor malignancy and the complications of treatment overlapping with the congenital anomalies, led in our case to many difficult therapeutic choices. It forced us to differentiate between treatment and persistent therapy and to define the welfare of the patient.

[236]

**Y-type urethral duplication. Case report of a patient with multiple congenital abnormalities**

Wojciech Gług

w.k.glug@gmail.com

Clinic of Pediatric Surgery and Urology, Medical University of Warsaw

**Trustee of the paper:** Stanisław Warchoń MD, PhD

**Background:** Urethral duplications were described and classified by Effman et al. in 1976. Type IIA2 or "Y-type" duplication is very uncommon anomaly in which, urethra is duplicated below the neck of the bladder, the ectopic urethra protrudes to the lumen of the rectum. In most cases, the ectopic urethra is the functional one, while orthotopic urethra is stenotic and undeveloped.

There are about 200 cases of IIA2 duplication reported in the literature. Although numerous methods of surgical repair have been described, mobilization from the rectum into the perineum is associated with the lowest risk of failure and usually is a one-step procedure.

**Case:** A male infant, born prematurely at 34th week of gestational age, presented with asphyxia and was referred to neonatal care unit. He was diagnosed with esophageal atresia and cardiac abnormalities. Prior to first procedure of esophageal repair, urethral catheterization was not successful thus bladder puncture and urethrography was performed. Imaging study revealed leakage into the canal of the rectum.

Initially, iatrogenic injury of the urethra was suspected. Further studies revealed the presence of stenotic penile urethra and functional ectopic branch communicating with the rectum. Penile ultrasound revealed underdevelopment of cavernous and spongy bodies. No anomalies of upper urinary tract were detected.

After management of esophageal atresia, patient was discharged home upon reaching 2 months. Surgical correction of ectopic urethra by translocation onto perineal area is planned.

**Conclusions:** Identification of functional urethra is essential in IIA2 type duplication.

Various approaches of surgical treatment of  $\gamma$ -type duplication were described. As the patient is qualified not only for urological but also cardiac and thoracic procedures, the treatment of ectopic urethra should be performed in one step and must carry the lowest risk of failure and complications. Therefore, rectal to perineal correction of ectopic urethra was chosen for this patient.

[237]

#### **A case of primary cutaneous large cell lymphoma in a 8-year old girl**

Kinga Szczepaniak, Joanna Gębarowska

Kinga.szczepaniak14@gmail.com

Students Scientific Circle in the Department of Children Infectious Diseases, Medical University of Warsaw

**Trustee of the paper:** Ewa Talarek MD PhD

**Background:** Anaplastic large cell lymphomas (ALCLs) are characterized by neoplastic proliferation of large, pleomorphic CD30 positive cells. It constitutes roughly 15% of childhood non-Hodgkin's lymphomas. Based on clinical and molecular features, four major forms of ALCLs has been recognized, including primary cutaneous ALCL (cALCL). As the name implies, cALCL arises in the skin without pre-existing systemic symptoms, contrary to systemic ALCLs. Although it is most commonly diagnosed in the sixth decade, it can also occur in childhood or adolescence.

**Case:** A 8-year old girl was referred by a dermatologist to the Department of Pediatric Infectious Diseases with suspected zoonotic infection. On admission she presented with a tender nodular lesion in the left temporal area of her face without any systemic symptoms. The lesion developed one month prior the consultation as a pruritic papule and was growing during this period. She had a history of being scratched by a pet cat, however claimed that the lesion had developed before the cat occurred in her house. After a consultation with a general practitioner she was empirically treated with amoxicillin/clavulanic acid but with no improvement. Laboratory tests were unremarkable. The results of serological and microbiological tests for the presumed infectious diseases, including an abscess, tularemia, cat-scratch disease, cowpox virus and fungal infection were negative. Due to suspicion of neoplastic disease the girl was referred to Oncology Department in the Children's Memorial Health Institute. The results of skin biopsy revealed the histopathological features characteristic for ALCLs.

**Conclusions:** The diagnosis of cALCL is difficult because the disease is rare and the clinical presentation could resemble non-neoplastic diseases. Patients presenting with rapidly growing nodular lesions require complex, multidisciplinary approach during the diagnostic process and even such uncommon diseases like cALCL should be considered.

[238]

#### **Different faces of dengue – a series of four cases**

Patrycja Miszczyk, Marta Piwowarek

p.a.miszczyk@gmail.com

Student Scientific Group at Department of Children's Infectious Diseases, Medical University of Warsaw

**Trustee of the paper:** Ewa Talarek MD PhD

**Background:** Dengue fever is a tropical disease caused by a flavivirus and spread by mosquitoes. Most frequently, the course of infection is asymptomatic or mild - with fever, headache, myalgia, arthralgia and skin rash. In some cases, it develops to haemorrhagic fever or shock with high mortality risk.

**Case:** No 1 – A 12-year-old girl presented to the hospital, 9 days after returning from Sri Lanka, with fever, headache, pain in lower limbs and nausea of 3-day duration. The first day of symptoms pharyngitis was diagnosed and cefuroxime axetil was prescribed. On admission, physical exam revealed hepatomegaly, macular rash on the trunk and few petechiae on shins. Lab test revealed thrombocytopenia, leukopenia and increased hematocrit. Dengue fever was confirmed by serologic testing.

No 2 – A 14-year-old boy presented with intensifying bone pain, fever and retrobulbar headache. The patient came back from Tanzania two weeks earlier. Pharyngitis and splenomegaly were found on physical examination. Abnormalities in lab tests included thrombocytopenia and elevated INR. The result of test for NS1 antigen of dengue virus was positive.

No 3 – A 10-year-old girl presented to the hospital a week after arrival from Vietnam, with a macular rash located on the trunk and limbs. Three days prior, she had a fever up to 39°C. The patient reported no other complaints such as headache, nausea or myalgia. Physical exam revealed lymphadenopathy and hepatomegaly, whereas lab results showed neutropenia and rise in hematocrit. The diagnosis of dengue was confirmed by detection of NS1 antigen.

No 4 – A 13-year-old-boy, suffering from Hashimoto thyroiditis, was admitted to the hospital after a week of high fever, vomiting, watery diarrhea, rash and an episode of pruritus of palms and soles. The patient returned from Thailand 8 days prior to onset of the symptoms. Lab results showed neutropenia and increased hematocrit. NS1 antigen and specific IgM dengue antibodies were detected.

All 4 patients recovered with no complications.

**Conclusions:** Dengue fever should always be considered in a febrile child returning from tropics and subtropics. Early diagnosis is important, for ibuprofen should not be used as an antipyretic and patient requires watchful follow up, especially in 24-48 hours after defervescence, when severe complications can develop.

## [239]

### **Difference in expression of Muenke syndrome in three generations of the family**

Patrycja Duda-Lichoń, Artur Dobosz MD

p.b.duda@gmail.com

Students' Scientific Group of Clinical Genetics, Jagiellonian University Medical College, Krakow, Poland

**Trustee of the paper:** Patrycja Duda-Lichoń

**Background:** Muenke syndrome is a fibroblast growth factor receptor 3 (FGFR-3)-associated coronal synostosis, with autosomal dominant inheritance pattern. Although clinical phenotype is variable, most patients are affected in coronal craniosynostosis, hearing impairment and intellectual disability. The birth prevalence is approximately 1 in 30 000. Nevertheless, the amount of published case report with familiar Muenke syndrome is understated.

**Case:** A 2,5-month patient was referred for consultation to the genetic clinic due to her dysmorphic features. Physical examination showed brachycephaly, prominent forehead, flattered nasal base, downward slant of palpebral fissures, retrognathia, syndactyly of 2-3rd toes bilaterally. The

proband's family report indicated similar phenotype in father and grandfather. The patient was tested molecularly for mutation c.749C4G in exon 7 of the FGFR3 gene which results in an amino acid substitution p.Pro250Arg of the protein product typical for Muenke syndrome. Results of DNA sequencing showed a heterozygotic variant.

Older brother, father and grandfather of the child were tested genetically, which confirmed mutation in the FGFR3 gene in each of them. Father and grandfather had similar phenotype features, though older brother at the age of 6, had no specific facial dysmorphism except slightly high arched palate, his psychomotor development was normal. The typical feature of all tested patients was syndactyly of 2-3rd toes bilaterally.

**Conclusions:** This familial case of Muenke syndrome highlights the different manifestation of the syndrome. The family pedigree is a proper example of autosomal dominant inheritance of the Muenke syndrome, therefore may be useful to prepare a natural history study of the disease in the future studies.

## [240]

### **Immunodeficiency syndrome in an infant. Case report**

Aleksandra Derwich

ola.derwich@gmail.com

Poznań University of Medical Sciences/ Department of Infectious Diseases and Child Neurology

**Trustee of the paper:** dr. hab. n. med. Katarzyna Mazur- Melewska

**Background:** The most common cause of HIV infection in children is the vertical transmission. The important factor of the infection is mother's high viremia, which can be prevented by administration of antiretroviral therapy. Vertical HIV infection in children does not generate defects and the symptoms observed are often nonspecific.

**Case:** The 8-month-old infant was admitted to the Department of Infectious Diseases and Child Neurology due to the suspicion of parasitic infection with *Toxocara sp* with eye involvement. Upon admission, the child presented symptoms of severe pneumonia. The girl had fits of choking cough and incessant breathlessness. In the 13th week of life, interstitial pneumonitis of unknown etiology was diagnosed. In the 15th week of life, the

neurologist diagnosed cerebral palsy of the spastic type. MRI showed atrophic changes in the central nervous system caused by hypoxia or recent infection. In the 7th month of life, the girl was hospitalized because of petechiae appearing all over her body. Laboratory tests revealed anemia and thrombocytopenia. At admission, due to increased dyspnea, a lung X-ray was performed. Parenchymatous pulp compresses in both lungs were described, with the increased opacification. Analysis of the earlier course of the disease indicated the presence of immune disorders, therefore the diagnostics were implemented and the presence of anti-HIV antibodies was proven. In the following days, the child's condition deteriorated, and respiratory failure occurred. In the examination of tracheal aspirate, *Pneumocystis jiroveci* and *Candida albicans* were confirmed. The co-infection of CMV and HIV was confirmed by PCR. Intensive anti-inflammatory and three-drug antiretroviral therapy was implemented. Since the 18th day of hospitalization, a sudden drop in the level of leukocytes and platelets was found. On the 25th day of hospitalisation, the child died as a result of cardiac arrest. The reason for this was: sepsis, immune reconstruction or drug-related complications.

**Conclusions:** The risk of vertical HIV infection with the absence of antiretroviral therapy is estimated at 15-30%. Screening pregnant patients for HIV infection would allow effective identification of patients and implementation of the therapy. Proper prophylaxis of infection allows reducing the average risk to <1%. Diagnosis of immune deficiencies in children caused by HIV infection due to the lack of specific clinical symptoms is a great challenge for a pediatrician.

[241]

#### **Cat scratch disease in a 14-year-old girl - a case report**

Agnieszka Gościńska, Izabela Paszkowska

aga.goscinska@gmail.com

Students' Scientific Group affiliated to Department of Pediatrics, Pediatric Nephrology and Allergology, Military Institute of Medicine

**Trustee of the paper:** Agata Wawrzyniak, Agnieszka Lipińska-Opałka, Bolesław Kalicki

**Background:** Cat scratch disease is a bacterial zoonotic disease caused most often by gram-negative bacteria *Bartonella henselae* (95%). Child most often becomes infected after being scratched by a host animal, mainly by young cats. The disease usually occurs in the form of local lymphadenopathy spontaneously subsiding to 8-12 weeks. In the United States alone, about 12,000 people are diagnosed with a diagnosis of cat's scratch disease, of which about 500 require hospitalization.

**Case:** A fourteen-year-old girl admitted to the Clinic due to unilateral enlargement of the neck lymph nodes, fever to 38.8°C and right ear pain.

On admission, in addition to the enlargement of the neck lymph nodes on the right side, the presence of secretion in the right external auditory canal and a linear scar on the skin of the right arm were found.

In the additional tests no irregularities were found. The test results for toxoplasmosis, infectious mononucleosis, tuberculosis and CMV infection were negative. Ultrasound examination of the abdomen revealed hepatosplenomegaly.

Based on the clinical picture, lymphadenopathy on an infectious basis was diagnosed and amoxicillin / clavulanic acid was included in the treatment. Due to the lack of improvement after the treatment, the diagnostics of *Bartonella henselae* infection serology was extended and the treatment (ceftriaxone + amikacin) was modified. Symptoms subsided and on the 10th day the patient was discharged home. Serological tests confirmed the diagnosis of a cat scratch disease.

**Conclusions:** The picture of a cat scratch disease is often unspecific, which requires a wide panel of tests necessary to exclude other diseases that may occur with local lymphadenopathy.

The literature describes cases of coexistence of other diseases in the course of cat scratch disease. In the case described, inflammation of the external auditory canal was found, which has not been described in the literature so far.

The described case indicates the important role of properly conducted medical history, which allows accurate and quick initial diagnosis.

[242]

**Risk factors for the development of intestinal failure-associated liver disease in child with ultrashort bowel syndrome**

Laine Bekere, Krista Skrējāne

laine.bekere@gmail.com

Riga Stradiņš University

**Trustee of the paper:** Inita Kaže, MD, Ieva Puķīte, MD

**Background:** Intestinal failure-associated liver disease (IFALD) occurs in 40-60% of infants receiving long-term parenteral nutrition (PN). Multiple risk factors have been evaluated for significance in contributing to IFALD, including premature birth, length of intestinal resection, lack of enteral nutrition, disruption of the bile acid recirculation, bacterial overgrowth, early and recurrent septic events. High-energy requirements for growth and excessive glucose intake are associated with the rapid onset of IFALD. Clinical manifestation varies from steatosis, cholestasis and gallbladder stones to fibrosis and cirrhosis.

**Case:** A female infant was born prematurely at week 24/25 (birth weight 750g). Nine days after the birth she experienced mesenteric thrombosis with subsequent necrotic loop resection (from duodenum 1 cm below ligament of Treitz to an ileocecal angle) and creation of duodenic-colonic-anostomosis. Since then, total parenteral nutrition was initiated. The composition of solution has been changed several times to provide the best component ratio for growth. Enteral feeding was also performed, but it was interrupted periodically due to rejection and deterioration of the patient's condition. Oral feeding was ceased at 2.5 years of age. Subsequently, minimal enteral nutrition via nasogastric tube was provided.

The patient repeatedly had elevated liver enzymes and bilirubin in blood tests and a hepatomegaly in USG. At 2 years of age, she had gallstone disease, cholestasis and IFALD complications, such as portal hypertension and recurrent biliary pancreatitis.

Currently, she is 5 years old. According to anamnesis, the patient has been hospitalized for a total of 3 years and 1 month. Over this time, she experienced about 20 septic episodes, most often caused by hospital flora-coagulase-negative staphylococcus, MRSA, E. coli, C. albicans, Enterococcus faecalis and P. aeruginosa. During the stay at social care centre - 4 septic episodes caused by L. lactis, S. hominis, Corynebacterium spp were recorded. Multiple septic episodes played a crucial role in the rapid IFALD progression.

**Conclusions:** Early identification and reduction of the risk factors are useful for the prevention and treatment of IFALD. It is necessary to initiate early enteral feeding, modify parenteral solutions and diminish the duration of PN infusions if possible. Tackling long stays in hospital decreases the risk of nosocomial infections and septic events and, therefore, cholestasis and progression of IFALD as well.

[243]

**Diagnostic approach to a teenage patient with jaundice**

Karolina Twardowska, Carlo Bieńkowski

karolina.twardowska1@gmail.com

Student's Scientific Group at Department of Children's Infectious Diseases, Medical University of Warsaw

**Trustee of the paper:** Ewa Talarek, MD, PhD

**Background:** Jaundice in teenagers is usually induced by hepatitis and hemolytic anemia. However, in some cases, findings might be quite surprising, while establishing the underlying cause of the symptom.

**Case:** A 15-year-old girl was referred to the pediatric ward of the Hospital of Infectious Diseases in Warsaw with suspicion of viral hepatitis. A week before she was consulted by her family doctor because of abdominal pain. Gastritis was suspected and omeprazole was prescribed. A few days later the girl noticed a dark color of urine and jaundice of sclera and skin. Lab tests revealed elevated activity of liver enzymes (ALT 379 IU/L, AST 168 IU/L, GGT 200 IU/L) and hyperbilirubinemia. (total bilirubin 118,4 μmol/L, direct bilirubin 99,3 μmol/L).

On admission the patient was in good general condition, she denied nausea or vomiting. She reported sexual activity and oral contraception for six previous months and a stay in Greece a month before. She had been vaccinated according to Polish Immunization Programme.

Physical examination revealed jaundice and mild hepatomegaly.

Infections with HAV, HBV, HCV, HIV, EBV, and CMV were excluded. Abdominal ultrasound revealed dilatation of the common bile duct and a hypochoic mass near the head of the pancreas. The patient was transferred to the Gastroenterology Department in the Children's Memorial Health Institute in Warsaw, where the presence of the

tumor was confirmed. She underwent surgery, on the base of histopathologic examination Burkitt lymphoma was diagnosed.

**Conclusions:** Elevated activity of liver enzymes is a non-specific symptom which appears in many diseases and conditions. This case highlights the importance of determining the actual cause in order to provide proper care.

Burkitt lymphoma is a rare form of non-Hodgkin's lymphoma. It is considered one of the fastest growing human tumors, leading to death quickly if left untreated. However, prompt diagnosis and proper treatment are associated with long-term survival rates of 60% to 90%.

[244]

**Can abdominal pain indicate a hematologic disease? A few words about the diagnosis of recurrent abdominal pain in a teenage boy**

Izabela Paszkowska, Izabela Grala

pas.izaaa@gmail.com

Medical University of Warsaw/ Gastroenterology and Nutrition Clinic of the Medical University of Warsaw

**Trustee of the paper:** Dr n. med. Marcin Dziekiewicz

**Background:** Abdominal pains in children have very common reasons for visiting a pediatrician. They usually have a functional nature and are treated with diet, painkillers and diastolic medications. Functional abdominal pain is a diagnosis of exclusion, after the elimination of "alarming agents", e.g. a positive family history of inflammatory bowel disease, celiac disease or gastrointestinal bleeding.

Are we always sure that the abdominal pain leading to a doctor is a trifle that does not hide the background of the hematologic disease?

We will try to prove how important is accurate and multidirectional diagnosis of recurrent abdominal pain.

**Case:** In the 2014 a 14-year-old boy was admitted to ER twice due to very intense, difficult to locate, abdominal pain. After performing gastroscopy, inflammatory process with erosions in the stomach was suspected. Since 2016, the patient has been under a constant care of the Gastroenterology Clinic. In the course of 9 visits in the Department, numerous additional tests were performed: CT and ultrasound of the abdominal cavity, gastroscopy, colonoscopy, capsule endoscopy, scintigraphy in the direction of Mekel's diverticulum, which did not show significant irregularities. In MRI with enterography, kidney degradation of hemoglobin products was found.

Normocytic anemia, thrombocytopenia, erythrocytopenia and reticulocytosis have been found in the laboratory department. Faecal blood and elevated calprotectin levels were detected in the faeces. Biochemical tests revealed free hyperbilirubinemia, elevated inflammatory markers and increased LDH concentration.

Due to persisting haemolytic anemia, the patient was referred to the Department of Hematology. Analyzing the current course of the disease the assumption of nocturnal paroxysmal hemoglobinuria was confirmed on the basis of tests carried out at the Institute of Hematology and Transfusion.

**Conclusions:** Paroxysmal nocturnal hemoglobinuria is a rare acquired hematopoietic disorder with an unusual constellation of delaying diagnosis symptoms. The disease relies on defect of the erythrocyte membrane, leading to increased hemolysis which reaches a maximum level during sleep.

In conclusion, a holistic view of the patient is necessary in the doctor's work. The patient's symptoms are worth analyzing and trying to get closer to the diagnosis through multi-directional diagnostics, sometimes going beyond the scope of the field in which the doctor specializes.

[245]

**A Rare Case of 'Skip Segment' Hirschprung Disease**

Laura Bajāre, Timurs Zurmutai, Ieva Šlēziņa, Katrīna Krieviņa, Dace Osīte-Kovaļova, Dana Augustova

laurasbajares@gmail.com

Riga Stradins University, Faculty of Medicine

**Trustee of the paper:** Prof. Arnis Engēlis, Children's Clinical University Hospital, Department of Paediatric Surgery

**Background:** Hirschprung disease (HD) is characterised by aganglionosis, which typically occurs in the rectum and distal sigmoid colon. HD is believed to be the result of incomplete craniocaudal migration of neural crest-derived cells, but there is a form of HD where there is no clear embryological explanation named 'Skip segment' HD. This form is extremely rare – there are only few cases described in literature.

**Case:** A 1 year and 4 months old boy was admitted to Riga Children's Clinical University hospital after ambulatory gastroenterologist consultation. Child suffered from absence of stools for 2 weeks. Objectively- abdomen with visibly increased size, meteorized, visible facial stigmas.

Child had a history of unspecified encephalopathy and reduced muscle tone at birth, ventricular tachycardia, partial nasogastral feeding since birth and constipation from age of 3 months. A genetic disorder was not proven.

Considering clinical manifestation, patient history and signs of significant ileus in abdominal roentgenography, HD was suspected. Child underwent digital evacuation of feces, when first biopsy was taken. Afterwards specific enterocolitis acceded. Later during ileostomy operation biopsy was taken for the second time. Histopathological conclusion: segmental agangliosis of terminal ileum and colon transversum.

**Conclusions:** HD is usually proven by the age of 1 year. 'Skip segment' HD is a rare variation of HD which may lead to delayed diagnostics due the atypical and craven clinical presentation.

[246]

#### **Tracheoesophageal fistula in a 2 month old patient**

Aleksandra Marzec

aleksandra.marzec@onet.eu

Medical University of Warsaw/ Department of Pediatric Pneumology and Allergy

**Trustee of the paper:** Wojciech Feleszko MD PhD

**Background:** The tracheoesophageal fistula (TEF) is a congenital or acquired communication between the trachea and esophagus. TEF can arise due to failed fusion of the tracheoesophageal ridges after the fourth week of embryological development and it often leads to severe and fatal pulmonary complications. Tracheoesophageal fistula is suggested in an infant by copious salivation associated with choking, coughing, vomiting, and cyanosis coincident with the onset of feeding. The treatment is a surgical correction, with resection of any fistula and anastomosis of any discontinuous segments.

**Case:** A 2 month old girl was referred to the Clinic in due to further pulmonological diagnostics. She was delivered by a vaginal delivery, without any complications during the labour and perinatal period. Choking was observed since the day of birth, during breastfeeding and within an hour after the procedure. The patient was in a good general condition. The clinical examination showed facial skin lesions and rhonchi, but without a sign of dyspnoea. In lung X-ray examination there was no visible densities in the lung pattern, but pulmonary parenchyma was peripherally hyperinflated. Contrast examination of oesophagus and bronchoscopy registered a presence of tracheoesophageal fistula in the upper part of trachea and the lower part of oesophagus. Echocardiogram showed patent foramen ovale. Due to suspicion of vascular ring occurrence CT scan was performed, but it wasn't confirmed. Liver enzymes were elevated. During hospitalization some rales were noticed, but lung ultrasonography and X-ray didn't show the signs of inflammation. Afterwards, patient was referred to surgical department in order to perform a surgical correction.

**Conclusions:** Tracheoesophageal fistula is a common congenital abnormality. In the presented case the typical signs and symptoms enabled the proper diagnosis and conducting the most suitable treatment.

[247]

#### **Acute Hepatitis B and unusual follow up in a 16-year old boy - a case report**

Carlo Bienkowski, Monika Kowalczyk, Karolina Twardowska

carlo.bienkowski@gmail.com

Student's Scientific Group at Department of Children's Infectious Diseases, Medical University of Warsaw

**Trustee of the paper:** Maria Pokorska - Śpiewak, MD, PhD, Ewa Talarek, MD, PhD

**Background:** After the introduction of routine vaccination against hepatitis B for all infants in Poland (1994-1996), the incidence of hepatitis B decreased significantly and nowadays cases among children are very rare.

**Case:** On December 28, 2016, a 16-year-old boy from Ukraine was admitted to the Department of Children's Infectious Diseases in Warsaw due to jaundice, general weakness, diarrhea, and vomiting. The boy has lived in Poland for 1.5 years, working (learning) as a hairdresser. He had a tattoo made at home 6 months ago, he cut his finger with scissors during work 6 weeks earlier, and during the last 6 months had two heterosexual contacts, both secured. He was vaccinated in Ukraine, but not against hepatitis B. He negated the dietary error, he never had a blood transfusion or surgery. He was once hospitalized due to acute gastroenteritis (in Ukraine). The physical examination revealed jaundice, hepatomegaly (2 cm below the rib arch), a tattoo on the right forearm.

Laboratory tests showed a significantly elevated level of aminotransferases (ALT 2439 IU/L; AST 1418 IU/L), bilirubin (110.2  $\mu\text{mol/L}$ ), GGTP (131 IU/L). Serological testing was positive for HbsAg and anti-HBc IgM, and negative for HAV, HCV, and HIV infection. Acute hepatitis B was diagnosed and the patient was treated conservatively. During observation, hepatic parameters were firstly elevating (ALT to 2818 IU/L; AST to 1427 IU/L), but after 23 days these parameters improved (ALT 661 IU/L; AST 125 IU/L) and he was discharged home, with the recommendation to appear at the ward to perform follow-up examinations after 6 months (in order to exclude chronic hepatitis B). The patient reported again only after 15 months. Hepatic parameters were normal, testing towards HBV was negative and chronic hepatitis B was excluded. The extended interview revealed urinary tract infection a year ago and unprotected sexual contacts, both homo- and heterosexual. During physical examination a small ulcer around his anus was noticed. Thus, additional tests for HIV and syphilis were ordered, which were positive only for syphilis. The patient applied for treatment to the Clinic of Dermatology and Venereology in Warsaw.

**Conclusions:** HBV infection is still possible in non-vaccinated people. Prophylaxis in immigrants should be intensified (every person staying in Poland for over 3 months is covered by the Polish vaccination program). It is important to deepen the epidemiological interview in teenagers towards sexually transmitted diseases.

[248]

#### **Intraspinal mesenchymal chondrosarcoma in 2-year-old Lithuanian patient**

Rūta Masiulienė

as.ruta@gmail.com

Vilnius University; Faculty of medicine

**Trustee of the paper:** Sonata Varvuolytė

**Background:** Mesenchymal chondrosarcoma (MCS) is an infrequent, highly malignant neoplasm of the soft tissues and bone. It represents 2 to 9% of all CS. Commonly, MCS originates in the bone, but it can also arise in extraskeletal sites, such as brain and intraspinal area (with a prevalence rate of 0.33% of all CS). MRI is the preferred imaging modality for intraspinal tumors. Radical surgery with negative surgical margin, if possible, seems to be the first line treatment. It tends to run a very rapid clinical course with distant metastases and has poor prognosis with the 10-year survival rates which vary from 21 to 67%.

**Case:** A 2 year 4 months old healthy boy presented with a 4-month history of limping, difficulty walking, falling and pain, which was worse during night time. The motor strength of the left lower extremity (LE) was 3/5 (proximally- 4/5; distally- 3/5), while right LE had normal motor strength (5/5). The deep tendon reflexes were absent and pathological reflexes were present in the left LE. An MRI of the lumbar spine showed a soft tissue mass in the spinal canal at the L2-4 level with cauda equina compression. The patient underwent L3-4 laminectomy, not radical tumor resection. The histopathologic examination revealed G3 poorly differentiated (high grade) tumor, consistent with a diagnosis of MCS. After surgical treatment, patient underwent chemotherapy (with similar protocols to Ewing 2008 VIDE (V cycles), VAI (VII cycles)) and radiation therapy. Within 14 months follow-up period the patient developed multiple bone fractures which could be related with treated MCS.

**Conclusions:** Detection of mesenchymal chondrosarcoma usually is delayed due to nonspecific physical findings and patient complaints. There is no distinguishing radiographic features specifically to separate MCS from the other CS. The diagnosis of this tumor requires careful histopathologic review. Preferred treatment is excision with wide surgical margins, but in certain locations such as the spine, this may not be obtainable. Chemotherapy and radiation therapy should be recommended when gross total resection cannot be obtained. The prognosis with MC is poor because of hematogenous and lymphatic metastases.

[249]

#### **15-year-old Fire-eater's lung**

Piotr Strus, Paweł Strus

struspiotrek@gmail.com

MUW, SKN PNEUMONOLOGII I ALERGOLOGII WIEKU DZIECIĘCEGO

**Trustee of the paper:** Dr hab. n. med. Wojciech Feleszko

**Background:** The Fire-eater's lung is a name of very rare acute exogenous lipoid pneumonia caused by aspiration of fatty substance using to make fireballs by spreading petroleum-based product by mouth to source of fire. It is typically characterized by cough, dyspnea, chest pain, hemoptysis and fever, but symptoms may vary and

sometimes are non-specific. The diagnosis is based on a typical history, X-rays and histopathological findings. A treatment of choice for lipoid pneumonia has not been established.

**Case:** 15-year-old fire-eater, during his show, aspirated a liquid tinder. This accident caused acute exogenous lipoid pneumonia. What is untypical – he had chest and costal arch pain on breathing but without dyspnea, cough nor fever. After 8 days of the therapy he was discharged home in good general condition with amoksiklav and glimbax. Unfortunately, after 2 days he come back to the hospital with fever, headache and two white coating on the palate. He also needed psychology consultation due to bad mood and recurrent headache.

**Conclusions:** Fire-eater's lung is caused by petroleum-based products using by fire-eaters. It is uncommon acute exogenous lipoid pneumonia, sometimes presented by non-specific symptoms. The diagnosis is based on typical history, histopathology and radiology. It is common to use steroids, an antibiotic therapy and a bronchoalveolar lavage as treatment.



# Pediatrics

**Date:**

Friday, May 10th, 2019

**Location:**

Room 141/142, Didactics Center

**Jury:**

prof. dr hab. n. med. Piotr Albrecht  
prof. dr hab. n. med. Sergiusz Jóźwiak  
prof. dr hab. n. med. Bożena Werner  
prof. nadzw. dr hab. n. med. Jolanta Sykut-Cegielska  
dr hab. n. med. Andrea Horvath  
dr hab. n. med. Bożena Kociszewska-Najman  
dr hab. n. med. Katarzyna Krenke  
dr hab. n. med. Renata Bokiniec  
dr hab. n. med. Anna Kucharska  
dr hab. n. med. Aleksandra Banaszekiewicz  
dr n. med. Paweł Grzesiowski  
dr n. med. Anna Taczanowska  
dr n. med. Ewa Talarek  
dr n. med. Beata Leszczyńska  
mgr Krzysztof Gogolewski

**Coordinators:**

Justyna Stańczyk  
Łukasz Filipski

**Scientific Patronage:**

National Consultant in Pediatrics Prof. Teresa Jackowska MD PhD  
National Consultant in Neonatology Prof. Ewa Helwich MD PhD  
National Consultant Pediatric Cardiology Prof. Jacek Białkowski MD PhD  
National Consultant in Pediatric Urology Tomasz Koszutski MD  
National Consultant in Pediatric Lung Disease Andrzej Pogorzelski MD PhD  
National Consultant in Pediatric Nephrology Prof. Danuta Zwolińska MD PhD  
Polskie Towarzystwo Neonatologiczne  
Polskie Towarzystwo Wrodzonych Wad Metabolizmu  
Fundacja Rozwoju Pediatrii



[250]

### **The impact of anthropometric measurements on safety and outcomes of hematopoietic stem cell transplantation in pediatric patients**

Marta Krzysztofik, Anna Skuza, Aneta Myszk, Karolina Jasiejko, Anna Banaś, Magdalena Niemirowska  
md.krzysztofik@gmail.com

Department of Immunology, Division of Clinical Immunology and Transplantation,  
Jagiellonian University Medical College, Krakow, Poland

**Trustee of the paper:** Dr hab. n. med. Jolanta Goździk

**Introduction:** Hematopoietic stem cell transplantation (HSCT) is an aggressive form of therapy used for malignant and non-malignant disorders of the hematopoietic system. As a result of conditioning regimen and transplant complications, HSCT procedure often leads to malnutrition requiring nutritional support.

**Aim of the study:** To investigate changes in anthropometric measures (body weight, height, BMI) during HSCT procedure and their impact on safety and outcomes of the procedure.

**Material and methods:** We analyzed changes in anthropometric measures of 94 pediatric patients (61 males, 33 females) up to the age of 19 years who underwent HSCT between 2005 and 2017 as a treatment for malignant disease (n=55) or non-malignant disease (n=39). Nutritional status of patients was assessed based on body weight and height measurements collected: 1) up to 7 days before HSCT; 2) on the last day of hospitalization related to HSCT; 3) at 100 days following HSCT; 3) at 365 days following HSCT. Body weight, height and BMI were referred to the age of a patient using available percentile calculators. Based on the measurements up to 7 days before HSCT, patients were classified as normal (10th-85th percentile), underweight or short stature (<10th percentile), overweight or tall stature (>85th percentile). Analyzed outcomes of HSCT were transplant-related mortality, general mortality and overall survival.

**Results:** Median values of anthropometric measures (in percentiles) during HSCT were: weight: 52.6 – 31.0 – 42.9 – 44.6; height: 54.2 – 48.2 – 52.0 – 40.1; BMI: 62.5 – 38.0 – 44.9 – 63.3. We noted significant decrease in patients' weight ( $p<0.01$ ) and height ( $p<0.01$ ) at one-year follow-up. Patients, who were underweight or short stature before HSCT, were more likely to die from transplant-related causes (all  $p<0.05$ ) or any causes (all  $p<0.05$ ). Kaplan-Meier curves showed that patients in underweight or short stature groups had the lowest probability of overall survival, however these results did not achieve significance in the log-rank test ( $p>0.05$ ).

**Conclusions:** HSCT is a long-term therapeutic procedure which may be complicated with malnutrition. Our results show that malnutrition and low height at the time of HSCT are associated with poor survival in children. Assessment of anthropometric measures before HSCT may provide prognostic information about the risk of adverse outcomes during HSCT procedure.

[251]

### **Effectiveness of postoperative pain therapy in children assessed by their parents – is inadequate analgesia potentially dangerous?**

Michał Zięba  
michalzieba01@gmail.com

Medical University of Warsaw / II Faculty of Medicine

**Trustee of the paper:** dr n. med. Magdalena Mierzewska-Schmidt

**Introduction:** Pain is the subjective feeling which many people, in general, connect with medical procedures for example with operations. Inadequate pain therapy can lead to negative physical and psychological consequences, increase number of complications and in some cases mortality.

**Aim of the study:** The aim of this study was to assess effectiveness of postoperative pain treatment in children from the point of view of their parents and to identify areas for improvement.

**Material and methods:** Patients' parents (n=85) from Paediatric University Hospital in Warsaw, Poland, took part in the survey comprising 18 questions, created by the author. Children underwent the operations under anaesthesia and were treated in Cardiosurgery Department, ENT Department and in Urology and Surgery Department. The pain intensity was evaluated on five-point Likert Scale and on numerical rating scale (NRS). The statistical analysis was conducted in program STATISTICA (v.13). Conformity of distribution of quantitative variables to normal distribution was proofed using the test - Compatibility of distribution: normal distribution. Variables of normal distribution were described by arithmetic mean and standard deviation. The groups with the normal distribution were compared with each other by t-test. As the significant, in this case, was assumed  $p<0,05$ . Qualitative variables were described by contingency tables and by graphs.

**Results:** Mean value of NRS was 4,22 (SD±2,53). On Likert scale the majority of parents described pain intensity as moderate. High percentage (38,82%) of children were in pain while their parents took the survey and only 19% of children did not feel pain at all. In 36 children (42,36%) pain caused sleep disturbances. In some cases non-pharmacological methods of analgesia were effective. Due to inadequate pain relief one of the parents arbitrarily administered to his child a formulation containing paracetamol and codeine. The study revealed low efficacy of analgesia among children whose parents were surveyed, however their level of satisfaction was inadequately high (91% of them were „very satisfied” or “rather satisfied”).

**Conclusions:** The survey confirmed the need for systematic pain assessment tools. Parental education seems necessary to make them aware that postoperative pain can be treated effectively. Administration of drugs without consulting medical staff is dangerous as it may result in the use of contraindicated agents (as in the case described above), drug overdose or unexpected interactions.

[252]

### **Comparing neutrophil-lymphocyte-ratio to eosinophil-lymphocyte-ratio in relation to pediatric brain tumours**

Margi Umeshkumar Patel, Iveta Baiba Dzīvīte  
pmargi96@yahoo.co.uk

Riga Stradiņš University, Department of Pathology

**Trustee of the paper:** Dr Maija Lubgane

**Introduction:** Primary central nervous system (CNS) tumours are the second most common malignancies in childhood and adolescence (Siegel R et al,2013). The overall mortality approaches 30% (Kliegman et al,2016). The role of systemic inflammatory response such as neutrophil-lymphocyte-ratio (NLR) and eosinophil-lymphocyte-ratio (ELR), are time efficient and inexpensive markers.

**Aim of the study:** To compare the role of NLR and ELR for paediatric primary brain tumour patient outcomes.

**Material and methods:** Retrospective study included patients receiving surgery for primary brain tumours. Data was collected using Andromeda database from December 2008-2018 at the Children’s University Hospital, Riga. Patient discharge summaries and laboratory analysis (obtained pre-operatively) were used. The respective histological slides were reviewed to identify tumour presence histological type and grade. Data was analysed using Excel and SPSS.

**Results:** The study composed of 46 patients (26 female,20 males). Ages ranging from 9 months to 18 years, at the time of operation.

NLR and ELR were compared with the following patient information: tumour grade, tumour histological types, if they received chemotherapy/radiotherapy or both and mortality (including hospice care).

With the assistance of correlation analysis, statistically significant albeit rather weak positive correlation has been found between the grade of the malignancy and NLR (Spearman’s rho = 0.41, p=0.008), for ELR statistically significant albeit rather weak negative correlation (Spearman’s rho=-0.337, p=0.031).

ELR has lowest mean rank for grade 4 tumours compared with NLE which has the lowest mean rank is for grade 1 tumours.

Kruskal-Wallis test was used to compare the distribution of NLR and ELR among patients with different tumour types. The difference has been found to be statistically significant (h=14.081, df=5, p=0.015 for NLR and h=11.211,df=5, p=.047 for ELR). Glioblastomas had the lowest ELR and the highest NLR.

NLR and ELR median values of 1.95 and 0.04 were used respectively as a cutoff for dividing patients in high and low ratio groups.

Of the patients in high NLR group, 57% (Confidence Interval (CI) ±20.23), are placed in hospice care or died in the hospital until December 2018, in high ELR group,35.7% (CI±34.94). In high NLR group: 71%(CI±18.54) of the patients who received both chemotherapy and radiotherapy had NLRs above the cut off value, 35.7%(CI±34.94) for high ELR.

**Conclusions:** NLR and ELR have an inverse relationship. It was found that higher the NLR and lower the ELR, greater the malignancies of the tumours. Patients in high NLR groups showed a worse patient outcome compared to high ELR groups.

[253]

**The role and association of plasma level of IL-19 and pro-inflammatory cytokines (IL-17A, IL-4 and IL-1 $\beta$ ) with severity of atopic dermatitis in children**

Karolina Dumycz<sup>1</sup>, Katarzyna Kunkiel<sup>1</sup>, Anna Stelmaszczyk-Emmel<sup>2</sup>, MD, PhD, Paweł Józefczuk<sup>3</sup>,  
Wojciech Feleszko MD, PhD<sup>1</sup>

karola.dum@gmail.com

<sup>1</sup> Department of Pediatric Respiratory Diseases and Allergy, Medical University of Warsaw

<sup>2</sup> Department of Laboratory Diagnostics and Clinical Immunology of Developmental Age,  
Medical University of Warsaw

<sup>3</sup> Department of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw

**Trustee of the paper:** Wojciech Feleszko MD, PhD

**Introduction:** Interleukin-19 (IL-19) is known as a pro-inflammatory cytokine produced mainly by monocytes and keratinocytes and stimulated by IL-4, IL-13 and IL-17. IL-19 promotes the development and function of Th2 cells and thus can play a role in pathogenesis of allergic diseases. However, no clinical studies have analyzed plasma levels of IL-19 in larger series of children with atopic dermatitis (AD).

**Aim of the study:** This study was performed to clarify whether plasma levels of IL-19 and cytokines associated with IL-19 are reflecting on disease severity.

**Material and methods:** Children diagnosed with atopic dermatitis in the active phase of the disease and healthy children were enrolled in the study. The diagnosis of atopic dermatitis was made by a physician according to criteria by Hanifin and Rajka. Demographic data including age, gender, sex, family history of atopy, age of onset, plasma eosinophil level were recorded. Disease severity was measured by SCORAD index. IL-19 plasma levels were measured with human IL-19 ELISA kit (R&D Systems), IL-17A, IL-4 and IL-1 $\beta$  plasma levels were measured with flow cytometry (CBA Human Enhanced Sensitivity Mater Buffer Kit, BD Biosciences), according to manufacturers' instructions.

**Results:** The study consisted of 23 children with atopic dermatitis and 12 healthy children (with mean age 5.91 years  $\pm$  3.61 and 8.56  $\pm$  4.89, respectively,  $p > 0.05$ ). Mean IL-19 plasma level was 61.1 pg/mL  $\pm$  105.7 in AD patients and 2.1  $\pm$  5.9 pg/mL in healthy controls. Mean IL-17A, IL-4 and IL-1 $\beta$  plasma levels in AD children were 129.4 fg/mL  $\pm$  86.1, 26.4 fg/mL  $\pm$  31.6, 67 fg/mL  $\pm$  82.8, respectively. In healthy controls mean plasma cytokines levels were 18.8 fg/mL  $\pm$  36.6, 21.5 fg/mL  $\pm$  32.2, 8.9 fg/mL  $\pm$  31, for IL-17A, IL-4 and IL-1 $\beta$  respectively. IL-17A and IL-1 $\beta$  plasma levels differed significantly between AD and control group ( $p < 0.001$ ,  $p < 0.05$  respectively) however cytokine levels were not significantly correlated with SCORAD index. IL-4 plasma levels did not differ significantly between AD and control group. Overall IL-19 levels were significantly increased in patients in the top quartile of SCORAD (36,7-55,8), compared to those in the bottom quartile and the control group (ANOVA,  $p < 0.001$  for all four comparisons).

**Conclusions:** Plasma IL-19 level was found to be significantly elevated in children with high SCORAD. Our findings indicate that plasma IL-19 may play a role in AD pathogenesis and become a novel indicator for evaluating disease activity.

[254]

**Regional variability of long-term survival after pediatric intensive care in Latvia**

Linda Šetlere<sup>1</sup>; Ilarija Kalamašnikova<sup>1</sup>; Elizabete Stašāne<sup>1</sup>; Kārlis Meirans<sup>1</sup>; Dr. Ivars Veģeris<sup>2,3</sup>;  
Dr. med. Reinis Balmaks<sup>1,2</sup>

setlerelinda@gmail.com

<sup>1</sup> Faculty of Medicine, Riga Stradiņš University, Latvia

<sup>2</sup> Intensive Care Unit, Children's Clinical University Hospital, Riga, Latvia

<sup>3</sup> Department of Doctoral Studies, Riga Stradiņš University, Latvia

**Trustee of the paper:** Linda Šetlere

**Introduction:** There is only one pediatric intensive care unit (PICU) in Latvia, where all critically ill children older than 1 month and younger than 18 years from all regions of Latvia (> 700 children a year) are admitted. In our previous study we found that children from Latgale and Riga regions had higher risk-adjusted mortality.

**Aim of the study:** The aim of this study is to explore regional differences in long-term survival of critically ill children after admission to PICU over a 10-year period.

**Material and methods:** Retrospective study of children who were admitted to the PICU. Clinical data for the period from 01.01.2008 to 31.12.2011 were collected from paper medical records and for period from 01.01.2012 to 31.05.2017 from electronic medical records (IntelliVue Clinical Information Portfolio; Phillips). Patient survival data were obtained from the Centre for Disease Prevention and Control of Latvia. Kaplan-Meier survival analysis was performed by using SPSS Statistics (v23.0) software. The data were compared among the six regions of Latvia – Riga, Pieriga, Kurzeme, Zemgale, Vidzeme and Latgale.

**Results:** A total of 7159 patients were reviewed of which 510 (7,1%) were excluded because of invalid data. Analysis included 6649 patients – 44.7% (N=2969) female and 55.3% (N=3678) male from all regions of Latvia. Median age among patients was 40.03 months (interquartile range 11.4–136.37).

PICU mortality was 2.9 % (N=196) of all admitted children. From all PICU deaths 26.5% (N=52) were surgical patients.

Post discharge over 10 years mortality increased to 9.7% (N=642).

The long-term survival after discharge was 90.3%. In Riga, Pieriga, Kurzeme and Vidzeme long-term survival was similar with 90.9%, 91%, 91.2% and 90.2%, but in Zemgale and Latgale it was lower – 89.7% and 87%.

There was statistically lower long-term survival in Latgale than in Riga ( $p=0.002$ ), Pieriga (0.004) and Kurzeme ( $p=0.009$ ).

**Conclusions:** Although PICU mortality in Latvia is low, it more than triples over ten years post discharge. We noted that children from Latgale region not only have higher risk-adjusted PICU mortality but also have statistically lower long-term survival after PICU discharge than in other regions of Latvia. This fact requires an additional study to find out the impact of the potential risk factors, such as socio-economic situation, access to medical care and level of education.

[255]

#### **Physicians' perspective on preschool wheeze – an international survey (2nd stage)**

Aleksander Adamiec; Dominika Ambrożej; Klaudia Ryczaj MD; Marek Ruszczyński MD, PhD;  
Wojciech Feleszko, MD, PhD

alekadamiec@gmail.com

Department of Pediatric Respiratory Diseases and Allergy, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Wojciech Feleszko MD PhD

**Introduction:** Lower respiratory tract diseases accompanied by wheeze are very common, occurring in around 30% of all children under the age of 6.

**Aim of the study:** This survey was initiated by the European Academy of Allergology and Clinical Immunology (EAACI) Task Force on Clinical Practice Recommendation for Preschool Wheeze to recognize unmet needs in management of wheezy preschoolers and to project the content of the EAACI recommendations.

**Material and methods:** Informed by the comments of physicians in a preliminary survey, organised in November and December 2017, the final survey was prepared in May 2018 and distributed to EAACI Paediatric and Asthma section members (n=2132). The survey consisted of two parts: general information about the participants and specific clinical questions. The second round of this survey was distributed via a national medical social network in Poland and was viewed by 1324 unique users.

**Results:** In total, 730 participants from 55 nations completed the survey. Most responders - 266 (36.4%) - cited the lack of diagnostic tools as the most pressing problem with the diagnosis of preschool wheeze or asthma in pre-schoolers. The most relevant diagnostic option in preschool wheezers, according to 370 (50.7%) of the responders, was response to treatment. A vast majority, 557 (76.3%) of the responders agreed that recurrent wheezers required a different approach in comparison to patients with a single episode of wheeze, with 341 (46.7%) choosing allergy tests as the most appropriate option. When asked to specify their problems or doubts in the management of preschool wheezers, the responders mainly selected bad compliance with 268 (36.7%) of responders. A large percentage, 312 (42.7%), of the responders stated that it was very important (5/5) to set the clinical practice guidelines for preschool wheeze.

**Conclusions:** The survey presented here is the first step taken by the EAACI Task Force in order to establish new, comprehensive official EAACI guidelines on preschool wheeze. The surveys which we have conducted are the first exploration of the troubles physicians face when managing children with preschool wheeze. The survey reveals an unmet clinical need for guidelines in management of preschool wheezers for general practitioners, family physicians, paediatricians and allergy specialists.

[256]

**Chronic rhinosinusitis in children with common variable immunodeficiency**

Magdalena Maria Dutsch-Wicherek, Aleksandra Gauden, Uladzislau Ulasavets, Joanna Jęczyński  
dutsch.wicherek@gmail.com

Jagiellonian University Medical College, Paediatric Department

**Trustee of the paper:** dr hab. Magdalena Dutsch-Wicherek,

**Introduction:** Primary immune deficiency (PID) is a group of genetically differing disorders causing an impairment of the immune response, which leads to an increased prevalence of respiratory system infections, raised incidence of atypical pathogens and increased risk of complications. Many studies confirm a correlation between immunodeficiency and sinusitis. Even up to 23% of patients with difficult-to-treat chronic rhinosinusitis had pooled IgG, IgA, and IgM deficiencies.

**Aim of the study:** The aim of our study was to analyse the prevalence of chronic rhinosinusitis in children with common variable immunodeficiency (CVID) and clinical use of the Lund-Mackay score in staging of rhinosinusitis in this group of patients.

**Material and methods:** The histories of 14 paediatric patients with diagnosis of CVID have been analysed. All of the patients required immunological and laryngological treatment. All of the patients had chronic rhinosinusitis that required compute tomography scan (CT). Staging of rhinosinusitis was performed using Lund-Mackay score, the patients were divided according to the result of staging into four groups: normal, mild, moderate and severe.

**Results:** Delay in recognition of CVID in our group was 1-11 years (average 4.7). Immune globulin replacement therapy has been administrated up to a month from the moment of diagnosis. 30% of the patients had a positive family history. 85% of patients had recurrent upper airway infections, 85% had pneumonia and bronchitis, 15% had disseminated candidiasis. Moreover prevalence of 7% was observed in asthma, allergy, psoriasis celiac disease and autism, 7% of patients had Gilbert's syndrome another 7% epilepsy. The results of staging were as following: normal – 53%, mild – 15%, moderate – 7% and severe – 25%. In children from normal and moderate group conservative treatment was fully effective. In children with moderate and severe changes in sinuses conservative treatment led to normalization of sinus mucosal appearance in most patients, only 7% required surgical treatment. Moreover the Lund-Mackay score correlated with a diagnostic delay and delay in administration of immune replacement therapy (8-11 years, average 9,3 years).

**Conclusions:** Patients with CVID need a screening for many coexisting diseases. Immune replacement treatment effectively decreases the risk of upper airway infections, including rhinosinusitis. Lund-Mackay score is a useful tool for diagnosis and treatment of rhinosinusitis. It might be also useful for prognosis of patients with rhinosinusitis in CVID.

[257]

**Three-dimensional high-resolution anorectal manometry in diagnosis of children with functional constipation**

Justyna Konys  
justyna.konys@gmail.com

Medical University of Warsaw / Department of Pediatric Gastroenterology and Nutrition

**Trustee of the paper:** dr Marcin Banasiuk

**Introduction:** Three-dimensional high-resolution anorectal manometry (3DHRAM) is the most precise tool to assess anorectal function and can show more data than conventional manometry.

About 14% of children suffer from functional constipation (FC). It is one of the main reason of visits in pediatric gastroenterology outpatient clinics.

One of the most important cause of constipation is dyssynergic defecation (DD). DD can be diagnosed with 3DHRAM and is defined as inappropriate propulsive force (measured as intrarectal pressure) and/or inadequate relaxation of the anal canal (measured as percent of anal relaxation) observed during defecation manoeuver.

**Aim of the study:** Our aim was to evaluate children with functional constipation using 3DHRAM and to determine its usefulness in diagnosing DD.

**Material and methods:** We performed a retrospective study of children diagnosed with FC (FC group) who were evaluated by 3DHRAM. In all patients conventional manometric parameters were obtained, as follows: mean resting sphincter pressure, maximum squeeze sphincter pressure, the length of anal canal, thresholds of sensations and bear down manoeuver. All data were compared raw data obtained from children without

symptoms from lower gastrointestinal tract published previously (healthy; H group). The diagnosis of DD was based on criteria used in adult population.

**Results:** 168 children (133 male, median age, 6.7 years; range, 1m-17yo) were included in the study.

Comparison of FC group and H group revealed lower values of mean resting pressure (77.6 mmHg vs 89 mmHg,  $p=0.000$ ) and maximum squeeze pressure (184.6 mmHg vs 208.5 mmHg,  $p=0.008$ ). In FC group the thresholds of the first sensation, urge and discomfort (40 cm<sup>3</sup>, 65 cm<sup>3</sup> and 120 cm<sup>3</sup>, respectively) were significantly higher than in H group (20 cm<sup>3</sup>, 30 cm<sup>3</sup> and 85 cm<sup>3</sup>, respectively; all comparisons  $p=0.000$ ).

Differences between FC group and H group were also observed in maximum rectal compliance (0.8 cm<sup>3</sup>/mmHg vs 0.6 cm<sup>3</sup>/mmHg, respectively;  $p=0.02$ ).

During bear-down manoeuvre DD was diagnosed in 88.4% of constipated children. In the FC group, the percent of anal relaxation was significantly lower than in the H group (6 vs 32.5).

**Conclusions:** Our study demonstrated that dyssynergic defecation is the most frequent cause of functional constipation in children. Moreover, the elevated thresholds of sensation and increased rectal compliance were observed.

3DHRAM may help to determine the pathomechanism and to plan the most appropriate treatment of constipation in children.

[258]

### Markers of endothelial injury in children with arterial hypertension

Michał Szyszka, Anna Ofiara

michal2927@gmail.com

Student Scientific Group at the Department of Pediatrics and Nephrology, Medical University of Warsaw, Warsaw, Poland

**Trustee of the paper:** Piotr Skrzypczyk, Anna Stelmaszczyk-Emmel

**Introduction:** Soluble forms of adhesion molecules: E-selectin and ICAM-1 (intercellular adhesion molecule – 1) are markers of endothelial activation and injury and have been showed to predict cardiovascular disease in adults

**Aim of the study:** Aim of the study was to assess relation between E-selectin and ICAM-1 and clinical and biochemical parameters including ambulatory blood pressure monitoring (ABPM) in children and adolescents with PH

**Material and methods:** In the group of 78 children and adolescents with primary hypertension (PH) (15.03±2.61 years, 50 boys, 28 girls) we evaluated serum soluble E-selectin [ng/mL], ICAM-1 [ng/mL] and selected clinical and biochemical parameters including ABPM results

**Results:** E-selectin level was from 6.87 to 146.17, mean 55.63±26.49 [ng/mL] and ICAM-1 level was from 201.40 to 626.60, mean 302.17±67.14 [ng/mL]. Both E-selectin and ICAM-1 were higher in boys than in girls (60.02±26.56 vs. 47.49±24.80 [ng/mL],  $p=0.047$  and 312.63±72.44 vs. 282.80±51.86 [ng/mL],  $p=0.062$ ). In the whole group E-selectin and ICAM-1 correlated with BMI Z-score ( $r=0.24$ ,  $p=0.037$ ;  $r=0.29$ ,  $p=0.011$ ). ICAM-1 correlated also with uric acid ( $r=0.35$ ,  $p=0.0025$ ), HDL-cholesterol ( $r=-0.28$ ,  $p=0.020$ ), and platelet-to-lymphocyte ratio ( $r=0.26$ ,  $p=0.025$ ); in boys ICAM-1 correlated with mean platelet volume ( $r=0.29$ ,  $p=0.038$ ). In addition, in a subgroup of 28 children with newly diagnosed and untreated PH E-selectin correlated negatively with systolic, diastolic and mean blood pressure variability (defined as BP standard deviation) ( $r=-0.39$ ,  $p=0.042$ ;  $r=-0.49$ ,  $p=0.010$ ;  $r=-0.41$ ,  $p=0.036$ ) and with diastolic blood pressure dipping ( $r=-0.57$ ,  $p=0.002$ ) and positively with ambulatory arterial stiffness index ( $r=0.61$ ,  $p=0.002$ )

**Conclusions:** 1. In children with primary hypertension endothelial damage is related to obesity, hyperuricemia, dyslipidemia and degree of subclinical inflammation.

2. Low blood pressure variability and disturbed circadian blood pressure profile may be consequence of endothelial damage in untreated children with PH.

3. E-selectin may be a marker of arterial stiffness in children with PH.

[259]

**The usefulness of the oral glucose tolerance test in the diagnosis of glucose metabolism disorders in adolescents with simple obesity**

Katarzyna Ciuk, Marta Bociąga, Zuzanna Witczak

c.katarzyna.anna@gmail.com

Jagiellonian University in Cracow

**Trustee of the paper:** Associate Professor Małgorzata Wójcik MD, PhD

**Introduction:** The incidence of overweight and obesity among children has increased dramatically in recent decades. Studies report an increased prevalence of type 2 diabetes mellitus (DM2) in obese children and adolescents, which may have significant impact on future health.

**Aim of the study:** The aim of this study was to determine the prevalence of DM2 and impaired glucose regulation in a group of children with obesity at the Children's University Hospital in Cracow.

**Material and methods:** The study population consisted of 98 patients, 46 boys and 52 girls, diagnosed with obesity (BMI SDS >2) at the Department of Pediatric and Adolescent Endocrinology. The mean age was 11.9 +/- 3.3, ranging from 3.5 to 17.7 years. The children underwent a standard 2-h oral glucose tolerance test (OGTT). Additionally, we measured values of fasting insulin concentration and insulin concentration 120 min. after OGTT. Patients were evaluated in terms of impaired fasting glucose (IFG), impaired glucose tolerance (IGT) and diabetic status. Insulin resistance was evaluated with HOMA-IR.

**Results:** The mean BMI SDS in our group was 4.06 +/- 1.76. There were neither cases of type 2 diabetes nor impaired fasting glucose. Impaired glucose tolerance was detected in 4.08% (n=4) of patients. The mean value of fasting insulin concentration was lower in male patients (p=0.02), and mean insulin concentration after the OGTT was also lower in males (p=0.002). There were no significant differences between male and female participants as regards to BMI SDS, height, or weight. BMI correlated positively with fasting insulin concentration (R=0.4, p= 0.0001), and there was also correlation between HOMA-IR and BMI SD (R= 0.4, p= 0.0002).

**Conclusions:** Both DM2 and IGT are rare in obese children. Female patients, who overall have significantly higher fasting insulin concentration values, as well as higher insulin values after the OGTT, are more likely to be prone to have these kinds of disorders. This gender difference may be useful for further exploration.

[260]

**In search of novel marker of successful immunotherapy**

Agnieszka Zimińska

aga-ziminska@hotmail.com

Medical University of Warsaw / Students Scientific Group at Department of Laboratory Medicine and Clinical Immunology of Developmental Age

**Trustee of the paper:** Anna Zawadzka-Krajewska, Anna Stelmaszczyk-Emmel

**Introduction:** Allergies are a global problem. At present in Poland it's assumed that 1/3 of our population suffers from at least one allergy. The number of people affected doubles every couple of years. The more people suffer from allergy, the more the need for therapy and alleviation of its' symptoms increases. There are a few proposed treatments for these patients, but only immunotherapy is considered as causal treatment. This method is based on giving an increasing amount of allergen into the patient's organism in days-weeks breaks, usually performed by injections or sublingually. Patient's immune system is then taught not to react too vigorously and unutterably as a response for allergen intrusion. But how can we measure the outcome of immunotherapy besides patient's improving well-being? Is there any laboratory marker?

**Aim of the study:** The aim of the study was to search for potentially good marker for successful immunotherapy and test if any proposed marker is suitable for the laboratory diagnostics. There were selected two molecules: IL-10 and IgG4 antibody. The selection is motivated by strong regulative characteristics of IL-10 and so called "blocking properties" of IgG4 which block molecules of allergen from binding with IgE and moderating the immune response.

**Material and methods:** The study involved 22 children with atopic allergy (diagnosed and treated in the Department of Pediatric Pneumology and Allergology, Medical University of Warsaw, Poland) and 16 healthy children. Samples were taken once from control group and from tested group we had collected samples before treatment, 6 and 12 months after immunotherapy. Measurements of IL-10 and IgG4 were performed using BD CBA Enhanced Sensitivity Flex Set and a flow cytometer BD FACSCANTOII. All results were subsequently subjected to statistical processing using non-parametric tests.

**Results:** Data analysis revealed statistically significant differences ( $p < 0,05$ ) for IL-10 measurements, but not for IgG4. That had directed us to further analysis of IL-10 variability. We demonstrated that significant differences occur between zero point and 6 months after finishing immunotherapy. Moreover we compared gained results to the VAS scale (visual analog scale of severity of allergic patient's symptoms). However, we observed only weak or slight correlation, before and after immunotherapy.

**Conclusions:** In this paper we confirmed that IgG4 is not promising laboratory marker for successful immunotherapy due to its not significant changes over time of treatment. However promising results were gained for IL-10 but still not clearly indicating its usefulness in diagnostics. It suggests necessity of further analysis on expanded group of patients.

[261]

### **Severity of mucositis among patients under 18 years old after radio-chemotherapy and hemopoietic stem cell transplantation (HSCT) depending on the specific scheme of conduct**

Karolina Jasiejko, Magdalena Niemirowska, Anna Banaś, Anna Skuza, Marta Krzysztofik, Aneta Myszk

karolina.jasiejko1@gmail.com

Jagiellonian University Medical College

**Trustee of the paper:** dr hab. Jolanta Goździk

**Introduction:** Patients undergoing radio-chemotherapy and hemopoietic stem cell transplantation (HSCT) are at increased risk of developing mucositis. Over 80% of them consider this complication as burdensome and report significant loss of life quality, with pain and trouble with eating and speaking. Damaged mucus membranes not only heighten the risk of infections, but also cause prolonged parenteral feeding, which increases the risk of both metabolic complications and prolonged hospitalization time. Despite its prevalence there is not yet any consensus regarding the prophylaxis and treatment of mucositis.

**Aim of the study:** This paper aims to compare 3 schemes of conduct for their effectiveness in the treatment of mucositis after HSCT.

**Material and methods:** 21 patients (aged 1,1-17,1 yo) undergoing HSCT were randomly assigned to one of three groups of conduct: group 1: rinsing of mouth with calcium and phosphorus ions solutions (min 4x/day); group 2: rinsing of mouth with 0,9% NaCl solution (min 4x/day); group 3: rinsing of mouth with chlorhexidine solution (2x/day) and 0,9% NaCl (min 2x/day). During the period of conditioning, transplantation and reconstruction of haematopoiesis, data regarding objective symptoms and their severity (according to WHO guidelines) was collected by nurses. Subjective symptoms were expressed on the scale from 1 to 10 by patients and their guardians.

**Results:** The analysis showed no statistically significant differences between three analysed groups in case of most of the investigated symptoms. The prevalence and intensity of diarrhoea were the most severe in group 3 (av. 741ml/day). In this group patients suffered the most from stomach pain (med. 55p) and odynophagia (med. 73.5p) in spite of the highest usage of opioids (av. 6.7mg/kg). Taste sensation disorders (med. 77p) and salivation (med. 8p) were also the most expressed in group 3. During the trial, the correlation between the WHO mucositis scale and subjective symptoms severity was observed only with low intensity of symptoms.

**Conclusions:** Despite differences in price and experts' opinions, the three analysed solutions show similar effectiveness in the therapy of mucositis. In group 3 several symptoms affecting the quality of life were expressed with greater intensity. It is the only group that used solution with antiseptic properties (chlorhexidine), what allow for hypothesizing on how excessive usage of antiseptics may negatively affect mucosa regeneration, due to weakening of commensal microflora.

[262]

### **Attitudes towards vaccination among parents in Poland: preliminary results**

Magdalena Chazan, Paulina Matejczyk, Łukasz Dembiński<sup>3</sup>, Ewa Talarek<sup>2</sup>, Tomasz Sobierajski<sup>1</sup>, Aleksandra Banaszkiwicz<sup>3</sup>

polamatejczyk@gmail.com

<sup>1</sup> Institute of Applied Social Sciences, University of Warsaw

<sup>2</sup> Department of Children's Infectious Diseases, Medical University of Warsaw

<sup>3</sup> Department of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw Student's Research Association GEKON at Department of Pediatric Gastroenterology and Nutrition, Medical University of Warsaw

**Trustee of the paper:** Aleksandra Banaszkiwicz, MD PhD, Assoc Prof

**Introduction:** Despite the fact that in Poland vaccination is an obligation, the final decision is taken by the parent or legal guardian of the child. Regarding the fact that the percentage of unvaccinated children in Polish population is raising, we thought it particularly important to understand parents' attitude and opinions on vaccination. The better we know their motivation, the more effectively we will educate parents, gain their trust that will lead to improve vaccination coverage.

**Aim of the study:** The aim of the study is to assess parents' attitudes towards vaccination.

**Material and methods:** The survey was carried out using an anonymous questionnaire in two large Warsaw hospitals. The form containing 21 closed questions was divided into two parts - the first concerning demographic data and general views on vaccination - and the second, specifically concerning the respondents' children's vaccinations.

Respondents were asked, among other things, to assess the risk of developing certain infectious diseases and their attitudes towards vaccination. They were asked if they perceive vaccinations as an obligation or privilege, and assess trust towards their child's physicians. They were also asked to rate their knowledge on vaccination and provide the source of knowledge they rely on.

**Results:** 242 parents participated in the survey, 74.8% of them women. 80% of all respondents perceive vaccination as a privilege, while 20% perceive it as an obligation. Almost all respondents (97.5%) would agree to give the child an additional vaccine, if their child's health would depend on it, while 19.4% of respondents were ever advised by the doctor not to vaccinate the child. 82.2% of respondents have great confidence in their child's physician regarding the vaccinations proposed for him. 76.3% of parents evaluate their knowledge about vaccination as at least good, and the most frequently indicated source of knowledge about it is a doctor (83.9%).

**Conclusions:** Our research allowed us to pre-determine the attitude of Poles towards vaccination. Every fifth Pole feels forced to vaccinate. Most of respondents have deep confidence in their child' physician, which is also the main source of knowledge about vaccinations.

[263]

#### **Clinical characteristics of girls suspected of hiperandrogenism/PCOS**

Barbara Kołakowska, Eryka Softys, Agata Wilanowska, Monika Milczarek MD  
barbara.e.kolakowska@gmail.com

Medical University of Warsaw / Department of Endocrinology and Pediatrics

**Trustee of the paper:** Anna Kucharska MD, PhD

**Introduction:** The Polycystic Ovary Syndrome (PCOS) is the most common endocrinopathy in the reproductive age. Early diagnosis can minimize symptoms and prevent serious complications. In women we can diagnose PCOS using Rotterdam criteria: irregular menses, hyperandrogenism and polycystic ovarian morphology (PCOM). Patients should meet 2 of the 3 criteria. These criteria seems to be insufficient in adolescents.

**Aim of the study:** The aim of this study was to assess clinical characteristics in hyperandrogenic girls suspected of PCOS.

**Material and methods:** For the study we enrolled 43 girls, hospitalized in Department of Endocrinology and Pediatrics, between July 2016 and July 2018, with initial diagnosis hyperandrogenism, hirsutism, menstrual disorders and suspicion of PCOS .Data was obtained retrospectively. We analyzed medical history, clinical symptoms, laboratory tests and pelvic ultrasound.

**Results:** Mean age in enrolled patients was 15 9/12 y/o ( $\pm 1,43$ ; range 11 11/12 to 17 7/12 y/o) and mean age of menarche was 12 y/o ( $\pm 1,26$ ; range 10 to 16 y/o). Within girls, suspected of ovarian hyperandrogenism, the most common symptoms were: menstrual disorders (72%), hirsutism (44%), overweight (40% of which 41% were obese), acne (0,02%). None of the patients presented alopecia or change of voice color. In Polish girls with hirsutism, excess hair appeared mainly on the linea alba (79%), above the upper lip (63%) and on the inner surface of the thighs (42%). Based on the latest guidelines, we were able to recognize adolescent PCOS (APCOS) in 3/43 (0,07%) of patients. Comparatively, 26/43 (60%) of girls could be diagnosed with PCOS according to the Rotterdam criteria.

**Conclusions:** In adolescents features of hyperandrogenism can be transitional due to pubertal period. Co-occurrence of symptoms increases risk of hyperandrogenemia. Diagnostics of APCOS require proper criteria to avoid overdiagnosis.

[264]

### **Sepsis as a complication of varicella in children**

Martyna Szewczyk, Klaudia Nowicka  
szewczyk.martyna05@gmail.com

The Student Scientific Circle of the Department of Children's Infectious Diseases

**Trustee of the paper:** dr n. med. Ewa Talarek

**Introduction:** Varicella (chickenpox) is a highly communicable disease which typically affects children 2-8 years of age. It is usually a mild disease, but can cause complications requiring hospitalization and in rare instances, can ever be fatal. The one of the most dangerous complications is sepsis.

**Aim of the study:** The aims of the study were to determine the incidence rate of hospitalization for patients with sepsis related to varicella and to describe these patients.

**Material and methods:** We analyzed medical records of children with sepsis related to varicella hospitalized in Department of Children's Infectious Diseases, Medical University of Warsaw, from 01.01.2015 to 31.12.2017.

The sepsis was diagnosed based on clinical symptoms and laboratory tests.

**Results:** Of the study period 473 children with varicella were hospitalized, in 8,2% of them (39; 17 boys and 22 girls) sepsis was diagnosed. The mean age was 3 years 6 months (range: 5 months - 10 years 9 months). None of those patients was immunocompromised. The duration of hospitalization ranged from 6 to 15 days (median 9 days). Admission occurred at different times after the first symptoms of varicella, ranging from 1 to 7 days (median 4 days). The household exposure to varicella was confirmed in 15 cases.

Patients presented other complications (some of them more than one): bacterial skin infection (17 patients; 43,6%), scarlet fever (11 patients; 28%), pneumonia (3 patients; 7,7%), acute otitis media (4 patients; 10,3%) and purulent conjunctivitis (3 patients; 7,7%).

The following laboratory results were obtained: CRP mean 111,7 mg/l (median 71 mg/l), PCT mean 18,02 ng/ml (median 4,83 ng/ml), WBC mean 13,7 K/ $\mu$ l (median 13,4 K/ $\mu$ l).

Bacteremia was confirmed only in 7 cases (*S. pyogenes* and *S. hominis* in 3 cases respectively and *S. aureus* in 1 case). Among 17 patients with sepsis as a result of bacterial superinfection of varicella skin lesions a causative agent was identified in 8 cases (*S. aureus* in 5 cases, *S. pyogenes* in 2 cases, *S. epidermidis* in 1 case) All 39 patients recovered.

**Conclusions:** Varicella may be severely complicated in otherwise healthy children. Sepsis related to varicella most commonly develops as a result of bacterial superinfection of skin lesions.

[265]

### **Left ventricular volumes and function is affected by the cardiac fibrosis in patients with Becker and Duchenne muscular dystrophies in CMR**

Meyer-Szary Jarosław, Bazgier Magdalena, Fijałkowska Jadwiga, Dorniak Karolina, Wierzba Jolanta, Kwiatkowska Joanna  
magda.bazgier@gmail.com

Department of Paediatric Cardiology and Congenital Heart Diseases, Medical University of Gdansk, Gdansk, Poland; Department of Noninvasive Cardiac Diagnostic, Medical University of Gdansk, Gdansk, Poland; 2<sup>nd</sup> Department of radiology, medical university

**Introduction:** Duchene Muscular Dystrophy (DMD) and Becker Muscular Dystrophy (BMD) are chromosome X-linked dystrophinopathies affecting skeletal, cardiac and respiratory muscles. Cardiac dysfunction is among leading causes of morbidity and mortality in this group of patients. Despite Cardiovascular Magnetic Resonance (CMR) is considered a useful tool for evaluation of cardiac function and fibrosis, in DMD and BMD patients the data is still scarce.

**Aim of the study:** The aim of the study was to examine the impact of cardiac fibrosis on left ventricular volumes and function and its correlation with age in patients with BMD and DMD.

**Material and methods:** Of 79 patients with genetically confirmed diagnosis, 41 (aged  $12.0 \pm 3.1$  years, DMD 88%, n=36, BMD 12%, n=5) were qualified and successfully examined using CMR. Disqualification criteria was age < 6 years, autism or metal implants. CMR protocol included LV dimensions, stroke volume (LVSV), ejection fraction (LVEF) measurement in short axis, and late gadolinium enhancement (LGE; 10–15 minutes after contrast injection) to provide fibrosis assessment. The obtained values were indexed to BSA and normalized (z-score)

according to reference data published by Kawel-Boehm. Data is presented as mean  $\pm$  standard deviation or median (range) dependently on the distribution. Chi-square test, Pearson and Spearman correlations were employed.

**Results:** Left Ventricle End Diastolic Volume index (LVEDVi) was  $63.6 \pm 17.4$  ml/m<sup>2</sup> and was abnormal in 24% (n=10). Left Ventricle End Systolic Volume index (LVESVi) was  $30.0 \pm 9.0$  ml/m<sup>2</sup>, abnormally high in 12% (n=50) and abnormally low in 2% (n=1). Left Ventricle Mass index (LVMI) was  $54.0 \pm 12.2$  g/m<sup>2</sup> and normal in 93% of patients (n=37). LGE was assessed in 39 patients and was positive in 38% (n=15), most often in mid-anterolateral (38%, n=15), basal-anterolateral (36%, n=14), basal-inferolateral (31%, n=12), mid-inferolateral (26%, n=10) and apical-lateral segments (18%, n=7). LVSVi was  $37.0 \pm 10.8$  ml/m<sup>2</sup>, abnormally low in 39% of cases (n=16), and LVEF was  $58\% \pm 6.4\%$ , low in 44%, n=18. Older patients had significantly lower LVEDVi-z (r=-0.41, p=0.008) and LVSVi-z (r=-0.50, p<0.001 respectively). LGE is significantly more prevalent in older patients (p<0.001). Patients with positive LGE had significantly lower LVSVi-z (p=0.022) and LVEF (p<0.001).

**Conclusions:** Fibrosis advances with age and DMD/BMD progression, causing worsening of cardiac function by limiting LVEDV and LVSV. The effect of pharmacotherapy is subject of a separate study.

[266]

#### **Efficacy and Safety of Imatinib in Paediatric CML**

Cynthia Smeding, Aleksandra Szydło, Krzysztof Pieluszczyk, Katarzyna Grzeszkiewicz MD

cynthia.smeding@gmail.com

Medical University of Warsaw

**Trustee of the paper:** Katarzyna Pawelec MD PhD

**Introduction:** Chronic myeloid leukaemia (CML) rarely affects the pediatric population and has an incidence of 0.06-0.12/100 000 children per year. Imatinib, a first-generation tyrosine kinase inhibitor, is proposed as the first-line therapy. The dire clinical course of pediatric CML is further exacerbated by adverse effects of long-term imatinib therapy.

**Aim of the study:** To assess the safety of long-term imatinib administration in terms of adverse effects as well as to estimate the probability of progression to advanced stages.

**Material and methods:** Our cohort comprised 14 CML patients (males, n=12; females, n=2) who were treated with imatinib between July 2010 and September 2018. Subjects were divided into pre-pubertal (n=7) and intra-pubertal groups (n=7). The European Leukemia Net standard milestones of response criteria were used to evaluate therapeutic effectiveness. Complete hematological remission (CHR) was assigned within the first 3 months of therapy whereas partial and complete cytogenetic responses (PCyR and CCyR, respectively) were set at the 12th month of treatment. Major molecular response (MMR) was set to be achieved by the 18th month of treatment.

**Results:** The median age upon diagnosis was 9.7 years (range: 1.3-16.9 years). At admission, 13 patients were diagnosed to be in the chronic phase whereas one patient was in the accelerated phase of CML. The most commonly encountered initial dose of imatinib was 300 mg/m<sup>2</sup> (n=12). The maximum dose encountered during treatment was 500 mg/m<sup>2</sup> (n=2). Throughout therapy, the dose had to be modified in a total of 9 patients. An increased dose was applied to 3 patients due to lack of a satisfactory response. A reduced dose was encountered in 6 patients due to symptoms of toxicity; bone pain (n=6), vomiting (n=5), neutropenia (n=1), leukopenia (n=1), and headache (n=1). CHR and PCyR were achieved in all patients. CCR was achieved in 7 patients. MMR was achieved in 6 patients. Resistance to imatinib was encountered in 2 patients, one each from the pre-pubertal and intra-pubertal groups, respectively. Two patients underwent haematopoietic stem cell transplantation due to unsatisfactory response to imatinib.

**Conclusions:** Imatinib is effective in treating newly diagnosed paediatric CML and limits progression to advanced stages, however, quality of life still needs to be optimised and long-term adverse effects require further investigation.

[267]

#### **Study of influence of antenatal Zinc deficiency on adolescents' health**

Anna Grechanaja, Olga Shtikova, Tatiana Legonkova

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof.Tatiana Legonkova, MD, PhD

**Introduction:** Nutritional elements deficiency in children is known to be a high risk factor for developmental disorders; deficiency of essential elements and Zinc (Zn) being one of them and competing in importance with iron and iodine only. The WHO recognized the deficiency of these micronutrients as the most important problem in social and medical terms as 48% world population has a zinc deficiency. However, there are few studies reflecting long-term effects in children.

**Aim of the study:** The aim of the study was to assess zinc deficiency level in children born from mothers with different zinc level during pregnancy.

**Material and methods:** We were involved into monitoring of 104 children divided into two groups: the main group had 66 children with zinc deficiency (less 13 micromole/liter), the control group – 38 children with normal zinc level in blood serum (more 13 micromole/liter). In both groups children were similar in age, sex, social status, and living condition. Clinical, laboratorial, biochemical studies, bioelectrical impedance analysis, ultrasound examination of abdominal cavity organs, survey of children and their parents to determine social status and nutrition were performed

**Results:** The study disclosed 81% children born by mothers with serum Zn deficiency during pregnancy, Zn deficiency determined at birth and remained in adolescence. There was positive correlation between the Zn level in blood serum of mother and child: mother during pregnancy and newborn ( $r=0,52$ ;  $p<0,05$ ;  $OR=20,9$ ; 95%  $DI=4,59-95,5$ ;  $RR= 8,1$ ;  $AR=57\%$ ), mother and secondary school age child ( $r=0,22$ ,  $p<0,05$ ;  $OR=7,59$ , 95%  $DI=2,76-20,8$ ;  $RR= 2,7$ ;  $AR=47\%$ ), newborn and teenager ( $r=0,29$ ;  $p<0,05$ ;  $OR=61,2$ , 95%  $DI=13,1-284,3$ ;  $RR= 3,3$ ;  $AR=67\%$ ). Monitoring children from birth, at the first year of life and in schoolchildren with Zn deficiency had more low growth and disharmonies development (in comparison with those that had a sufficient Zn level) and positive correlation of Zn level with leaner growth ( $r=0,47$ ;  $p<0,05$ ). Schoolchildren with Zn deficiency more often had musculoskeletal disorders (73 and 45%), gastrointestinal tract (62 and 42%), allergy (59 and 37%, accordingly) and also decrease in the body resistance (62% and 34%) than their coeval with normal Zn level.

**Conclusions:** Children born from mothers with Zn deficiency have Zn deficiency at birth that remains in later life and influence on functioning of body systems. Zn deficiency affects growth and harmonious physical development, body resistance, contributes to pathologies of musculoskeletal, gastrointestinal system and allergy.

[268]

#### **Headache in children and adolescents: prevalence and features**

Anna Mikheeva, Nikita Maslov, Vladimir V. Bekezin

amikheevag@mail.ru

Smolensk State Medical University

**Trustee of the paper:** Prof. Vladimir V. Bekezin, MD, PhD

**Introduction:** Headache is one of the most common symptoms that can disturb people, not only adults but also children and adolescents. It can be both primary and secondary. And if the secondary headache is a consequence of another disease; the primary doesn't depend on anything and it is a separate subject for study.

**Aim of the study:** The aim of our study was to evaluate the prevalence of headache among children in Smolensk, its features and impact on daily activity and quality of life.

**Material and methods:** Children and adolescents (age: 10 – 18) were interviewed. HIT-6 and PedMIDAS questionnaires were used for the survey. All results were processed statistically.

**Results:** 122 children were interviewed (including 26 boys and 96 girls). Children noted the appearance of headaches in the age of 14 most often. At the same time, 21.3% (26 people) of respondents claim that they don't suffer from headaches. In addition, we can't say that the headache is primary in 26.2% of cases (32 people). Endocrine pathologies, craniocerebral traumas, vegetative-vascular dystonia caused headache most often.

Among children with primary headache debut age varies from 6 to 15 years (average -12.1). Girls predominate in this group (84.6% of respondents). The most common type of primary headaches were tension headaches (84.8% of cases). Children rated their pain on the VAS by 4-5 points most often (50% of cases). The most frequent concomitant symptoms: vertigo (53.8% of cases), lacrimation (14.4% of cases). At the same time, 30.7% of respondents with primary headache didn't notice any associated symptoms. The most frequent localization of headache is the frontal-temporal area (46.15% of cases). Fatigue (84.6%), lack of sleep (65.3%), weather changes (46.15%), stress (38.4%) were most frequent provoking factors. The results of PedMIDAS ranged from 0 to 51 (average – 12,54); HIT-6 – from 48 to 69 (average - 59).

**Conclusions:** Among all the interviewed children 78.7% suffer from headaches. Primary headaches can be expected in 56,2% of the respondents. In girls headaches occurs significantly more often than in boys. The strength of pain, as a rule, increases with age. It is necessary to understand that headache affects daily activity

of the children (19.7% - heavy impact) and quality of life (in 42.6% of cases - heavy impact). That's why headache in children is related both with Pediatrics and Public Health.

[269]

**State of cerebral hemodynamics in teenagers with autonomic dysfunction according to reoencephalography**

Nikoletta Buzgan

nikoletka1@rambler.ru

Smolensk State Medical University

**Trustee of the paper:** Vladimir Bekesin, MD, PhD

**Introduction:** Autonomic dysfunction is a very prevalent health problem among teenagers. Blood pressure instability is one of numerous symptoms of autonomic dysfunction caused by dysregulation of vascular tone. Reoencephalography allows to evaluate indirectly state of cerebral hemodynamics, vascular tone and elasticity of cerebral vessels.

**Aim of the study:** The aim of the study was to detect and compare cerebral hemodynamic features in teenagers with labile hypertension and with normal arterial pressure against a background of autonomic dysfunction.

**Material and methods:** Peculiarities of cerebral hemodynamic were investigated according to reoencephalography among teenagers in the age of 12-17 with autonomic dysfunction. There were examined 62 patients divided into two groups: group 1 included 30 (48%) teenagers with labile hypertension, group 2 (control) - 32 (52%) teenagers with normal arterial pressure (according to data of ambulatory blood pressure monitoring).

**Results:** In group 1 blood filling in the a. carotis pool was decreased in 78,2%, in the control group – 63.3% ( $p=0.023$ ). The value of blood filling with normal amplitude in group 1 was 21,8 %, in the control group – 33,3% ( $p=0.046$ ).

In group 1 blood filling in the a. vertebralis pool was decreased in 50,0%, in the control group – 50,0% and without significant differences. The value of blood filling with normal amplitude in group 1 was 40,6%, and in the control group – 33,3% ( $p=0.09$ ). And there was increasing amplitude of blood filling both in group 1 – 9,4 % and in the control group – 16,7% ( $p=0.061$ ).

There were changes in state of small cerebral vessels in both groups. In group 1 normal vessel tone was in 62,5% teenagers, and in the control group – 50% ( $p=0.068$ ). Dystonic changes in vessel tone in group 1 was in 28,1% cases, and in the control group – 46,7% ( $p=0.028$ ). Increasing vessel tone in group 1 was in 9,4% teenagers, while in the control group – 3,3% ( $p=0.047$ ).

**Conclusions:** The study did not reveal any significant differences according to reoencephalography datas in comparison groups. There is significant tendency in both groups to decrease vessel tone in a. carotis pool and to increase vessel tone in a. vertebralis pool. Small cerebral arteries in autonomic dysfunction is already affected, so there is some tendency in labile arterial hypertension to stabilize vessel tone at early stages.

# Pharmacy

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 119, Library – CBI

**Jury:**

prof. dr hab. n. farm. Anna Kiss  
prof. dr hab. n. med. Małgorzata Kozłowska-Wojciechowska  
prof. dr hab. Grzegorz Nałęcz-Jawecki  
prof. dr hab. n. farm. Grażyna Nowicka  
prof. dr hab. n. farm. Agnieszka Pietrosiuk  
prof. dr hab. n. farm. Jadwiga Turło  
prof. dr hab. n. farm. Maciej Andrzej Małecki  
dr hab. n. farm. Magdalena Bujalska-Zadrozny  
dr hab. n. farm. Agnieszka Bazyłko  
dr hab. n. farm. Joanna Kolmas  
dr hab. n. farm. Piotr Luliński  
dr hab. n. farm. Tomasz Pawiński  
dr hab. n. farm. Dariusz Maciej Pisklak  
dr n. mat. Justyna Kurkowiak

**Coordinators:**

Rafał Guzek  
Kamil Koronowski

**Scientific Patronage:**

Polskie Towarzystwo Farmaceutyczne  
Polskie Stowarzyszenie Farmaceutów Onkologicznych  
Instytut Farmaceutyczny  
Farmacja.net  
Polskie Towarzystwo Studentów Farmacji



POLSKIE TOWARZYSTWO  
STUDENTÓW FARMACJI



INSTYTUT  
FARMACEUTYCZNY

GRUPA ■■■■  
farmacja.net

PFO

[270]

**Applying molecularly imprinted polymer as a recognition layer in chemosensor selective towards Aripiprazole.**

Marianna Gajda<sup>1</sup>, Maciej Cieplak<sup>1</sup>, Renata Rybakiewicz<sup>2</sup>, Teresa Żofek<sup>3</sup>, Dorota Maciejewska<sup>3</sup>, Edyta Gilant<sup>4</sup>, Piotr Rudzki<sup>4</sup>, Andrzej Kutner<sup>4</sup>, Jyoti<sup>1,2</sup>, Paulina Wilczyńska-Materska<sup>1</sup>, Włodzimierz Kutner<sup>1</sup>, Krzysztof Noworyta<sup>1</sup>

marianna.gajda012@gmail.com

<sup>1</sup> Physical Chemistry Institute Polish Academy of Science, Kasprzaka 44/52, 01-224 Warsaw

<sup>2</sup> Department of Mathematics and natural science, School of science, Kardynał Stefan Wyszyński University, Wóycickiego 1/3, 01-938 Warsaw

<sup>3</sup> Department of Organic Chemistry, Faculty of Pharmacy Medical University of Warsaw, Banacha 1, 02-097 Warsaw

<sup>4</sup> Institution of Pharmacokinetics Pharmaceutical Institute, Rydygiera 8, 01-793 Warsaw

**Introduction:** Aripiprazole is a partial agonist of dopaminergic receptor D2, serotonergic receptor 5HT1 and antagonist of serotonergic receptor 5HT2, used to cure schizophrenia and bipolar affective disorder. Currently to determine a level of the active substance in blood we use the liquid chromatography with spectroscopic detection or capillary electrophoresis. Those methods show a number of disadvantages. They are expensive and require specialistic apparatus and qualified personnel to operate it and analyze the results. Furthermore, it is hard to lighten the chromatographic apparatus. HPLC method requires very high purity of solvents and patterns which are very expensive. That is why there is a need to develop a new selective and reliable method to determine medicines in a biological matrix.

**Aim of the study:** The aim of the study was to design the selective chemosensor for Aripiprazole using the molecularly imprinted polymer (MIP) as a recognizing layer.

**Material and methods:** The key task in the development of the MIP sensor is choosing correctly functional monomers. In this paper, we applied carbazole derivatives which electropolymerized in low potentials. Thanks to this we avoided the risk of simultaneous oxidation of Aripiprazole during the preparation of the polymer. In order to develop selective chemosensor, we have carried out chemical quantum calculations, which allowed to choose the monomers creating the strongest complex with the analyte and the right composition of the polymerization mixture. The mixture was used to deposit the polymer film on the platinum electrode, using electropolymerization. Also, extraction of the template was established.

**Results:** Deposited films were characterized at each step of the synthesis. Electrodes covered with MIP film were used to selectively determine Aripiprazole using electrochemical signal transduction.

**Conclusions:** Analytical parameters of the obtained chemosensor allow its use in the range of concentrations expected in bodily fluids of patients when it is administered orally. Preliminary testing of the sensor in the presence of interfering compounds allows for the conclusion of its good selectivity.

[271]

**Sumatriptan effects on morphine-induced antinociceptive tolerance and physical dependence: The role of nitric oxide**

Nazanin Rajai, Mahsa Hassanipour, Nastaran Rahimi, Iman Fatemi, Mitra Jalali, Reihaneh Akbarian, Ali Shahabaddini, Amirhossein Nazari, Hossein Amini-Khoei, Ahmadsreza Dehpour

nazanin.rajai@gmail.com

Department of Pharmacology, School of Medicine, Tehran University of Medical Sciences, Tehran, Iran

**Introduction:** The long-term administration of morphine and related opioids remains limited in pain management due to its adverse effects such as tolerance and dependence phenomena. The majority of evidence verified the involvement of nitric oxide (NO) pathway on morphine-induced tolerance and physical dependence. Sumatriptan, a 5HT (5-hydroxytryptamine) 1B/1D receptor agonist, showed neuroprotection in different studies. Growing body of evidence presumed NO-dependent pathway as one of the probable mechanisms involved in sumatriptan beneficial effects.

**Aim of the study:** The aim of the present study was to investigate the effect of sumatriptan on morphine-induced antinociceptive tolerance and physical dependence. We also investigated the possible role of nitric oxide (NO) on sumatriptan effects.

**Material and methods:** Tolerance was induced by morphine injection (50, 50, 75 mg/kg) three times daily for five days. Antinociceptive latency after acute and chronic treatment with sumatriptan (0.001, 0.01, 0.1 and 1

mg/kg) was measured by hot plate test in morphine-dependent animals. To investigate the possible involvement of NO, different isoforms of nitric oxide synthase (NOS) inhibitors including L-NAME, aminoguanidine and 7-nitroindazole were co-administered with sumatriptan. Nitrite level in mice hippocampus was quantified by Griess method. To examine the role of sumatriptan on physical dependence, three parameters of withdrawal signs were recorded after injection of naloxone (4 mg/kg).

**Results:** Acute treatment with sumatriptan (0.01, 0.1 and 1 mg/kg) attenuated the antinociceptive tolerance ( $P < 0.001$ ). Chronic injection of sumatriptan (0.001, 0.01 and 0.1 mg/kg), as well, decreased the antinociceptive tolerance ( $P < 0.001$ ). Moreover, co-administration of NOS inhibitors prevented the effects of sumatriptan. Sumatriptan significantly increased the level of nitrite only after chronic administration. Sumatriptan administration showed no alteration in naloxone-precipitated withdrawal signs.

**Conclusions:** Acute and chronic administration of sumatriptan attenuated morphine antinociceptive tolerance; at least in chronic phase via nitrenergic pathway. Our data did not support beneficial effects of sumatriptan on morphine-induced physical dependence in mice.

[272]

#### **Determination of antioxidant potential and hepatoprotective effect of the Thymus mugodzharcicus and Artemisia sieversiana essential oil**

Aidos Bolatov, Kazbekova A.T., Shamenov Z., Adekenov, S.M.

bolatovaidos@gmail.com

JSC "Astana Medical University" / Department of General and Biological chemistry

**Trustee of the paper:** DCh T.S. Seitembetov

**Introduction:** The liver performs diverse functions that are essential for life. In the absence of reliable liver protective drugs, a large number of natural medicinal preparations are used for the treatment of liver diseases.

**Aim of the study:** Evaluate antioxidant activity (AOA) in vitro of the Thymus mugodzharcicus (TMEO) and Artemisia sieversiana (ASEO). Assess the impact of administration with ASEO and TMEO in male rats on hepatoprotective activity in vivo.

**Material and methods:** Plant materials were developed and provided by JSC "IRPH "Phytochemistry" (KZ).

For the present study FRAP, Total phenolic content (TPC) assay by FCR and DPPH free radical scavenging activity assays were used for the assessment of AOA of TMEO and ASEO.

Hepatoprotective activity was evaluated using acute hepatic injury model induced by CCl<sub>4</sub>. Fifty adult male rats were randomly divided into 5 groups of 10 animals each. Group I served as the control, group II rats were intoxicated with CCl<sub>4</sub> i.p. (1 ml/kg body weight CCl<sub>4</sub>/oil 1:1), group III rats received TMEO orally (50 mg/kg/day for 7 days) and CCl<sub>4</sub> i.p., group IV rats received ASEO and group V – Silymarin in same conditions. Biochemical parameters included ALT, AST, ALKP, TBIL and lipid peroxidation marker. Histopathological changes in the liver were assessed using H&E staining.

**Results:** The TPC of ASEO and TMEO was  $0,038 \pm 0,001$  mgEGA/ml and  $1,114 \pm 0,002$  mgEGA/ml respectively (EGA - equivalent of gallic acid). ASEO and TMEO absorbance of FRAP at 1000 µg/ml concentration was  $0,293 \pm 0,003$  and  $0,445 \pm 0,007$  respectively. In DPPH model the ASEO showed 8,65% inhibition, in contrast, the TMEO showed 27,56%.

Pre-treatment with ASEO and TMEO resulted in significant decreased enzyme markers, bilirubin levels, and lipid peroxidation marker compared with group II. Histological findings revealed that the hepatic tissue are less damaged in TMEO, compare with ASEO and Silymarin administrated rats. Comparing biochemical and histological analyzes TMEO showed more expressed hepatoprotective activity ( $p < 0,05$ ).

**Conclusions:** The TMEO showed significant hepatoprotective activity in CCl<sub>4</sub> induced acute liver damages. More expressed hepatoprotective activity of TMEO can be explained by AOA and synergetic effect of the phytophenolic present in the plant. The data can be used to develop new hepatoprotective drugs based on Thymus mugodzharcicus essential oil.

[273]

#### **Influence of various types of tea on clinical strains E.coli and E.faecalis**

Olga Matukhina, Daria Bezborodova, Olga Azovskova

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Olga Azovskova, PhD

**Introduction:** Tea is a multicomponent complex with various biological activities. There are publications studying effects of certain tea components on biochemical processes in the human body. However, it is still an open question how these components influence microscopic organisms.

**Aim of the study:** The aim of the study was to investigate in vitro an impact provided by water infusions of tea, on microbiological properties of clinical strains *E.coli*, *E.faecalis*.

**Material and methods:** Qualitative characteristics of microorganisms were studied with routine methods. Two groups of clinical strains *E.coli*, *E.faecalis* were extracted from the defecations and tested. Water infusions were prepared from different sorts of tea from several manufactures. Bacterial suspensions were prepared from daily cultures. Regulated inoculum was mixed with broth to get the result concentration of cells number  $1 \times 10^6$  colony-forming units/ml. 5 ml of bacterial suspension were added into 100  $\mu$ l of tea infusion, incubated in the thermostate for 18 hours. Antibiotic sensitivity of selected strains was tested. Suspensions were prepared from daily cultures, grown on Mueller-Hinton. Regulated inoculum was diluted in bullion to get the final concentration of cells number equal to  $1 \times 10^6$  CFU/ml. Experimental cultures were inserted into the water tea infusions, control cultures were inserted into saline solution. Both were kept by t 37oC during 2 and 24 hours. In 2 and 24 hours of incubation bacterial cultures were sowed on Mueller – Hilton agar.

**Results:** Under the influence of black tea components strains *E. coli* intensified their saccharolytic activity. By the second brewing of the tea some more expensive sorts diminished enzymatic bacteria activity. Some kinds of green tea normally reduced the growth intensity of *E. coli* and/or reduced its enzymatic activity. Some kinds of green tea completely suppressed the growth of *E. faecalis*. Elite black tea with vanilla provided the growth interruption in 80 % cases, the rest part of strains demonstrated inhibition of enzymatic properties. Both experimental and control cultures, incubated during 2 hours, weren't different in antibiotic sensitivity. In some cases there was some mucous, which we can interpret as a protective reaction. Zones of growth delay of bacteria reduced twice compared to control strains.

**Conclusions:** Depending on a sort of tea and compounds, water infusions can provide antimicrobial and/or modifying influence on cultural, morphological and saccharolytic properties of clinical strains *E. coli* и *E. faecalis*.

[274]

#### **Hospital initiation of Benzodiazepine Receptor Agonists in adults aged 65 years and over and their continuation in primary care: a retrospective cohort study**

Seán Coll, Mary E Walsh, Tom Fahey, Frank Moriarty

seancoll@rcsi.com

HRB Centre for Primary Care, Department of General Practice, RCSI

**Trustee of the paper:** Dr. Frank Moriarty PhD MPSI

**Introduction:** BZRAs (benzodiazepine receptor agonists) are regularly prescribed medicines for insomnia and anxiety, among others, but in older adults their benefits must always be balanced against their side effects, especially when used long-term. GPs may be reluctant to stop medicines initiated by another prescriber, particularly where there is a lack of information on the original prescription.

**Aim of the study:** To examine factors associated with continuation of hospital-initiated BZRAs among adults aged over 65.

**Material and methods:** This retrospective cohort study used data from 44 GP practices in Ireland between 2011 and 2016 on prescriptions and hospitalisations for patients aged  $\geq 65$  years. We identified BZRA initiations in hospital or primary care among patients with no BZRA prescription in the previous 12 months. For hospital-initiated BZRAs, we determined the proportion continued in primary care (prescribed within 90 days of discharge) and the time to discontinuation (defined as a BZRA-free period of  $\geq 135$  days after the duration of the last prescription). We used regression to look at factors, in particular presence of instructions relating to the BZRA on the hospital discharge message, associated with continuation and time to discontinuation.

**Results:** There were 7,875 BZRA initiations during the study, and 5.3% were hospital-initiated. Almost 60% of these had some BZRA instructions (e.g. duration) on the discharge message. 41% (n=171) were continued in primary care, and lower age, being prescribed a Z-drug hypnotic or more medicines were associated with an increased risk of continuation. Of these 171, in 102 cases (59.6%) the BZRA was discontinued during follow-up. Presence of instructions was positively associated with likelihood of discontinuation (hazard ratio 1.63, 95% CI 1.08-2.45).

**Conclusions:** These results show that communicating instructions to GPs after hospital discharge may be important in avoiding long-term BZRA use. Carefully maintained hospital discharge records will play a key role in providing seamless transitions of care and ensuring the continued safety of vulnerable patient groups.

[275]

**Metabolic fingerprinting may be useful in prediction of rivaroxaban efficiency in lysing of a thrombus in the left atrial appendage**

M. Jaracz, R. Piotrowski, P. Kuřakowski, J. Giebuřtowicz  
martynaa04@gmail.com

Department of Bioanalysis and Drugs Analysis, Faculty of Pharmacy, Medical University of Warsaw, Warsaw,  
Department of Cardiology, Postgraduate Medical School, Grochowski Hospital, Warsaw, Poland

**Trustee of the paper:** dr hab. n. farm. Joanna Giebuřtowicz

**Introduction:** Rivaroxaban is a direct factor Xa inhibitor used once a day for prevention of thrombotic events in patients with atrial fibrillation (AF). In patients with AF, a once a day regimen is recommended for the prevention of strokes. However, in a small proportion of subjects thrombus in the left atrial appendage (LAA) is present despite this treatment. Our recent study showed that rivaroxaban 15 mg twice daily seems to be safe and may dissolve LAA thrombus in some patients when standard rivaroxaban therapy is ineffective.

**Aim of the study:** To use metabolic fingerprinting to detect patients in whom the increasing rivaroxaban dose resulted in persisting of thrombus in LAA despite therapeutic drug range.

**Material and methods:** Plasma was collected from 15 patients suffering from AF with thrombus in LAA treated with single 20 mg daily dose of rivaroxaban for 8 weeks without the effect. Then the patients were treated with the increased dose of the drug (2 x 15 mg). As a result thrombus was lysed in 7 (Group A) and persisted in 8 subjects (Group B). Metabolomic analysis was made using liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) using HILIC (Hydrophilic interaction liquid chromatography) column in the positive ionization mode.

**Results:** Metabolic fingerprinting allowed to distinguish patients that would respond and not to anticoagulant therapy. We used both unsupervised (ANOVA, principal component analysis) and supervised analysis (Partial Least Squares Discriminant Analysis, goodness of prediction (Q<sup>2</sup>) = 0.8). The most significant ion in the model was m/z 190.107 and 214.118.

**Conclusions:** Our preliminary study shown that metabolomics fingerprinting can allow to predict the effect of increased daily dose of rivaroxaban on thrombus in LAA. Larger study is needed to build the reliable predictive model. The knowledge that the increasing of the dose would have no benefits will save money, time and bring the therapeutic effects due to changed therapy much faster and will avoid unnecessary increased risk of bleeding.

[276]

**Synthesis of the new renin inhibitors containing modified pseudopeptide units. Investigation of inhibitory activity and enzymatic stability**

Filip Charuk, Artur Wierzbowski, Iwona Winiecka, Paweł Jaworski  
filip.charuk@onet.pl

Department of Drug Chemistry, Medical University of Warsaw, Banacha 1, 02 – 097 Warsaw, Poland

**Trustee of the paper:** Filip Charuk

**Introduction:** The renin-angiotensin-aldosterone (RAA) system plays an essential role in the regulation of normal blood pressure. Aliskiren is the only one renin inhibitor used. RAA new opportunity of blocking this system is using renin inhibitors. Obtaining a new generation of renin inhibitors with high activity and improved bioavailability might be an alternative to medicines used now a days.

**Aim of the study:** The main aim of this work is synthesis of four potential renin inhibitors with pseudo-peptide structure based on the peptide fragment 8-11 of human angiotensinogen. Inhibiting activity will be checked with in-vitro using renin and her substrate. The stability of new inhibitors will be checked (resistance to  $\alpha$ -chymotripsin). Our aim is also to develop NO determination by spectrofluorimeter method from pseudo-peptide structure of 2 renin inhibitors.

**Material and methods:** The structure of new renin inhibitors was molecularly modeled based on 8-11 fragment of human angiotensinogen. Pseudopeptides were synthesized according to the Maibaum protocol, next the

peptides were synthesized by the (DCC/HOBt) method of fragment condensation, through multi-step synthesis. The first stage will result in obtaining a receive four potential renin inhibitors:

two pseudopeptides derivatives containing 4-amino-3-hydroxy-5-methylhexanoic acid (AHMHA)

two pseudopeptides derivatives containing Boc- $\beta$ -hydroxyester N- $\omega$ -Nitro-L-arginine (AHGHA)

All of the semi-final product and final product will be purified using column chromatography, and their structure will be confirmed by the spectroscopy method and homogeneity will be checked by TLC and HPLC method. The obtained NO, from 2 renin inhibitors, in reaction with 4,5-diaminofluorescein gives the product quantitative, which will be spectrofluorimetrically determined.

**Results:** Obtaining renin inhibitors with high activity, stability and bioavailability. Improvement of bioavailability by increasing the stability of areas susceptible to proteolysing. Placing fragments in the molecule, capable to increasing an interaction between enzyme and inhibitor, allowed to increase activity.

**Conclusions:** From the two new renin inhibitor, containing modified arginine analogs, expected a hybrid mechanism of action. In addition to the renin inhibitory action it is believed, that they will be the source of nitric oxide.

[277]

### **Astrocytes and neuroblastoma cellular models in neuroprotective drugs screening procedure**

Anna Górna<sup>1</sup>, Katarzyna Klas<sup>1</sup>, Paulina Koczurkiewicz<sup>1</sup>, Vittorio Canale<sup>2</sup>, Paweł Zajdel<sup>2</sup>, Elżbieta Pękała<sup>1</sup>  
ankagorna@gmail.com

<sup>1</sup> Department of Pharmaceutical Biochemistry, Faculty of Pharmacy, Jagiellonian University Medical College, Kraków

<sup>2</sup> Department of Pharmaceutical Chemistry, Faculty of Pharmacy, Jagiellonian University Medical College, Kraków

**Trustee of the paper:** Paulina Koczurkiewicz PhD

**Introduction:** Neurodegenerative diseases are one of the main challenges of today's medicine. Constantly increasing number of patients and lack of effective drugs indicate a need to design and develop a new disease modifying therapies. Multidirectional neuronal damage that leads to loss of their function is a typical feature of neurodegenerative diseases. Therefore, one of the important strategies is targeting the neuroprotective activity of new potential drug candidate. This approach allows to restore the physiological functions of damaged cells and improve the effectiveness of therapies. In vitro tests based on astrocytes and neuronal cells culture are an important step during the selection of neuroprotective compounds.

**Aim of the study:** The aim of the study was to evaluate the neuroprotective properties of new molecule - compound a using SHSY-5Y and astrocytes cells.

**Material and methods:** The analyze of cytotoxic and neuroprotective properties of new molecule was based on cell viability test (MTT) - a widely accepted assay to drug cytotoxicity screening.

Drug toxicity screening was examined by incubation of mouse astrocytes and SHSY-5Y with various concentrations of compound A (from 0.1 to 10  $\mu$ M). The counter-test was an intepiridine - a novel 5HT6 receptor antagonist in development for the treatment of patients with mild-moderate Alzheimer's disease (AD) and dementia with Lewy bodies with confirmed neuroprotective activity in in vitro tests.

Then, neuroprotective activity was evaluated by incubation the astrocytes and SHSY-5Y with potential neuroprotective substance (a and also intepiridine) for 5 hours and subsequent addition of cytotoxic agent – doxorubicine (DOX) – for next 3 hours.

**Results:** Drug toxicity screening showed that there were no significant effects of cell viability in the concentration of 0.25  $\mu$ M. The examination of neuroprotective activity proved that compd a in concentration of 0,25  $\mu$ M shows neuroprotective activity by preventing astrocytes and SHSY-5Y from DOX-induced cytotoxicity. Interestingly, no neuroprotective effect was observed for intepiridine. At least three independent experiments were performed.

**Conclusions:** Performed preliminary experiments demonstrated that both, astrocytes and neuroblastoma cells represents a good models in neuroprotective properties screening procedure. Their development may contribute to the effective search for new active compounds.

[278]

### **Anti-cancer properties of MIX2, a multi-component cocktail of European medicinal herbs**

Agata M. Gawel, Anna Stachurska, Damian Gaweł, Marlena Godlewska  
agata.gawel@yahoo.com

Centre of Postgraduate Medical Education , Warsaw , Poland

**Trustee of the paper:** Marlena Godlewska

**Introduction:** Presently, there is an urgent need for the development of novel strategies to fight malignancies. In addition to classic hallmarks of cancerogenesis, the phenomenon of multidrug resistance (MDR) is currently considered to be one of the most significant therapeutic barriers suppressing the effectiveness of drug therapy of malignant tumors. Therefore, it is essential to establish new strategies, which will not only deplete metastasis, proliferation or adhesion of cancer cells, but at the same time will sensitize tumors to the administrated chemotherapeutics.

**Aim of the study:** The aim of the study was to establish the effect of a combination of natural extracts (MIX2) prepared from fresh fruits of *Prunus spinosa*, *Crataegus monogyna*, *Sorbus aucuparia* and *Euonymus europaeus* on the classic hallmarks of cancer cells, and the expression and activity of the multidrug resistant P-gp glycoprotein.

**Material and methods:** Alcoholic extracts made from ripened fruits of: *Prunus spinosa* L. (blackthorn), *Crataegus monogyna* Jacq. (hawthorn), *Sorbus aucuparia* L. (rowan) and *Euonymus europaeus* L. (spindle) were used in the study. In the *in vitro* analyses, HeLa and T98G cell lines, and classic molecular biology methods including RT-qPCR, Western blot, flow cytometry and confocal imaging, were used. Additionally, migration, adhesion and proliferation assays were performed.

**Results:** It was found that MIX2 is not toxic, but at the same time significantly alters the metastasis, proliferation and adhesion of tumor cells. Furthermore, it was found that cells exposed to MIX2 exhibit a significantly reduced expression and activity of P-gp. Most importantly, in the performed *in vitro* assay, it was shown that MIX2 effectively sensitizes HeLa cells to doxorubicin (chemotherapeutic).

**Conclusions:** The results indicate that the tested MIX2 composition of extracts presents strong anti-cancer properties. We postulate that MIX2 may be considered as a safe and applicable tool in sustaining drug delivery therapies of malignancies.

[279]

### **Development method of IMPDH activity quantification in immunosuppressive therapy**

Kocur Arkadiusz, Marszałek Dorota, Pawiński Tomasz  
arkadiusz.kocur95@gmail.com

Department of Drug Chemistry, Medical University of Warsaw

**Trustee of the paper:** Marszalek Dorota, dr n. farm.

**Introduction:** Treatment with immunosuppressant drugs causes a number of side effects, often also non-immunological. This is due to the pharmacokinetics of these drugs - they are characterized by a narrow therapeutic index, so their concentration in the blood must be monitored. The one of main drug used in therapeutic schemes is mycophenolic acid (MPA), used as prodrug -mycophenolate mofetil- or as sodium salt of this acid. At the molecular level, it is a selective, non-competitive and reversible inhibitor of inosine monophosphate dehydrogenase (IMPDH) which catalyzes the conversion of inosine monophosphate (IMP) to xanthosine monophosphate (XMP). B and T cell lymphocytes, which are completely dependent on the level of this enzyme, when it is suppress by MPA cannot be multiplied, which brings the intended immunosuppressive effect.

**Aim of the study:** The aim of this study was all of development, validation and check test usefulness of quantification IMPDH activity and isolation of PMBC (peripheral blood mononuclear cell) from whole blood.

**Material and methods:** IMPDH activity was determined by quantitation of XMP in the plasma by high-performance liquid chromatography coupled with UV-VIS detection (HPLC-UV/VIS). The development of the method included: selection of analysis conditions, preparation of xanthine calibration curves - XMP degradation product, choosing parameters of lymphocytes (PMBC) isolation from whole blood. Method was checked at samples taken from patients before and after transplantation.

**Results:** The validation results of the method showed the linearity, precision and reproducibility of the above method. Additionally, the developed methodology of lymphocyte isolation turned out to be quite efficient and

XMP concentration was determinable. The examination of patient samples from the MUW's Transplantology Institute confirmed the usefulness of this method - a clear inhibition of IMPDH was observed after the standard dose of the drug.

**Conclusions:** Due to the high individual variability of IMPDH and non-linear pharmacokinetics of MPA the measurement of enzyme activity may be a useful tool to adjust the pharmacological regime directly to patient after solid organ transplantation for better individualization of the therapy. The results of these studies may contribute to the development of a PK / PD (pharmacokinetic-pharmacodynamic) model of therapeutic MPA concentration. Additionally, developed, efficient method of PMBC's isolation can be used in other pharmacological studies, because it is quite universal.

# PhD Basic & Preclinical Science

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 119, Library – CBI

**Jury:**

prof. dr hab. n. med. Katarzyna Koziak  
prof. dr hab. n. biol. Ewa Bartnik  
prof. dr hab. n. med. Paweł Włodarski  
dr n. o zdr. Piotr Samel-Kowalik

**Coordinators:**

Lucyna Iwanow  
Katarzyna Samelska

**Scientific Patronage:**

National Consultant in Medical Microbiology Prof. Katarzyna Dzierżanowska-Fangrat MD PhD  
Instytut Biochemii i Biofizyki Polskiej Akademii Nauk  
Polskie Towarzystwo Histochemików i Cytochemików



Pawińskiego 5a, 02-106 Warszawa



[280]

**Correlation between lemur tyrosine kinase 2 expression and the severity of tau pathology in Alzheimer's disease**

János Bencze<sup>1</sup> and Tibor Hortobágyi<sup>2,3,4</sup>

bencze.janos@med.unideb.hu

<sup>1</sup> Institute of Pathology, Faculty of Medicine, University of Debrecen, Debrecen, Hungary;

<sup>2</sup> Institute of Pathology, Faculty of Medicine, University of Szeged, Szeged, Hungary;

<sup>3</sup> MTA-DE Cerebrovascular and Neurodegenerative Research Group, Debrecen, Hungary;

<sup>4</sup> Department of Old Age Psychiatry, Institute of Psychiatry, Psychology & Neuroscience, King's College London, London, UK

**Trustee of the paper:** János Bencze

**Introduction:** Lemur tyrosine kinase 2 (LMTK2) has important role in physiological axonal transport, regulation of apoptosis and phosphorylation of microtubule-associated tau protein. Since, disruption of these mechanisms identified in the early stages of Alzheimer's disease (AD), LMTK2 may contribute to the AD pathogenesis.

**Aim of the study:** Our aim was to characterize the connection between tau pathology and LMTK2 expression in different neuropathological (Braak) stages of AD.

**Material and methods:** We selected formalin-fixed paraffin-embedded samples of 5-5 patients with stage I. and stage VI. AD pathology. The regions of interest were determined by neuropathologist (TH): middle frontal gyrus – spared in early stages of AD, and anterior hippocampus – affected in both stages. Immunohistochemical reaction was performed according to the manufacturer's protocol. After scanning the slides, we took 5 photos/cases at 400x magnification and performed the digital analysis with ImageJ software. We measured the mean grey value of the neurons and determined the mean and median intensity profiles for each case. Results were compared between Braak stage I. and Braak stage VI. groups. For statistical analysis we used SPSS 24 software.

**Results:** In the three regions which are affected by tau pathology - ant. hippocampus in stage I. and ant. hippocampus and middle frontal gyrus in stage VI. - we detected statistically significant alteration ( $p < 0,001$ ) in the mean and median LMTK2 greyscale intensities compared to the relatively spared middle frontal gyrus in Braak stage I. Among the LMTK2 intensities of the three tau-affected regions there were no statistically significant difference.

**Conclusions:** According to our results the expression of LMTK2 decreases with the progression of tau pathology. These findings suggest that the modification of LMTK2 protein level may be a future therapeutic target in Alzheimer's disease.

[281]

**PI3K/AKT/M-TOR signaling pathway changes with Creatine by the violation of circadian rhythm**

MSc student N.Papelishvili, PhD student M.Shengelia, Prof. N.Koshoridze, Assistant Prof.G.Burjanadze

nin.papelishvili95@gmail.com

Ivane Javakhishvili Tbilisi State University, Exact and natural sciences, faculty of Biology, Biochemistry department.

**Trustee of the paper:** Prof. N.Koshoridze

**Introduction:** Stress is a global issue of our society. Stress often generate adaptive behavioral and physiological responses that restore internal homeostasis. However, stressors that impact permanently and are especially severe can also lead to several negative consequences for human health, including major neurodegenerative disorder. Violated circadian rhythm is a well known stress factor and can cause changes in some metabolic pathways such as PI3K/AKT/mTOR signaling cascade. Accordingly, discovery of natural compounds that could help to prevent and cure adverse changes is very important. One of the recently discussed substances is creatine that is believed to have anti-stressor properties.

**Aim of the study:** The aim of our study was to study the PI3K/AKT/mTOR signaling pathway changes caused by damaged circadian rhythm and social isolation in hippocampal cells of rat brain, as well as therapeutic effects of creatine supplementation. PI3K/AKT/mTOR signaling pathway is known for its major role in protein biosynthesis. mTOR protein is involved in many processes such as transcription, cell survival and proliferation. In the last few years, special attention has been given to the role of mTOR signaling in mood modulation.

**Material and methods:** Experiments were conducted on male Wistar rats. Prior to the experiment, the animals were divided into three main groups:

- (1) Control group (G1) –kept in a common cage under natural conditions
- (2) Stressed group (G2) –maintained in individual cages in the dark for 30 days;
- (3) Cr-treated stressed (G3) –maintained in individual cages in the dark for 30 days and injected 140 mg/kg Cr during this period.

We studied activity of mitochondrial enzymes such as succinate dehydrogenase, aconitase, fumarase,  $\alpha$ -ketoglutarate dehydrogenase and creatine kinase by specific testing systems (ab102500, abcam, Massachusetts, USA). Expressions of total and phosphorylated AKT and mTOR proteins were assessed via western blot analysis.

**Results:** We have seen that activity of mitochondrial enzymes and amount of proteins like m-TOR and phosphorylated AKT decreases as a result of a violation of the natural circadian rhythm. These data show an authentic reduction in rat brain injected with creatine intraperitoneally.

**Conclusions:** The data indicate that mitochondrial enzymes activity is dependent on the activity of PI3K/AKT/mTOR signaling pathway. Creatine supplementation increases the amount of mTOR and phosphorylated AKT and this pathway activates protein synthesis and, in particular, mitochondrial enzymes synthesis.

[282]

### **The biological role of microvesicles (MV) in the progression of thyroid malignancies**

Małgorzata Grzanka<sup>1</sup>, Anna Stachurska<sup>2</sup>, Ewa Gajda<sup>1</sup>, Anna Adamiok-Ostrowska<sup>1</sup>, Barbara Czarnocka<sup>1</sup>  
mgrzanka@cmkp.edu.pl

<sup>1</sup> Department of Biochemistry and Molecular Biology, Centre of Postgraduate Medical Education, Warsaw,

<sup>2</sup> Department of Immunohematology, Centre of Postgraduate Medical Education, Warsaw

**Introduction:** Various cell types have the ability to release microvesicles (MV) under physiological and pathological conditions. These membrane fragments play important role in the intercellular communication and can affect tumor initiation, proliferation and metastasis. Qualitative and quantitative exact analysis of MVs have not been fully understood. A characteristic feature of all MVs is the presence of Caveolin-1 and tetraspanins (eg. CD82), the level of which is correlated with tumor progression and malignancy. In recent years, the study of MVs is of great interest, but so far there have been no studies on their impact on thyroid cancer

**Aim of the study:** Analysis of the effect of MVs released by thyroid cancer cell lines (CGTH, FTC-133, 8505c, TPC-1 and BcPAP) on migration, invasion, proliferation and expression of the tetraspanin CD82 of normal thyroid line cells (NTHY). The study of the quantity and size of MVs released by various types of thyroid cells and observations of their phagocytosis by monocytes

**Material and methods:** Normal thyroid cells were cultured with cancer cell MVs isolated by ExoQuick-TCTM-. Expression level of CD82 was evaluated by qRT-PCR and Western Blot. Proliferation was examined by BrdU test. Migration and invasion were analysed using chambers with and without matrigel. Qualitative and quantitative cytometric analysis of PS-exposing MVs was performed using the annexin V-FITC, and calibrated beads and analysed using a flow cytometer FACSCanto II. MVs were also visualized (3D model) under a confocal microscope (Zeiss). Measurements of MV phagocytosis by human monocytes were carried out using a flow cytometer and a confocal microscope

**Results:** The analysis revealed statistically significant increase of migration between NTHY cells and NTHY cultured with MVs from TPC-1 cells ( $p < 0,0001$ ). We observed also increase of invasion between NTHY and NTHY cells cultured with MVs from all of examined cell line except BcPAP. The Western blot analysis has also shown significant differences in expression of CD82 between cultures. There was no differences in proliferation and gene expression. We observed different MV size distribution depending on the cell line. Number of MVs per 1000 cells was from 17 (TPC-1 and NTHY) to 420 (CGTH). The XZ and YZ slices showed that the MVs were in fact internalized and surrounded by monocyte actin. The phagocytosis index was 13% for phagocytosis of MVs isolated from TPC-1 and 22% for FTC-133 cells

**Conclusions:** MVs can affect the development of thyroid cancer and the immunological response.

This project was supported by the National Science Center grant No. UMO–2016/21/B/NZ5/00063

[283]

### **Investigating proteinuria in the early period of alloxan-induced experimental diabetes**

Olenovych O.A.

olcka76@gmail.com

Higher State Educational Establishment of Ukraine «Bukovinian State Medical University» (Chernivtsi, Ukraine),  
Department of Clinical Immunology, Allergology and Endocrinology

**Introduction:** Proteinuria was considered to be the evidence of a long existing kidney damage with already irreversible changes, confirming the degree of glomerular destruction in case of diabetes mellitus (DM). Recent scientific information demands reassessment of the micro/macroalbuminuria meaning in the context of the pathogenesis of diabetic kidney disease (DKD).

**Aim of the study:** To clarify the peculiarities of proteinuria in the early period of experimental diabetes mellitus.

**Material and methods:** The experiments were carried out on 20 white non-linear mature male rats. Experimental modeling of DM was performed by the intraperitoneal administration of Alloxan monohydrate to 10 animals in diabetogenic dose of 160 mg/kg. On 11th day after the induction of the disease diabetic rats and 10 intact animals of the control group were loaded with water (in the volume of 5% of body weight), placed into individual cages for 2 hours to collect urine samples. Further analysis of urine samples, as well as blood plasma, collected at the moment of decapitation of animals, enabled the evaluation of kidney functional state by the clearance method.

**Results:** The signs of hyperfiltration, typical for the initial stages of DKD, have been observed on 11th day after the induction of alloxane diabetes – glomerular filtration rate (GFR) was found to be almost twice higher than that of the control (by 1,9 times ( $p < 0,01$ )).

The protein content in urine of experimental animals on 11th after administration of alloxan significantly 1,6-folds exceeded the control values ( $p < 0,001$ ). The significant augmentation of protein excretion – by 77,1% ( $p < 0,001$ ) – was observed as well, including that standardized in 100  $\mu$ L of glomerular filtrate – by 26,3% ( $p < 0,001$ ). Developing against the background of marked renal hyperfiltration, the total protein loss, observed in the early period of the experimental DM, resulted mainly from an increase of GFR with raised filtration loading of the nephron. Thereby, an overloading phenomenon develops for transport reabsorption systems in proximal tubules accompanied by their intactness.

**Conclusions:** Thus, glomerular hyperfiltration, revealed in the early period of alloxan-induced diabetes, is not only a marker, but also a risk factor for renal dysfunctions in case of hyperglycemia. The character and dynamics of proteinuria evidences mainly the functional origin of renal disorders on the 11th day of experimental diabetes in the absence of significant structural changes in the tubular apparatus of the kidneys.

[284]

### **The relationship between sperm apoptotic markers and seminal oxidative stress in men exposed to clinical or environmental thermogenic factors**

Marta Budzińska, Marzena Kamieniczna, Maciej Kurpisz, Monika Frączek

martabudzinski@gmail.com

Institute of Human Genetics, Polish Academy of Sciences, Poznan, Poland

**Trustee of the paper:** Monika Frączek

**Introduction:** Genital heat stress is considered to be a risk factor for male infertility. There are two possible processes involved in heat-induced germ cell damage such as apoptosis and oxidative stress.

**Aim of the study:** Evaluation of selected sperm apoptosis and oxidative stress parameters in semen of men exposed to clinical or environmental thermogenic factors.

**Material and methods:** Semen samples of 84 men (25-40 years old) were collected. Men were classified into the following study groups: 1) occupational drivers (n=23), 2) infertile men with cryptorchidism (n=15), 3) infertile men with varicocele (n=34), and 4) fertile individuals as control (n=12). In all ejaculates, standard semen analysis was manually performed according World Health Organization guidelines. Markers of sperm apoptosis such as mitochondrial transmembrane potential (JC-1 dye), lipid membrane asymmetry (merocyanine 540 dye), membrane integrity (SYBR-14 and PI dyes), phosphatidylserine translocation (test with Annexin V and PI) and DNA fragmentation (TUNEL assay) were determined. Seminal oxidative stress parameters such as production of sperm mitochondrial superoxide anion (MitoSOX Red dye), total antioxidant capacity, activity of catalase, activity of superoxide dismutase and malondialdehyde concentration were also measured.

**Results:** The deterioration of standard sperm parameters and the increase in PI-positive spermatozoa in men exposed to heat stress were observed. In the group of men with cryptorchidism, all the classic markers of apoptosis were significantly increased compared to the control group. Additionally, positive correlations of the percentage of merocyanine 540-positive cells with progressive motility and viability were noted. In the group of occupational drivers, the activity of superoxide dismutase was positively correlated with progressive motility. In men with varicocele, negative correlations of TUNEL-positive sperm with both progressive motility and total antioxidant capacity were observed.

**Conclusions:** Genital heat stress has harmful influence on the male gametes as a result of oxidative stress and apoptosis. The main mechanism of poor semen quality in men with cryptorchidism can be associated with induction of mitochondria-dependent apoptosis. Genital heat stress may stimulate oxygen metabolism of sperm mitochondria which can be associated with the initiation of necrosis.

The study was financed by National Science Centre, Poland, grant No 2015/19/B/NZ5/02241.

[285]

#### **Isolation of progenitor/stem cells from human breastmilk**

Małgorzata Witkowska-Zimny, Ewa Kamińska-El-Hassan  
ewa.kaminska@hotmail.com

Department of Biophysics and Human Physiology Medical University of Warsaw

**Introduction:** Human milk is considered to be the gold standard in infant nutrition, providing optimal nutrients for normal growth and development. Apart from its nutritional benefits, human milk contains multiple bioactive and immunomodulatory components. Some studies indicate the presence of progenitor/stem cells in the human breastmilk.

**Aim of the study:** The aim of this study was to obtain in vitro culture of the breast milk-derived cells and identify expression of pluripotency genes in the cells.

**Material and methods:** Mature breastmilk (20–30 ml) samples were obtained from health breastfeeding women in very early range of lactation in a aseptic way. The isolation procedure was based on the protocols described by Hassiotou et al. with modifications. The cells were cultured in vitro under standard conditions and characterized on molecular level.

**Results:** The presence of the cells of various origin was detected in human breast milk. The isolated breast-milk-derived cells were adherent to the plates. We found the expression of pluripotency genes: OCT4, SOX2 and NANOG in the isolated breastmilk cells by Real-time PCR and present it in contrary to human bone-marrow derived stem cells.

**Conclusions:** Human breastmilk contains a heterogeneous cell populations. Progenitor/stem cells express pluripotency genes. Human breast milk could be therefore a non invasive source of human progenitor cells for regenerative and personal medicine in the future.

[286]

#### **The effect of resistin, SIRT1 and SIRT4 proteins on the insulin resistance induction in pregnant women**

Adrian Krygier, Rafał Świechowski, Małgorzata Sobczak, Mariusz Grzesiak, Marcin Baum, Michał Krekora, Maciej Banach  
adriankrygier@o2.pl

Oxidative Stress Laboratory of the Center of Medical Laboratory Diagnostics and Screening, Polish Mother's Memorial Hospital - Research Institute, Lodz, Poland

**Trustee of the paper:** Professor Maciej Banach

**Introduction:** Gestational Diabetes Mellitus (GDM) is the one of the most common medical problem during pregnancy which is characterized by the glucose intolerance recognized prior to pregnancy and did not occur earlier. GDM affects between 2% and 5% of pregnant women and usually occurs in the last three months of pregnancy. GDM is associated with adverse maternal and neonatal sequelae. Recent studies are trying to clarify the role of adipokins in GDM development. This adipokine, which is probably associated with the development of GDM, is resistin. Proteins which could be involved in regulation of insulin secretion are sirtuins. Data suggests that sirtuins have also influence on adipokine secretion.

**Aim of the study:** To assess influence between resistin, SIRT1 and SIRT4 blood concentrations and insulin resistance induction in women which suffer from GDM.

**Material and methods:** The study was carried out on 39 women between 32-36 weeks of pregnancy with absence of pre-pregnancy diabetes. The investigated group consisted of 17 women with gestational diabetes mellitus (type A1). The control group consisted of 22 healthy pregnant women. The lipid profile, glucose and insulin concentrations were measured in serum of each patient. The resistin, SIRT1 and SIRT4 concentration were assessed by ELISA. Insulin resistance was determined using HOMA -IR index. All results were statistically analyzed.

**Results:** According to our research we observed statistically significant association between HOMA-IR index and occurrence of GDM ( $p=0.019$ ). Among patients with GDM the HOMAR-IR index varied more and had an increased values. HOMAR-IR index also correlated with SIRT4 concentration ( $p=0,0005$ ). Furthermore, we also found statistically significant association between resistin concentrations and GDM occurrence ( $p=0,042$ ). Values were higher in patients with GDM. The resistin concentration also correlated with SIRT4 ( $p=0,013$ ).

**Conclusions:** Preliminary studies show that the resistin concentration and HOMAR-IR index in patients with GDM is higher compared to the control group. It may indicate a potential association with the insulin resistance development. The SIRT4 protein also positively correlates with resistin concentration and the HOMAR-IR index, which may indicate its role in the development of insulin resistance. Future research in this area is needed. The project was supported by the Polish Ministry of Science and Higher Education, Polish Mother's Memorial Hospital - Research Institute - Young Researcher Internal Grant no. 2016/1/19-MN.

[287]

#### **PIM inhibition as a rational therapeutic strategy against multiple myeloma**

Filip Garbicz

filip.garbicz@gmail.com

Postgraduate School of Molecular Medicine, Medical University of Warsaw; Institute of Hematology and Transfusion Medicine

**Trustee of the paper:** Przemysław Juszczynski MD PhD; Maciej Szydłowski PhD

**Introduction:** Multiple myeloma (MM) is an aggressive hematological neoplasm originating from plasma cells that produce copious amounts of monoclonal immunoglobulin. MM cells overexpress PIM kinases - oncogenic serine/threonine kinases regulating cytokine-induced prosurvival signaling by orchestrating NF $\kappa$ B, JAK/STAT and mTOR pathways. They are essential for the survival of neoplastic plasma cells, and are putative effectors of numerous microenvironmental interactions between multiple myeloma and bone marrow niche cells.

**Aim of the study:** The aim of this study was to characterize the molecular consequences of pan-PIM inhibition on signaling pathways crucial for myeloma survival. In addition, since progression of MM heavily depends on bone marrow neovascularization, we investigated the possible anti-angiogenic effects of PIM inhibition in vitro.

**Material and methods:** The effects of commercially available PIM inhibitors was studied in established MM cell lines as well as primary patient-derived cells. Cytotoxicity was assessed using MTS, AnnexinV and Caspase-Glo assays. Signaling changes were detected using Western blot. The expression of angiogenic cytokines was determined using qPCR.

**Results:** PIM inhibition induced a dose-dependent proliferation arrest and apoptosis in MM cells with concomitant activation of intrinsic caspase pathway and PARP cleavage. Furthermore, the activity of mTOR, JAK/STAT and NF $\kappa$ B was significantly downregulated after blocking PIM activity. The myeloma-specific oncogenic IKZF1/3-IRF4-MYC axis was also inhibited. In consequence, the expression of proangiogenic cytokines, VEGFA and Galectin-1, was decreased.

**Conclusions:** PIM inhibition is toxic for multiple myeloma cells and disrupts major MM oncogenic signaling nodes. Furthermore, it modulates the expression of angiogenic cytokines, which are responsible for the development and progression of this disease. Our data suggests that pan-PIM inhibition represents a promising therapeutic strategy against MM. This work was supported by the Polish Ministry of Science and Higher Education Diamond Grant (0071/DIA/2016/45).

[288]

#### **Pharmacokinetics of sugammadex 1 mg/kg given for reversal of rocuronium-induced blockade in pediatric patients**

Mirosław Malec

miroslawmalec90@gmail.com

Poznan University of Medical Sciences, Department of Clinical Pharmacy and Biopharmacy

**Trustee of the paper:** Agnieszka Bienert, PhD

**Introduction:** Reversal agents are used to terminating the action of muscle relaxants. Sugammadex, a modified  $\gamma$ -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.

**Aim of the study:** Sugammadex rapidly reverses moderate and profound rocuronium- or vecuronium-induced neuromuscular blockade at doses of 4 mg/kg and 2 mg/kg, respectively. There is no data about its effectiveness at a dose of 1 mg/kg in children. This study evaluated the pharmacokinetics of sugammadex in subjects at a dose of 1 mg/kg.

**Material and methods:** The permission of the bioethical commission was obtained for conducting the research. Fifteen patients (aged 3 -17) undergoing elective surgery procedures with a standardized sevoflurane-fentanyl-rocuronium (rocuronium dose 0,6 mg/kg) anesthetic technique received sugammadex at doses of 1 mg/kg and 2 mg/kg (control group) for reversal of neuromuscular blockade. During the operation, blood samples were collected at the time-determined points after the rocuronium intubation dose - 2 and 15 minutes after rocuronium administration, just before sugammadex and 2, 5, 15, 60 minutes and 6 hours after sugammadex. The concentration of sugammadex was determined by HPLC-MS/MS. The analytical procedure was validated, and all steps of the validation confirmed that the applied analytical procedure was suitable for the intended purpose. Pharmacokinetic calculations were performed in Kinetica 5.1. We also measured the time from sugammadex administration to the full restoration of muscle function.

**Results:** Pharmacokinetic data were obtained from 15 subjects. Mean sugammadex AUC in subjects was about 2 times lower than in the control group. Similar clearance values were observed in both groups of patients. Mean Cmax was about 2,5 times lower in a group that received a dose of 1 mg/kg. Mean time needed to full restoration of muscle function were almost 3 times longer in the study group than in the control group.

**Conclusions:** The findings indicate sugammadex 1 mg/kg can be given safely and effectively for the reversal of rocuronium-induced neuromuscular blockade in pediatric patients. Despite differences in pharmacokinetic parameters with the control group, the dose of 1 mg/kg is effective in reversal of rocuronium-induced neuromuscular blockade.

[289]

#### **Study of the expression of vegf and Ki-67 in perimenopausal women with uterine myoma**

Kukharchyk Yuliya

juliakukharchik@mail.ru

Grodno State Medical University

**Trustee of the paper:** Gutikova L.V.

**Introduction:** Uterine myoma a common gynecological disorder in women of perimenopausal period. It is proved that myoma growth is accompanied by a weakening of the immune defense against the backdrop of increasing levels of pro-inflammatory cytokines, which are regulators of proliferation and apoptosis mediators actions of sex steroids. The participation of many factors in the development of fibroids, including vascular endothelial growth factor (VEGF) and Ki-67, remains controversial.

**Aim of the study:** the study of the expression of VEGF and Ki-67 in perimenopausal women with uterine myoma period, depending on the size of the tumor.

**Material and methods:** The study included 46 perimenopausal women between the ages 50,1 $\pm$ 0,53 years with uterine myoma. Of these, 20 women were diagnosed with asymptomatic uterine fibroids small size (up to 3 cm), in 26 is clinically manifested by large uterine fibroids (corresponding to the value of the uterus 12 weeks gestation). The control group consisted of 20 healthy women of comparable age (48,5 $\pm$ 0,39 years).

VEGF levels in serum were determined by enzyme immunoassay. Immune histochemical reactions conducted by the standard technique using microwave oven to determine antigens on serial paraffin sections from myoma, myo- and endometrium. The antibodies for Ki-67 (Dako) were used as the primary specific antibodies. The streptavidin complex (LSAB KIT, Dako) was used as secondary antibodies and visualizing system. The expression of Ki-67 - percent by counting nuclei stained with 3000 cells. Statistical data processing carried out with the help of «Statistic 6.0» program. Reliable results were considered at p <0,05.

**Results:** In the investigation marker Ki-67 proliferation established that proliferating uterine myoma large compared with asymptomatic myoma small size, Ki-67 expression was 7,5 times higher. Thus, in myomas mitotically active in comparison with the cell, the level of expression of this marker was higher both in the average of (4,36 vs. 1,68), and in homes proliferation. Ki-67 proliferation marker was not detected in the

myometrium and endometrium in the middle of its value is 0,87 with a tendency to an increase in proliferating myomas: in the cell – 1,43 in mitotic activity – 1,78.

During the study found an increase in VEGF levels 1,5 fold in women with uterine myoma large compared to its level in the control group and the group of women with uterine fibroids small size.

**Conclusions:** Thus, we have found that increasing the size of fibroids is accompanied by increased expression of VEGF and Ki-67, which we regarded as a possible pathogenesis of uterine fibroids.

[290]

#### **Analysis of bacteria isolated from snow**

Kubra Küçükgöz, Karolina Zalewska

ozdilkubra@gmail.com

Medical University of Warsaw, Dept. of Pharmaceutical Microbiology

**Introduction:** Bacteria are commonly found on Earth, occur in all ecosystems. They include pathogenic and antibiotic resistant species. The study was undertaken on freshly fallen snow collected in the center of Warsaw. aimed at determining if there are bacterial species present in the snow that are capable of growing on microbiological media and showing resistance to antibiotics.

**Aim of the study:** The aim of the study was to determine if there are bacterial species present in the snow that are capable of growing on microbiological media and showing resistance to antibiotics.

**Material and methods:** Falling snow was collected into a sterile box. The water obtained after melting was used to inoculate a rich liquid microbiological medium (BHI) either supplemented with antibiotics or without any antibiotic. The medium was incubated at 28 °C with agitation. Bacteria from the liquid cultures were grown on agar plates with antibiotic present in liquid culture, later individual colonies were tested on plates with other antibiotics. DNA from direct cultures and cultures obtained from individual colonies was isolated.

**Results:** The cultures on the medium without antibiotics and the cultures supplemented with ceftazidime after overnight incubation grew to high density. The remaining cultures required 2 (ampicillin or biseptol) or 3 days (tetracycline or kanamycin). By testing of individual colonies, numerous isolates resistant to both ampicillin and kanamycin were found and a single clone resistant to both ampicillin and biseptol. In the culture with tetracycline, the growth of mainly fungi and *Pseudomonas* was found. Electrophoretic analysis revealed the presence of plasmid DNA in direct cultures: with ampicillin, with ceftazidime, and without antibiotics. The gram-negative rod carrying a large plasmid was isolated from the culture with ceftazidime. Plasmid DNA was present after several repeated culture propagations.

**Conclusions:** In the snow the number of culturable microorganisms is very small. When snow water was directly spread on agar plates, presence of approx. 5 mold colonies per ml was found. However, the growth of bacteria was strong also in the antibiotic media. The analysis showed the presence of plasmids in the DNA preparations. Antibiotic resistance genes are often carried by plasmids, which are very active in the horizontal gene transfer. The obtained results indicate that snowfall can spread bacteria that are resistant to antibiotics and have plasmids that can participate in transfer of resistance genes.

[291]

#### **Small-molecule inhibitory compound of PERK-dependent signaling pathway as a target-based treatment strategy against colon cancer**

Wioletta Rozpędek<sup>1</sup>, Adam Wawrzynkiewicz<sup>1</sup>, Natalia Siwecka<sup>1</sup>, Adam Dziki<sup>3</sup>, Łukasz Dziki<sup>3</sup>, Dariusz Pytel<sup>2</sup>, J. Alan Diehl<sup>2</sup>, Ireneusz Majsterek<sup>1</sup>

wioletta.rozpedek@umed.lodz.pl

<sup>1</sup> Department of Clinical Chemistry and Biochemistry, Medical University of Lodz, Lodz, Poland;

<sup>2</sup> Department of Biochemistry and Molecular Biology, Hollings Cancer Center, Medical University of South Carolina, Charleston, USA;

<sup>3</sup> Department of General and Colorectal Surgery, Medical University of Lodz, Lodz, Poland

**Trustee of the paper:** Wioletta Rozpędek

**Introduction:** There is an ample of evidence that cellular alterations on the molecular level are strictly correlated with cancer development and progression. Low oxygen tension within cancer cells directly induces the Endoplasmic Reticulum (ER) stress conditions and subsequently activates the PERK-dependent Unfolded Protein Response (UPR) signaling pathway characterized by a dual role: pro-adaptive and pro-apoptotic.

**Aim of the study:** The main aim of the study was to evaluate the effectiveness of the selected PERK inhibitor no. 42.

**Material and methods:** Experiments were performed on the human colon adenocarcinoma cell line HT-29 and the normal human colon epithelial cell line CCD 841 CoN. The cytotoxicity of inhibitor 42 was assessed using the LDH Cytotoxicity Assay Kit. Cells were treated with inhibitor 42 at a concentration range of 75µM to 100µM and incubated for 16, 24 and 48h. Cells incubated with the media containing 1µl DMSO served as a positive control. Apoptotic cell death was measured by flow cytometry using a double staining with FITC-annexin V and propidium iodide. Cells were treated with 6µM and 50µM concentrations of inhibitor 42 for 24h. Cells treated with 1µM staurosporine constituted a positive control, whereas cells incubated with media containing 1µl DMSO served as a negative control.

This work was supported by grant PRELUDIUM no. 2015/19/N/NZ3/00055 from the Polish National Science Centre, grant OPUS no. 2016/23/B/NZ5/02630 from the Polish National Science Centre, grant of Medical University of Lodz, Poland no. 502-03/5-108-05/502-54-224-18 and no. 564/2-000-00/564-20-031.

**Results:** Investigated compound significantly inhibited HT-29 cells viability in a dose- and time-dependent manner, whereas no cytotoxicity effect was observed in CCD 841 CoN cells in any used concentration of inhibitor 42 and time of incubation. A significant cytotoxic effect of inhibitor 42 toward HT-29 cells was noticed at a concentration of 50µM-100µM at all incubation times. Evaluation of the level of apoptosis demonstrated that 42% of HT-29 cells treated with 50µM inhibitor 42 were at the early and late stages of apoptosis. However, after 24h treatment with inhibitor 42 at a concentration of 50µM only 10% of CCD 841 CoN cells were in early and late apoptosis. We did not note a significant number of death CCD 841 CoN and HT-29 cells after their 24h treatment with inhibitor 42 at a concentration of 6µM.

**Conclusions:** Obtained results have suggested that PERK inhibitors may constitute a novel, target-based treatment strategy against colon cancer.

[292]

#### **Peculiarities of morpho-functional reaction of the kidneys on hyperglycemia in the early period of alloxan-induced experimental diabetes**

Olenovych O.A.

olcka76@gmail.com

Higher State Educational Establishment of Ukraine «Bukovinian State Medical University», Chernivtsi, Ukraine

**Introduction:** Considering the multifactoriality of renal impairment mechanisms in case of diabetes mellitus (DM), recent scientific researches target their identification at the initial stages of the disease, unaccompanied by clinical manifestations of kidney damage.

**Aim of the study:** To assess the peculiarities of morpho-functional reaction of the kidneys on experimental hyperglycemia in the early period of experimental diabetes mellitus.

**Material and methods:** The experiments were carried out on 20 white non-linear mature male rats. Experimental modeling of DM was performed by the intraperitoneal administration of Alloxan monohydrate to 10 animals in diabetogenic dose of 160 mg/kg. On 11th day after the induction of the disease diabetic rats and 10 intact animals of the control group were withdrawn from the experiment. Removed right after decapitation, the kidneys were exempted from the capsule and weighted with further calculation of the organ mass index. Further analysis of blood plasma and urine samples, collected at the moment of decapitation of animals, enabled the evaluation of carbohydrate metabolism and kidney functional state indices.

**Results:** On the 11th day of the alloxan-induced hyperglycemia the absolute weight of the kidneys of the experimental animals was found to be 21,1% higher than the index of that of the controls ( $p < 0,05$ ), accompanied by a reliable increase of kidney mass index of rats with mentioned duration of diabetes – by 35,4% in comparison with the corresponding control index ( $p < 0,02$ ). Noted changes of kidney mass indices of the alloxan-diabetic rats are, probably, related not only to the decline of animals' body weight in the dynamics of diabetes, but to blood flow disorders in the kidneys, the increase of the intravascular volume of the fluid, hyperperfusion of the kidneys: the intensity of relative water reabsorption in the tubular portions of the nephron was found to be reliably increased (by 1,6% in comparison with control ( $p < 0,05$ )), limiting the excreted urine volume despite the presence of glucosuria.

**Conclusions:** Thus, the hyperdynamically-hyperperfusing type of renal function on 11th day after the administration of diabetogenic substance results from the mobilization of adaptive, reserve renal mechanisms regulating the adaptation of the kidneys to the systemic and local effects of hyperglycemia.

[293]

**Circulating amino acid concentrations in severe obese patients before and after weight loss**

E. Raćkowska<sup>1</sup>, J. Giebułtowicz<sup>1</sup>, P. Wroczyński<sup>1</sup>, G. Nowicka<sup>2</sup>, M. Wrzosek<sup>2</sup>  
ekrzeminska@wum.edu.pl

<sup>1</sup> Medical University of Warsaw/ Department of Bioanalysis and Drugs Analysis, Faculty of Pharmacy;

<sup>2</sup> Medical University of Warsaw/ Department of Biochemistry and Pharmacogenomics, Faculty of Pharmacy;

**Trustee of the paper:** Joanna Giebułtowicz

**Introduction:** Due to the development of sensitive analytical methods, some of D-amino acids have been found in mammals. Available data indicate that D-amino acids play a role in physiological processes as well as participate in the pathogenesis of some disorders. Previous studies indicated that weight loss affects the serum concentration of L- amino acids, but there is no data on serum D-amino acid concentrations before and after weight loss.

**Aim of the study:** The purpose of the study was to evaluate serum-free amino acid enantiomers (D and L) concentrations in obese patients before and after significant weight loss.

**Material and methods:** Forty-three patients with severe obesity (BMI over 35) before and one year after the bariatric surgery were enrolled in this study. Determination of amino acid enantiomers concentrations in serum was performed using liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS).

**Results:** Statistically significant increase in serum concentration of D-alanine, D-serine and D-proline after bariatric surgery was observed.

**Conclusions:** This is the first study evaluating changes in circulating D-amino acid concentrations in the obese patients after bariatric surgery. Further studies are needed to assess the importance of D-amino acids associated with body weight loss in obese.

[294]

**Tracking the cluster of differentiation 30 and carbonic anhydrase IX enzyme expression pattern in classical Hodgkin lymphoma cases**

Orsolya Matolay MD, Gábor Méhes MD, PhD, DSc, Lívia Beke, Marianna Czenke, Ádám Jóna MD, PhD, Zsófia Miltényi MD, PhD, Árpád Illés MD, PhD, DSc, Judit Bedekovics MD, PhD  
orsolya.matolay@med.unideb.hu

University of Debrecen, Department of Pathology, Department of Haematology

**Trustee of the paper:** Orsolya Matolay M.D

**Introduction:** Hypoxia has a dramatic influence on the behaviour of the tumour cells and one particular pathway, the Hypoxia Inducible transcriptional Factor-1 $\alpha$  (HIF1 $\alpha$ ) related changes are highly investigated in recent years. HIF1 $\alpha$  promotes the expression of the membrane-bound carbonic anhydrase IX (CAIX), which is often associated with poor prognosis and outcome. Classical Hodgkin's lymphoma (cHL) is characterised by its unique malignant cells, e.g. the mononucleated Hodgkin-, and the multinucleated Sternberg-Reed cells (HRS-cells). Only limited number of studies has investigated effect of hypoxia in cHL.

**Aim of the study:** The aim of our current study was to analyse the expression of CAIX in our cHL cases.

**Material and methods:** Histological samples taken from the lymph nodes of 101 patients diagnosed with cHL between 1999-2018 in the Department of Pathology, University of Debrecen. The tissue samples were analysed with routine pathological stainings (H&E, PAX5, CD20, CD30) and with hypoxia specific stainings e.g. HIF1 $\alpha$ , CAIX immunohistochemistry. For further analysis, the CD30 and CAIX immunostained representative cases were digitalized with Panoramic MIDI-Automatic Brightfield Scan (3DHistech, Budapest, Hungary) slide scanner. In order to determine the relative enzyme expression, whole slide digital (WSD) analysis was performed with the DensitoQuant module of the QuantCenter Software (3DHistech Kft., Budapest, Hungary). The histoscore (H-score) values were generated by the software. The cut-off for positivity was determined at H-score 1. The results were investigated by Wilcoxon signed rank test and Spearman correlation analysis.

**Results:** The cohort consisted of the subtypes of cHL, including 71 nodular sclerosis (NS), 19 mixed cellularity (MC), 7 lymphocyte rich (LR), 4 lymphocyte depleted (LD). The selective membrane associated expression of CAIX (H-score: 2.52-90.36) was observed in 56 cases in total (56/101, 55.4%), especially in the HRS-cells, moreover CAIX expression was also demonstrated in the perinecrotic foci. Interestingly, the expression of CAIX was higher in our lymphocyte depleted and nodular sclerosis cases than in other subtypes. The H-score of CD30 showed no difference between the CAIX+ and CAIX- group.

**Conclusions:** The increased expression of CAIX is associated with the cellular adaptation to the hypoxic microenvironment which might contribute to the failure of standard chemotherapy.

[295]

**Expression of CD25 and CD69 surface markers of B and T lymphocytes – could it be a new prognostic factor of chronic lymphocytic leukemia?**

Michał Mielnik, Martyna Podgajna, Mateusz Mielnik  
micmiel@gmail.com

Medical University of Lublin, Department of Clinical Immunology and Immunotherapy

**Trustee of the paper:** Ewelina Grywalska MD, PhD, Associate Professor

**Introduction:** Chronic lymphocytic leukemia (CLL) is a condition characterized by the accumulation of morphologically mature monoclonal lymphocytes B with the CD19+/CD5+/CD23+ phenotype in lymphoid tissue, peripheral blood and bone marrow. The clinical course of patients with CLL is heterogeneous, ranging from indolent to aggressive. The role of lymphocyte activation in the natural history of CLL is still a matter of discussion.

**Aim of the study:** The aim of this study was to determine the percentages and absolute numbers of lymphocytes B and T in peripheral blood and bone marrow of CLL patients. Moreover, we analyzed the relationship between the number of CD25-positive and CD69-positive lymphocytes and the established prognostic factors in CLL.

**Material and methods:** The study included 80 untreated patients with CLL and 20 healthy subjects. The immunophenotype of peripheral blood mononuclear cells (in both groups) and bone marrow cells (solely in the CLL group) was determined by means of flow cytometry.

**Results:** Patients with CLL showed a higher absolute number of activated lymphocytes B with phenotypes CD19+CD25+ and CD19+CD69+, as well as a higher absolute number of CD3+CD25+ lymphocytes T than the controls. The enhanced activation of peripheral blood and bone marrow lymphocytes was associated with higher Rai stages, an increased concentration of lactate dehydrogenase and beta-2 microglobulin and the progression of the disease. The number of lymphocytes B CD19+ZAP-70+ correlated positively with the number of CD19+CD25+ B cells and CD3+CD69+ T cells.

**Conclusions:** The study confirmed the association between an unfavorable prognosis and a high expression of activation markers in CLL patients. The determination of CD25+ and CD69+ lymphocytes T and B constitutes a valuable diagnostic tool, completing the cytometric evaluation of CLL.



# PhD Clinical Science

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 123, Library – CBI

**Jury:**

prof. dr hab. med. Kazimierz Szopiński  
prof. dr hab. n. med. Zbigniew Gaciong  
prof. dr hab. n. med. Tomasz Pasierski  
prof. dr hab. n. med. Paweł Piątkiewicz  
prof. dr hab. n. med. Barbara Górnicka  
prof. dr hab. n. med. Magdalena Durlik  
prof. dr hab. n. med. Jakub Gołąb  
prof. dr hab. n. med. Piotr Małkowski  
prof. dr hab. n. med. Piotr Andziak  
dr hab. n. med. Romuald Cichoń  
dr n. med. mgr mat. Zbigniew Lewandowski

**Coordinators:**

Agnieszka Koppolu  
Ilona Cieślak

**Scientific Patronage:**

Polskie Towarzystwo Wirusologiczne  
Polskie Towarzystwo Diabetologiczne



POLSKIE TOWARZYSTWO  
DIABETOLOGICZNE



[296]

**Content of the indicators of the metabolism of connective tissue in the serum of patients with chronic obstructive pulmonary disease and non-alcoholic steatohepatitis**

Hryniuk O.Ye., Khukhlina O.S., Mandryk O.Ye.

hryniuk.olha@gmail.com

The Department of Internal Medicine, Clinical Pharmacology and Occupational Diseases, Higher State Educational Establishment of Ukraine "Bukovyna State Medical University" (BSMU)

**Trustee of the paper:** Hryniuk O.Ye.

**Introduction:** The increasing prevalence of chronic obstructive pulmonary disease (COPD) and nonalcoholic steatohepatitis (NASH) is a problem of high importance.

**Aim of the study:** To establish peculiarities of the exchange of connective tissue components in patients with a combined course of non-alcoholic steatohepatitis, COPD and obesity.

**Material and methods:** 100 patients with COPD participated in the study, including 49 with NASH and obesity of the 1st degree: group 1 - 28 patients with COPD (2B GOLD). Group 2 - 23 patients with COPD (3C, D). Group 3 - 25 patients with COPD (2B) with NASH. Group 4 - 24 patients with COPD (3C, D) and NASH. Control group - 20 healthy persons (HP).

**Results:** The analysis of the intensity of fibrous reactions in patients with COPD, depending on the presence of comorbid NASH, indicates a probable increase in the content of protein-bound oxyproline (PBOP) in the blood of patients of all groups: in the 1st group ( $61,88 \pm 2,54$ ) – 1.5 times in comparison with the HP ( $41,48 \pm 3,72$ ) ( $p < 0.05$ ), in patients of group 2 ( $73,23 \pm 2,96$ ) – 1.8 times ( $p < 0.05$ ), group 3 ( $84,21 \pm 3,65$ ) – 2.0 times ( $p < 0.05$ ), in patients of group 4 ( $97,38 \pm 3,42$ ) – 2.4 times ( $p < 0.05$ ). At the same time, the index of free oxyproline (FOP) content in the blood, which is the biochemical marker of collagen catabolism, in patients with COPD of group 1 ( $15,27 \pm 0,43$ ) was 1.2 times higher ( $p < 0.05$ ) than that in HP, in patients of group 2 ( $17,46 \pm 0,57$ ) – 1.4 times ( $p < 0.05$ ), indicating a parallel increase in collagen degradation against the background of its high synthesis. The activity of collagen degradation was even more intense in comorbidity with NASH: in patients of groups 3 and 4 – 1.5 and 1.7 times ( $p < 0.05$ ) respectively. Patients in all groups had a probable increase of hexosamines (GA) in group 1 - by 12.45%, in patients of group 2 - by 16.7%, in patients of groups 3 and 4 - more intensively: by 32.3% and 41.3% ( $p < 0.05$ ).

**Conclusions:** The received data confirm that patients with COPD secondary to NASH, which developed against the background of obesity, suffer from a significant increase in the synthesis of collagen and glycoproteins, accompanied by an ineffective resorption of newly formed collagen due to insufficient activation of collagenolysis and proteolysis, a significant imbalance in the CT metabolism system, which leads to progressive fibrosis of the lungs and liver and disturbances of their functions.

[297]

**Metabolism of tramadol in patients with extreme obesity**

Stachowiak Anna, Szałek Edyta, Karbownik Agnieszka, Zawada Agnieszka, Królewska Anna, Grabowski Tomasz, Dobrowolska Agnieszka, Grześkowiak Edmund

stachowiak.an@gmail.com

Department of Clinical Pharmacy and Biopharmacy, Poznan University of Medical Sciences, Poland

**Trustee of the paper:** Stachowiak Anna, MSc

**Introduction:** Extreme obesity is a growing civilization disease affecting about 7% of the population in the USA and it is one of the pathophysiological factors that can change the pharmacokinetics (PK) of drugs. Studies have shown that obesity can increase CYP 2E1, 2D6, 2A1 activity and decrease 3A4. Tramadol (TRM) is a broadly used analgesic, primarily metabolized by CYP2D6 to its main active metabolite O-desmethyltramadol (M1), which is more potent than parent drug and may be responsible for adverse effects.

**Aim of the study:** The aim of the research was to analyze the PK of TRM and M1 in patients with extreme obesity (BMI > 40 kg/m<sup>2</sup>). It allows indirectly to evaluate CYP2D6 activity.

**Material and methods:** The study was performed on a group of patients (n=9) with extreme obesity (mean  $\pm$  SD; age  $50 \pm 11$  years; weight  $140.8 \pm 17.4$  kg; BMI  $45.0 \pm 5.3$  kg/m<sup>2</sup>; WHR  $1.00 \pm 0.08$ ). The patients received oral TRM in a single oral dose of 100 mg. Blood samples were collected during 24 h after receiving the drug. TRM and M1 concentrations in blood plasma were measured by the use of validated high performance liquid chromatography method with fluorescence detection. PK for TRM and M1 were calculated by non-compartmental method.

**Results:** The main PK for TRM were as follows: C<sub>max</sub> 116.0 ± 40.6 µg/L; t<sub>max</sub> 3.11 ± 0.89 h; AUC<sub>0-t</sub> 1403.1 ± 419.9 µg·h/L; V<sub>d/F</sub> 5.31 ± 1.35 L/kg; Cl/F 0.438 ± 0.133 L/kg·h; t<sub>0.5</sub> 8.9 ± 2.4 h. The main PK for M1 were as follows: C<sub>max</sub> 36.5 ± 18.9 µg/L; t<sub>max</sub> 3.94 ± 1.38 h; AUC<sub>0-t</sub> 488.8 ± 190.6 µg·h/L. Additionally, M1/TRM ratios were calculated for C<sub>max</sub> (0.3 ± 0.1) and AUC<sub>0-t</sub> (0.4 ± 0.1).

**Conclusions:** The average M1/TRM ratios for C<sub>max</sub> and AUC in analyzed patients were similar to the other populations, therefore the activity of CYP2D6 seems to be unchanged in patients with BMI > 40 kg/m<sup>2</sup>. However, 6/9 extremely obese patients had C<sub>max</sub> for TRM below the therapeutic range (100-300 µg/L) associated with its analgesic activity, therefore the efficacy of pain management may be reduced in this group of patients.

[298]

### **Past thromboembolic and bleeding events substantially affect the major bleeding acceptance among patients with atrial fibrillation on oral anticoagulation**

Gabriela Rusin, Małgorzata Koniecznyńska, Piotr Bijak

gabriela.rusin@gmail.com

Collegium Medicum, Jagiellonian University

**Trustee of the paper:** Anetta Undas MD PhD

**Introduction:** Oral anticoagulation (OAC) increases bleeding risk which affects compliance and adherence to the therapy. To our knowledge, there have been no studies performed among patients with atrial fibrillation (AF) treated with Vitamin K antagonists (VKA) and Non-vitamin K antagonists (NOAC) in which the bleeding tolerance was assessed in relation to clinical factors. It is unclear whether the knowledge regarding AF and its therapy has any effect on the major bleeding acceptance among AF patients.

**Aim of the study:** The aim of the study was investigate how clinical factors and the level of AF knowledge influence the bleeding tolerance in AF patients.

**Material and methods:** A total of 173 AF anticoagulated outpatients (aged 68.7±10.7 years, 39.3% male) were studied. The bleeding tolerance was assessed based on the declared maximum number of major bleedings that could have been endured to avert one major stroke. The Jessa Atrial fibrillation Knowledge Questionnaire (JAKQ) was used to evaluate patients' knowledge on AF and anticoagulation.

**Results:** Compared with patients with high bleeding tolerance (n=88, 50.9%), subjects with the low bleeding tolerance (below 4 bleeds, n=85, 49.1%) were older, with longer duration of AF and higher prevalence of heart failure. Stroke or transient ischemic attack survivors (n=62, 35.8%) were ready to endure more major bleedings related to OAC to prevent another stroke compared with those free of such events (4 [3-7] versus 3 [2-5], p<0.001). Patients who experienced major bleeding (n=33, 19.1%) and those reporting current minor bleeds (n=77, 44.5%) were less tolerant toward possible major bleeding complications (2 [1-3] versus 4 [2-5.5], p<0.001 and 2 [2-4] versus 4.5 [3-6], p<0.001, respectively). The low bleeding tolerance was observed in patients switched to NOAC from VKA and those on reduced dose of NOAC (both p<0.001). The level of knowledge on AF and OACs did not affect the bleeding acceptance.

**Conclusions:** In conclusion, major bleeding tolerance of anticoagulated AF patients depends on prior thromboembolic and bleeding episodes as well as minor bleeds reported on anticoagulation.

[299]

### **Assessment the relationship between platelet reactivity and clinical and functional status in patients with ischemic stroke**

Karolina Filipka, Adam Wiśniewski

karolinafilipskaf@gmail.com

Neurological and Neurosurgical Nursing Department, Faculty of Health Sciences, Nicolaus Copernicus University, Toruń, Poland

**Trustee of the paper:** Karolina Filipka

**Introduction:** Stroke is an important social and medical problem of the 21st century, as it is one of the main causes of morbidity and long-term disability and the second most frequent cause of death in the world. One of the better-understood causes of brain ischemia is the pathology of large pre-cranial vessels, most often the internal carotid artery, which accounts for about 20%-30% of all causes of stroke. An important role in the pathogenesis of ischemic stroke is also played by the pathology of platelet function.

**Aim of the study:** The aim of the study was to assess the relationship between platelet reactivity and clinical and functional status in patients with ischemic stroke, with particular emphasis on the role of stroke etiopathogenesis.

**Material and methods:** The study involved 69 patients with ischemic stroke, including 20 patients with the pathology of large vessels. The assessment of platelet reactivity was made using two aggregometric methods: impedance and optical, while the clinical condition was assessed using the NIHSS scale and the functional state using the mRS scale on the 1st and 8th day (early prognosis) and the 90th day of stroke (late prognosis).

**Results:** Results

The initial reactivity of platelets was found to be higher in patients with severe neurological deficit on the 90th day after stroke, than in the group with mild neurological deficit (median, respectively, 40 AUC vs 25 AUC,  $P=0.033$ ). In the subgroup of patients with the pathology of large vessels, there was a significant correlation between the reactivity of platelets and the functional status on the 1st day of stroke ( $R= 0.4526$ ;  $P= 0.0451$ ), platelet reactivity was higher in the subgroup of patients with severe than mild neurological deficit on the 1st day of the disease (median, respectively, 58.5 vs 23.5 AUC;  $P= 0.0372$ ), and patients resistant to aspirin have significantly greater possibility of a severe neurological deficit on the 1st day of stroke compared to those who are sensitive to aspirin (OR=14.00, 95% CI 1.25-156.12,  $P= 0.0322$ ).

**Conclusions:** High platelet reactivity in patients with stroke is associated with worse late prognosis (greater severity of neurological deficit on the 90th day), and in the group of patients with the pathology of large vessels is associated with worse early prognosis and clinical condition in acute phase of the disease.

[300]

### **Assessment of QTc interval in children with cardiovascular autonomic neuropathy depending on the indicators of continuous monitoring of blood glucose**

Aleksandra Demianenko, Irina Alimova

verazaytseva@yandex.ru

Smolensk State Medical University, the Department of Pediatrics

**Trustee of the paper:** prof. Irina L. Alimova, MD, PhD

**Introduction:** A risk factor for sudden cardiac death is prolongation of the QTc interval. Cardiovascular neuropathy (CAN) is a complication of diabetes mellitus associated with QTc prolongation. The study of the duration of the QTc interval, depending on the glycemic level in children with CAN is of great importance.

**Aim of the study:** The aim of the study was to assess the duration of the QTc interval in children with CAN depending on the level of glycemia.

**Material and methods:** We examined 50 patients at the age 10-17 (mean age 14 years [12-15]), with type 1 diabetes and disease duration from 2 to 12 years (4 years [2.6-7]), with a level of HbA1c - 8.3-14.9% (10.4% [9.1-11.6]). In all patients synchronous monitoring of glycemia and ECG were performed. Two groups for comparison were formed: Group 1 – patients with a CAN (n = 15), Group 2- without CAN (n = 35). According to the glycemia monitoring data, the following sections were identified: hypoglycemia sites ( $\leq 3.9$  mmol / l, n = 12), areas of the optimal glycemia level (4.0–9.0 mmol / l, n = 35). Of all the episodes of hypoglycemia, 66% were registered in patients with CAN, 34% were without CAN. Statistical data processing was performed with the program «Statistica 9». For critical significance level  $p < 0.05$  was accepted. The results are presented as medians, 25 th and 75 th percentiles (Me [25-75]).

**Results:** Duration of the QTc interval in periods of hypoglycemia in both groups was comparable (1st – 451 ms [437–476]; Group 2 – 444 ms [433–458],  $p = 0.410$ ). In the areas of optimal glycemic values, QTc duration (1st - 442ms [440-450], 2nd group – 430ms [416-439],  $p < 0.001$ ) is higher in patients with CAN than in patients without CAN. At the same time, in patients with CAN, there was no difference in the duration of QTc with hypoglycemia and the optimal level ( $p = 0.07$ ), in patients without CAN, a significant increase in the interval during hypoglycemia ( $p = 0.015$ ). In an individual analysis, the duration of the QTc interval exceeding the pathological values (more than 450 ms) in the hypoglycemia areas with the same frequency was recorded in both the 1st (71%) and 2nd group (40%,  $p = 0.211$ ). At optimal glycemic values, the pathological QTc duration was recorded more frequently in patients with CAN (1st group — 71%, 2–4%,  $p = 0.012$ ).

**Conclusions:** In patients with CAN, lengthening of the QTc interval and its pathological duration are recorded regardless of the level of glycemia, while hypoglycemia in these patients is recorded two times more often compared with patients without CAN.

[301]

### **Pulmonary ventilation disorders and dyspnea in patients with chronic obstructive pulmonary disease**

Denis Punin, Natalia Drobot, Alexandr Punin

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Viktor Milyagin, MD, PhD

**Introduction:** Dyspnea is a common symptom in chronic obstructive pulmonary disease affecting the quality of life. The links between dyspnea and pulmonary ventilation disorders, such as lung hyperinflation, emphysema severity, level of obstructive disorders is still unclear.

**Aim of the study:** The aim of our study was to assess the link between dyspnea severity and levels of obstructive disorders and pulmonary hyperinflation.

**Material and methods:** We examined 41 patients with COPD aged 51 - 78 years with body plethysmography performed with the Jaeger MasterScreen Body. The study was performed 20 minutes after the use of bronchodilator Salbutamol 400 mkg to assess morphological subtract of pulmonary hyperinflation – lung emphysema. Severity of dyspnea was assessed with modified Medical Research Council dyspnea scale (mMRC). Statistical analysis was performed using Kruskal-Wallis test. Statistical tests were two-sided and  $p < 0.05$  was considered significant. In multiple pair comparisons with Mann-Whitney test with Bonferroni correction the first kind error was  $\alpha = 0.008$ . Data are shown as the median (range 25-75 quantile).

**Results:** Patients were divided into 4 groups according to the level of dyspnea measured by mMRC scale (0-1, 2, 3 and 4 points). While comparing bodyplethysmography parameters of these groups with Kruskal-Wallis test the differences were revealed in the levels of bronchial resistance (Reff), forced expiratory levels in 1 second (FEV1), vital capacity (VC).

The levels of Reff in mMRC 0-1 group was 0.39 kPa\*s/l [0.31; 0.55], in mMRC Group 2 – 0.42 kPa\*s/l [0.32; 0.67]; in mMRC Group 3 – 0.59 kPa\*s/l [0.44; 0.64], in mMRC Group 4 – 0.76 kPa\*s/l [0.63; 0.93]. We performed multiple pair comparisons the group with mMRC 4 differed significantly from all other groups by Reff ( $p < 0.008$ ). All other groups were similar in the parameter. Only groups with the lowest and the highest level of mMRC differed in FEV1 and VC. FEV1 was significantly lower in mMRC 4 group compared with mMRC 0-1 group (33.6% [32.1; 39.7], 57.6% [44.1; 66.9]). The same situation was about VC (81.7% [68.0; 100.3] in mMRC 4 group, 104.9% [96.1; 117.5] in mMRC 0-1 group,  $p = 0.0002$ ). Other parameters of pulmonary ventilation, such as residual volume (RV), intrathoracic gas volume (ITGV), total lung capacity (TLC), RV/TLC ratio were similar in all groups.

**Conclusions:** There is dependence of dyspnea on the severity of obstructive disorders. The level of hyperinflation in use of bronchodilator and emphysema does not influence the level of mMRC scale.

[302]

### **Occurrence of specific clinical syndrome in patients with chronic diffused liver diseases**

Vladislav Didenko, Zagubnaia Ekaterina, Elena Ivanishkina

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof. Elena Ivanishkina, MD, PhD

**Introduction:** Chronic Diffused Liver Disease (CDLD), particularly of alcohol and viral aetiology is a great health problem resulting in high rates of disability and mortality. Clinical manifestations of liver diseases can be unclear for a long time, so early laboratory diagnostics is of particular significance.

**Aim of the study:** The aim of the study was to assess occurrence and dynamics of specific clinical syndromes in patients with CDLD.

**Material and methods:** 105 CDLD patients aged 30 - 65 were examined: 55 patients had chronic hepatitis (CH) and 50 patients with cirrhosis (C). 25 patients had virus nature of the disease (15 CH and 10 cirrhosis patients), the alimentary nature had 65 patients (35 CH and 30 cirrhosis patients), damage to the liver of mixed etiology (virus and alcoholic) was in 15 patients (in 5 CH and cirrhosis). Detoxification therapy and hepatoprotectors were administered.

**Results:** Depending on liver damage (hepatitis, cirrhosis) syndromes had various frequency: asthenia was in 92,7% CH and in 90% C patients before treatment. After treatment it persisted in 45,5 CH and in 76% cirrhosis patients. Pain syndrome in CH was observed less often (in 78,2% cases before treatment and 43,6% – after treatment), in cirrhosis in 92% cases before treatment and in 46% after treatment). Dyspepsia was in CH patients

before treatment was in 80% cases, after treatment – in 27,3% cases; in cirrhosis this syndrome was in 88% before treatment and 52% after treatment. Haemorrhagia was in CH patients in 3,63% cases before treatment, after treatment it was not revealed. Body temperature increased in 20% CH patients before treatment and 1,8% after treatment, in C patients – in 7,5% cases before treatment and 4% – after treatment. Hepatomegalia was in 30,9% CH patients before treatment, in 48% cirrhosis patients before treatment. Splenomegalia was in 3,63% CH before treatment and C patients in 48% cases. Jaundice was noted in CH in 27,3% cases before treatment and 9,1% cases after treatment, in C patients in 62% cases before treatment and 48% after treatment. Cholestasis was in 43,6% CH cases before treatment and in 36,4% after treatment, cirrhosis it was noted in 40% cases before treatment and 34% cases after treatment. Portal hypertension was in all cirrhosis patients.

**Conclusions:** Early diagnostics of hepatic diseases prevents progression of the disease, reduces risk of complications and lethality. It is important to convince patients in alcohol hepatotoxicity and necessity of patients to keep healthy life style.

[303]

#### **Role of therapeutic hypothermia in postnatal outcomes of neonates, born in asphyxia**

Spiridonov Dmitrii, Kuzina Aliya

skipdi@mail.ru

Pirogov Russian National Research Medical University

**Trustee of the paper:** Shalina Raisa, Sokolovskaya Yuliya, Kunyakh Zhanna

**Introduction:** Infant hypoxic-ischemic encephalopathy is one of the main causes of perinatal morbidity in full-term newborns. Therapeutic hypothermia (TH) is more commonly used with time. Data on the TH results, within various treatment protocols, remain contradictory.

**Aim of the study:** To compare the effectiveness of various methods of TH in the complex therapy of post-hypoxic ischemic brain injury in newborns.

**Material and methods:** A retrospective analysis of 73 neonates was carried out. All of them had antenatal or intranatal hypoxia or were born with signs of moderate or severe perinatal asphyxia. Inclusion criteria: gestational age  $\geq 36$  weeks, body weight  $> 1800$  g, first 6 hours of life, an absence of intraventricular hemorrhage. Two groups were formed: I – 46 newborns treated with selective head cooling (SHC) with Olympic Cool-Cap<sup>®</sup> system; II – 27 newborns treated with whole body cooling (WBC) with CritiCool<sup>®</sup> system. The Apgar score at the first minute of life in groups I and II did not differ significantly ( $p > 0,05$ ): 1-2 points – 15 (32.6%) and 3 (11.1%); 3-4 points – 21 (45.7%) and 14 (51.9%); 5-7 points – 10 (21.7%) and 10 (37.0%), respectively.

**Results:** During first hours of life 62 (86.6%) newborns from both groups had seizures or increased seizure readiness: 39 (84.8%) and 23 (85.2%) ( $p > 0,05$ ) in groups I and II. 33 (84.6%) and 18 (78.3%) ( $p > 0,05$ ) newborns, respectively, had seizures on EEG. During TH, despite the use of both pain medication and sedation, seizures persisted in all neonates in group I (39 – 100%) and in 4 (17.4%) ( $p < 0,05$ ) in group II. By the end of TH seizures were cured in 11 (28.2%) and 19 (82.6%) ( $p < 0,05$ ) newborns after SHC and WBC, respectively. By the end of TH seizures persisted 4.13 times rarely after the WBC ( $p < 0,05$ ). All infants survived and were transferred to the II level of NICU. The prognosis, concerning the development of cerebral palsy and mental retardation, in 23 (50.0%) newborns from SHC group was unfavorable. In WBC group all infants (27 – 100%) were discharged from the II level of NICU with favorable dynamics of the neonates' status and good neurological prognosis.

**Conclusions:** The use of WBC in complex therapy of infants born in asphyxia is 2.9 times more effective, concerning seizures treatment, than SHC. Implementation of WBC, comparing with SHC, ensured a shorter period of positive neurological status dynamics achieving. After the WBC procedure, in contrast to SHC, there were no unfavorable signs of the cerebral palsy development risk and future mental retardation.

[304]

#### **The role of glucose, leptin and adiponectin in predicting adverse pregnancy outcomes**

Anastasiia Ogareva, Vitalii Amalitskii, Vita Pokusaeva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Vita Pokusaeva, MD, PhD

**Introduction:** A high level of glycemia is known to be associated directly with a high risk of adverse outcomes for women and their newborns. The question about the period in which it is preferable to assess the blood glucose

level in pregnant women to predict adverse outcomes such as the birth of a large fetus and an increase in the frequency of operative delivery remains unclear. Placental hormones and proteins are important regulators in the formation of insulin resistance and are involved to many physiological and pathological processes. Some experts consider dysregulation of adipokine production, namely leptin and adiponectin, can lead to gestational diabetes.

**Aim of the study:** The aim of the study was to identify the correlation between the level of fasting glucose in the first trimester of pregnancy and the outcomes of pregnancy and the weight of the newborn, as well as to assess the level of adipokines, leptin and adiponectin, in pregnant women with different levels of fasting glycemia.

**Material and methods:** Our prospective study involved 61 pregnant women divided into two groups: Group 1 included 11 (18%) pregnant women with a glycemia level  $\geq 5.1$  mmol/l, Group 2 (control) - 50 (82%) of pregnant women with the normal blood glucose levels.

**Results:** In Group 1, the average level of glycemia was  $5.42 \pm 0.34$  mmol/l, in the control group -  $4.42 \pm 0.39$  mmol/l. The average mass of newborns ( $3260.91 \pm 554.43$  g) in pregnant women in Group 1 was comparable to this value ( $3478 \pm 507.77$  g) by pregnant women in the control group ( $p = 0.45$ ).

Similar results were obtained concerning cases of operative delivery. In the control group, the rate was 32% (16), in the main group - 36% (4) and without statistically significant differences.

There was a clear tendency in differences in the mean adiponectin values in patients with abdominal ( $0.79 \pm 0.4$  ng/ml) and natural ( $0.52 \pm 0.22$  ng/ml) labor. When comparing leptin levels, similar results were obtained -  $1.29 \pm 0.78$  ng/ml and  $1.25 \pm 0.93$  ng/ml, respectively.

**Conclusions:** There is no a significant correlation between the level of lean glycemia in the first trimester of pregnancy and the mass of the newborn, as well as the mode of delivery. Analysis of the levels of leptin and adiponectin in the blood plasma shows the concentration of adiponectin is significantly lower than in the control group. We did not manage to get evidence on differences in leptin levels in pregnant women with normal levels of lean glucose and hyperglycemia.



# PhD Health Science

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 124, Library – CBI

**Jury:**

prof. dr hab. n. med. Joanna Gotlib  
prof. dr hab. n. med. Tomasz Pasierski  
prof. dr hab. n. med. Bożena Walewska-Zielecka  
prof. dr hab. n. o zdr. Paweł Zalewski  
dr n. o zdr. Mariusz Jaworski

**Coordinators:**

Inga Włodarczyk-Pruszyńska  
Krzysztof Kobryń

**Scientific Patronage:**

National Consultant in Public Health Prof. Jarosław Pinkas, MD, PhD  
National Consultant in Epidemiology Iwona Paradowska-Stankiewicz, MD, PhD

[305]

**Students' competencies before and after OBGYN classes in center for medical simulation**

Joanna Kacperczyk-Bartnik, Paweł Bartnik, Aleksandra Symonides, Agnieszka Dobrowolska-Redo, Julia Zaręba-Szczudlik, Aneta Malinowska-Polubiec, Ewa Romejko-Wolniewicz  
asiakacperczyk@gmail.com

II Department of Obstetrics and Gynecology, Medical University of Warsaw

**Introduction:** During the OBGYN course for undergraduate medical students different types of activities are performed – seminars, interviewing patients, participation in department duties, and classes in center for medical simulation.

**Aim of the study:** The aim of the study was to analyze students' subjective assessment of their practical skills and anxiety associated with individual patient management – before and after the classes.

**Material and methods:** Final year undergraduate medical students during obstetrics and gynecology classes in center for medical simulation were enrolled in this cross-sectional study. Participants answered anonymous questionnaires assessing their skills, confidence and anxiety of independent patient management using Likert scale. Questionnaires were distributed twice - before and after the classes. Simulations included physiological delivery trained with Victoria S2200 Birthing Delivery Simulator, 3rd trimester obstetric ultrasound performed on mannequin with ACUSON NX2 Ultrasound System, and perineal repair using silicone episiotomy and suturing simulators. The Mann-Whitney-U Test was used for statistical comparison.

**Results:** Study group included 113 students. Competencies associated with delivery were assessed as increased – in case of delivery in a hospital ( $p < 0.001$ ) and outside the hospital ( $p < 0.001$ ). Obstetric ultrasound competencies were assessed as increased regarding fetal presentation ( $p < 0.001$ ), estimation of fetal weight ( $p < 0.001$ ), placental location ( $p < 0.001$ ), and amount of amniotic fluid assessment ( $p < 0.001$ ). Suturing skills and perineal repair were also assessed as improved after the classes ( $p < 0.001$ ). The same pattern was observed in relation to reducing anxiety levels associated with real-life situation management – delivery ( $p < 0.01$ ) and ultrasound ( $p < 0.01$ ).

**Conclusions:** Participation in classes in center for medial simulation is an effective way of teaching students practical skills and reducing their anxiety associated with performing certain duties in OBGYN ward. This kind of classes is surely a great introduction to managing real patients for future doctors.

[306]

**Lifestyle and smoking in young and middle age adults from Brasov, Romania**

Mihaela Badea, Adelina Jinga, Cristina Adochite, Robert Chelaru, Walid Kansoun, Mariana Radoi, Marius Moga, Liliana Rogozea  
badeamihaela@yahoo.com

Faculty of Medicine, Transilvania University of Brasov, Romania

**Introduction:** Smoking was associated with increased risks of many chronic diseases that shorten life and decrease quality of life. New systems for delivering nicotine (electronic cigarettes) are intensively used as alternative for conventional smoking, but only few recent studies are demonstrating their harmful potential.

**Aim of the study:** The aim of this study was to correlate smoking status of the subjects and their lifestyle with their blood total antioxidant status, specific bioactive compounds, and heavy metals content.

**Material and methods:** A cross-sectional study was designed using 150 subjects from Brasov (Romania), divided in three groups: non-smokers/NS (N=58), conventional cigarettes smokers/CS (N=58) and electronic cigarettes users/ECU (N=34). A questionnaire concerning their lifestyle (food and beverage consumption, physical activity, smoking characteristics) was administered to all groups. Blood samples were collected for detection of some blood components, total antioxidant status and heavy metals content.

**Results:** There were underlined the different/similar reasons of using conventional/e-cigarettes and also life styles. Differences between the presence of some heavy metals and rare earth elements were obtained for conventional smokers and electronic cigarettes users.

We have to notice that the uric acid seems to be an important marker of smoking habits also for our groups. Statistical difference were obtained for serum uric acid when NS and CS groups ( $p < 0.0001$ ) and NS and ECU groups ( $p < 0.001$ ) were compared. No significantly statistical differences were obtained between CS and ECU groups.

Significant statistically changes ( $p < 0.0001$ ) were identified for blood A and E vitamins for NS vs. CS and NS vs. ECU. We have to mention that a significant statistical difference ( $p < 0.05$ ) was obtained also for comparison of vitamin A corresponding to CS group versus ECU group.

Similar to other studies, it was observed a slightly decrease of HDL cholesterol in serum of CS (with 1.7% lower) and ECU (with 4.6% lower) respectively, compared with NS group.

Total antioxidant status was measured and significant differences ( $p < 0.05$ ) were obtained when NS vs. CS and NS vs. ECU were compared. Similar behavior was identified for CS and ECU.

**Conclusions:** The study indicated that smoking promotes the production of excess reactive oxygen species, involving in different pathway different antioxidants and bioactive molecules. Type of the heavy metals could be associated with smoking habits.

Educating young people on tobacco dependence and its effects on health should remain an important part of the school.

[307]

### **Characteristics of patients referred by primary care physicians to the geriatric ward, with particular emphasis on mental disorders**

Piotr Kamiński, Paula Jankowska, Paweł Królik, Ewa Rudnicka-Drożak  
kamien08@gmail.com

Medical University of Lublin/Chair and Department of Family Medicine

**Introduction:** The share of older people in the population is systematically increasing. Geriatric care enables slowing down the development of chronic diseases, preventing exacerbations, hence prolongs independent functioning at home.

**Aim of the study:** The aim of the study was to characterize a group of patients referred by primary care physicians to the geriatric ward and assess occurrence of mental problems among them and its influence on activities of daily living and functional capacity.

**Material and methods:** The study involved patients referred by primary care physicians to the Geriatrics Department of the Specialist Hospital in Jasło in the years 2016-2017. 912 patients were included in the study group. Their average age was 79.6 years. Methods included analysis of medical documentation and use of scales VES-13, and instruments of Comprehensive Geriatric Assessment (ADL, I-ADL and Tinetti test). Presence of mental problems was assessed by means of Mini-Mental State Examination and Geriatric Depression Scale.

**Results:** General condition of 12.9% ( $n=118$ ) patients admitted to hospital was described as very heavy, heavy or quite heavy. 14.6% ( $n=133$ ) of hospitalized persons were lying persons. The absolute majority of patients obtained a score of 3-10 points in the VES-13 scale, which indicates the risk of significant deterioration of health and functional capacity as well as the need for a comprehensive geriatric assessment. According to the MMSE test, patients with profound cognitive impairment constituted a group of 11.5% ( $n=105$ ) of the studied population. Depressive disorders were diagnosed in 28.5% of patients ( $n=257$ ). It has been shown that the occurrence of dementia significantly influenced on the degree of functional disorders in terms of basic activities of daily life, functional capacity and risk of falls ( $p < 0.0001$ ). The degree of cognitive impairment influenced the length of hospitalization. Depressive disorders were more commonly observed in patients in the general medium state, no correlation was found between depression and death during hospitalization.

**Conclusions:** Referral of the vast majority of patients to the geriatric ward by family doctors was justified. Mental disorders in the elderly, significantly affect the general condition and functional capacity. Thus, comprehensive geriatric assessment and particularly, evaluation of mental state of patients is crucial in taking care of the elderly and can contribute to reduction of the risk of adverse events and dependence in everyday life.

[308]

### **Pregnancy outcomes in patients with hyperglycemia in the first trimester of pregnancy**

Anastasiia Ogareva, Vitalii Amalitskii, Vita Pokusaeva  
verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Vita Pokusaeva, MD, PhD

**Introduction:** Health of potential mothers is a strategic worldwide problem. Recent studies have demonstrated high prevalence of metabolic disorders as well as their adverse effect. For example, diabetes can have an impact on gestation, childbirth, condition of the fetus and newborns.

**Aim of the study:** The aim of the study was to identify the effect of glycemia in the first trimester on pregnancy outcomes.

**Material and methods:** The prospective study included 525 pregnant women who had a fasting hyperglycemia test on their first visit to the doctor and within 10–12 weeks, and a routine glucose tolerance test within 24–28 weeks. Inclusion criteria: singlet pregnancy, maternal age over 18 years, lack of any somatic pathology and diabetes mellitus in history. Exclusion criteria: multifetal pregnancy and preterm delivery.

**Results:** To assess the risk of macrosomia, the following results were obtained. 15.1% newborns were of a big size, in patients with gestational diabetes, which was diagnosed in the 2nd trimester; the fetal macrosomia was recorded in 60% ( $p = 0.022$ ) patients. Rates of carbohydrate metabolism in woman and their changes during the pregnancy were assessed the Mann-Whitney and  $\chi^2$  criteria. The following features of metabolism parameters were identified in females whose children had different body weight. In the first trimester, the levels of low-glucose glycemia were approximately the same in all patients; however, in the second trimester, the concentration of glucose in women with large fetuses significantly exceeded those by the normal fetal sizes ( $p=0.021$ ). Glycemia above 4.7 mmol/l in the second trimester was associated with a fivefold increase in the risk of giving birth to large children ( $p=0.038$ ). For fetal macrosomia the postprandial glucose level was prognostically significant. Thresholds at which the risk of giving birth to a big fetus increased in 6.2 mmol/l and over ( $p=0.019$ ) in the first trimester and 6.5 mmol/l and over ( $p=0.038$ ) in the second trimester. Cesarean section (the cases of planned indications were excluded from the analysis due to the presence of uterine scar, extragenital pathology) occurred in the same percentage of cases with normoglycemia in 1 trimester and glucose level of 5.1 mmol/l and above (17,8% and 19,2%).

**Conclusions:** There is no a significant correlation between the level of lean glycemia in the first trimester of pregnancy and the mass of the newborn, as well as the mode of delivery. Analysis of the levels of leptin and adiponectin in the blood plasma shows the concentration of adiponectin is significantly lower than in the control group. We did not manage to get evidence on differences in leptin levels in pregnant women with normal levels of lean glucose and hyperglycemia.

[309]

### **The influence of gait disorders on the daily functioning among people with Parkinson's disease**

Anna Maria Dobosiewicz, Gracjan Rózański, Ewelina Litwa

annamdo@gmail.com

Scientific Circle of Exercise Physiology at Department of Hygiene, Epidemiology and Ergonomics. Division of Ergonomics and Exercise Physiology, Nicolaus Copernicus University in Toruń, Collegium Medicum in Bydgoszcz, Poland

**Introduction:** Parkinson's disease (PD) is a neurodegenerative illness of the central nervous system. The beginning of PD is deceitful and only a specific diagnostics can bring the appropriate recognition. Parkinson's Disease is characterized by a large number of symptoms and very distinctive diagnostic criteria. A proper medical care and an adequate physiotherapy could delay the progress of the illness.

**Aim of the study:** The aim of the study is to assess the gait problems within people with Parkinson's disease by using physical testing and also to evaluate how the gait disorders affects their daily living.

**Material and methods:** Study group consist of 12 women and 10 men, with diagnosed Parkinson's Disease in stadium H-Y from the first till the fourth. The average age of the study group was  $74,90 \pm 9,42$ . The control group was grounded by 22 healthy people, without PD. There were 19 women and 3 men. Both of the groups were assessed by a number of tests which can give answers regarding the qualitative and quantitative aspects of the gait such as : Tinetti Test, TUG, 2-minute step-in-place. Additionally, both groups gave answers to questions in ADL and iADL to assess their independence in activities of daily living.

**Results:** The results showed some significant differences in quality and speed of gait between the two groups. The patients in the study group achieved worse results in tests than the healthy people. People with PD have more problems to deal with activities in daily living. Moreover, the correlation between the stage and the advance of gait disorders was noticed.

**Conclusions:** Gait disorder is a symptom of Parkinson's disease which up against the development of the illness will affect everyone with PD. Results analysis are bringing information that gait disorders are a significant problem among people with Parkinson's disease. What is more, gait disorders which occur in PD, substantially influence daily living in basic and complex activities. There is a need to do more researches to find the appropriate

methods of delaying occurrence of the symptom and to help people with PD to be independent in daily living as long as possible.

[310]

#### **The quantitative and qualitative assessment of gait and balance disorders in people with multiple sclerosis**

Anna Maria Dobosiewicz, Gracjan Róžański, Ewelina Litwa, Paulina Miętkowska

annamdo@gmail.com

Scientific Circle of Exercise Physiology at Department of Hygiene, Epidemiology and Ergonomics. Division of Ergonomics and Exerc

**Introduction:** Multiple sclerosis (SM) is a progressive chronic inflammatory and demyelinating disease of the central nervous system (CNS). The etiology of the disease is still poorly known but medical investigation are putting the impact of the immune system disorders. The occurrence of SM is 2,5 million patients worldwide in age between 20 and 50 years old. The disease is lightly more common among women. Multiple sclerosis is defined by many various symptoms such like: paresis of both legs, slurred speech or visual impairment. The most common and often occurring signs of the disease are gait and balance disorders. What is more, both of the symptoms can cause many problems in daily living and can be a barrier which cannot be defeat so easily.

**Aim of the study:** The aim of the study is to shown quantitative and qualitative differences in gait and balance among people with multiple sclerosis compared to healthy people.

**Material and methods:** The study was carried out among people with diagnosed multiple sclerosis and healthy volunteers without SM. The study group consist of 20 people (12 women and 8 men), mean age of the study group was  $51,95 \pm 14,90$ . To assess the gait and balance disorders TUG test, Tinetti Test, Romberg Test and Berg Scale were done.

**Results:** The results are showing that there are significant differences in quality of gait between study and control group ( Tinetti Test, gait part:  $Z=-5,06$ ;  $p<0,001$  ). There are also correlation between Romberg test and tests assessing balance disorders ( e.g. Tinetti Test, balance part:  $Z=-3,74$ ;  $p<0,001$ , Berg Scale -  $Z=-3,48$ ;  $p<0,01$  ).

**Conclusions:** Multiple sclerosis is a disease with range of heterogeneous symptoms. The latest scientific reports give information that the gait and balance disorders affect the daily living of patients with SM. That could be the cause to do more specific investigation to find out how to deal with those signs in daily living. This in turn can raise the level of quality of life patients with SM and help them to be not dependent on family or carers for longer time.

[311]

#### **Status of minerals level in chronic fatigue syndrome (CFS/ME) – pilotage study**

Anna Maria Dobosiewicz, Gracjan Róžański, Ewelina Litwa

annamdo@gmail.com

Scientific Circle of Exercise Physiology at Department of Hygiene, Epidemiology and Ergonomics. Division of Ergonomics and Exerc

**Introduction:** Chronic Fatigue Syndrome (CFS/ME) is a disease with still poorly known etiology and by having no diagnostic biochemical test or investigation. Recently studies have shown that there is a wide range of probably etiopathogenesis of the disease.CFS/ME was firstly defined as a disease by Centers for Disease Control and Prevention (CDC) in 1988.It worldwide occurrence is ranging from 0.2% to 2.6% and what is important –in Poland chronic fatigue syndrome is diagnosed very rarely.There are no clinical unequivocal parameters for diagnose the disease but the most common in medical world are Fukuda Criteria from 1994 which consist of major and minor symptoms.To diagnosed CFS/ME patient has to manifest all three major symptoms and four minor signs.Clinical trials are beginning to explore the role of nutrition, level of minerals and vitamins and how these might affect the health and life of patients with chronic fatigue syndrome.

**Aim of the study:** The aim of the work was to examine the level of minerals among patients with chronic fatigue syndrome.

**Material and methods:** The study included 9 patients (3 men and 6 women) with diagnosed chronic fatigue syndrome by using Fukuda Criteria.They were compared to a control group of fifteen healthy volunteers without CFS/ME.The mean age of the study group was  $33.33 \pm 6.48$  years and the mean disease duration was  $3.94 \pm 3.11$  years.Hair samples 3-4 cm long were cut from the sub-occipital zone of the head and were analyzed for minerals (sodium, potassium, calcium, magnesium, iron, zinc, copper) using Atomic Absorption Spectrometer (AAS).

**Results:** The research shows statistically significant differences in the levels of some minerals Ca ( $P = 0.0151$ ), Mg ( $P = 0.0050$ ), Zn ( $P = 0.0002$ ), K ( $P = 0.0372$ ), Na ( $P = 0.0321$ ) compared to the control group. Moreover, a positive correlation was observed only between Fe level and length of history ( $R = -0.71$ ,  $p < 0.05$ ).

**Conclusions:** Patients with chronic fatigue syndrome are showing significant differences in some minerals level (Zn, Mg, Na and K) compared to the control group. This difference may be related to many different symptoms in the course of chronic fatigue syndrome. This was only a pilotage study so more scientific examination is needed to prove that there may be a correlation between minerals level and occurrence of chronic fatigue syndrome symptoms.

# Psychiatry & Clinical Psychology

**Date:**

Saturday, May 11th, 2019

**Location:**

Room 124, Library – CBI

**Jury:**

prof. dr hab. n. med. Piotr Gałecki  
prof. dr hab. n. med. Maria Załuska  
prof. dr hab. n. med. Przemysław Bieńkowski  
prof. nadz. dr hab. n. med. Marta Anczewska  
prof. nadz. dr hab. n. med. Katarzyna Kucharska  
dr hab. n. med. Barbara Remberk  
dr hab. n. med. Sylwia Fudalej  
dr hab. n. med. Andrzej Jakubczyk

**Coordinator:**

Zuzanna Dratwicka

**Scientific Patronage:**

National Consultant in Psychiatry Prof. Piotr Gałecki MD PhD  
National Consultant in Child and Adolescent Psychiatry Prof. Barbara Remberk MD PhD  
Instytut Psychiatrii i Neurologii w Warszawie  
Centrum Terapii Dialog



Instytut Psychiatrii i Neurologii  
w Warszawie

**dialog**  
CENTRUM TERAPII

[312]

### **Phenomenology and clinical correlates of cognitive tics in Gilles de la Tourette syndrome**

Anna Dunalska, Piotr Janik, Natalia Szejko, Andrzej Jakubczyk  
adunalska@gmail.com

Department of Neurology, Medical University of Warsaw, Department of Bioethics,  
Medical University of Warsaw, Department of Psychiatry, Medical University of Warsaw

**Trustee of the paper:** dr hab. n. med. Piotr Janik

**Introduction:** Gilles de la Tourette syndrome (GTS) is characterized by motor and vocal tics, usually preceded by premonitory urges. One third of patients will develop Obsessive-Compulsive Disorder (OCD) and in up to 80% of them Obsessive-Compulsive Symptoms (OCS) will appear. Cognitive tics (CTs) are phrases or words that intrude into consciousness and are difficult to differentiate from obsessions.

**Aim of the study:** The aim of the study was to establish if CTs belong to tic spectrum or OCD spectrum and to assess the incidence and clinical associations of CTs in patients with GTS.

**Material and methods:** We performed a prospective, one-registration study in a cohort of 203 consecutive patients with GTS (males: n=158, 77.8%). Mean age of children was 10.4±3.1 years; mean age of adults 27.2±7.4 years. Duration of GTS was 4.9±3.0 years (range: 1–13) in children and 18.3±7.3 years (range: 6–39) in adults. The patients were evaluated for the clinical diagnosis of GTS and co-morbid mental disorders according to DSM-IV-TR. Tic severity was measured with the Yale Global Tic Severity Scale (YGTSS). Coprolalia, echolalia, palilalia, counting and repeating of words/phrases were recognized as CTs during the interview and analysed in this study. The statistical analyses were performed using STATISTICA 13.1 software.

**Results:** CTs were found only during active inquiry, none of the patients reported them spontaneously. They occurred at some point in the lifetime of 19.6% (n=38) of patients, more often in adults than children (29.3% (22/75) and 13.4% (16/119), respectively, p=0.03). In 9 patients CTs were not possible to evaluate. Gender did not differ between CTs+ and CTs- groups (males, 81.6% vs. 76.9%; p=0.667). CTs were continuing in 26 patients (68.4%) at the time of evaluation. Age at onset of CTs was known in 28 patients (mean: 13.9±5.2 years; range: 3–26). CTs started 7.4±5.0 years after the onset of first tics. The patients with CTs were older at evaluation (p=0.013), had more severe tics (p=0.0005), experienced preceded premonitory urges (p=0.003), suffered more often from OCD/OCS (p=0.018), anxiety disorders (p=0.025) and depression (p=0.028). Multivariate logistic regression analysis showed significant associations of CTs only with tic severity (p=0.034) and premonitory urges (p=0.013), but not with any co-morbid psychiatric disorders including OCD/OCS (p=0.634).

**Conclusions:** CTs are part of the tic spectrum not obsessions. They appear most often in adolescence and are mostly associated with tic severity and premonitory urges.

[313]

### **Study of physiological manifestations of emotions during playing chess**

Tsarova Sophia, Dereshkevichute Anna  
verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Andrey V. Evseev, MD, PhD

**Introduction:** Interest in chess playing has really dropped due to computerization of the society and a variety of electronic games. Chess is considered to be a difficult and boring game but players can experience really vivid emotions during the game. The most emotional version of this fascinating game is rapid chess.

**Aim of the study:** The aim of the study was to evaluate the emotional status and responses in rapid-chess players.

**Material and methods:** The study involved assessment of basic physiological characteristics with a device called polygraph"Barrier-14". Only 5 minutes was given to one volunteer to think of the moves, while the other one-10 minutes. During the game, we used a video camera focused on the chessboard; each pair of movements was fixed with marks on the monitor screen. The moments of maximum emotional tension were recorded with the Sheriff-6M program.

**Results:** At the beginning of the game, high excitement of the sympathetic nervous system was noted. Breathing had an uneven nature of GSR (galvanic skin response) and was characterized by an abundance of peaks. The volumetric pulse decreased sharply and the heart rate and the blood arterial pressure increased. The movement activity was quite high. As the game progressed, decrease in the starting "heat" was formed. The player's emotions mostly arose in response to his own actions, and not to the opponent's moves. When the opponent

began an aggressive game, the situation is complicated. The pneumogram become unstable again, the GSR was activated, the volume pulse decreases and the blood pressure rises. The critical moment of the game made the volunteers think for a long time. Different physiological parameters demonstrated moderate emotional arousal and reduction of internal tension. And although the emotional state of the individuals stabilized further during the game, the game was lost in time. During the play a so called rebound phenomenon was noted. Convulsive deep breathing, increased GSR wave activity, severe peripheral vascular spasm, a sharp increase in blood pressure, excessive physical activity. Finally, the situation was worsening by the fact that the game was lost not only in time but also in the result.

**Conclusions:** Such device as a polygraph proves that chess represents not only a highly intellectual, but also a highly emotional game. Analysis of polygrams makes it possible to evaluate the dynamics of change in psychoemotional stress at all stages of the game and determine the level of mental readiness of a chess player for the upcoming competitions

[314]

**The prevalence of seasonal affective disorder among the blind patients with serious visual impairment - a preliminary study**

Bartłomiej Kurczab, Aleksandra Ćwiek, Krzysztof Kramarczyk, Anna Witkowska  
kurczab.bartlomiej@gmail.com

Medical University of Silesia in Katowice / Department of psychiatry and psychotherapy

**Trustee of the paper:** Karolina Drzyzga

**Introduction:** Seasonal affective disorder is a common disorder in which people with normal mental health throughout the year demonstrate depressive symptoms at the same time of the year each year. While the prevalence of SAD among generally healthy individuals is well known, the problem is establishing the prevalence of SAD among the blind and visually impaired patients.

**Aim of the study:** The aim of the study was to investigate the prevalence of Seasonal Affective Disorders among the blind and people with serious visual impairment in polish population.

**Material and methods:** 250 blind or seriously visually impaired individuals and 250 healthy controls were assessed with the usage of SPAQ questionnaire. In research group survey was conducted with the CATI technique provided by School and Education Center for Blind Children in Laski. In control group the questionnaire was distributed via online forums. The results were analysed with the usage statistical package - Statistica 13.1

**Results:** Mann-Whitney U test revealed that there is statistically significant difference in occurrence of SAD between people with correct vision and people with visual impairment ( $p < 0.00001$ ).

Furthermore Spearman rank correlation coefficient proved that among individuals with correct vision age is negatively correlated with score in SPAQ questionnaire ( $p = 0.04896$ ;  $R = -0.12271$ ). While on the other hand, among individuals with visual impairment correlation between age and score in SPAQ is positive ( $p = 0.01598$ ;  $R = 0.15224$ ). In addition to this Mann-Whitney U test revealed that among people with visual impairment there is statistically significant difference in occurrence of SAD between men and women

**Conclusions:** The study has shown a significant difference in occurrence of SAD between study and control groups. Interestingly the blind show lesser tendency of developing SAD than the control, however there is almost no difference in prevalence of SAD between the blind and persons with serious visual impairment, who have sense of light. What is more the study showed major difference in the occurrence of SAD between men and women in study group. The results seem to be puzzling, taking into consideration the fact that this is the second analysis of this type in Europe and there is almost no literature to compare them to.

[315]

**How the perception of human cadavers influences the moral standards of the first-grade student during the gross anatomy classes**

Marcin Czezelewski, Konrad Ślizień-Kuczapski  
marcin.czezelewski@gmail.com

Department of Human Anatomy, Medical University of Lublin

**Trustee of the paper:** Gabriela Kuroska MD

**Introduction:** Dissection of human cadavers plays essential role in education of medical students. People who donate their bodies provide exceptional possibility to visualize human anatomical structures. Their sacrifice

should be reciprocated by utmost respect and care. However, during the gross anatomy classes the acts of violation of good practice rules may happen.

**Aim of the study:** We aimed to check if the perception of human cadavers by first grade medical students influences the committing frequency of unethical acts.

**Material and methods:** The cross-sectional study was based on self-composed, anonymous survey consisting of 24 questions. Questions were asked using 4-item Likert scale to avoid central tendency bias. The survey was conducted on the population of first grade medicine students of Medical University of Lublin (n=309) in written form during anatomy test in January. The ordinal data were coded as numbers to perform Mann-Whitney U-test and linear regression. Additionally, the G-test was performed. P value <0.05 was considered significant.

**Results:** The group of respondents consisted of 190 women (61,5%) and 119 men. Over the half (55%) of the group was below 20 years old. The frequency of committing unethical acts declared by student was low. The median answer "sometimes" was selected in questions referring to: "using colloquialism referring to cadavers", "talking about cadavers to non-medical peers", "talking about cadavers in public places". In rest of the question concerning the frequency of unethical acts the median answer was "never". There were no statistically significant differences in the frequency of unethical acts comparing genders or age groups. The significant negative correlations were found between perceiving the cadaver as "the teacher" and unethical acts in relation to cadaver: using colloquialism (r=-0,14), joking (r=-0,15), talking to non-medical peers (r=-0,17), instrumental treatment (r=-0,17). The positive correlation was observed between preserving the cadaver as "the tool" and frequency of drinking or eating in the prosectorial room (r=0,11). Among the respondents 30 people declared that they have never done any of the unethical act. Comparing them with the rest of the sample it was found that this group more strongly agree with the statement that cadavers are their "first patients" (p=0,005; G=13,78)

**Conclusions:** The moral standards of student's behavior during gross anatomy classes in relation to human cadavers are determined by the way how they perceive cadavers.

[316]

#### **Diagnosing depression during pregnancy- what are the risk factors of prenatal depression?**

Olga Płaza, Stepan Feduniw, Dominika Paździor  
olga.w.plaza@gmail.com

Medical University of Warsaw, Students' Research Group at the 1st Department of Obstetrics and Gynecology

**Trustee of the paper:** Assoc. Prof. Katarzyna Kosinska-Kaczynska, MD, PhD

**Introduction:** The main causes of depression among pregnant women remain unclear, however, it is clear that the pregnancy carries a higher risk of depression occurrence. Left untreated, prenatal depression can be a cause of serious both maternal and neonatal complications.

**Aim of the study:** The aim of the study was to define potential risk factors of prenatal depression and to assess the frequency of its occurrence among pregnant women.

**Material and methods:** A prospective cross-sectional study was performed among 346 women. The self-composed questionnaire consisting of 46 questions, was distributed via internet between November 2017 and March 2018. The questionnaire contained Edinburgh Postnatal Depression Scale (EPDS), in which the results of 13 and more points (out of 30) suggested possible prenatal depression. Statistical analysis was performed with Chi2 Pearson. P value <0.05 was considered significant.

**Results:** 35.57% (n=130) of women had a score of 13 or more points. Women with depressive symptoms (DS) reported lack of support from the partner (46.9% vs. 16.2%; p<0.001) as well as other family members (40.8% vs. 14.4%; p<0.001), current pregnancy being unplanned (21.5% vs. 12.5%; p=0.014) and low socio-economic status (10% vs. 0.9%; p<0.001). Both early and advanced maternal age seemed to play a role in occurrence of DS: in women aged 17-24 40.8% declared symptoms (vs 28.7%; p<0.01), in mothers aged ≥37 6.2% did (vs 0.5%; p<0.001). Smoking during pregnancy was also more frequent among patients with DS (31.5% vs. 18.1%; p=0.004).

Previous diagnosis of depression or other mood disorders significantly increased a chance of DS occurrence (respectively- 17.7% vs. 4.6%; p<0.001 and 49.2% vs. 25%; p<0.001). Parental diagnosis of mood disorders and other mental disorders was also more frequent in this group of patients (respectively- 24.6% vs. 15.7%; p= 0.026 and 26.4% vs. 9.7%; p<0.001).

Only 23.8% of women with DS sought for help from healthcare professionals, with 21.5% receiving pharmacological treatment.

**Conclusions:** Pregnant women often report having DS. Evaluation of risk factors of DS and possible prenatal depression is essential in proper screening for depression among pregnant women.

[317]

**What is the relation between depressive disorders, dyspareunia, and other sexual dysfunctions?**

Lukasz Rowicki, Magdalena Zgliczynska, Agata Majewska, Monika Zasztowt-Sternicka, Iwona Szymusik, Katarzyna Kosinska-Kaczynska

lukas.rowicki@gmail.com

1<sup>st</sup> Department of Obstetrics and Gynaecology, Medical University of Warsaw, Poland

**Trustee of the paper:**

**Introduction:** Mood disorders, dyspareunia, and other sexual dysfunctions are very complex phenomena that affect each other. The aim of the study was to determine the impact of depressive disorders on specific aspects of sexual life - desire, arousal, lubrication, orgasm, sexual satisfaction, and pain.

**Aim of the study:** The aim of the study was to determine the impact of depressive disorders on specific aspects of sexual life.

**Material and methods:** We performed a cross-sectional study on a group of 561 women (18-40 years). Study participants completed a questionnaire, which consisted of 60 questions about demographic data, medical history, shortened Female Sexual Function Index (FSFI-6), Beck Depression Inventory (BDI) and 20 questions about pain characteristics and its rating with Visual Analog Scale (VAS).

**Results:** On the basis of the BDI result, the following depressive disorders were diagnosed: no signs of depression (BDI<11;n=351;62.57%), with mild depression (BDI=12-26;n=177;31.55%) and with moderate depression (BDI=27-49;n=33;5.88%). None of the study participants suffered from severe depression (BDI>49). Total BDI scores negatively correlated with total FSFI-6 score and with results in all studied aspects of sexuality: arousal, desire, lubrication, orgasm, sexual satisfaction, pain (p<0.05). The strongest correlation was found between sexual satisfaction and total BDI (r=-0.3). Moreover, a statistically significant positive correlation was found between the result in BDI and pain during sexual intercourse expressed in the VAS scale (p<0.05, r = 0.25). Pain assessed on the VAS scale during the relationship also significantly differed between the groups „no signs of depression”, „mild depression” and „moderate depression” (p<0.05). The FSFI-6 score was weakly correlated with the severity of following depression symptoms like anxiety for the future, neglecting of duties, anhedonia, sense of guilt and deserving punishment, feeling of being worse than others, inability to work, fatigue, sense of illness and loss of interest in sex (strong correlation; r=-0,44) but did not correlate with: suicidal thoughts, lack of interest in interpersonal contacts, sense of ugly appearance, insomnia, worse appetite, loss of weight.

The greater the severity of depressive disorders, the greater the exacerbation of sexual dysfunction. We should keep in mind that during the treatment of depressive disorders proper attention should be paid to this aspect. Patients with sexual dysfunction should be examined for depression.

**Conclusions:** The greater the severity of depressive disorders, the greater the exacerbation of sexual dysfunction. We should keep in mind that during the treatment of depressive disorders proper attention should be paid to this aspect. Patients with sexual dysfunction should be examined for depression.

[318]

**Analysis of types of nooses and location of knots in cases of suicide by hanging**

Katarzyna Ciuk, Ositadima Chukwu, Emil Dadański, Marta Bociąga, Szymon Ciuk

c.katarzyna.anna@gmail.com

Jagiellonian University in Cracow

**Trustee of the paper:** Associate Professor Tomasz Konopka MD, PhD

**Introduction:** Hanging is the most common type of suicide. It can be performed by using different types of materials and knots. Choice of type of noose can be determined by many factors, such as accessibility or cultural influence.

**Aim of the study:** The objectives of the study were to determine the types of nooses used in suicides by hanging, to determine frequency of different locations of knots and investigate their association with age, gender and place of committing suicide.

**Material and methods:** There were 1373 cases (M=87,11%, F=12,89%) of suicide by hanging in the archives of the Department of Forensic Medicine of Jagiellonian University Medical College in Cracow in years 2008-2018. 1294 (94,25%) of them had documented forensic autopsy and were analyzed in terms of types of used noose and location of a knot.

**Results:** Most frequently used type of noose was a rope (615 cases; 44,79%). Other types were, as follows: a cable (178; 12,97%), a belt (142; 10,34%), a piece of fabric (47; 3,42%), a part of clothing (44; 3,20%), a leash (12; 0,87%), an adhesive tape (16; 1,17%), a band (11; 0,80%). Two types of nooses were associated with different age groups; people who used a piece of fabric were younger than the rest (mean age 43,56 vs. 48,06, p-value <0,05), people who used a rope were older (60,09 vs. 47,77, p-value <0,05). People who committed suicide in hospitals used different types of nooses (a rope was used less frequently, a part of clothing and a belt were more common, p<0,05). The location of a knot on the left side of a neck was present in 299 cases (21,78%), right side of a neck 258 (18,79%), back of a neck 523 (38,09%), front of a neck 23 (1,68%). There were 10 cases in which a noose was without any knot. People who placed a knot at the front of a neck were statistically older (mean age 54.63 vs. 47.73, p-value <0,05).

**Conclusions:** The most common type of noose in our study was a rope. Easily accessible types of nooses were found very often (cable 12,97%, belt 10,34%). Suicides by hanging that took place in hospitals were performed by using different types of nooses. The most common location of a knot is a side of a neck (40,57%; left side 21,78%; right side 18,79%). A knot is placed at the front of a neck very rarely.

### [319]

#### **Depression in patients with end-stage renal disease: a role of quality of life**

Karolis Vencevicius; Ieva Eitaviciute

karolis.vencevicius@gmail.com

Vilnius University, Institute of Clinical Medicine

**Trustee of the paper:** Laurynas Rimsevicius, MD PhD

**Introduction:** Kidney failure and dialysis exert a significant psychological impact on patients. Therefore, depression is highly prevalent and is associated with poor quality of life among adults with end-stage renal disease.

**Aim of the study:** To evaluate depression symptoms of hemodialysis patients (HDP), predialysis patients (PDP), healthy controls (HC) and determine the relationship between depression and quality of life in HDP.

**Material and methods:** A case-control study of 139 subjects (43 HDP, 46 PDP, 50 HC) was performed at Vilnius University hospital Santaros klinikos in 2017-2019. Depression symptoms of subjects were evaluated by Center for Epidemiologic Studies Depression Scale (CES-D), higher scores (0-60) indicating the presence of more symptomatology (24 – cutoff for severe depression). Quality of life (QOL) of HDP was evaluated by Kidney Disease and Quality of Life instrument (KDQOLTM-36), higher results indicating higher QOL. All subjects completed an anonymous 12-questions questionnaire to determine their demographic, epidemiological characteristics. Statistical analysis was performed using Student's t-test,  $\chi^2$  test, Mann-Whitney, Kruskal-Wallis, ANOVA tests, Pearson and Spearman correlations by IBM SPSS 23.0.

**Results:** The three study groups did not differ regarding sex, age and education. Mean CES-D scores were significantly higher in HDP group than in PDP and HC (17,26±6,79; 13,64±5,64; 10,36±4,48 accordingly; p=0,001). There were significantly more cases of severe depression in HDP group than in PDP and HC groups (18,6%; 4,35%; 2% accordingly; p=0,032). Mean CES-D scores of female HDP were higher than male HDP (20,36±6,45 vs. 14,22±5,92; p=0,018). Mean CES-D scores were lower in HDP former smokers than in HDP who never smoked but the difference was not statistically significant (16,03±7,23 vs. 17,56±6,36; p=0,353). A negative correlation between HDP KDQOLTM-36 scores and HDP CES-D scores was determined but it was not statistically significant (r=-0,196; p=0,143). A statistically significant negative correlation between HDP KDQOLTM-36 physical subscale (SF-12 measure of physical functioning) and HDP CES-D scores was determined (r=-0,421; p=0,039).

**Conclusions:** HDP mental state, regarding depression symptomatology and prevalence of severe depression, was more severe than PDP and HC. Depression symptoms were more severe in female HDP than male HDP. A statistically significant correlation between quality of life and mental state in HDP was not observed. Mental state of HDP with better physical functioning was better.

### [320]

#### **Medical students attitude towards psychotherapy in Latvia**

Renate Kangsepa

r.kangsepa@gmail.com

Riga Stradins university / Department of Psychosomatic Medicine and Psychotherapy

**Trustee of the paper:** Arturs Miksons

**Introduction:** Help seeking is part of our natural behaviour which allows us to adapt situations in life. There are stigmas towards mental illness and also stigma towards seeking professional psychological help. People are afraid being called names if they reveal seeking therapist. There are not a lot of studies about attitude towards psychotherapy in non-medical population, but some of them reveal the same aspects as medical students why they are not choosing professional psychological help (Chen, J., 2018).

**Aim of the study:** To determine attitude towards seeking psychotherapy and their experience in psychotherapy.

**Material and methods:** Cross-sectional study with anonymous survey on Google Forms, which includes adapted ATSPPH scale- The Attitudes toward Seeking Professional Psychological Help-Scale and authors' questions. Statistical data was processed in MS Excell and IBM SPSS v22 Statistics.

**Results:** 223 respondents' answers (85,2% women) from all medical study years were analyzed (33,2% from 1st year). Most of the students (78,9%) shown positive attitude to psychotherapy. Gender, age or study year doesn't have any statistical correlation to attitude towards psychotherapy. Overall psychotherapist's help had seek 42 students mainly women and spending up to half a year in therapy. Students mostly reveal being in psychotherapy, to their surroundings, most often parents and friends. There is statistical reliable correlation between use of psychotherapy and attitude towards psychotherapy ( $p < 0,001$ ).

**Conclusions:** Overall attitude towards psychotherapy is positive, but less than 1/5 had seek professional help. Use of psychotherapy has an positive impact on students attitude towards psychotherapy.

[321]

### **Assessment of prognostic factors for dissatisfaction with body image in young female and male populations**

Agnė Šarskutė, Jokūbas Gužas, Vilma Andrejauskienė

sarskuteagne@gmail.com

Vilnius University Faculty of Medicine, Faculty of Philosophy

**Trustee of the paper:** Agnė Šarskutė, Jokūbas Gužas

**Introduction:** Nowadays the prevalence and severity of eating disorders are increasing between adolescents. Important risk factor for eating disturbances is dissatisfaction with own body. However, existing researches lack data on prognostic factors for body image distortion.

**Aim of the study:** To assess prognostic factors for dissatisfaction with body image in young female and male populations.

**Material and methods:** 101 adolescents (age  $M = 17,89$ ,  $SD = 0,53$ ), 43 female and 58 male participants took part in the study. They filled Body Shape Questionnaire-16 (Cronbach  $\alpha = 0,96$  for female version and Cronbach  $\alpha = 0,818$  for male version), Obligatory Exercise Questionnaire (Cronbach  $\alpha = 0,946$ ), Physical Appearance Comparison Scale-Revised (Cronbach  $\alpha = 0,946$ ), Fear of Negative Appearance Evaluation Scale (Cronbach  $\alpha = 0,912$ ).

**Results:** Females ( $M = 43,4$ ,  $SD = 20,78$ ) were significantly more concerned about their body shape than males ( $M = 26,72$ ,  $SD = 8,87$ ),  $p < 0,001$ . The results have revealed that a greater dissatisfaction with body shape related with higher level of obligatory exercise (for females  $r = 0,352$ ,  $p < 0,05$ , for males  $r = 0,273$ ,  $p < 0,05$ ), more frequent comparison of ones physical appearance with the appearance of the same gender individuals (for females  $r = 0,762$ ,  $p < 0,001$ , for males  $r = 0,302$ ,  $p < 0,05$ ), as well as higher level of anxiety, caused by the fear to experience negative judgement of one's physical appearance (for females  $r = 0,459$ ,  $p < 0,01$ , for males  $r = 0,485$ ,  $p < 0,001$ ). Further analysis showed the predictive value of dissatisfaction of own body between female participants is the frequency of comparison between own and same gender individual bodies ( $\beta = 1,613$ ,  $p < 0,001$ ),  $F = 56,805$ ,  $p < 0,001$ ,  $R^2 = 0,58$ . Prognostic factors for male dissatisfaction with their own body include the level of anxiety, caused by the fear to be judged negatively ( $\beta = 0,858$ ,  $p < 0,001$ ) and degree of obligatory exercise ( $\beta = 0,328$ ,  $p < 0,05$ ),  $F = 12,270$ ,  $p < 0,001$ ,  $R^2 = 0,309$ .

**Conclusions:** In young female population the greater body comparison rate with the same gender predicts a greater dissatisfaction with own body shape. Meanwhile in young male population the degree of obligatory exercise and, most importantly, the level of anxiety of being judged negatively predicts dissatisfaction with own body.

[322]

### **Role of psychiatric and nonsteroidal anti-inflammatory drugs overdose in adolescent suicide attempts**

Laura Bajare, Ieva Slezina, Katrina Krievina, Dana Augustova  
ieva.slezina@gmail.com

Riga Stradins University, Faculty of Medicine, Riga, Latvia

**Trustee of the paper:** Ivars Vegeris, Anesthesiologist-reanimatologist, Children's Clinical University Hospital, Riga, Latvia

**Introduction:** Suicide rate in Latvia is one of the highest in Europe. State statistics focus mainly on committed suicides in all ages, lacking in-depth analysis of adolescent suicide attempts. Our study explores recent incidence of paediatric suicide attempts with drug intoxication.

**Aim of the study:** Aim of the study was to investigate adolescent (age 10-18) drug intoxication cases and highlight the cases of suicide and parasuicide attempts, analyzing the main pharmaceutical groups and medicine chosen by children, patient demographics and intents.

**Material and methods:** A retrospective study based on Children's Clinical University Hospital (Riga, Latvia) patients database according to ICD-10 codes during time period from January 2017 till December 2018. In addition, regulations published by State Agency of Medicines, state statistics and scientific literature on the topic were reviewed.

**Results:** In total 146 patients with drug intoxication were admitted to Emergency Department (ED) in year 2017 and 2018. 43 of them were suicide attempts, 6 of them repeated. Female patients were almost four times more than men, average age 16 years (min – 11, max – 18). 15 of them were using NSAIDs, 21 – psychiatric drugs, 7 – different combinations or other groups of medicine. In cases of NSAIDs overdose average number of pills was higher (48, while psychiatric drugs – 19). Motives for suicide attempts are depression – 15 patients, conflict with family or friends or both – 14, schizophrenia – 3, violence in family – 2, behavioural disorders – 2, unknown – 7.

**Conclusions:** The number of adolescent suicide attempts using NSAIDs and psychiatric medicine is noteworthy. In all 15 cases, where NSAIDs were used, chosen drugs were accessible over the counter or without any control. Almost in all cases, where psychiatric drugs were used, patients used their own medicine prescribed by their psychiatrist.

[323]

### **Correlation between alexithymia and anxiety among medical students**

Evija Tropiņa, Liene Sauša, Artūrs Miksons  
dr.e.klavina@gmail.com

Rīgas Stradiņa universitāte

**Trustee of the paper:** Evija Kļaviņa

**Introduction:** Alexithymia is characterized as cognitive and affective deficits in recognition of subjective emotional states. Alexithymia can be detected by using Toronto Alexithymia Scale (TAS 20) which consist of three alexithymia elements: difficulty identifying feelings (DIF); difficulty describing feelings (DDF); externally oriented thinking (EOT). Lately alexithymia has been brought to doctor's attention because of its newfound association with a variety of medical conditions. Anxiety is a feeling of unease, such as worry or fear. Symptoms can be mild to severe and can interfere with individuals everyday functioning. Studies has showed high prevalence of both – alexithymia and anxiety in general population.

**Aim of the study:** The aim of this study is to find out if there is correlation between alexithymia and anxiety among medical students.

**Material and methods:** This was a cross-sectional study. Medical students from 1st till 6th year were asked to fill the self-report questionnaire electronically on voluntary basis. Questionnaire consisted from internationally validated TAS 20 and Four-Dimensional Symptom Questionnaire (4DSQ). SPSS for Windows was used to perform all statistical analyses.

**Results:** Altogether responded 224 medical students (MS). Of all medical students alexithymia was detected in 14,7 % (n=33), possible alexithymia in 27,7% (n=62) and no alexithymia in 57,6% (n=129). Among all respondents in 17 % (n=38) anxiety was moderate and in 7,1 % (n=16) anxiety was strong. Correlation coefficient (CC) between alexithymia and anxiety was 0,490 (p<0,001). The strongest correlation was between anxiety and DIF (CC=0,503; p<0,0001) and the weakest correlation was between EOT (CC =0,217; p<0,001).

**Conclusions:** Results of this study showed that anxiety has moderately strong correlation with alexithymia. Altogether anxiety was detected in one quarter of medical students and alexithymia was detected in almost half of students. This study shows that alexithymia could be anxiety enhancing factor. From all elements of alexithymia difficulties identifying feelings could have the biggest impact on anxiety.

[324]

**Peculiarities of self-esteem in primary schoolchildren with overweight and obesity**

Daria Avchinnikova, Ekaterina Tsukareva

verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** Andrey Avchinnikov MD, PhD

**Introduction:** Overweight can affect self-esteem, reduce the intensity of communication with peers, worse the emotional state of children. Particular relevance has the problem of overweight in children of primary school age, when their self-esteem and attitude to body are only formed.

**Aim of the study:** The aim of our study was to reveal the effect of overweight and obesity on the formation of self-esteem in primary schoolchildren.

**Material and methods:** The study involved 510 primary schoolchildren of 9–10 years (242 boys and 268 girls) of Smolensk schools, who were divided into two groups: experimental – pupils with overweight and obesity and control – pupils with normal body weight. The questionnaire of Cologne Sports University (Kinderheute–Bewegungsmuffel, Fastfoodjunkies, Medienfreaks, Lebensstilanalyse, 2010) was used to study the self-esteem of children. Along with elements of lifestyle and nutritional status, this questionnaire allows to identify peculiarities of the general self-esteem in primary schoolchildren. Statistical proceedings was performed with the Statistica 7.0 software package (StatSoft, USA).

**Results:** Significant differences between the children of experimental and control groups for a number of indicators were identified. Particularly, only 29% of children in the study group were satisfied with their bodies, compared with 58% of children in the control group. ( $\chi^2=16,83$ ,  $p<0,001$ ). Furthermore 22% of children with overweight and obesity don't like their body, against 9% of children with a normal weight ( $\chi^2=6,45$ ,  $p=0,012$ ). A positive assessment of their physical appearance «I look really good» was noted in 34% of children in the experimental and in 59% in control group ( $\chi^2=5,80$ ,  $p=0,017$ ). If 23% of overweight children would gladly change their appearance, then in a group of children with normal body weight, only 8% would like that ( $\chi^2=13,08$ ,  $p<0,001$ ). While interpreting self-esteem, only 30% of pupils from the experimental group were very satisfied with themselves, compared with 51% of children from the control group ( $\chi^2=5,55$ ,  $p=0,019$ ).

**Conclusions:** The study has revealed negative changes in the formation of their own body image in children, reduced level of self-esteem in primary schoolchildren with overweight and obesity. The data confirm the necessity to develop recommendations for the harmonization of body image in pupils with overweight and obesity, the formation of a positive attitude to their own body, increasing self-esteem, self-confidence and their abilities.



# Public & Global Health

**Date:**

Friday, May 10th, 2019

**Location:**

Room 119, Library – CBI

**Jury:**

prof. dr hab. n. med. Andrzej Pająk  
dr hab. n. med. Aneta Nitsch-Osuch  
dr hab. n. med. Katarzyna Szamotulska  
dr hab. n. o zdrowiu Joanna Gotlib  
dr hab. n. o zdrowiu Mariusz Panczyk  
dr hab. n. roln. Iwona Traczyk  
dr Krzysztof Łanda  
mgr Krzysztof Krasuski

**Coordinators:**

Aleksandra Hyży  
Maciej Mikołajczak

**Scientific Patronage:**

National Consultant in Public Health Prof. Jarosław Pinkas, MD, PhD  
National Consultant in Epidemiology Iwona Paradowska-Stankiewicz, MD, PhD  
Krajowe Centrum ds. AIDS  
Polskie Towarzystwo Higieniczne  
Międzynarodowe Stowarzyszenie Studentów Medycyny IFMSA Poland



Agenda Ministra Zdrowia



**IFMSA-Poland**  
Międzynarodowe Stowarzyszenie  
Studentów Medycyny

[325]

### Assessment of physical activity in students of armenian universities

Antonyan G.G.<sup>1</sup>, Hayrapetyan L.M.<sup>1</sup>, Gasparyan L.S.<sup>1</sup>, Khachatryan S.A.<sup>1</sup>, Manusajyan A.H.<sup>1</sup>, Muradyan T.M.<sup>1</sup>, Varderesyan S.G.<sup>2</sup>

gayane.antonyan@gmail.com

<sup>1</sup> Faculty of General Medicine, Yerevan State Medical University, Yerevan, Armenia

<sup>2</sup> Department of Pathophysiology, Yerevan State Medical University, Yerevan, Armenia

**Trustee of the paper:** Varderesyan S.G.

**Introduction:** One of the most common and unhealthy lifestyle component of modern society is physical inactivity. Diseases, which are correlated with sedentary lifestyle are type 2 diabetes, cardiovascular diseases, colon and breast cancers, dementia and depression.

**Aim of the study:** The study aimed to investigate the level of physical activity and body mass index (BMI) of university students in Armenia.

**Material and methods:** We collected data through printed out and online questionnaires via "Survey Monkey" program. The questionnaire was developed based on World Health Organization "The Global Physical Activity Questionnaire" and included general information about participant and six questions related to: daily walking/cycling (Q1), heavy (Q2) and moderate-intensity (Q3) housework, hard (Q4) and moderate-intensity (Q5) sports/fitness, and sitting/reclining time per day (Q6). The data were analyzed using Independent T-test via "IBM SPSS Software" statistical program.

**Results:** We surveyed 274 students aged 17 to 27, where 85.4% were non-overweight (BMI<25) and 14.6% were overweight (BMI≥25). The mean value of BMI among Armenian students (21,3±2,9) is significantly lower (p<0.01) compared to foreign students (23±3,5) and is higher in males than in females (22,8±3,3 and 21±2,7).

Daily walking/cycling duration (min/day) is higher in males than in females (45,1±31,3 vs 37,3±27,9, p<0.05) and in Armenians than in foreign students (42,7±29,8 vs 27,5±23,1, p<0.01). Among YSMU students 1st and 2nd-year students have lower range of activity compared to the 3-6th-year students (26,9±21,4 vs 40±28,4, P<0.01). Armenian students sit/recline less than foreign students (441,8±215,1 vs 531,4±183,8 min/day, p<0.01), 1st to 3rd-year students sit/recline more than 4th-6th-year students (506,6±213,2 vs 439,6±203,5 min/day, p<0.05).

**Conclusions:** The prevalence of overweight students is 14,6%, which coincides with the official state data in appropriate age groups and points to the high risk of noncommunicable diseases in the future. The mean BMI of male students is by 7,9% higher than in females. Because of more intense schedule and academic program, 1st to 3rd-year medical students spend more time in sitting/reclining positions, while students of higher years are involved in clinical rotations and walk more to get to the hospitals and work with patients. We assume that attendance to the physical training classes in 1st-year improves the level of physical activity. Physical training classes can be recommended to add to schedules of the high-year students.

[326]

### The knowledge and experiences of pregnant women regarding physical activity during pregnancy

Izabela Walasik, Katarzyna Kwiatkowska

drzewicaiza@wp.pl

Medical University of Warsaw

**Trustee of the paper:** Katarzyna Kosinska-Kaczynska, MD, PhD

**Introduction:** Adequate physical activity of a pregnant woman has been proven to decrease the risk of pregnancy complications. The knowledge of women regarding physical exercise in pregnancy is a part of conscious motherhood, while a lack of it may lead to not taking up any form of physical activity during pregnancy.

**Aim of the study:** To analyze the knowledge and experience of women regarding physical activity during their latest pregnancy.

**Material and methods:** An anonymous questionnaire, consisting of 57 questions, was completed electronically in 2018 by women who gave birth at least once. The respondents were qualified as "physically active during pregnancy" if they performed physical exercises such as regular walks, marching, jogging, working out at a gym, swimming, yoga, pilates, fitness, exercise-ball workouts or home gymnastics.

**Results:** The study group consisted of 9345 women. 52% of them performed exercises during pregnancy. The main reasons for a lack of physical activity were: lack of interest in physical activity (45%), lack of energy (40%), lack of knowledge regarding proper exercise during pregnancy (34%), lack of time (27%) and medical

contraindications (25%). Non-active respondents suffered from gestational hypertension (6,7% vs 9,2%;  $p < 0,001$ ) and gave birth prematurely (11% vs 15%;  $p < 0,001$ ) to newborns with a lower birth weight significantly more often ( $< 2500\text{g}$  vs  $> 2500\text{g}$ ;  $p < 0,001$ ). Physically active women reported suffering from pregnancy-related ailments such as fatigue, back pain or constipation significantly less often. 22% of all respondents were unable to identify reliable sources of information regarding exercise during pregnancy. A majority of the exercising women used the Internet to obtain gain information on physical activity during pregnancy (69,1%). Physically active women had vaginal delivery more often (61% vs 55%;  $p < 0,05$ ). Episiotomy was performed most often on non-active primiparous respondents (77,5% vs 71% active primiparous,  $p < 0,001$ ). 13% of women felt discriminated due to their physical activity during a pregnancy. 22% of respondents' physical activity was not accepted by their environment. 39,1% of the women were told by others to stop physical exercise because it was bad for the baby's health.

**Conclusions:** The knowledge of Polish women regarding proper physical activity during pregnancy is insufficient, which may influence a lack of will to initiate such activity among pregnant women. Physical activity of a pregnant woman may have an impact on the course of the pregnancy and birth.

[327]

### **Factors affecting influenza vaccination in pregnant women in Latvia**

Ulrika Ulla Andersone, Anna Linda Upmale, Agnese Anna Jaunākā  
ulrikaandersone@gmail.com

Rīga Stradiņš University, Faculty of Medicine

**Trustee of the paper:** Prof. PhD Gunta Lazdāne

**Introduction:** Seasonal influenza is an acute respiratory infection caused by influenza viruses which circulate in all parts of the world. Influenza can cause severe illness or death especially in people at high risk. According to the WHO annual epidemics are estimated to result in about 3 to 5 million cases of severe illness and about 290 000 to 650 000 deaths. Pregnant women have increased risk of severe disease and death from influenza. It may also lead to complications such as stillbirth, neonatal death, preterm delivery and decreased birth weight.

**Aim of the study:** The aim of this study was to clarify women's awareness about influenza vaccine during pregnancy and sources of information, and what are the main factors influencing women's choice to get or not to get vaccinated during pregnancy.

**Material and methods:** A questionnaire was created to assess women knowledge about the influenza vaccine during pregnancy. 235 women in post-partum period were included in this study. During their follow up visit women were asked to fill in a questionnaire regarding factors that may influence women's choice regarding influenza vaccination during pregnancy. Statistical analysis was performed using Microsoft Excel. The study was approved by the Ethics Committee of Rīga Stradiņš University.

**Results:** 227 (96.6%) women were aware of the influenza vaccine, 8 (3.4%) – were not. 191 (81,3%) women were aware about the influenza vaccination during pregnancy, 44 (18,7%) – were not. 151 (71.9%) pregnant women did not get vaccinated and in 109 cases (72,3 %) general practitioners discouraged them. The most common information source regarding vaccination was general practitioner in 134 (57%) cases, subsequent source were newspapers, TV and radio – in 99 (42.1%) cases, gynecologist and midwife - in 76 (32.3 %) cases. The most common statement was "There is still a chance to get seasonal influenza infection even if I have been vaccinated" in 179 (76.2%) cases. Subsequent in 67 (28.5%) cases was "Healthy people without any immune issues does not have to get the vaccine", third most common – "Pregnant women getting vaccinated, protects her child after birth" in 66 (28.1%) cases.

**Conclusions:** The study confirmed that 2/3 of pregnant women in Latvia are aware of the vaccine against influenza during pregnancy. There is a strong assumption among pregnant women that there is a possibility to get seasonal influenza infection even when vaccinated. Low adherence to vaccination is associated to healthcare service providers discouraging pregnant women to get vaccinated.

[328]

**Cervical cancer - causes and prevention of HPV infections in the opinions of young Polish women: a cross-sectional survey**

Maja Kotowska, Artur Kotowski, Aleksandra Warzyszyńska, Iwona Szymusik, Katarzyna Kosińska-Kaczyńska, Andrzej M. Fal

kotowska.maja@gmail.com

Warsaw Medical University - affiliation of the first author

**Trustee of the paper:** Iwona Szymusik

**Introduction:** Cervical cancer is an important issue of gynecologic oncology. Among the EU countries Poland is distinguished by a higher mortality rate due to cervical cancer, which results from the low awareness, late diagnosis, low level of vaccination rate and unsatisfactory level of participation in cervical screening.

**Aim of the study:** The aim of the study was to assess the various aspects of knowledge regarding cervical cancer, risk factors for this disease, the role of HPV infection and the attitude to primary (vaccination) and secondary (cytological screening) prevention among young women.

**Material and methods:** The study was performed using CAWI method based on original questionnaire in electronic form. Online completing of the survey was voluntary and anonymous.

**Results:** The study was conducted in a group of 2058 women aged 19-33. In total 98.4% of respondents came across the term "cervical cancer", 84.1% knew that cervical cancer could be prevented and the following were identified as the main risk factors: cervical cancer in closest relatives (85.3%) and HPV infection (81.9%). Although according to 82.0% of women HPV infection can be prevented by vaccination, only 18.4% of respondents were vaccinated. The main reason for non-vaccination was lack of knowledge about the availability of the vaccine (41.2%) and high price (32.0%). Of the unvaccinated people, 63.5% declare their will to be vaccinated in the future. Concerning secondary prevention, 98.6% of the respondents admitted that they knew the term "cytological examination", 89.0% indicated that this examination detected the presence of pre-cancerous lesions, and according to 58.4% of respondents, this test should be performed after sexual initiation. Despite the fact that 80.5% of respondents confirmed the fact of beginning sexual activity (44.4% of them had more than 1 partner), 17.1% of the respondents admitted that they didn't go to gynecologist yet. Approximately 84% of respondents believe that the amount of information on cervical cancer prophylaxis and HPV infections currently providing is insufficient.

**Conclusions:** The basic terms regarding primary and secondary prevention of cervical cancer have been widely known. However, the knowledge about specific risk factors, sexual behaviors contributing to HPV infection and, consequently, the ability to self-identify as belonging to higher risk group is insufficient. It is justified to conduct educational activities regarding the assessment of risks related to cervical cancer addressed to young women.

[329]

**The Effects of Font Style and Size on Memory in Middle School Children**

Dr. Oshin Behl

officialobehl@gmail.com

**Introduction:** The Indian system of education focuses mainly on memory-based-learning, thus increasing the need to find methods of easier memory retention in children. Effects of variations in content presentation and style of teaching have been studied. However, the niche of effects of textual modifications like change in font style and size itself, is yet to be explored.

**Aim of the study:** In this study, we aim to

1. Explore the effect of "desirable difficulty" in reading on memory.
2. Understand which font style & size is best suitable for learning in students of middle school

**Material and methods:** A 350 word standard passage for 11 to 13 year olds (Grade 6 to 8), was administered to n=132 students in 4 different groups - Normal textbook font (1A- Times, 15, n=34), Normal style, Smaller size (1B- Times, 11, n=33), Unusual style, Normal size (2A- Trattatello, 15, n=33), Unusual style, Smaller size (2B- Trattatello, 11, n=34).

Students were given 5 minutes at the beginning of the school day to read the text thoroughly once, to simulate the style of classroom reading. At the end of the school day, the students were asked to fill out 11 bits of 1-3 word information, which was used to test their memory, with 1 correct word recalled=1 point. Each paper was scored out of a maximum possible score of 15.

Individual memory capacity as a confounder in this test was eliminated by pre-administering the 15 word Rey Auditory Verbal Learning Test (RAVLT), and excluding students with scores <7 (n=11).

**Results:** Average age of students was 12 years 7 months. Mean score for RAVLT overall was 7.93, while group wise (excluding scores <7), it was 1A=7.88, 1B=7.78, 2A=7.87, 2B=7.93. The variable based memory scores (based on passage, out of 15) were 1A=5.5 with SD=0.54, 1B=7.5 with SD=0.38, 2A=6.75 with SD=1.02, 2B=7 with SD=0.84.

**Conclusions:** Through this study, we can conclude that Smaller size, but Normal style text yields the best memory results in middle school children. Also, smaller sizes of both normal and unusual font styles give better results than the bigger counterpart of the same, thus guiding us in designing reading material.

[330]

### **jakszczepic.pl - automatic creation of personalized vaccination schedules for children**

Wawrzuta Dominik, Giefert Sylwia

d.wawrzuta@gmail.com

Medical University of Warsaw

**Introduction:** In the recent years the number of properly vaccinated children in Poland is decreasing. There are many different reasons, predominantly mild infections make vaccinations impossible to do on time, sometimes parents do not want to vaccinate their children or migrate from another country where a vaccination schedule is different. Consequently, almost 90% of children are not fully vaccinated or were not vaccinated at the official dates. In these situations, it is necessary to create a personalized schedule to maintain effectiveness of vaccinations.

**Aim of the study:** The aim of the study was to develop an online application to automatic creation of personalized vaccination schedules for children living in Poland. This tool is designed for pediatricians and parents. It enables to create a schedule in less than a minute.

**Material and methods:** We have developed an algorithm specifically designed to create an optimal vaccination schedule. The algorithm takes into account all important features of vaccines using official recommendations and documentations of vaccines.

A user, for example a parent or a physician, specifies a date of birth of a child and his or her vaccination history. Using this information the algorithm performs multiple steps to generate the recommended vaccination schedule. First of all, it verifies past vaccinations and removes incorrect ones. Secondly, the tool finds missed doses and estimates minimum time needed to give all missing vaccines. Finally, it generates easy to use personalized schedule. A user can also choose his own list of non-mandatory vaccines to immunize a child.

**Results:** The result of our research is an application available on the website [jakszczepic.pl](http://jakszczepic.pl) ([vaccinescheduler.eu](http://vaccinescheduler.eu) for English language users). This tool is easily accessible using computers and smartphones.

**Conclusions:** The application gives opportunity to create a reliable vaccination schedule without extensive medical knowledge. It will increase a number of properly vaccinated children, therefore it will provide a higher level of herd immunity and will prevent epidemics. The application [jakszczepic.pl](http://jakszczepic.pl) is the first tool to generate personalized vaccination schedules in Europe. In the future, we plan to create similar applications for other countries.

[331]

### **Chronic obstructive pulmonary disease screening with portable spirometers performed by medical students**

Marcin Zagaja, Urszula Szafrańska, Olga Żelazna, Kornelia Woźniczko, Mikołaj Kutka, Katarzyna Mycroft MD, Piotr Jankowski MD, Łukasz Kołtowski MD, Piotr Korczyński MD, PhD, Katarzyna Górńska MD, PhD

zagajamarcin@gmail.com

Department of Internal Medicine, Pulmonary Diseases and Allergy, Medical University of Warsaw, Poland; Students' Research Group "Alveolus", Medical University of Warsaw, Poland

**Trustee of the paper:** Katarzyna Górńska MD, PhD, Piotr Korczyński MD, PhD,

**Introduction:** Chronic obstructive pulmonary disease (COPD) is a global healthcare problem which is expected to worsen. A diagnosis of COPD can be made when fixed airway obstruction in spirometry is present. Introduction of portable spirometers might improve patients' accessibility to spirometry.

**Aim of the study:** The aim of our study was to assess: 1. whether technically correct spirometry could be performed by medical students; 2. usefulness of portable spirometers in pulmonary department; 3. the prevalence of undiagnosed COPD among hospitalised patients.

**Material and methods:** Medical students performed spirometry at the patient's bedside using a portable spirometer AioCare in eligible patients admitted to the pulmonary department. All study performers were trained in performing spirometry and had to prove their skills during the practical exam. Inclusion criteria to the study were: 1. age  $\geq 40$  years old, 2. tobacco exposure  $\geq 10$  pack-years, 3. no contraindications for spirometry, 4. written consent to participate. Each patient had a medical history taken and filled in a questionnaire created in a mobile app regarding COPD risk factors, symptoms and potential contraindications for spirometry. Afterwards, spirometry at the patient's bedside was performed. When airway obstruction ( $FEV_1\%VC < 5$ th percentile) was present, the bronchial reversibility test was performed.

**Results:** Out of 126 patients admitted to the pulmonary department between January 7th and February 18th 2019, 54 fulfilled eligibility criteria. In total, only 33 (61.1%) patients agreed to participate in the study: 45% women, median age 67 (IQR 60-72) years old, 30 (90.9%) of subjects had spirometry in the past. In 27 patients (81.8%) measurements were performed correctly. In 5 patients spirometry was classified as a grade C and in 1 patient as a grade F according to NLHEP criteria. Post-bronchodilator airway obstruction was present in 16 (48.5%) patients, of those 10 had a prior diagnosis of COPD, 3 of asthma/COPD overlap and 1 patient had asthma. We found two (6.1%) new cases of COPD.

**Conclusions:** Most spirometry measurements performed by medical students were technically correct. Although COPD is well diagnosed among patients admitted to the pulmonary department, a significant ratio of hospitalised patients refused to have spirometry. The convenience of portable spirometers proves their suitability for use in internal medicine wards and should also be considered as a diagnostic tool in different medical facilities.

[332]

#### **Attitudes towards HPV vaccines in rural area in Poland**

Carlo Bieńkowski, Agata Golik

carlo.bienkowski@gmail.com

Student's Scientific Group affiliated to the 2<sup>nd</sup> Department of Obstetrics and Gynaecology, Medical University of Warsaw

**Trustee of the paper:** Joanna Kacperczyk-Bartnik, MD, Agnieszka Dobrowolska-Redo MD, Assoc. Prof. Ewa Romejko-Wolniewicz, MD, PhD

**Introduction:** Despite documented effectiveness and safety of Human papilloma virus (HPV) vaccines, HPV vaccination rates in Poland remain relatively low.

**Aim of the study:** The aim of the study was to determine what types of beliefs and concerns are associated with HPV vaccines among population living in rural areas and searching for possibilities of increasing HPV vaccine coverage.

**Material and methods:** It was a cross-sectional survey study performed by means of paper questionnaires distributed to mothers and female teachers during parents' gathering in a primary school in a rural area in Holy Cross Province. Altogether 170 surveys were collected.

**Results:** Mean age of surveyed women was 38 (between 19-63 years old). 10% of respondents had a history of abnormal Pap smear result, 2.3% were vaccinated against HPV, 7% were recommended by a physician to get vaccinated. 5% of surveyed women vaccinated their children against HPV. 10% were recommended by a physician to vaccinate their child. 83% of respondents believed that vaccination is an effective protection against HPV caused diseases. 43% answered that HPV vaccine leads to sexual promiscuousness among adolescents. 96% stated that HPV vaccine should be fully funded by state and in such condition – 86% would have vaccinated their daughter and 87% would have vaccinated their son. Most common reasons for not vaccinating were: no physician's recommendation (58%), unawareness of such possibility (44%), and price (26%).

**Conclusions:** Main barriers associated with low vaccination rate were unawareness of such possibility and high price. Increase in HPV vaccine coverage could be achieved by educating parents and organizing funding sources.

[333]

### **Adherence to breast cancer screening in a rural area in Poland**

Aleksandra Szczęśna, Agata Golik

alexandra.szcz@gmail.com

Students' Scientific Group affiliated to 2nd Department of Obstetrics and Gynecology,  
Medical University of Warsaw

**Trustee of the paper:** Joanna Kacperczyk-Bartnik MD, Agnieszka Dobrowolska-Redo MD,  
Ewa Romejko-Wolniewicz PhD MD

**Introduction:** According to the International Agency for Research on Cancer, the incidence of breast cancer among Polish women in 2018 was 59 per 100 000, representing 22.4% of newly diagnosed malignancies. Increase in breast cancer incidence is observed in other countries of West and in Central-East Europe as well. In 2018, the Polish Society of Gynecologists and Obstetricians introduced screening guidelines, in which breast ultrasound is recommended for every pregnant woman.

**Aim of the study:** The aim of the study was to examine breast cancer screening adherence in rural area in Poland.

**Material and methods:** It was a cross-sectional survey study performed by means of paper questionnaires distributed to mothers and teachers during parents' gathering in a primary school in a rural area in Holy Cross Province. Altogether 170 surveys were collected.

**Results:** Mean age of surveyed women was 38 (between 19-63 years old). 12% of respondents had a positive family history of breast cancer. 3% had breast biopsy and 2.3% underwent treatment for breast cancer. 49% of surveyed women had palpation breast examination performed by a physician, 22% underwent breast ultrasound and 1.7% had a mammography. During pregnancy – 49% had a palpation examination by physician and 14% had breast ultrasound. 90% of respondents believed that breast ultrasound is an effective way of early breast cancer detection and decrease in mortality rate. 65% were recommended by a physician to undergo this examination – 62% by a gynecologist and 6% by a general physician. 77% of women performed breast self-exam, however only 30% did it regularly once a month.

**Conclusions:** Percentage of women living in rural areas who undergo prophylactic breast examinations on regular basis is not satisfactory. Routine screening in pregnancy as well as referral by general physicians could be valuable for early detection of breast cancer due to higher screening adherence.

[334]

### **The Attitude of Polish and American Mothers Toward Breastfeeding – A Questionnaire Study**

Dominique Gnatowski, Steven Hamati

dominiquegnatowski@gmail.com

Medical University of Warsaw / Department of Pediatric Dentistry

**Trustee of the paper:** Anna Turska-Szybka, DDS, PhD

**Introduction:** Exclusive breastfeeding is recommended up to 6 months of age and no longer than 12 months.

**Aim of the study:** To compare the attitude of Polish and American mothers toward breastfeeding.

**Material and methods:** Surveys consisting of 49 questions concerning breastfeeding were given to mothers from Philadelphia (USA) and Warsaw (Poland). Statistical analyses including Spearman correlations were made using Statistica 12.

**Results:** There were 500 Polish and 504 American questionnaires collected. The average age of Polish and American mothers was 39.0±6.5 and 37.7±8.6 ( $p=0.008$ ). 47.2% of Polish and 42.3% of American mothers had a graduate level of education ( $p>0.05$ ). Polish (91.8%) and American (88.3%) mothers were mainly in the middle social class ( $p>0.05$ ). In Poland 5.8% of mothers bottle-fed, 63.8% both breastfed and bottle-fed, and 30.4% only breastfed, and in the U.S. 16.5%, 70.1%, and 13.4%, respectively ( $p<0.05$ ). Among Polish and American mothers, 50.9% and 79.0% ( $p<0.05$ ) breastfed all of their children, 27.1% and 39.2% breastfed up to 6 months ( $p<0.05$ ), and 11.8% and 0.2% breastfed up to 2 years, respectively ( $p<0.05$ ). During the day, Polish mothers breastfed every 3 hours (27.9%) and every 4 hours (42.8%), and American mothers every 3 hours (36.6%) and every 4 hours (37.9%) ( $p<0.05$ ). In Poland, 74.6% of mothers breastfed their children at night with 41.1% feeding 3 times per night, and in the U.S. 87.8% at night with 35.4% 3 times per night ( $p<0.05$ ). During the eruption of primary teeth, 36.0% and 57.7% of Polish and American mothers both breastfed and bottle-fed their children ( $p<0.05$ ). The more educated a Polish mother, the shorter she breastfed ( $p=-0.279$ ) and for an American mother, the longer

she breastfed ( $p=0.134$ ). The higher the social status of a Polish mother, the shorter she breastfed ( $p=-0.144$ ), and for an American mother, the longer she breastfed ( $p=0.122$ ).

**Conclusions:** Most mothers in Poland and the U.S. both breastfed and bottle-fed, with most feeding 3 times per day and 3 times at night. There was an inverse correlation between education and social status and the duration of breastfeeding for Polish mothers while the opposite was true for American mothers.

[335]

#### **Assessment of quality of life among patients after lung transplantation – a single center study**

Alicja Szczerba, Wioletta Szywacz, Zofia Tatoj, Fryderyk Zawadzki, Marta Wajda-Pokrontka  
alisza.sz@gmail.com

Medical University of Silesia

**Trustee of the paper:** Marek Ochman MD PhD, Mirosław Nęcki MD PhD, Magdalena Latos MD, Izabela Jaworska PhD

**Introduction:** Lung transplantation (LTx) is the only effective method of treatment for patients with end-stage lung diseases. The main purpose is to improve their health and quality of life (QoL). Not only a change in medical examination should be taken into consideration after LTx, but also how patient's life changed after the procedure.

**Aim of the study:** The aim of the study was to assess the QoL of patients who underwent LTx.

**Material and methods:** Study group was consisted of 42 patients (20 women, 22 men, mean age: 46 yo.), who underwent LTx in Silesian Center for Heart Diseases (SCCS). Among these patients 15 received single (SLT) and 27 double lung transplantation (DLT). Main reasons for receiving LTx were interstitial lung diseases (ILDs), chronic obstructive pulmonary disease (COPD) and cystic fibrosis (CF). To determine patient's QoL the following questionnaires were used: General Health Questionnaire (GHQ), The World Health Organization Quality of Life Test-Bref (WHOQOL-BREF), St. George Respiratory Questionnaire (SGRQ). Spirometry and 6 minute walk test were used to examine patient's respiratory system and physical performance.

**Results:** According to WHOQOL-BREF men after LTx are more satisfied than women in each domain of the questionnaire (somatic, psychological, social and environmental). In SGRQ patients after DLT had less severe symptoms from respiratory system and they weren't affecting their lives as much as it was among SLT patients (30,69% and 34,07% respectively). Men presented more limitations (41,17%) than women (33,03%) in activity. Patients with ILDs (32,25%) and COPD (38,26%) presented worse results than with CF (23,19%). As reported in GHQ men had worse overall results (5,18 standard ten scale) than women (4,85 standard ten scale).

**Conclusions:** The greatest improvement of QoL after LTx is seen among patients suffering from CF. This study helps to understand how important QoL after LTx is for the patients and that further studies in this area should be conducted.

[336]

#### **Young women's knowledge about pregravid preparation**

Katsiaryna S. Ihumna  
igumnovaes@gmail.com

Belarusian State Medical University / Public Health and Health Care

**Trustee of the paper:** Alla N. Cherevko

**Introduction:** The health of an individual and the population as a whole is determined by many factors. One of the leading is a lifestyle. Lifestyle is formed in childhood and accompanies a person to the end of his days. An important contribution to the preservation of the health of generations and a contribution to the future is reproductive health.

**Aim of the study:** To study young women's knowledge of pregravid preparation.

**Material and methods:** The work used sociological and statistical methods. For the survey, a questionnaire was developed from 21 questions, giving an opportunity to examine the facts, opinions and awareness of women. Scope of study: 100 women who responded to the questionnaire in January 2019. The analysis of respondents' answers to questions about pregravid preparation during family planning was carried out. Average values are presented as  $M \pm \Delta 95.5\%$ .

**Results:** 94% of respondents indicated that consultation and examination of a gynecologist are a mandatory element of pregravid preparation. 90% indicated that when planning a pregnancy for men, a urologist examination is mandatory, 73% answered that a spermogram should be done. When planning a pregnancy, 98% of respondents believe that adjusting their lifestyle to a healthier one is necessary for both men and women. 83% of respondents indicated that before conceiving a woman, taking into account the antibody titer, pregravidary vaccination is necessary.

Acceptance of folic acid for 3-6 months before the planned pregnancy is supported by all respondents, however, who should accept opinions are divided: 43% assume that this applies only to women, the 45% this applies to both expectant parents. Medical genetic counseling considers as a mandatory component of 51% of respondents, 33% of respondents were in favor of examining narrow specialists. 56% of respondents have a correct understanding of the intervals between births during normal pregnancy. 94% of respondents were informed that breastfeeding is not prevention of unwanted pregnancy.

**Conclusions:** Most respondents have a good level of knowledge about pergravid training. 88% of girls realize the need for vaccination against the most common diseases before planning a pregnancy. Female respondents are informed that the health of the father is also an important factor for successful pregnancy.

[337]

#### **Knowledge about menopause and different approaches to menopausal symptoms treatment in middle – aged lithuanian women**

Greta Mitrikaitė, Rūta Maželytė

mazelytee@gmail.com

Faculty of Medicine

**Trustee of the paper:** Kristina Norvilaitė

**Introduction:** These days women in Lithuania are experiencing longer active and more qualitative life than before. That is why the menopause is becoming more important. With this topic being not much spoken in Lithuania, for future doctors it is important to know what kind of knowledge about menopause women have and what they do to alleviate symptoms.

**Aim of the study:** The aim of the study was to find out the amount of knowledge women have about menopause and their approach to symptoms.

**Material and methods:** Altogether 266 women aged 40 to 66 (the mean of age was 56) were enrolled to the cross - sectional study. Females were given a questionnaire regarding questions whether or not they know/knew about menopause, have they consulted a doctor and what measures were taken.

**Results:** 66,16% (n=266) females reported that they knew about menopause and that it was expected. 20,67% have not noticed any significant changes. For 6% of correspondents menopause was unexpected and they had no clue. And 4% of women were afraid of this period. 33,45% consulted the doctor because of menopause symptoms. 35% of women used non - hormonal therapy. 15,78% started regularly exercising. Only 4,5% of women used hormonal therapy and it was effective for 75% of women who used it.

**Conclusions:** Even though two thirds of correspondent women knew about menopause, every third woman had to consult a doctor because of experienced menopause symptoms. There are many ways of treating those symptoms, the most popular being non – hormonal microelement and multivitamin therapy, different physical activities reported less popular and hormonal therapy being the least common.

[338]

#### **Knowledge of healthy lifestyle, average physical activity and free time activities among polish teenagers in Małopolska**

Izabella Owsianka, Jan Bylica, Jerzy Król, Paweł Pasięka, Krystian Mróz

izka.ow@gmail.com

Jagiellonian University Medical College

**Trustee of the paper:** Klaudia Knap, Grzegorz Kopeć, Piotr Podolec

**Introduction:** The prevalence of many diseases such as: obesity, diabetes type 2 and arteriosclerosis is strictly related to lifestyle risk factors. Having the proper knowledge allows to implement actions of preventive interventions aimed at pro-health behavior promotion among children.

**Aim of the study:** To assess knowledge of healthy lifestyle, average physical activity and time spent on various leisure activities among Polish teenagers.

**Material and methods:** We used a questionnaire to survey teenagers from randomly chosen first and second classes of middle schools in Malopolska in 2015-2017. This study is a part of the Malopolska Cardiovascular Preventive Intervention Study (M-CAPRI).

**Results:** The study involved 3753 junior high school students (49.9% females) at the age of 14.1±0.7 years. The most frequent source of information about healthy lifestyle was the Internet (63.9% boys vs 79.4% girls, p<0.001) and family. Unfortunately, 9.4% males and 3.4% females (p<0.001) pointed out that they had not received any information about pro-health behavior. The main characteristics of healthy lifestyle due to students were regular physical activity (92.1% boys vs 97% girls, p<0.001) and proper diet. Just 50.5% males and 48.4% females (p<0.001) pointed out prevention of obesity and only 5% boys vs 2.1% girls (p<0.001) considered avoidance of drinking sweet drinks. The most common free time activity among students was surfing on the Internet. Boys (B) spent average 124.5 (±139.7) minutes per day (min p/d) and girls (G) 145.5 (±139.7) min p/d p<0.001, but B additionally used computer 98.7 (±101.5) min p/d and G only 50.4 (±101.5) min p/d, p<0.001. B spent more time for physical activity than G, 124.3 (±93.7) and (±93.7) min p/d respectively, p<0.001.

**Conclusions:** Knowledge of healthy lifestyle among teenagers is insufficient. Considering, that they spend most of their spare time using Internet resources, it seems to be convenient way to educate them about lifestyle risk factors.

[339]

### **Burnout rates and the impact of emotional intelligence on burnout syndrome among medical students and resident doctors in Latvia**

Agija Kalve

kalve.agija@gmail.com

University of Latvia, Faculty of Medicine

**Trustee of the paper:** Andis Užāns

**Introduction:** Burnout syndrome is caused by chronic stress and may lead to depression. Emotional intelligence (EI) is the ability to perform analysis based on emotions. Higher EI may be a protective factor against burnout. However, there is scarce data on Latvian students' and resident doctors' burnout and EI. Hence, it is crucial to evaluate data on mental health in future doctors.

**Aim of the study:** To determine burnout rates and to assess correlation between EI and burnout among medical students and residents in Latvia.

**Material and methods:** By January 2019, 67 students and resident doctors have voluntarily and randomly participated in the cross-sectional study which is conducted at the University of Latvia and online. Participants were surveyed using the Maslach Burnout Inventory – General Survey consisting of 3 scales – Exhaustion, Professional Efficacy and Cynicism (MBI – GS, Maslach, Jackson & Leiter, 1996, adapted in Latvia by Daiga Caune, 2004) and The Self-Report Emotional Intelligence Test (SREIT, Shutte et al., 1998, adapted by Viesturs Reņģe, Jeļena Nižņika, 2012). SPSS Statistics 22 was used for the statistical analysis of the data. Statistical significance level was set at p<0.05.

**Results:** Participants were 18 – 40 years old; half of individuals (n=37) were in the age group of 24 – 26 years. 88% were female. 81% were students (n=54) and 19% were in residency (n=13). 58% of individuals worked, with 27% working two jobs (n=18). Most of the employed participants reported working for 21 – 30 hours a week.

High Exhaustion rates were in 56.7%, high Cynicism in 47,8% of the individuals. Moderate levels of Exhaustion were seen in 26.9%. Only 15.4% experienced low Exhaustion levels.

Using Pearson correlation coefficient moderate, negative, statistically significant correlation was found between EI and Exhaustion (r=-0.49, p<0.001), weak correlation between EI and Cynicism (r=-0.28, p=0.02), and a positive, moderate correlation between higher EI and higher Professional Efficacy (r=0.56, p<0.001). Independent Samples t-Test showed no statistical significance between EI and burnout in working and non-working individuals (Exhaustion p=0.4, Cynicism p=0.6, Efficacy p=0.054).

**Conclusions:** High Exhaustion level was seen in 56.7% of the respondents, high Cynism – in almost 50% which describes high burnout rates in the Latvian medical students' and residents' population.

Statistically significant correlation was found between higher EI and lower burnout, suggesting that higher EI acts as a protective factor against burnout.

[340]

**Awareness and knowledge of Evidence based medicine among Indian medical students : A cross sectional study**

Ainkareswar Kolappa Pillai, Aanchal Sareen, Sivarayanolla Nikhileshwar Reddy, Palamakula Rajendhar Reddy  
kainkareswar@yahoo.com

Uzhhorod National University

**Trustee of the paper:** Dr. Veerabahu & Dr. Meiarasu

**Introduction:** Evidence-based medicine (EBM) can be defined as involvement of individual clinical practice with the best available clinical evidence from research. A through knowledge in EBM effects positively in the output of clinical practice.

**Aim of the study:** A cross sectional study the awareness of Evidence Based Medicine among medical students from India.

**Material and methods:** We surveyed students from various medical colleges, between the year of three to internship were provided with fifteen questions with options and one descriptive answer based question. The data was analyzed and presented.

**Results:** Of the 530 students who participated, about 165 (31%) students were aware of EBM and have used it in their practice, about 450 (85%) students agreed that practising evidence-based medicine improves patient's well being, 381 students (72%) read no journal once a month or had no subscription with any of the journal, 371 students (70%) asserted that their primary knowledge of medicine comes through books and internet, 175(33%) students would reject evidence based upon their clinical analysis, 244 students (46%) affirm that they would use evidence based medicine in their day to day practice.

**Conclusions:** We conclude that Evidence based medicine awareness and knowledge among Indian medical students was well identified but the practice of the same was not satisfactory, it stresses the need to educate medical students in colleges on judicious use of medicine in their practice.

[341]

**Does Education Degree Affect the Patient's Attitude to the Treatment after Myocardial Infarction?**

Zivile Girkantaite

zivile.girkantaite@gmail.com

Vilnius University, Faculty of Medicine

**Trustee of the paper:** Assoc. Prof. Jolita Badariene, MD, PhD, Vilma Dzenkeviciute, MD, PhD, Alma Cypiene, MD, PhD

**Introduction:** Patients who survived myocardial infarction (MI) may experience severe disabling consequences with extensive impact on their quality of past MI treatment. Education degree may be a factor influencing the attitude to the illness treatment, which is a very important component of great medication adherence and successful results of illness treatment.

**Aim of the study:** To assess the interface between education degree and attitude to the treatment after MI.

**Material and methods:** 302 outpatients after MI, 226 male and 76 female (mean age  $59 \pm 9.22$  years), treated in Vilnius University Hospital Santaros Klinikos Preventive Cardiology subdepartment, were included in the study. All patients were asked to complete 2 questionnaires: "Quality of Life and Treatment after Myocardial Infarction" and "Cholesterol-lowering Drugs Consumption Peculiarities", compiled by the authors of the study. All questions of these questionnaires were responded by 191 (140 male and 51 female) patients, therefore statistical analysis was performed only from their data.

**Results:** We found that the level of concern about previous MI did not differ statistically significantly between patients with a higher education degree and patients with a lower education degree (43.2%; n=35 vs. 52.9%; n=55, respectively,  $p > 0.05$ ). Patients that had a higher education degree were more likely to identify themselves as the main subjects in MI treatment in comparison with patients that had a lower education degree (30.5%; n=25 vs. 15.2%; n= 16, respectively,  $p=0.033$ ). More educated patients found it easier to follow up the doctor's treatment plan than less educated patients (23.2%; n=19 vs. 9.5%; n=10, respectively;  $p=0.035$ ).

**Conclusions:** Patients with a higher education degree are more likely to follow up the doctor's treatment plan and see it easier than patients with a lower education degree. Thus, more attention should be paid on less educated patients in order to raise their awareness about their own impact on the past MI treatment.

[342]

**Assessment of hygienic aspect of health in younger schoolchildren**

Avchinnikov.A.V.,Tsukareva E.A.,Voskresenskaya O.N.,Gordadze D.V  
verazaytseva@yandex.ru

Smolensk State Medical University

**Trustee of the paper:** prof.Andrey Avchinnikov MD, PhD

**Introduction:** School doctors and pediatrician should give much attention to hygienic assessment of the health status of primary school children because poor hygiene can result in high morbidity and poor physical development.

**Aim of the study:** The aim of the study was a hygienic assessment of the health status in primary school children in Smolensk on the basis of the data of school medical records

**Material and methods:** The study involved 113 children's health cards kept at schools participating in the Russian Federal Pilot project called School Medicine. Parameters of physical development, chronic diseases and other indicators were assessed to include children in a particular health group.

**Results:** The results of the hygienic assessment of the health status of younger schoolchildren in Smolensk showed that the incidence of students increases with each class, the first group of health includes fewer children than the second ,third and fourth.

Children in the learning process, acquire diseases of the cardiovascular system associated with physical inactivity, diseases of the musculoskeletal system that are associated with the incorrect position at the Desk and inadequate physical activity, dental, endocrine, allergic diseases, eye diseases, ENT organs.Confirmation of the deterioration of health of students in the dynamics from 1 to 4 class is an increase in the number of students with overweight and obesity. Children with overweight-17.3%, children with obesity-7.6%. In total,their number reaches 25% - every fourth student to grade 4 is obese or overweight. Significantly fewer children remain completely healthy to class 4. ( 2,7%)

**Conclusions:** The data obtained in our study disclose gradual deterioration in the health of schoolchildren and an increase in morbidity associated with the conditions in educational institutions in the process of schooling and a gradual increase in educational loads on the child's body.

[343]

**The medical and social status of pregnant women with hysteromyoma**

Hrazhyna Zholik, Nastassia Samets, Aleh Navitski, Elena Trus  
grazhina\_zholik@mail.ru

Grodno State Medical University / Department of Public Health and Public Health Service

**Trustee of the paper:** Henrych Zabaruski PhD

**Introduction:** Uterine fibroids are benign tumors that develop in the myometrium, represented by cells of the smooth muscle tissue and belong to hormone-dependent tumors. Uterine fibroids occur in every second woman older than 30 years.

**Aim of the study:** To characterize the medical and social status of a pregnant woman with uterine myoma.

**Material and methods:** The study was conducted on the basis of 139 medical records of pregnant women with uterine fibroids who were operated. A somatic, gynecological and reproductive history was analyzed in all women.

**Results:** Most of patients (84.2%) live in the city, and 15.8% – in the countryside. 12.2% of women noted a history of smoking. The age of menarche was 13.1±0.1 years. However, late menarche occurred in more than one third of cases (36.7%). A high obesity rate was detected: 61.9% of patients had a BMI of 30 kg/sq. m or greater. Extragenital diseases were diagnosed in 50.3% of patients, and 23.7% of women suffered from cardiovascular diseases, 15.8% – myopia, 10.8% – hypothyroidism. Gynecological diseases were detected in 51.1% of patients, of whom cervical erosion occurred in 23.7% of cases. Complicated obstetric history was reported in 23.0% of cases. Two thirds of women (64.7%) had a natural birth, while the remaining patients had a Cesarean section (35.3%). The risk of myomas decreases with increasing sequence number of the birth. 45.0% of pregnant women had single nodes, multiple fibroids were found in the rest: 16.2% – 2 nodes, 27.6% – 3, 6.6% – 4, 2.8% – 5, 0.9% – 6, 0.9% – 8. It was established that in 11.5% of patients myoma was combined with the 1st pregnancy, in 27.5% – with the 2nd, in 33.8% – with the 3rd, in 15.8% – with the 4th, in 9.3% – with the 5th, in 1.4% – with the 6th, in

0.7% – with the 9th. 14.4% of patients had a threatened abortion. Infertility was identified in 7.9% of women, abortion – in 15.1%. Myoma was combined with pain in 56.8% of cases, preeclampsia – in 5.8%.

**Conclusions:** A pregnant woman with hysteromyoma is a female of reproductive age with obesity (61.9%), most often (61.3%) having the second or the third pregnancy, accompanied by pain (56.8%), somatic (50.3%) and gynecological diseases (51.1%) with diagnosed multiple nodes (55.0%) and previous natural birth (64.7%), that should be considered in the development of preventive measures.



# Radiology

**Date:**

Saturday, May 12th, 2018

**Location:**

Room 124, Library - CBI

**Jury:**

prof. dr hab. n. med. Marek Gołębiowski  
prof. dr hab. n. med. Olgierd Rowiński  
prof. dr hab. n. med. Leszek Królicki  
prof. dr hab. n. med. Jerzy Walecki  
prof. dr hab. n. med. Iwona Sudoł-Szopińska  
dr hab. n. med. Kazimierz Szopiński  
dr hab. n. med. Robert Młosek  
dr hab. n. med. Rafał Słapa  
dr hab. n. med. Marta Zalewska

**Coordinator:**

Katarzyna Zamora

**Scientific Patronage:**

Polskie Lekarskie Towarzystwo Radiologiczne Oddział Mazowiecki



[344]

**What can we find in MRI and CT of patients with inflammatory bowel disease?**

Kamil Krupa, Szymon Ciuk, Marta Bociąga, Anna Gajdosz, Justyna Tęczar  
kamilkrupa955@gmail.com

Jagiellonian University in Kraków, Medical College

**Trustee of the paper:** prof. Andrzej Urbanik MD, PhD

**Introduction:** Inflammatory bowel diseases result in many complications found in numerous organs in body. Extraintestinal manifestations of both Crohn's disease and ulcerative colitis are very common and can involve nearly every system. Radiological imaging, such as abdominal CT scans, pelvic MRI or MRI bowel-directed techniques plays an important role in evaluation of such patients.

**Aim of the study:** The aim of the study was to evaluate abdominal extraintestinal changes found in patients with IBD.

**Material and methods:** There were 191 cases of patients with diagnosed IBD than underwent either CT of abdomen, pelvic MRI or MRI enterography in years 2017-2018 in archives of Department of Diagnosting Imaging in the University Hospital in Kraków. There were 166 cases with CD and 25 with UC. Women constituted 53,2%. Mean age was 38,2. R Software was used for statistical analysis. Any iatrogenic materials imaged or medical procedure consequences were ignored.

**Results:** 57,07% of patients had the features of active intestinal inflammation. In urinary system such changes were found: double ureter (1,57%), kidney stones (3,66%), 1 case of amputation of ureter. Double renal artery was found in 2,62%. The following ones were found in liver: steatosis (12,05%), cysts (11,52%), hemangioma (7,33%), enlargement (5,24%), Riedel lobe (5,76%). PSC was in 3,66% and cholecystolithiasis in 5,24% of cases. 66 patients had enlarged lymph nodes. Accessory spleen was found in 27 cases. 6 patients had signs of undergone acute pancreatitis. 4 patients had pancreatic cysts. There were 30 cases of ovarian, 8 of cervical and 5 of vaginal cysts. Kidney cysts were found in 17,8% of cases. Mean age in patients with kidney cysts was significantly higher. Kidney cysts are found more frequently in men.

**Conclusions:** Extraintestinal findings in patients with diagnosed IBD occur frequently and affect many abdominal organs.

[345]

**Guidelines for obtaining the optimal section of the sacrotuberous ligaments in sonography**

Artem Poddubny

Artem.P.Gomel@mail.ru

Gomel State Medical University / Department of radiation diagnosis and therapy

**Trustee of the paper:** A. Yurkovsky

**Introduction:** Structures capable of acting as generators of pain in the event of functional overload or damage are ligaments of the lumbosacral spine. How often the ligamentosis of the sacrotuberous ligaments (STL) is encountered is not known for sure, since there are no clear ideas on how to obtain the STL image that is optimal for estimating the echo structure and morphometry (thickness measurement).

**Aim of the study:** The development of guidelines, allowing to obtain the image of the STL in the cross section, optimal for estimating the echo structure and thickness.

**Material and methods:** At the first stage, the angle formed by the longitudinal axis of the STL and the line of the spinous processes on 33 cadavers was evaluated: 23 men (mean age  $63.6 \pm 12.4$  years) and 10 women (mean age  $63.9 \pm 12.9$  years). At the second stage, sonographic studies were conducted in accordance with the reference points obtained with the section ( $n = 36$ ).

Quantitative indicators were presented as a median of the 25th and 75th percentiles (Me 25%–75%). To compare the angle between the line of the spinous processes and the longitudinal axis of the STL in men and women, as well as to compare the parameters of the contralateral ligaments, the Mann-Whitney U test was used. ROC analysis was used to assess the sensitivity, specificity and prognostic value of the trait.

**Results:** Assessment of the position of the longitudinal axis of the STL relative to the line of the spinous processes during the section (in vitro): the longitudinal axis of the STL with the line of the spinous processes of the vertebrae in men is  $24 (22; 25)^\circ$ , in women -  $23^\circ (19; 25)^\circ$ , in 10% of cases, the angle was less than the indicated values —  $14\text{--}16^\circ (Q25 - Q75)$ . There were no statistically significant differences between the angle formed by the

longitudinal axis of the right and left STL. There were no statistically significant differences between these parameters in men and women ( $p = 0.15$ ).

Using as a guideline a line drawn at an angle of 19-25 ° from the sciatic hill to the line of the spinous processes in 26 cases allowed us to obtain an optimal longitudinal section of the STL, in 10 cases the optimal longitudinal section was obtained when the sensor was located at an angle of less than 19 ° (i.e. in the range of 14-18 °).

**Conclusions:** Orientation of the sensor at an angle of 19-25 ° relative to the line of the spinous processes in most cases allows you to quickly obtain an image of the STL in cross section, which minimizes the likelihood of anisotropy artifacts (hypoechoic zones that mimic the centers of mucoid dystrophy within the ligament). In addition, the use of a standardized sensor position will improve the reproducibility of the results.

[346]

### **Pediatric Computed Tomography of the Head and the Assessment of Radiation doses**

Kitija Nulle

kitijanulle6@gmail.com

Riga Stradins University

**Trustee of the paper:** Ilze Apine

**Introduction:** Nowadays computed tomography (CT) is one of the most frequently utilized imaging modality, but it is also becoming a major source of patient exposure to radiation, particularly in pediatric patients, who are more sensitive to radiation.

That is why diagnostic reference levels (DRL) as a tool for patient protection in diagnostic imaging were introduced. Dose length product (DLP, mGy) and volume computed tomography dose index (CTDIvol, mGy cm) are recommended values for setting the DRL.

**Aim of the study:** Aim of the study was to evaluate DLP and CTDIvol that accounts for both radiation intensity and total radiation dose in pediatric head CT examinations and to compare them with European pediatric dose reference levels (PiDRLs), thus gaining impression on the overall situation in the country and to evaluate whether dose management is necessary.

**Material and methods:** This is a retrospective descriptive study of radiation doses recorded for CT examinations of head for a total of 157 pediatric patients at one regional hospital in Latvia from July 2016 till June 2018.

Radiation estimates were determined using DLP and CTDIvol as provided on the operating console.

**Results:** Patients' age ranged between 1 and 17 years. Data were split into two groups based on their age: 1st group (n=47) included patients younger than 10 years, the 2nd group (n=109) included patients older than 10 years.

Mean values of CTDIvol in the 1st group were 62.23 mGy (2016), 63.04 mGy (2017), 62.76 mGy (2018).

Mean values of DLP were 1309.42 mGy x cm (2016), 1131.75 mGy x cm (2017), 1148.20 mGy x cm (2018).

Mean values of CTDIvol in the 2nd group was 60.23 (2016), 62.86 (2017), 61.67 (2018).

Mean values of DLP were 1214.29 (2016), 1172.23 (2017), 1236.94.

Recommended European DRLs for CT of the head depend on the age group with lowest value for patients younger than 1 year. Both DLP and CTDIvol DRLs increase in patients older than 1 year and they increase again in patients older than 6 years.

CTDIvol values vary from 24 to 50mGy, and DLP values vary from 300 to 650mGy cm based on the age of child.

**Conclusions:** Registered radiation values from CT scans were generally higher than quoted in European guidelines for diagnostic reference levels for pediatric imaging. Furthermore, values gathered during this study did not follow the pattern mentioned in Guidelines. CTDIvol values do not differ in both patient groups as well as DLP values

[347]

### **Thoracic duct - can we use sonography to visualize it and assess it?**

Arkadiusz Kowalczyk, Mikołaj Sługocki

m.slugocki@hotmail.com

Students Scientific Group 'Anatomy', Medical University of Warsaw

**Trustee of the paper:** Adam Koleśnik, MD

**Introduction:** Imaging of thoracic duct (TD) is challenging and still in development. As TD plays crucial role in human pathology, reliable and repeatable method of assessing its anatomy and function is required. We decided to check if sonography of its terminal part may be considered good imaging option.

**Aim of the study:** To assess anatomy and physiology of terminal part of TD using sonography.

**Material and methods:** Using GE Logiq F8 with L6-12 transducer (6-13MHz) we examined region of left venous angle of 11 healthy volunteers. We checked if TD is visible, if it presents any anatomical variations and if its valve is visible. We also measured its outlet and maximal visible width. We did examination three times – first after fasting (at least 6h after last meal and 2h after last drink), second right after eating standardized meal (McDonalds BigMac®), and third 1h after meal.

**Results:** TD was visible in all cases. Standard anatomy was observed in 7 cases. We confirmed anatomical variations of TD drainage to internal jugular vein in 3 cases and to subclavian vein in 1 case. Valve was visible in 3 cases. TD mean maximal width was  $2.7 \pm 1.4$  mm, while mean outlet width was  $1.3 \pm 0.6$  mm after fasting. Results changed to  $3.4 \pm 2.2$  and  $3.5 \pm 1.9$  for maximal width and  $1.5 \pm 0.5$  and  $1.6 \pm 0.7$  for outlet width directly after and 1h after meal respectively. We also observed reversed flow through valve in 1 case and distinct peristalsis of TD in 10 cases.

**Conclusions:** Sonography can potentially serve as reliable non-invasive imaging option for terminal part of TD. Physiological changes in TD anatomy after meal were observed using ultrasound examination.

[348]

### **Management of unruptured wide-neck bifurcation aneurysms with pCONus device: results and complication**

Justyna Tęczar, Kamil Krupa, Iwona Kucybała, Jakub Wnuk, Ositadima Chukwu  
stdmchkw@gmail.com

Jagiellonian University in Kraków, Medical College

**Trustee of the paper:** Andrzej Urbanik MD, PhD Paweł Brzegowy MD, PhD

**Introduction:** Endovascular treatment of bifurcation aneurysms represents a technical challenge for interventional radiologists. In our study we present our initial experience with new pCONus device, which was used for wide-neck intracranial bifurcation aneurysms.

**Aim of the study:** The aim of the study was to report the results of pCONus application in patients with unruptured bifurcation aneurysms.

**Material and methods:** A retrospective review was performed to analysis 6 patients with unruptured aneurysms treated with the pCONus device and coiling in 2017 in the section of angiological diagnostics and interventional radiology of the Department of Radiology, University Hospital in Cracow. There were six cases of male patients with six unruptured wide-neck bifurcation aneurysms treated with the new pCONus device with additional coiling. The mean age was  $62.2 \pm 10.2$  years (range 49 – 74 years).

**Results:** Localisations of aneurysms were, as follows: basilar tip (33.3%, n=2), anterior communicating artery (33.3%, n=2), middle cerebral artery bifurcation (33.3%, n=2). Mean volume of the aneurysm was  $188.2 \pm 143.7$  mm<sup>3</sup>. Immediately after the procedure, 4 of aneurysms were completely occluded (RROC I), while remaining 2 had residual neck (RROC II). Only 1 procedure (16.7%) had complications (thrombosis within both posterior cerebral arteries) that was successfully treated and the patient had only temporary neurological deficit after the procedure. Neurological status of remaining 5 patients remained unchanged. Mean hospitalization time was  $3.5 \pm 1.9$  days, none of the patients died during the hospitalization. 4 patients had follow up examination (2 of them conventional angiography of the head and remaining two MR angiography of the head), which was performed averagely after  $3.7 \pm 3.1$  months. There was only 1 recanalization of initially completely obliterated aneurysm, 2 remained properly occluded (RROC I), while 1 with initially residual neck turned out to be completely occluded after 6 months.

**Conclusions:** Use of pCONus device and coiling in wide-necked bifurcation aneurysms provides good occlusion rates and is effective and safe.

[349]

### **3D printed bronchoscopy training model for didactics and planning treatment strategy**

Mateusz Ożóg, Maria Królikowska, Magdalena Latos  
mateuszkamil.ozog@gmail.com

Department of Cardiac, Vascular and Endovascular Surgery and Transplantology, SDMZ in Zabrze, Medical University of Silesia in Katowice, Silesian Centre for Heart Disease in Zabrze, Poland

**Trustee of the paper:** Marek Ochman

**Introduction:** Diagnostic and medical procedures in interventional pulmonology require a lot of experience. High individual variability of lower respiratory tract anatomy is challenging not only during planning of the treatment by an inexperienced team, but also in the management of intra-procedural navigation. 3D printing technology enables us to create personalized training models, which are a help in teaching and planning treatment.

**Aim of the study:** Creation of personalized training model using 3D printing for teaching purposes and facilitating the planning of complicated interventional pulmonology procedures. **Material and methods:** Based on HRTC of 26 years old male patient with cystic fibrosis we created model of the lower respiratory tract using Amira. Then, by using Autodesk Netfabb, a bronchoscopy training model based on respiratory tract anatomy was modeled and 3D printed. The inside of the oral cavity and the larynx were cast from silicone using 3D printed forms.

**Material and methods:** Based on HRTC of 26 years old male patient with cystic fibrosis we created model of the lower respiratory tract using Amira. Then, by using Autodesk Netfabb, a bronchoscopy training model based on respiratory tract anatomy was modeled and 3D printed. The inside of the oral cavity and the larynx were cast from silicone using 3D printed forms.

**Results:** By using 3D printing it is possible to create inexpensive training models which anticipate various clinical scenarios.

**Conclusions:** It is possible to create a low cost personalized bronchoscopy training model that can be used for training during bronchial fiberoscopy course. Due to relatively short time of design and printing it could be used for planning treatment strategy especially for bronchial stent placement.

[350]

### **Evaluating the impact of aberrant right subclavian artery (arteria lusoria) on frequency of presence of pathologies of aortic arch, thoracic and abdominal aorta**

Agata Andrzejczyk, Radosław Ciesielski, Katarzyna Zamora

agata.andrzejczyk@gmail.com

Medical University of Warsaw

**Trustee of the paper:** MD, PhD Magdalena Januszewicz

**Introduction:** A pathology of arteria lusoria, the aberrant right subclavian artery as a forth, the last branch of aorta occurs in

0.6-1.4% of population. Usually it is clinically silent and its occurrence reveal occasionally during imaging. The impact of arteria lusoria on frequency of presence of pathologies of aortic arch, thoracic and abdominal aorta is still not examined enough.

**Aim of the study:** The aim of this study was to assess the correlation between occurrence of arteria lusoria and frequency of

pathologies of aortic arch, thoracic and abdominal aorta.

**Material and methods:** 121 patients with arteria lusoria were included. All cases of this anomaly were detected in patients who underwent imaging in II Department of Clinical Radiology, Medical University of Warsaw from June 2006 to October 2018. The mean age of patients was 60.23 years old. The rated parameter was the occurrence of arteria lusoria detected by imaging: computed tomography (132), magnetic resonance imaging (1) and X-Ray (1). There was a correlation between arteria lusoria and other anomalies of aortic arch, thoracic and abdominal aorta investigated. The indicator of statistical significance was established at the level of  $p < 0.05$ . There were symptoms and interventions analysed. The problems of patients reported to the hospital were compared with the occurrence of arteria lusoria and its impact on it. To statistic analysis there were used programmes Statistica 13.1 and MS Excel.

**Results:** In 17.6% of patients with arteria lusoria there were vascular anomalies in it, in aortic arch, thoracic and abdominal aorta detected. This group included 12 women at the age from 53 to 87 and 9 men at the age from 39 to 72. 49.9% of anomalies were detected both in arteria lusoria and thoracic and abdominal aorta, 14.2% in aortic arch. It is statistically significant that there is a correlation between the presence of arteria lusoria and the occurrence of aneurysms and dissections at the level of  $p = 0.004$ . From 6 aneurysms on arteria lusoria there were 3 cases in men and 3 cases in women. Sex and age have no significant correlation with these aneurysms.

In 11 patients vascular dissections occurred, in 5 patients together with aneurysms, which shows the correlation between arteria lusoria and vascular anomalies.

**Conclusions:** The presence of arteria lusoria has an impact on the occurrence of aneurysms and dissections in arteria lusoria, aortic arch, thoracic and abdominal aorta. The further researches on the correlation between the presence of arteria lusoria and the occurrence of the life-threatening vascular anomalies are necessary.

[351]

**A new computed tomography based classification system for orbital blowout fractures - pilot study**

Łukasz Stopa, Wojciech Stopa

wojciech.stopa77@gmail.com

Medical University of Warsaw/Department of Cranio Maxillofacial Surgery, Oral Surgery and Implantology

**Trustee of the paper:** Zygmunt Stopa

**Introduction:** An orbital blowout fracture is a fracture of the orbital floor, in most cases caused by a blunt trauma. A proper evaluation of the fracture is crucial for the planning of the treatment.

**Aim of the study:** The aim of this study was to evaluate possible parameters, that could be used in a orbital blowout fractures classification system.

**Material and methods:** Seven possible parameters have been selected for evaluation:

I Largest length of the fracture in mm in the sagittal plane,

II Distance between the infraorbital margin and the end of the horizontal plate of the palatine bone in mm in the sagittal plane,

III Distance between the infraorbital margin and the end of the fracture in mm in the sagittal plane,

IV Whether the fracture includes the medial wall of the orbit,

V Relation between the fracture and the infraorbital nerve,

VI Largest width of the fracture in mm in the coronal plane,

VII The size of the hernia into the maxillary sinus in mm in the coronal plane.

Six physicians were asked to evaluate the parameters by means of CT in three different patients and to write down the time it took to assess them. The results have been statistically evaluated.

**Results:** The standard deviation was:

- for parameter I 1,42 in the first, 2,33 in the second and 0,4 in the third patient

- for parameter II 4,79 in the first, 1,49 in the second and 1,73 in the third patient

- for parameter III 0,93 in the first, 3,00 in the second and 1,99 in the third patient

- for parameter VI 1,99 in the first, 6,53 in the second and 1,01 in the third patient

- for parameter VII 0,75 in the first, 6,41 in the second and 0,83 in the third patient

Parameter IV was assessed in the same way by 4 physicians in the first and second patients and by 3 physicians in the third patient. Parameter V was assessed in the same way by 3 physicians in the first and second patient and by 5 physicians in the third patient. The average assessment time of a patient was 5,51 minutes.

**Conclusions:** The selected parameters can be quickly assessed. Parameters I, II, III, VI and VII were assessed in a inconsistent manner in only one patient. Parameter IV which was assessed in an inconsistent manner in all patients and parameter V which was assessed in a consistent manner in only one patient. Modifications or additional training for the evaluating physicians may be needed.

# Surgery

## Date:

Friday, May 10th, 2019

## Location:

Room 139/140, Didactics Center

## Jury:

prof. dr hab. n. med. Maciej Słodkowski  
prof. dr hab. n. med. Sławomir Nazarewski  
prof. dr hab. n. med. Jacek Szmidt  
prof. dr hab. n. med. Krzysztof Zieniewicz  
prof. dr hab. n. med. Marek Krawczyk  
prof. dr hab. n. med. Włodzimierz Otto  
prof. dr hab. n. med. Mariusz Frączek  
prof. dr hab. n. med. Wojciech Lisik  
prof. dr hab. n. med. Andrzej Chmura  
prof. dr hab. n. med. Roman Danielewicz  
prof. dr hab. n. med. Piotr Fiedor  
prof. dr hab. n. med. Artur Kwiatkowski  
prof. dr hab. n. med. Piotr Małkowski  
prof. dr hab. n. med. Andrzej Borkowski  
prof. dr hab. n. med. Krzysztof Bielecki  
prof. dr hab. n. med. Tomasz Grodzki  
prof. dr hab. n. med. Beata Jurkiewicz  
prof. dr hab. n. med. Mariusz Frączek  
prof. nadzw. dr hab. n. med. Paweł Nyckowski  
prof. dr n. med. Piotr Krokowicz  
dr hab. n. med. Piotr Myrcha  
dr hab. n. med. Michał Grą  
dr hab. n. med. Mariusz Wyleźoń  
dr hab. n. med. Marek Pacholczyk  
dr hab. n. med. Maciej Romanowski  
dr hab. n. med. Paweł Zawadzki  
dr hab. n. med. Piotr Dobroński

## Coordinators:

Karolina Jasińska  
Agnieszka Siatka

## Scientific Patronage:

National Consultant in Surgery Prof. Grzegorz Wallner MD PhD  
National Consultant in Pediatric Surgery Prof. Janusz Bohosiewicz MD PhD  
National Consultant in Surgical Oncology Prof. Arkadiusz Jeziorski MD PhD  
Towarzystwo Chirurgów Polskich



[352]

### **What causes intraoperative difficulties during Laparoscopic Sleeve Gastrectomy?**

Oksana Skomarovska, Jakub Droś, Artur Kacprzyk, Tomasz Stefura, Karol Cizek, Marta Krzysztofik  
skomarovska.o@gmail.com

Students' Scientific Society of 2nd Department of General Surgery, Jagiellonian University Medical College,  
Kraków, Poland

**Trustee of the paper:** Piotr Major, Magdalena Pisarska

**Introduction:** Laparoscopic Sleeve Gastrectomy (LSG) is one of the most frequently performed bariatric procedures worldwide. Preoperative knowledge concerning risk factors of potential intraoperative difficulties may help to predict outcomes and influence the operative approach.

**Aim of the study:** Our purpose was to identify potential risk factors of intraoperative difficulties during LSG.

**Material and methods:** The analysis included consecutive patients who underwent LSG between December 2009 and April 2017. Patients with intraoperative difficulties were submitted to Group 1, patients without intraoperative difficulties to Group 2. Demographic parameters were assessed for potential risk factors of intraoperative difficulties. Length of stay (LOS) and complication rate were also analysed.

**Results:** Group 1 consisted of 37 (11.71%) and Group 2 of 279 (88.29%) patients. Besides rates of diabetes, pulmonary disease and sleep apnea, which were higher in group 1, there were no statistical differences between the groups based on demographic parameters. Univariate logistic regression found that risk factors affecting intraoperative difficulties included BMI >45 kg/m<sup>2</sup> (OR 2.15, 95% CI 1.05-4.39, p=0.0362), experience of operating surgeon (OR 9.22, 95% CI 4.31-19.72, p=0.0058), incidence of diabetes (OR 2.44, 95% CI 1.19-4.98, p=0.0146) or pulmonary disease (OR 12.22, 95% CI 1.97-75.75, p<0.0001). In the multivariate logistic regression model only experience of operating surgeon (OR 8.61, 95% CI 3.75-19.72, p<0.0001) remained significant factor affecting intraoperative difficulties.

**Conclusions:** The only significant factor contributing to the incidence of intraoperative difficulties is the experience of the surgeon.

[353]

### **2-years follow-up after lung transplantation in chronic obstructive pulmonary disease patients-single center study**

Daria Pawlak, Monika Wojtasik  
dariapawlak51@gmail.com

Medical University of Silesia/Department of Cardiac, Vascular and Endovascular Surgery and Transplantology,  
Silesian Center for Heart Diseases

**Trustee of the paper:** MD PhD Marek Ochman, MD PhD Mirosław Nęcki, MD PhD Tomasz Stącel ,  
MD Maciej Urlik

**Introduction:** Chronic obstructive pulmonary disease (COPD) is a respiratory condition characterized by air flow limitation. It affects more than 5 percent of the population. It is associated with high morbidity and mortality with end-stage COPD. Lung transplantation (LTx) is often the only therapeutic option for patients.

**Aim of the study:** The aim of the study was to establish whether patients with end-stage respiratory failure due to COPD benefited from lung transplantation and assess the pulmonary function by the 6 Minute Walk Test (6MWT) and Forced expiratory volume in 1 second (Fev-1).

**Material and methods:** A retrospective study was carried out on the group consisting of 69 patients (40 recipients, 18 patients currently waiting, 11 patients, who died while waiting for a lung graft) diagnosed with end-stage COPD, referred to Silesian Center for Heart Diseases' Lung Transplant Ward and qualified to be treated by means of lung transplantation between 2006 and 2018. Beginning of the observation for all 69 patients was a qualification date.

**Results:** Kaplan Meyer estimation presented that graft recipients noted 50% probability of survival at approximately 5,5 years whereas patients from the other group had such parameter at about 1,4 years. The average results Fev-1 obtained at qualification are about: SLT : 23,69%; DLT: 22,06% and 158,07 meters in 6MWT. One year after procedure the average value of Fev-1 are: SLT: 55,83% , DLT: 79,54% and 430,7 meters in 6MWT.

**Conclusions:** It is statistically significant, that qualified patients who underwent lung transplantation lived longer than those, who did not undergo such procedure. We observe a difference in a single and double lung transplant recipients.

[354]

**The efficiency of continuous wound infusion of local anaesthetics after gastrectomy. Pilot study**

Olga Saluka, Igors Ivanovs, Aleksejs Mischuks

oleley@inbox.lv

University of Latvia

**Introduction:** Partial and total gastrectomy is indicated to patient with active stomach ulcer or malignant tumour. First few days after the surgery the patient is experiencing severe pain. Opioids are regularly used to decrease pain in the first few days. We believe that continuous wound infusion (CWI) of Bupivacaine is the first 48 hours as additional analgesia allows effectively reduce pain and decrease the amount of opioids.

**Aim of the study:** To evaluate the efficiency of CWI to reduce pain after gastrectomy and determine the necessary amount of opioids, combined with CWI.

**Material and methods:** The following pilot study results for period from October to January are presented here. Two groups of people participate in the study: CWI group (7 patients), which is given CWI in combination with opioids, and Control (9 patients) – where pain is reduced by opioid only. Patient is being catheterized in preperitoneal space under m. rectus abdominis of surgical wound, 3 – 4 cm from the edges: both catheters are used to infuse by perfusor of Bupivacain 10 mg/h to the wound during to the first 48 hours. The patients are asked to evaluate the intensity of pain according to Numeric Pain Scale (NPS) in the first 3 days. The amount of opioids also is being calculated

**Results:** Pain after gastrectomy, according NPS (median): day 1: CWI group – 3(IQR 2, 5 – 7,5), control group – 5 (IQR 4 – 6); day 2: CWI group – 3(IQR 2.5 – 3.5), control group – 5 (IQR 3 – 6); day 3: CWI group – 1(IQR 1 -2.5), control group – 2 (IQR 1 – 5). Opioids, during the hospital stay (median): Sol. Phentanyli 0,005%: CWI group – 0.5 mg (IQR 0 – 0.75), control group – 2 mg (IQR 1,5 – 3). Sol. Trimeperidini hydrochloridum 2 %: CWI group – 20 mg (IQR 0 – 40); control group – 80 mg (IQR 40 – 100). Complications: CWI group - 1 wound bleeding (local haemostasis), control group - 1 dehiscence and peritonitis (additional laparotomy). Side effects from the use of Bupivacaine have not been found. Patient mobilization: CWI group – 4(IQR 3, 5 – 4,5); control group – 4 (IQR 3 – 5).

**Conclusions:** In our pilot study we observe the tendencies that the patients in CWI have less pain in the first 3 days after surgery, as well as, they get less common amount of opioids during the whole hospital stay. Only further research can demonstrate the efficiency of the CWI of local anaesthetics.

[355]

**Serum bilirubin concentration as a marker of severity of acute appendicitis**

Michalina Szczęśniak, Maciej Jastrzębski, Michał Wierzchowski, Julia Pikul

misia.szczesniak@gmail.com

Department of General, Transplant and Liver Surgery; Medical University of Warsaw

**Trustee of the paper:** Maciej Krasnodębski MD, PhD; Michał Grąt MD, PhD

**Introduction:** Acute appendicitis (AA) is one of the most common causes of urgent admission to the hospital. Clinically applicable classification distinguishes simple (non-perforated) and complex (gangrenous or perforated) inflammation. Among commonly used inflammation markers of AA bilirubin concentration is poorly known and, for this reason, rarely applied.

**Aim of the study:** The aim of the study was to examine an association between increased serum total bilirubin concentration and severity of AA.

**Material and methods:** This retrospective research involved 169 patients admitted to the Department of General, Transplant and Liver Surgery (Medical University of Warsaw) and operated, between January 2015 and December 2017, with a presumptive diagnosis of AA. Determined study endpoints included three groups of patients with simple and complex inflammation and patients who ultimately had different diagnosis after surgery. The Mann-Whitney U and Kruskal–Wallis tests were used to compare study groups with respect to bilirubin concentration. Receiver-Operating Characteristics (ROC) were used to determine cut-off values for bilirubin concentration with the best sensitivity and specificity for severe form of AA. Area under curve (AUCs) was presented with 95% confidence intervals (95% CI). The statistical significance limit was set at 0.05. The statistical analysis was carried out using the STATISTICA 13 program (Dell Inc).

**Results:** 84 (49.7%) patients underwent laparotomy and 85 (50.3%) laparoscopy. After surgery, 45 (26.6%) patients had a diagnosis other than AA. 83 (49.1%) and 41 (24.3%) patients had simple and complex AA form respectively. Median bilirubin concentration was 0.56, 0.69 and 1.08 in patients without AA and in simple and

complex form respectively ( $p=0.02$ ). The optimal cut-off for serum bilirubin concentration to predict severity of AA was  $\geq 1.4$  mg/dl (AUC 0.646; 95%CI 0.526-0.766) with 37.8% sensitivity, 90.6% specificity, 70.0% positive and 71.6% negative predictive value.

**Conclusions:** Serum bilirubin concentration should be considered as one of the possible markers for AA. Moreover, it can be used to predict its severity.

[356]

#### **Comparison of fixing materials in the therapy of SCFE**

Michaela Šoltysová

miska.soltysova@gmail.com

Department of children's surgery, orthopaedics and traumatology, University Hospital Brno - Children's hospital

**Trustee of the paper:** prof. MUDr. Jan Poul, CSc

**Introduction:** Slipped capital femoral epiphysis (SCFE) is a juvenile hip condition based on a lesion of proximal femoral physis that leads to slippage of femoral metaphysis anteriorly. Femoral head stays in acetabulum, relatively posteriorly to the translated metaphysis. Disease appears most frequently at the age of 10 to 15 years, before definitive closure of the physis and is indicated to surgical solution. Chronic and acute mild forms after reposition are transfixed by Kirschner wires or combination of a screw and wires.

**Aim of the study:** Main aim of this study is to compare physeal growth ability using 2 specific types of material – K-wires or screws, by monitoring altering position of material's apex over the physeal boarder.

**Material and methods:** In the sample of 66 surgically solved slipped hip joints (41 by K-wires, 25 with screws) we recognized sex, age at the beginning of the therapy, laterality of the joint and bilaterality of the condition. X-rays of selected patients were monitored in a program "Marie Pacs - Diagnostic". This program has allowed us to measure Southwick angle, height of epiphysis and position of material's apex over the physeal boarder. Each of mentioned parameters were observed and compared, both at the beginning and at the end of the therapy, in two planes of projection – anteroposterior (APP) and axial (AXP). Next we have evaluated average overhang of material's apexes over the physeal boarder and it's altering positions, also the ratio of averages' alteration of this overhang to averages' alteration of epiphyseal height.

**Results:** Comparison of these results enables us to see significant change in average position of K-wires' apexes (-3,901 mm in APP, -2,317 in AXP), but also in the average position of screws (-4,008 mm in APP, -3,064 in AXP). This change is notable when comparing overhang ratio (overhang/ epiphyseal height) as well – using K-wires in APP -0,218 mm, in AXP -0,119 and using screw -0,214 mm in APP and -0.174 in AXP. Average period passed from the operation to evaluation of X-rays was 18 months for K-wires and 24 months for screws. It was interesting to notice obvious differences in results in-between the sexes when using same material, pointing to unequal age of definitive closure of the physis.

**Conclusions:** Measured numeric values of overhang of fixing material over the physeal boarder, in evaluated period alter using both materials. Results show us, that no matter which material being used, there is an ability for proximal femur to grow, despite transfixation of proximal physis.

[357]

#### **Pilonidal sinus treatment: less is more?**

Povilas Miknevičius, doctoral student Donatas Danys, professor Tomas Poskus

povilui.m@gmail.com

Vilnius University, faculty of medicine

**Trustee of the paper:** Vilnius University, faculty of medicine

**Introduction:** Pilonidal disease is treated surgically. There exists a large number of different surgical techniques, but the main technique used among surgeons worldwide is the excision of abscess with or without second closure of the wound. However, this surgical procedure leaves a large wound, which makes the patients unable to return to work and to normal daily life for weeks. Considering this, other, less invasive techniques were developed, one of which is the "pit-picking" technique. There is only a few reports that show advantages of this procedure over open excision.

**Aim of the study:** To compare minimally invasive and open surgical treatment for sinus pilonidalis.

**Material and methods:** The retrospective study included 100 patients treated for sinus pilonidalis at Vilnius University Hospital Santaros Clinic in 2013–2018, of which 47 patients underwent minimally invasive surgical treatment (Group I) and 53 underwent open excision (Group II). The patients were interviewed 1 month–5 years postoperatively. Data processing was performed using the quality of life instrument (EQ-5D-5L), Microsoft Excel 2016 and SPSS v24. Statistical significance was set at  $p < 0.05$

**Results:** There were 43 male (81.1%) and 10 female (18.9%) patients who underwent minimally invasive surgical treatment and 39 male (83%) and 8 female (17%) patients who underwent open excision. Operating time: Group I –  $19 \pm 8$  min, Group II –  $30 \pm 19$  min,  $p < 0.05$ . Hospitalisation days: Group I –  $2 \pm 1$ , Group II –  $3.6 \pm 3$ ,  $p < 0.05$ ; pain intensity after operation (VAS scale): Group I –  $3.7 \pm 2.7$ , Group II –  $5.6 \pm 2.8$ ,  $p < 0.05$ ; return to work after surgery (number of days): Group I –  $17 \pm 14$ , Group II –  $34 \pm 16$ ,  $p < 0.05$ ; return to social life (number of days): Group I –  $10 \pm 4$ , Group II –  $27.5 \pm 19.8$ ,  $p < 0.05$ ; recovery of physical activity levels. Group I –  $25 \pm 18$ , Group II –  $47 \pm 30$ ,  $p < 0.05$ ; satisfaction with the cosmetic result (5 = average to 10 = excellent): Group I –  $9.8 \pm 1$ , Group II –  $7 \pm 2$ ,  $p < 0.05$ . A total of 96.2% patients of Group I would opt for the same type of surgery, while the figure in Group II was 21.3%,  $p < 0.05$ . Relapse was greater in patients of Group I – 11 patients (20.8%) than in Group II – 4 patients (8.5%),  $p > 0.05$ .

**Conclusions:** Given the operating time, hospitalisation days, wound healing, pain intensity, and the quality of life of patients after surgery, the minimally invasive surgical technique for treating sinus pilonidalis is a superior procedure compared to open excision.

[358]

#### **Does age have any impact on perioperative outcomes of laparoscopic total gastrectomy for cancer?**

Karol Cizek, Jakub Droś, Tomasz Stefura, Artur Kacprzyk, Oksana Skomarovska

cizek.karol2@gmail.com

Students' Scientific Group at 2nd Department of General Surgery, Jagiellonian University Medical College in Kraków, Poland

**Trustee of the paper:** Piotr Major MD PhD

**Introduction:** The vast majority of cancer incidences increase with age. Length of life has been used in substantially all cancer researches and epidemiology. It is thought that operations for cancer are much more dangerous for older people than for the younger ones.

**Aim of the study:** We aimed to assess whether the age is a significant factor influencing perioperative outcomes of laparoscopic total gastrectomy for cancer by virtue of we wanted to confirm or deny safety of such surgery in elderly.

**Material and methods:** We reviewed prospectively created database of 75 patients divided into two age groups (in accordance to WHO guidelines): 33 patients were over 65 years old ( $\geq 65$ ) and 42 patients – under 65 years old ( $< 65$ ). Intra- and postoperative parameters recorded within 30 days after the initial surgery were considered endpoints of the study.

**Results:** Outcomes in  $\geq 65$  group showed significantly more often intraoperative adverse events compared to  $< 65$  group (27.27% vs. 9.52%,  $p=0.043$ ). No significant differences were observed in median operative time (300min for  $\geq 65$  group vs. 295min for  $< 65$  group,  $p=0.521$ ) and percentage of conversions (6.06% vs. 2.38%,  $p=0.420$ ). Also, both groups did not significantly differ in the rates of postoperative complications (36.36% vs. 33.33%,  $p=0.784$ ), reoperations (12.12% vs. 16.67%,  $p=0.578$ ) and mortality (12.12% vs. 4.76%,  $p=0.244$ ). According to the Clavien-Dindo classification, there were no differences in minor (grade I-II) and major (grade III-V) postoperative complications rates (15.15% vs. 14.29%,  $p=0.916$  and 21.21% vs. 19.05%,  $p=0.816$ , respectively). The respective median length of hospital stay was 5 days for both groups ( $p=0.873$ ) and also readmission rate was similar: 12.12% vs. 16.67% ( $p=0.578$ ) so we didn't notice significant differences here.

**Conclusions:** Despite higher frequency of intraoperative adverse events in the group of older patients ( $\geq 65$ ) compared to the younger ones we believe that laparoscopic total gastrectomy for cancer remains safe in elderly.

[359]

#### **Treating disfiguring disease - congenital vascular malformations, single center experience**

Adrianna Zembrzycka, Agata Andrzejczyk, Jakub Borowiec, Radosław Ciesielski

ada.zembrzycka@gmail.com

Medical University of Warsaw, Department of General and Endocrinological Surgery

**Trustee of the paper:** dr n. med. Tomasz Ostrowski

**Introduction:** Vascular malformations are congenital abnormalities which may either stay asymptomatic throughout life and be considered a minor aesthetic defect or cause severe functional impairment and cosmetic deformities of affected tissues. Venous, arteriovenous and lymphatic malformations make up the majority of vascular malformations. They are confirmed by physical examination and imaging methods, such as Computed Tomography (CT) or Magnetic Resonance (MRI). Treatment is challenging, requires long time surveillance and depends on a number of factors, including location and size of the malformation.

**Aim of the study:** Analysis of the effectiveness of embolisation in patients suffering from vascular malformations.

**Material and methods:** A total of 46 (15 male, 31 female; mean age 35,8) patients with congenital vascular malformations, who presented to the Department of General and Endocrinological Surgery, Medical University of Warsaw between January 2012 and October 2018, were included in this retrospective observational study. Patients were divided into three groups based on the type of malformation: venous (18), arteriovenous (26) or lymphatic (2). All patients underwent physical examination, Duplex-Doppler examination and Angio-CT scan. The treatment method of choice was embolisation (specific agents were chosen in accordance with appropriate clinical guidelines) and its side effects were recorded in the follow up period of minimum 4 months. MRI was used to confirm the effectiveness of embolisation.

**Results:** In all 46 (100%) patients treated in the Clinic, symptoms significantly improved after the procedures and in 44 (96,65%) patients both clinical and aesthetic effects were satisfying in patients' opinion. However, all patients had to undergo multiple embolisation procedures (minimum 2, maximum 33) in order to treat the malformations. Despite best efforts, complete resolution of malformations was not achieved in any case. Three patients suffered from significant complications- peroneal and tibial nerve palsy, and hand phlegmon respectively. During the follow up period, no debilitating symptoms, which could prompt further clinical interventions, arose.

**Conclusions:** Vascular malformations remain a therapeutic challenge in clinical practice. Success rate in patients treated with alcohol embolisation seems promising and the risk of complications is low. Therefore, surgery, which is more invasive and associated with a significantly higher recurrence rate, should not be offered as the first line of treatment.

[360]

#### **Effectiveness of a diagnostic tool for children with suspected acute appendicitis**

Zane Liepina, Liene Taurina

liepina.zane.91@gmail.com

Riga Stradins university

**Trustee of the paper:** Dr. med. Astra Zviedre, Prof. Arnis Engelis, Prof. Aigars Petersons

**Introduction:** As a result of changes in treatment of acute appendicitis new diagnostic criteria for uncomplicated and complicated acute appendicitis are developed in emergency department setting.

**Aim of the study:** To evaluate whether diagnostic criteria for patients with a suspected acute appendicitis is effective as a diagnostic tool in Children's Clinical University Hospital (CCUH).

**Material and methods:** A retrospective study identified patients who were treated with antibacterial therapy (metronidazole and ampicillin) based on diagnostic criteria for suspected acute appendicitis in CCUH (January 2017 - December 2017). Alvarado score (AS), C- reactive protein (CRP), white blood count (WBC) and radiological findings were evaluated for all patients. Patients were divided into two groups. Group A (68%, n=67) – patients with uncomplicated acute appendicitis according to further criteria (AS  $\geq 7$ , negative rebound tenderness, CRP  $\leq 8.4$  mg/L, white blood count (WBC)  $\leq 10.4 \times 10^9/l$ , appendix diameter in US  $> 7$  mm). Group B (32%, n=31) - patients with complicated acute appendicitis according to criteria (AS score  $\geq 7$ , positive rebound tenderness, CRP  $> 8.4$  mg/L, WBC  $> 10.4 \times 10^9/l$ , appendix diameter in US  $> 7$  mm).

Data were processed by using IBM SPSS Statistics 22 program (Fisher's Exact test, Pearson Chi – Square test, Spearman correlation analysis, Pearson correlation analysis, Shapiro-Wilk's Test,  $p < 0.05$ ). Study has received ethical approval.

**Results:** A total of 98 patients were included (boys 51% (n=50)). Mean age was 12.6 (SD=2.9).

There was significant positive moderate correlation between CRP, WBC and appendix diameter at admission and after 48 hours of dual antibacterial therapy in Group A ( $r=0.31$ ,  $p=0.003$  vs.  $r=0.37$ ,  $p < 0.001$  vs.  $\rho=0.51$ ,  $p=0.013$ ). 7 patients underwent appendectomy and 2 patients received broad spectrum antibacterial therapy in Group B. There is significant association between AS, rebound tenderness, WBC, CRP according to clinical diagnosis ( $p=0,004$  vs.  $p < 0.001$  vs.  $p=0.004$  vs.  $p < 0.001$ ).

**Conclusions:** Uncomplicated acute appendicitis diagnostic criteria are appropriate to selected antibacterial therapy.

[361]

### Epithelial ovarian tumors in children – retrospective analysis between 2005 and 2018

Kinga Bartosiewicz

bartosiewiczkinga1@gmail.com

Warszawski Uniwersytet Medyczny / I Wydział Lekarski

**Trustee of the paper:** Marek Stefanowicz

**Introduction:** Epithelial ovarian tumors are a rare group of developmental age neoplasms. They represent ~1% of all neoplasms and 10%-20% of neoplasms in the pediatric population. A standard treatment in the group of adults (especially in the post puberty period) is the surgical removal of an ovary. This method seems to be too radical for pediatric patients.

**Aim of the study:** The aim of the study was a retrospective analysis of operated patients with diagnosed ovarian tumor between 2005 and 2018, subsequent isolation of patients with epithelial ovarian tumor and assessment of early and distant treatment results.

**Material and methods:** There were 226 operations performed on patients with ovarian tumors in the period between 2005 and 2018 in our center. At the time of the operation, the patients' age ranged from 2 days to 18 years (median 14 years). 21 patients were diagnosed with epithelial neoplasm (17 cystadenoma, 3 adenofibroma, 1 adenocarcinoma), which represented 9,3% of the analysed group. The age of these patients ranged from 9 to 18 years (median 15,6 years). 2 girls did not menstruate. Clinical symptoms were reported in 8 patients (one of them experienced bleeding from the genital tract), the other 13 patients did not report any symptoms. In each case imaging tests were performed and serum tumor markers were analysed.

**Results:** 16 procedures were performed laparoscopically and in 5 patients through laparotomy. There were 10 cystectomies, 8 oophorectomies, 1 salpingo-oophorectomy and 2 marsupializations. None of the patients had intraoperative complications. In the early post-operative period, 1 patient had an adhesive obstruction of the digestive tract requiring surgical treatment. 1 patient was subjected to post-operative chemotherapy. 2 girls after the initial marsupialisation had to be reoperated due to cyst recurrence in the same ovary. In both cases, the ovary was subsequently removed. 19 patients remain in long-term observation, lasting from 6 months to 9 years (median 2,4 years). None of our patients reported any clinical symptoms, and the control ultrasound examination did not show any changes.

**Conclusions:** Cystectomy seems to be a safe method of surgical treatment in pediatric patients with ovarian tumor. Marsupialization may bear the risk of tumor recurrence, although our analysis is limited by relatively small number of patients and further studies are necessary.

[362]

### Changes of the congestive heart failure marker (NT-proBNP) serum level during postoperative period following bariatric surgery

Oksana Skomarovska, Tomasz Stefura, Jakub Droś, Artur Kacprzyk, Marta Krzysztofik, Karol Ciszek

skomarovska.o@gmail.com

Students' Scientific Society of 2<sup>nd</sup> Department of General Surgery, Jagiellonian University Medical College, Kraków, Poland

**Trustee of the paper:** Magdalena Pisarska, Piotr Major

**Introduction:** NT-proBNP is often used during diagnosing cardiological ailments. Morbidly obese patients are prone to developing heart failure.<sup>[1,2]</sup>

**Aim of the study:** Our aim was to assess the changes of NT-proBNP serum level during postoperative period among patients undergoing bariatric surgery.

**Material and methods:** This prospective study involved 26 patients treated for morbid obesity without cardiac failure. NT-proBNP was measured during operation day - postoperative day 0 (POD0), POD1 and POD7. We also gathered demographic data, information concerning comorbidities, factors related to the surgery and outcomes of bariatric treatment.

**Results:** Twenty-six patients completed the study (18 females). The mean age of the group was 42.59 ± 11.58 years (range 23-66). Overall, 16 (61.54%) patients were submitted to Laparoscopic Sleeve Gastrectomy (LSG) and 10 (38.46%) patients were submitted to Laparoscopic Roux-en-Y Gastric Bypass (LRYGB). The mean NT-proBNP level was 55.80 ± 95.64 ng/mL during POD0, 364.73 ± 291.77 ng/mL during POD1 and 106.95 ± 191.08 ng/mL during POD7. Changes were found to be statistically significant (p=0.026). There were no significant differences

between LSG and LRYGB groups during first, second and third measurements of serum NT-proBNP ( $p=0.121$ ,  $p=0.337$  and  $p=0.077$ , respectively).

**Conclusions:** We observed an immediate increase in NT-proBNP serum level among patients who underwent bariatric surgery; however, it seemed to partially stabilize during the first postoperative week. LSG and LRYGB have comparable impact on NT-proBNP during peri-operative period. It seems that operative stress following bariatric operation may limit usefulness of the NT-proBNP as a heart failure marker.

### [363]

#### **Assessment of safety and efficacy of thrombolytic treatment for acute lower extremity ischemia and the limb survival and hemorrhagic complications prognostic factors**

Jakub Kramek

[jakub\\_kramek@onet.eu](mailto:jakub_kramek@onet.eu)

Department of General and Vascular Surgery <sup>[[SEP]]</sup>University Hospital of Lord's Transfiguration <sup>[[SEP]]</sup>Poznań  
University of Medical Sciences

**Trustee of the paper:** Hubert Stępak

**Introduction:** Thrombolysis is a way of treatment of acute lower limb ischemia. It may be an alternative for surgical treatment. Although several studies have been conducted, a consensus about treatment protocol is not established.

**Aim of the study:** To assess safety and efficacy of thrombolytic treatment with use of alteplase with one protocol and the limb survival and hemorrhagic complications prognostic factors.

**Material and methods:** Retrospective analysis of 96 consecutive patients treated with catheter-directed, intra-arterial alteplase thrombolysis for acute lower limb ischemia (Rutherford I and IIa) was performed. Clinical data including: angiography results, complications, failure of the therapy, need for surgery, duration of symptoms and laboratory tests were analysed.

**Results:** Amputation free rate was 86.5% and the patency rate was 76% overall. Clinical improvement was noticed in 2 cases without restoring angiographic patency. Failure of treatment appeared in group of 13 patients, considering amputations. In the cases with restored patency, additional endovascular interventions were performed in 27.4%, and surgical interventions in 13.7%. In cases with no primary patency restored, surgical interventions were performed in 22.1%. Major complications including bleeding to central nervous system, and retroperitoneal space were observed in 3 and 1 cases respectively. There is no statistically significant difference in mean APTT and fibrinogen values in patients with and without minor and major bleeding complications. There is also no correlation between incidence of minor and major hemorrhagic complications and anticoagulants or antiplatelets on admission. In the group of patients with and without amputation there was no statistically significant difference in median dose of alteplase and median time of treatment. The threshold of symptoms duration in terms of clinical success was managed at 72h (sensitivity 100% and specificity 40%).

**Conclusions:** Thrombolytic therapy is a suitable and efficient solution for patients with acute lower limb ischemia resulting from in situ thrombosis. It may prevent selected patients from surgical intervention, and enable treatment of the group precluded from surgery. It appears to be no correlation between limb salvage and dose of alteplase or time of treatment. When symptoms last over 72h, it might be related with worse prognosis. APTT and fibrinogen values seem to be not an appropriate tool for assessment of bleeding risk.

### [364]

#### **Analysis of criteria of pediatric appendicitis score in children aged 5 - 9 years**

Daryia Palityka

[polityko.darja@gmail.com](mailto:polityko.darja@gmail.com)

Grodno State Medical University

**Trustee of the paper:** Viktor Vakulchik, MD, PhD

**Introduction:** No single clinical symptom, no single marker of inflammation in isolation from others can determine acute appendicitis with high specificity and sensitivity. Their combination significantly improves diagnostic accuracy. For this purpose, proposed diagnostic scales for acute appendicitis (PAS - Pediatric Appendicitis Score, Alvarado, AIR, RIPASA, Lintula). Reasonable doubts are expressed about the significance of some criteria of these scales.

**Aim of the study:** Analysis of the diagnostic significance and informativeness of the criteria of PAS in children aged 5–9 years.

**Material and methods:** The prospective randomized blind clinical trial. 126 children were examined: 58 girls (46.0% DI 37.3–54.7) and 68 boys (54.0% DI 45.3–62.7). The patients were divided into two groups: group A – diagnosis of acute appendicitis (AA) is excluded as a result of dynamic observation (105 children) or diagnostic laparoscopy (4 patients); group B - children (17 patients; 13.5% DI 7.5–19.5) with a histologically verified diagnosis of AA.

**Results:** It has been established that the highly informative criteria include: «tenderness over right iliac fossa» (Jxi = 10.3), «Right Lower Quadrant (RLQ) tenderness to cough, percussion, or hopping» (Jxi = 5.6), «leukocytosis: white blood cell count > 10,000» (Jxi = 3.0).

Medium informative criteria: «left shift: absolute neutrophil count > 7,500», «nausea or vomiting», «migration of pain to RLQ».

Background criteria: «anorexia», «fever: temperature  $\geq 38.0^{\circ}\text{C}$ ».

The analysis of diagnostic significance showed that «tenderness over right iliac fossa» has a high sensitivity (Se = 100%; -Pv = 100%); «RLQ tenderness to cough, percussion, or hopping» — high specificity (Se = 92.7%; -Pv = 96.2%).

**Conclusions:** The criteria of the PAS have different informative and diagnostic values. It is necessary to review and adjust the number of points assigned to each of the criterion. PAS needs further research in different age groups.

[365]

#### **Differentiating criteria for acute simple and complicated appendicitis in patients under 7 years old**

Pavils Plume<sup>1</sup>, Astra Zviedre<sup>2,3</sup>, Arnis Laduss<sup>1</sup>, Karlis Pētersons<sup>1</sup>, Arnis Engelis<sup>2,3</sup>, Aigars Petersons<sup>2,3</sup>

pavils.plume@gmail.com

<sup>1</sup> Faculty of Medicine, Riga Stradinš University, Riga, Latvia

<sup>2</sup> Department of Pediatric Surgery, Riga Stradinš University, Riga, Latvia

<sup>3</sup> Department of Pediatric Surgery, Children's Clinical University Hospital, Riga, Latvia

**Introduction:** Acute appendicitis (AA) is the most common acute surgical condition of childhood with the peak incidence occurring at the age of 11 – 12 years. The lifetime risk of AA is 8%. In children the classical presentation of AA is rare thus the diagnosis is challenging and often delayed leading to complicated AA. This applies strongly to children aged <7 years.

**Aim of the study:** The aim of this study was to determine the differences in clinical presentation, laboratory and ultrasonography (US) findings among acute appendicitis (AA) patients aged 0-6 years to differentiate simple from complicated AA.

**Material and methods:** A retrospective analysis of clinical symptoms, laboratory and US findings among patients aged 0-6 years old admitted to Children's Clinical University Hospital emergency department with a diagnosis of AA during the time period of January 2012–November 2017. A total of 194 patients were included and divided into two groups—simple AA (73) and complicated AA (121) based on histopathological analysis of the appendix. Patients successfully treated with antibiotics were included in the simple AA group. Receiver operating characteristic (ROC) curves and the areas under curve (AUC) were defined.

**Results:** Mean age of the patients was  $4.6 \pm 0.21$  years. Statistically significant differences between simple AA and complicated AA were found among the following parameters: duration of symptoms, frequency of vomiting, heart rate, local resistance, rebound tenderness, serum C-reactive protein (CRP) and interleukin-6 (IL-6) level, US findings: dilated bowel loops, fecalith.

AUC of 0.76 (95%CI(0.690-0.823),  $p=0.001$ ) with  $\text{CRP} \geq 22.6$  mg/L was 2.21 times more frequent (sensitivity 75% and specificity 66%) and AUC of 0.86 (95%CI(0.660-1.00),  $p=0.001$ ) with  $\text{IL-6} \geq 35.3$  pg/ml was 3.44 times more frequent (sensitivity 86% and specificity 75%) in patients with complicated AA than in those with simple AA.

Only rebound tenderness (OR 19.58, 95%CI(2.88–132.99),  $p=0.002$ ), dilated bowel loops (OR 27.00, 95%CI(3.59–202.92),  $p=0.001$ ) and fecalith (OR 28.03, 95%CI(3.80–206.91),  $p=0.001$ ) remained significant predictors of complicated AA using binary logistic regression. All the predictors account for 61.7% of the variability of complicated AA.

**Conclusions:** Serum levels of CRP and IL-6, rebound tenderness, dilated bowel loops and fecalith on US can be used to differentiate simple from complicated AA in patients under 7 years old .

[366]

### **Pulmonary resections in Thoracic Surgery Department of Santaros Clinics**

Žymanras Jagelavičius, Andrius Timpa, Agota Piščikaitė

agota.piscikaite@gmail.com

Vilnius University

**Trustee of the paper:** Andrius Timpa

**Introduction:** Patients undergoing thoracotomy associated with lung resection are thought to be at high risk for the development of postoperative pulmonary complications during the perioperative period, and these complications may lead to serious morbidity. Despite advances in surgical technique, anesthesia, and perioperative care, mortality ranges from 2 to 12%.

**Aim of the study:** Our aim was to analyze all anatomical pulmonary resections in VULSK Thoracic surgery department from 2013 to 2018, compare complication rates with the literature analysis also compare anatomical resections and VATS complications.

**Material and methods:** All patients undergoing anatomical lung resection surgery were reviewed. Data collection based on medical documentation retrospectively.

**Results:** 256 anatomical lung resection operations were performed. The average age of patients is 58.9 years. 74% of the operations were due to primary lung cancer. The majority of the operations consisted of lobectomies. More than 90% of surgeries were conducted in an "open chest" manner. 35.5% of open chest surgeries were complicated. The main complication was bleeding, which was 7% and was the leading cause of death. VATS operations accounted for less than 10%. A 26.3% complication rate was observed, and the main complication was air drainage.

**Conclusions:** The frequency of complications does not differ significantly from literature research data. Postoperative bleeding was the most common complication.

[367]

### **Higher compliance to the Enhanced Recovery After Surgery (ERAS) protocol in the pathway for bariatric surgery does not increased weight loss**

Alicja Dudek, Justyna Tabiś, Hanna Twardowska

ala.ddudek@gmail.com

Jagiellonian University Medical College

**Trustee of the paper:** dr Piotr Małczak

**Introduction:** Enhanced recovery after surgery (ERAS) pathways are increasingly implemented and have been shown to improve outcomes among various surgical specialties. Nowadays lacks studies presenting impact of ERAS compliance in bariatric surgery.

**Aim of the study:** We aimed to assess the influence of implementation ERAS protocol on better treatment effects, i.e. weight loss.

**Material and methods:** An observational review of a prospectively maintained database was performed. 764 patients who underwent bariatric surgery between April 2009 to November 2017 were included. Guidelines of the Metabolic and Bariatric Surgery Section of the Polish Society were used as criteria for surgical treatment. ERAS protocol was applied in all patients. Data including weight loss, length of hospital stay (LOS) and perioperative morbidity were collected.

**Results:** All the analysed patients were divided into two subgroups depending on the compliance to the ERAS protocol, group 1 compliance <80%, group 2 >80%. There were no statistical differences in preoperative BMI and type of procedure between the 2 groups. Overall mortality counted 7,2% (55 cases). The groups did not differ significantly in percentage weight loss (%WL)  $p=0,999$ , percentage of excess weight loss (%EWL)  $p=0,559$  neither median of excess BMI loss (%EBMIL)  $p=0,440$ . Median length of hospital stay between analysed groups was insignificant 3-4 vs. 2-4 (G1 vs. G2),  $p= 0.234$ . However, the group with higher compliance to ERAS had a significantly lower rate of perioperative morbidity 5.54% vs. 9,37% (G2 vs. G1),  $p=0.024$ .

**Conclusions:** Increased compliance to the ERAS protocol in pathway of bariatric surgery is not associated with an increased weight loss. ERAS protocol use is beneficial in bariatric surgery in terms of reducing perioperative morbidity.

# Surgical Case Report

**Date:**

Sunday, May 12th, 2019

**Location:**

Room 139/140, Didactics Center

**Jury:**

prof. nadzw. dr hab. n. med. Robert Gasik  
prof. dr hab. n. med. Waldemar Kostewicz  
prof. dr hab. n. med. Sławomir Nazarewski  
prof. dr hab. n. med. Tadeusz Grochowiecki  
prof. dr hab. n. med. Ireneusz Nawrot  
prof. dr hab. n. med. Krzysztof Zieniewicz  
prof. dr hab. n. med. Marek Krawczyk  
prof. dr hab. n. med. Maciej Skórski  
prof. dr hab. n. med. Zbigniew Gałązka  
prof. dr hab. n. med. Mariusz Frączek  
prof. dr hab. n. med. Jerzy Polański  
płk prof. nadzw. dr hab. n. med. Mirosław Dziekiewicz  
prof. nadzw. dr hab. n. med. Jadwiga Snarska  
prof. nadzw. dr hab. n. med. Paweł Nyckowski  
dr hab. n. med. Mariusz Wyleżoń  
dr hab. n. med. Marek Stańczyk  
dr hab. n. med. Witold Chudziński

**Coordinators:**

Agata Celuch  
Adrianna Zembrzycka

**Scientific Patronage:**

National Consultant in Surgery Prof. Grzegorz Wallner MD PhD  
National Consultant in Pediatric Surgery Prof. Janusz Bohosiewicz MD PhD  
National Consultant in Surgical Oncology Prof. Arkadiusz Jeziorski MD PhD  
Towarzystwo Chirurgów Polskich



[368]

**Foot reconstruction after crush injury using the anterolateral thigh flap – case report**

Patrycja Antosik, Patrick Buliński

patrycja.antosik@gmail.com

Department of Trauma, Reconstructive and Plastic Surgery

**Trustee of the paper:** Marcin Strojny, MD, Bartosz Mańkowski, MD, PhD

**Background:** Surgical treatment of extensive foot injury is a challenging problem. The reconstructive ladder includes primary closure, skin grafting, local flaps, and free flaps. The anterolateral thigh flap (ALT flap) has a good blood supply from the lateral circumflex femoral artery with a long vascular pedicle. It has been successfully used in reconstruction procedures of head and neck, upper and lower extremity, trunk, breast, and abdomen.

**Case:** A 25-year-old male patient was admitted to the Department of Trauma, Reconstructive and Plastic Surgery, Karol Marcinkowski University of Medical Sciences in Poznań, due to a crush injury to his left foot caused by a 2116 pounds steel construction frame. A CT scan revealed a nondisplaced second metatarsal bone fracture, displaced third and fourth metatarsal bone fracture and comminuted fracture of first metatarsal bone with signs of dislocation in the first tarsometatarsal joint. The scan also found a fracture of the medial cuneiform bone and an avulsion of the distal phalanx of the first and fifth digit. A CT angiography revealed partial patency of the medial plantar artery and loss of patency of the dorsal artery at the level of the tarsus.

The lower extremity was immobilized for two weeks. The patient was qualified for reconstruction using the ALT flap. Debridement of the necrotic tissue and dissection of medial plantar vessels was accomplished. The right ALT flap was elevated and transferred to the recipient site. The perforator artery was anastomosed end-to-side to the medial plantar artery while the perforator vein was anastomosed end-to-end to the vein. The distal phalanx of the first toe was amputated. Furthermore, the flap was surgically modeled while the donor site was covered with a skin graft taken from the left thigh. After an observation period of the flap in the department, the patient was discharged from the hospital and is currently under ambulatory care.

**Conclusions:** Restoration of the limb function is the primary goal after a complex foot injury. Reconstruction using the ALT flap is a practical, safe and more often used surgical method because of its ability to cover large areas of injury, satisfactory cosmetic and functional effect and low morbidity of the donor site.

[369]

**Cardiosurgery as a rescue after unexpected major complication during cardiological intervention**

Cecylia Rządowska, Karina Cichy, Zofia Tatoj, Marta Wajda- Pokrontka, Fryderyk Zawadzki

cichy.karina@gmail.com

School of Medicine with the Division of Dentistry in Zabrze

**Trustee of the paper:** Tomasz Stącel MD PhD, Maciej Urlik MD

**Background:** Acute coronary syndromes are one of the most frequent urgent conditions in cardiology as the result of abrupt imbalance between consumption of oxygen by heart muscle and its supply. Myocardial necrosis is the consequence of coronary hypoperfusion. One of the methods of treatment is reperfusion of obstructed vessel by Percutaneous Coronary Intervention (PCI) with or without implanting stents which keep them open.

**Case:** A 72-year-old patient admitted to hospital with symptoms of Non-ST-Elevation Myocardial Infarction (NSTEMI). Urgently performed coronarography showed amputation of circumflex (Cx) artery and severely obstructed right coronary artery (RCA). Percutaneous angioplasty resulted in implantation of drug eluting stent (DES) into Cx artery. RCA angioplasty was performed 5 days later due to patient's condition exacerbation-recurrence of chest pain and elevation of troponin levels. During the removal of the balloon the end of the guidewire broke off remaining in the artery. Symptoms of ST-Elevation Myocardial Infarction (STEMI) of the inferior wall occurred. The patient in severe condition was transferred to SCCS hospital for continuation of the treatment after being secured with intra-aortic balloon pump (IABP) and endocavitary electrode.

Pre-operation coronarography specified location of the balloon and an attempt of removal of broken catheter was performed ineffectively. The patient subsequently underwent surgery in the hybrid operating room when it turned out the endocavitary electrode pierced not only through interventricular septum (IVS) but also lateral wall of left ventricle (LV). During the surgery the heart was temporarily stopped with cardioplegia. The perforation of the LV's wall was furnished and a minor aortotomy (1 cm) was done to retrieve the remnant of the guidewire (40cm) and the stuck balloon. The surgery was finished after control coronarography that showed proper position of undamaged stent, unobstructed RCA with Thrombolysis In Myocardial Infarction Scale (TIMI)

3 and undamaged ostium after removal of the balloon. In good condition 13 days after surgery the patient was transferred back to the primary hospital.

**Conclusions:** PCI is a routine procedure used in invasive cardiology with numerous risks, nevertheless major complications are uncommon such as in aforementioned case. It clearly shows it is crucial to maintain alertness while performing the procedure on patients and control their condition carefully afterwards.

[370]

#### **Deceptive lesion in adrenal gland**

Ewa Pruchniewicz, Joanna Pełka  
ewapruchniewicz@gmail.com

Medical University of Warsaw

**Trustee of the paper:** PhD Sadegh Toutounchi

**Background:** Primary aldosteronism (also known as Conn's syndrome) is a condition that can have varying symptoms, from high blood pressure and muscle cramps to excessive urination and headaches. It can also be caused by different adrenal abnormalities. Most commonly adrenal hyperplasia or tumor are to blame. There is a dispute in the medical field, whether the underlying cause of primary hyperaldosteronism can be diagnosed using only imaging - such as ultrasonography, CT or MRI. Some argue that adrenal venous sampling (AVS) is necessary before conducting adrenalectomy. Our case is an argument on why it is so important.

**Case:** A 37-year-old male, with 8-year history of high blood pressure and hypokalemia, was diagnosed with refractory hypertension due to primary hyperaldosteronism. He was treated pharmacologically using 3 antihypertensive drugs, but it was insufficient. He underwent abdominal CT which showed nodular adrenal hyperplasia in the left gland, as did ultrasonography. Scintigraphy showed hyperplasia in both adrenals, larger in the left gland. All of the above suggested hypersecretion of aldosterone in the left adrenal gland. The patient was about to undergo an excision of the left adrenal, but medical staff decided to check the hormone levels in the adrenal veins. AVS was performed twice, each time revealing aldosterone hypersecretion in the right vein - contralateral to the lesion. That led to the conclusion that the laparoscopic right adrenalectomy is necessary. Thanks to this sampling, patient was spared an unnecessary procedure, as the first adrenalectomy would be futile and patient's blood pressure would not improve. A year after the surgery, saline suppression test came out within normal limits, and the patient sustains normal blood pressure without any medication.

**Conclusions:** Performing AVS is very important before conducting adrenalectomy when treating hyperaldosteronism, because sometimes the lesion seen in medical imaging may not be the cause of the condition. Relying on CT or MRI can lead to harmful surgery and removal of the non-secretive adrenal gland.

[371]

#### **A rare case of recurring malignant peripheral nerve sheath tumor (MPNST)**

Krzysztof Słowiński Dorota Hop  
krzysztofslowinski1993@gmail.com

Medical University of Lodz/ Neurosurgery, Spine Surgery and Regional Peripheral Nerves Clinic, University Clinical Hospital Military Memorial Medical Academy in Lodz

**Trustee of the paper:** Maciej Radek MD PhD

**Background:** MPNST (Malignant peripheral nerve sheath tumor) is a rare tumor, constituting less than 5% of soft tissue sarcomas. It is derived from cells of peripheral nerves sheaths. Approximately 50% of MPNST tumors grow from preexisting neurofibroma in patients with type 1 neurofibromatosis (NF1). It is most commonly found in 30 to 50 year old patients, but the age of onset is typically lower in those patients with NF1 (approximately 28-36 years old). Due to high malignancy, 5-year survival rate is 50-55% and in cases of preexisting NF1 - 20-30%. Environmental factors (e.g history of radiation) play a role in 10% of cases whereas 40% are sporadic (unknown genetic predisposition). Diagnosis is based upon histological, immunohistochemical and ultrastructural features suggesting Schwann-cell differentiation.

**Case:** In this study we present a case of 55 year old male patient, who underwent a series of 5 surgeries over the timespan of 6 years in order to remove multiple tumors from the spinal canal at the level of Th-L/S. The first surgery took place in 2013, and the other 4 surgeries occurred in 2017 and 2018. As a probable cause for accelerating clinical and histopathological progress of the disease we consider courses of radiation therapy throughout 2013-2017

**Conclusions:** In the presented case 5 year survival has been achieved. Despite radiation therapy being a part of treatment, it may have potential to induce MPNST tumor recurrences. Due to tumor reappearing, several surgeries may be necessary. To achieve satisfactory outcome of treatment, the surgeon needs to resect the tumor with wide margins. Potential effectiveness and side effects of radiation therapy should be reevaluated in other MPNST cases.

[372]

**Successful treatment of pheochromocytoma presenting with paroxysmal episodes of hypertension following coronary artery bypass grafting**

Kopaev A.O.; Yusufov M.P.; Titov N.S.; Pomerancev I.M.; Anankin A.A.

kopaevandrei@gmail.com

Pirogov Russian National Research Medical University (RNRMU)

**Trustee of the paper:** Makhuova G.B.

**Background:** According to the literature, in 30-70% cases, the diagnosis of pheochromocytoma (PCC) is established postmortem, due to highly variable clinical picture, which lead to misdiagnosing and unsuccessful treatment.

**Case:** Patient S., 53 y.o., suffered from hypertension during 20 years. From 2009 – elevation of arterial pressure (AP) up to 200/120 mm Hg, appearance of chest pain. From 2009 to 2015, numerous hospitalizations with a diagnosis of unstable angina. Along this period treated with antihypertensive therapy. Consulted by cardiac surgeon – recommended coronary artery bypass grafting (CABG). 22.04.2015 – heart attack and loss of consciousness, followed hospitalization in Bakulev Scientific Center of Cardiovascular Surgery. 14.05.2015 was performed CABG. At the postoperative period, repeated episodes of increased AP up to 200/100, weakness, dizziness. On the 8th day after the operation, at the background of rise AP, the patient fell, resulting in a divergence of the sternal sutures. A second urgent operation was performed. After the operation, according to the CT of the abdominal cavity, revealing neoplasia of adrenal gland up to 5 cm in diameter. Laboratory – increase of metanephrines. Endocrinologist diagnosed: PCC of the left adrenal gland, the state of uncontrolled hemodynamics. Urgent surgical intervention is indicated. Doxazosin therapy has been initiated. 05.06.2015 the patient was admitted to the surgical department of Buyanov hospital for urgent surgery. Objectively, the patient's condition is severe, AP difference from 260/120 to 90/70 mmHg in a matter of minutes. The medical Council made a decision to remove adrenal gland because of health reasons. Laparoscopic adrenalectomy was performed at 16 days after last cardiac surgery. Intraoperatively - without complications, minimal blood loss. Histologically - benign PCC. The postoperative course was favorable, hypertensive crises, heart attacks, sweating, headache does not note.

**Conclusions:** Due to the wide range and variability of clinical manifestations of PCC, doctors may meet this pathology under the "mask" of well-known diseases. Surgical intervention performed with unrecognized PCC often leads to the most dangerous complication – a state of uncontrolled hemodynamics, which in turn is associated with high mortality and requires urgent surgical treatment.

[373]

**Extensive degloving of abdomen and trunk**

LA Georgiou, P Georgiou

letizia.georgiou98@gmail.com

Dpt of Plastic Surgery and Latseio Burns Centre, Thrasio GH, Elefsis, Athens, Greece

**Background:** Degloving injuries are defined as 'share and tear' injuries of some part of the body, when skin and subcutaneous tissue is detached from the underlying muscle fascia. They are very common in limb injuries, and the mechanism may vary. A common mechanism in limbs is subcutaneous hematoma formation. The skin is often damaged as perforator vessels have been avulsed.

**Case:** We present a case of extensive Degloving injury of the abdomen and posterior trunk after a road traffic accident. This overweighted 17 yr old boy (140kg, 175cm, BMI 45,7) was seated back and thrown out from the front window after a car crash. He sustained a fracture of the right clavicle, and a 40\*15cm friction burn of the left lower abdomen. At the area of the friction burn fluid accumulation was diagnosed a week later, and it drained about 4000cc of serous fluid in a weeks' time. In the theatre the full thickness friction burn was debrided, and a cavity of liquefied fat, 70\*30 cm was revealed and debrided. After some sessions of VAC treatment he was reoperated and the cavity closed with flaps and STSGs. In a third operation aesthetic improvement of the area was achieved with a modified abdominoplasty. The cavity was sealed and aesthetic outcome is acceptable. In

the 10 year follow-up the patient has lost weight. His BMI is within normal values and does not wish further aesthetic improvement of the abdominal and back region.

**Conclusions:** Extreme pressure may cause fat liquefaction and dissociation of skin and muscles. Mechanism of trunk degloving, a rare entity, is different from that of limb degloving, which is often found in accidents. Fat can act as a protecting cushion and prevent devastating injuries.

[374]

#### **Stenting as a successful treatment in May-Thurner Syndrome**

M. Rulewska, A. Kuczyńska, M. Dąbrowska  
monika.maria.rulewska@gmail.com

Department of General, Endocrine Surgery and Vascular Diseases, Medical University of Warsaw

**Trustee of the paper:** Dr n. med. Jerzy Leszczyński

**Background:** MTS in classical meaning is a left common iliac vein thrombosis due to compression by the overlying right common iliac artery. The spot where a left common iliac vein is adjacent to the lumbar spine and crossing right common iliac artery anteriorly may meet two of the three elements of Virchow's triad. Stasis of the blood due to chronic mechanical compression and endothelial dysfunction from adjacent arterial pulsations. The condition can lead to discomfort, pain, swelling and claudication due to iliac vein thrombosis. This pathology usually presents between the second and fourth decades of life, more common in women.

**Case:** A 43-year-old woman presented to our clinic transmitted from WIM with mild pain in her swollen left leg. First symptoms start 8 months earlier, when the pain was severe and prominent swelling. Patient with salivary gland tumor and right iliac joint endoprosthesis in history. She gave birth to 2 children with no symptoms during pregnancy. In the department, to exclude hypercoagulation the Prothrombin time (11,7 s.), INR (1,03) and activated partial thromboplastin time (29,3 s.) were checked. Ultrasound revealed left common and external iliac vein thrombosis. CT showed the compression of the left common iliac vein by the right iliac artery and thrombosis of the left common and external iliac vein. The veins below the left inguinal ligament were patent. The patient was prepared for the procedure. Endovascular recanalization of occluded external and common iliac veins was obtained through the access of femoral vein. Three stents were implanted: VENITI VICI 14x120mm, VENITI VERTO 14x60mm and WALLSTENT 12x90mm. During procedure 10 000 u. of heparin were given and later, anticoagulant treatment was changed to rivaroxaban. The Ultrasound performed 2 weeks, 1 and 3 months after procedure revealed the patency of the left iliac vein. The patient was asymptomatic and in good condition.

**Conclusions:** Endovascular procedures are a good option for patients with symptomatic MTS. The easy percutaneous technique, acceptable safety and efficacy make the iliac vein stenting preferred approach in patients even with advanced diseases. Additionally, anticoagulant treatment may decrease the risk of recurrent venous thrombosis.

[375]

#### **Concomitant laparoscopic recurrent umbilical hernia repair and preventive cholecystectomy in a patient with splenomegaly and polycythemia vera-associated collateral circulation and portal vein thrombosis- case report**

A.Andrzejczyk, J.Borowiec, R.Ciesielski, A.Zembrzycka  
agataandrzejczyk@gmail.com

Medical University of Warsaw

**Trustee of the paper:** J. Świątkiewicz MD, D. Tomaszewski MD

**Background:** Operation for a recurrent umbilical hernia is a fairly common surgical procedure, frequently performed with the use of laparoscopic techniques. Newly developed 3-Dimensional (3D) laparoscopy, associated with lower bleeding risk and shorter overall surgery time due to better quality of imaging than 2D laparoscopy, may be particularly useful when treating patients with multiple comorbidities. It was a method of choice in the operation of a young patient with a recurrent small umbilical hernia, asymptomatic cholelithiasis, massive splenomegaly and polycythemia vera-related portal vein thrombosis, portal hypertension and collateral circulation.

**Case:** In February 2019, a 32-year-old patient presented to the Department of General and Endocrinological Surgery with a recurrence of congenital umbilical hernia, firstly treated in 2015 by Mayo repair. The patient was previously diagnosed with polycythemia vera with confirmed JAK2 mutation, which prompted portal, superior mesenteric and splenic vein thrombosis, esophageal varices and portal hypertension, further complicated by

massive splenomegaly (largest dimension >28cm). Additionally, asymptomatic cholelithiasis with the presence of a single stone (20x26mm) was found on abdominal ultrasound. The patient was qualified for umbilical hernia surgery preceded by preventive laparoscopic cholecystectomy. Despite being asymptomatic, the gallbladder was excised due to the patient's extensive medical history and the risks associated with possible future emergency cholecystectomy with hernia surgical mesh already implanted. Splenomegaly was an important challenge as it both limited the range of motion at the surgical site and increased the likelihood of bleeding due to splenic injury during the procedure. Thus, 3D laparoscopy system was used. The involvement of the gallbladder by venous collaterals resulted in inadvertent, albeit massive, portal venous haemorrhage. Ultimately, the gallbladder was removed and the surgical mesh implanted. No other complications were noted. The patient was discharged home in good condition and remains under observation.

**Conclusions:** Performing both cholecystectomy and recurrent umbilical hernia repair as a single surgical act had clear benefits for the patient. It eliminated the need for future abdominal reoperations, which potentially posed a high risk of complications due to comorbidities and previous interventions. However, concomitant surgeries are still rarely performed due to anticipated complication risk.

[376]

### **False aneurysm as a complication of foot surgery in a 17-year-old patient with Charcot-Marie-Tooth disease**

Katarzyna Rylewicz, Matylda Wincenciak

katerylewicz@gmail.com

SKN Graft at the Department of General, Vascular and Transplant Surgery  
Medical University of Warsaw, Poland

**Trustee of the paper:** Dr n. med. Grzegorz Szostek

**Background:** Charcot-Marie-Tooth disease (CMT) is an inherited progressive peripheral neuropathy which causes a spectrum of neurologic dysfunctions. In this case, the patient has type 1a CMT disease (CTM1A) which results in sensory and motor neuropathies and is the most common type of CMT. Common clinical presentation of CTM1A is bilateral pes cavovarus deformities. The surgical treatment varies depending on the stage of the disease and aims at restoring walking abilities. It includes rehabilitation, tendon elongation or transfer and bone tissue surgeries. A rare complication of surgical treatment may be an aneurysm in the operated area, what is discussed in this case report.

**Case:** A 17-year-old patient with bilateral pes cavovarus, dorsal flexor muscles paresis and contracture of Achilles' tendons was admitted to the hospital. His family members had similar health problems. An electrophysiological study confirmed CTM1A. Due to progression of the illness resulting in patient's inability to walk, a bilateral surgery was performed. It consisted of plantar aponeurosis release, posterior tibial tendon elongation and triple arthrodesis with wedge resection of Chopart's joint stabilised by two Kirschner wires. The surgery on the left side was performed without any complications, but on the right side, a pulsating lump was detected.

Arteriography of the right foot confirmed the presence of a false aneurysm supplied by the distal part of the posterior tibial artery and plantar artery with outflow to posterior tibial veins. The patient was qualified for the intravascular supply of the aneurysm. The plantar artery was catheterized with Rebab-18 microcatheter and embolized with embolization coils Concerto 5mm. Next, the distal part of the posterior tibial artery was embolized, using embolization coils Concerto 4 and 5 mm. In the control arteriography, effective elimination of the aneurysm was confirmed. The operation finished by dressing the injection site with occlusion system Angioseal 6F and pressure dressing (applied for 24h). No postoperative complications were found and the patient was discharged.

During check-ups, no pulsating was found and in control computed angiotomography no contrast enhancement of aneurysm was detected. The maximum transverse dimension of the aneurysm has reduced to 30 mm.

**Conclusions:** In this patient with CTM1A, the surgical procedures enabling walking were a standard form of care. A false aneurysm is a rare complication of the surgery but was successfully removed.

[377]

### **Is it verrucous carcinoma, or still a wart?**

Jakub Śledź

jakubsledz@interia.pl

Department of Dermatology, Medical University of Warsaw

**Trustee of the paper:** Olga Warszawik- Hendzel; MD, PhD

**Background:** Verrucous carcinoma (VC) is an uncommon, well differentiated subtype of squamous cell carcinoma (SCC). The incidence of VC among SCC varies between 1-10%. VC is a low-grade malignance, locally aggressive, with a high risk of recurrence and minimal metastatic potential. It is commonly associated with HPV infection, and distinguishing between a verrucous carcinoma and a large wart can be difficult. Penetration of VC into underlying tissues can result in destruction of subcutis, fascia and bone. The tumor can involve the oral cavity (Acerman's tumor), larynx, anogenital region (Condyloma acuminatum), plantar surface of foot (Carcinoma cuniculatum) and other cutaneous regions. In some cases it occupies the urinary bladder. The case refers to carcinoma cuniculatum.

**Case:** We report a case of 40 years old woman patient with the VC localized on the left foot. The lesion, primary diagnosed as a persisted HPV-triggered giant wart, was treated with cryotherapy, that failed to succeed. A tumor was excised and relapsed upon two weeks. Surgical excision was repeated and the biopsy of the recurrent lesion revealed here a verrucous carcinoma.

**Conclusions:** We present the case of a VC patient and the review of the literature based on the latest data. VC poses a diagnostic challenge due to its rare occurrence and inconspicuous clinical manifestations. The case report shows the importance of accurate diagnosis of verrucous lesions resistant to standard treatment. Traditionally, the surgical excision is a golden standard and radiation therapy is not employed because of concern regarding anaplastic transformation. Follow-up is recommended due to a high risk of relapse.

[378]

### **Multistage orthopaedic correction of a multiaxial deformation of the lower extremity caused by extensive osteomyelitis as a consequence of sepsis**

Klaudia Tatara, Maciej Świercz

maciek.swiercz2@gmail.com

MUW; prof. Gruca orthopaedic and trauma teaching hospital in Otwock- Department of Orthopaedics, Children's Orthopaedics and Traumatology led by prof. dr hab. n. med. Jarosław Czubak

**Trustee of the paper:** lek. med. Tomasz Parol, dr n. med. Marcin Złotorowicz

**Background:** Osteomyelitis is a relatively rare complication of sepsis, most likely to occur in pediatric population. The treatment regimen consists of targeted antibiotic therapy combined with surgical debridement. One of the probable consequences of osteomyelitis is bone deformation, in treatment of which an inestimable role is played by reconstructive orthopaedic surgery. Taking under consideration the fact that it is long bones that are most commonly affected, this particular area of medicine can significantly contribute to improving patients quality of life.

**Case:** The presented case report describes a 10 year old male patient with a major deformation of the lower extremity. At the age of 2, he was diagnosed with hematogenous osteomyelitis of the 1st metatarsal bone - as a complication of sepsis. He underwent surgical debridement, involving drainage of the abscess and partial removal of the devitalized bone. Impaired structure resulted in medial foot drop, which led to distal and subsequent proximal tibial epiphysis deformations and both ankle and knee articular malfunctions. Over the years numerous surgical procedures were performed in order to bring back the proper function of the mentioned joints. Miniortofix and Taylor Spatial Frame systems were used to support bone growth, restore the proper axis of lower extremity and remodel lateral malleolus. Process of recovery is still ongoing and is significantly complicated by the condition of the skin which still suffers the consequences of sepsis. Despite all of the mentioned adversities the hitherto effects are promising.

**Conclusions:** Although not commonly seen osteomyelitis is a crucial complication of sepsis as it may lead to long-term extensive skeletal deformations and articular malfunctions. The disease substantially impairs the quality of patient's life and thus the role of reconstructive surgery as the only effective treatment method cannot be overstated.

[379]

### **Aortic regurgitation correction after transcatheter aortic valve implantation (TAVI)**

Žygimantas Abramikas

zygabra@gmail.com

Vilnius University Faculty of Medicine

**Trustee of the paper:** Agnė Drąsutienė MD; Greta Burneikaitė MD, PhD; Associate prof. Birutė Petrauskienė MD, PhD.

**Background:** Patients with aortic stenosis (AS) and left ventricular dysfunction are at increased risk of morbidity and mortality following surgical aortic valve replacement. Limited data is available on the outcome of such patients.

**Case:** Herein described is a case report of an 83-year-old male patient with dyspnea on moderate exertion, typical angina and heart failure symptoms (NYHA class IV). Transthoracic echocardiography demonstrated a tricuspid aortic valve with significant calcification, meeting the echocardiographic criteria for severe AS. There was known history of hypertension, coronary artery disease (coronary artery bypass surgery was performed in 2003), chronic atrial fibrillation, pacemaker implantation, chronic renal failure and chronic obstructive pulmonary disease. The patient was evaluated by a multidisciplinary team and due to high surgical risk (the logistic EuroSCORE was 27, whereas the Society of Thoracic Surgeons score was 12) transcatheter aortic valve implantation (TAVI) was suggested. The patient underwent TAVI in December 2014. Self-expanding aortic valve bioprosthesis (31 mm) implantation was performed under general anesthesia using the retrograde approach with fluoroscopic and transesophageal echocardiogram (TEE) guidance. Pre-dilation of the native valve was performed with a 20 x 40 mm balloon. Due to the low positioning of the prosthesis, severe paravalvular aortic regurgitation (AR) occurred. It was evaluated immediately after the device deployment and after removal of the catheter and guidewire. Short- and long-axis TEE views were used to assess AR localization and grade and it was classified as severe. The transcatheter valve-in-valve (TV-in-TV) technique was used immediately after the first TAVI. The second valve was positioned 10 mm higher than the first one. After the second valve implantation the peak aortic gradient significantly decreased from 77 to 34 mmHg. No significant regurgitation was observed post second valve implantation. The post-procedural outcome was favourable. NYHA functional class improved to III. The patient was discharged in good general status and asymptomatic, with no complications from the procedure. He was referred to cardiologic clinical monitoring.

**Conclusions:** Paravalvular leak after percutaneous transcatheter aortic valve replacement is associated with significantly higher morbidity and mortality. Transcatheter valve-in-valve (TV-in-TV) technique was feasible and effective treating acute severe AR after first TAVI.

[380]

#### **Otitis media complication – cranial base abscess**

Zofia Burska, Zuzanna Steć, Karolina Olech  
zburska2@gmail.com

Students' Scientific Group affiliated to the Department of Otolaryngology, Faculty of Medicine and Dentistry

**Trustee of the paper:** Eliza Brożek-Mądry MD, PhD

**Background:** Acute otitis media (AOM) complications are commonly divided into intratemporal and intracranial complications. Intratemporal complications of AOM include mastoiditis, labyrinthitis, facial nerve paresis and petrous apicitis. Mastoiditis, which is the most common AOM complication, can lead to the development of subperiosteal abscess. Abscesses due to otitis media can also develop intracranially, where they are most common in petrous apex in middle cranial fossa or posterior cranial fossa. We report a case of cranial base abscess with osteomyelitis as a complication of middle ear infection.

**Case:** 66-years old male presented to ER with severe left earache, weakness and cranial nerves IX and XII dysfunction. Patient reported a history of diabetes type 2, hypertension and otitis media lasting 5-months prior to admission treated with different antibiotics. MRI was performed and confirmed left otitis media (middle ear filled with fluid or granulation), together with cranial base osteomyelitis with an abscess. Due to abscess localization and patient's comorbidities immediate surgery was performed. Atticoantromastoidectomy and wide tympanocentesis were performed, and intravenous empirical antibiotic therapy was immediately introduced with ceftazidime and metronidazole. During the course of treatment glucocorticosteroids were added with close observation of glucose levels and blood pressure. Throughout hospital treatment CT changes have withdrawn and function of cranial nerves IX and XII was restored.

**Conclusions:** Ineffective and prolonged treatment of middle ear infection may lead to potentially fatal consequences, such as cranial base abscess impairing cranial nerves function. Moreover, unstable diabetes is an important factor predisposing to complicated middle ear infections. Thus, such a patient should immediately draw medical attention due to possibility of necessary surgical intervention.

[381]

**Acute myocardial infarction in young man with ASD II – a rare case of paradoxical embolism**

Wojciech Skorupski<sup>1</sup>, Olga Trojnarowska<sup>1</sup>, Agnieszka Bartczak-Rutkowska<sup>1</sup>, Wiesław Sikora<sup>2</sup>, Maciej Lesiak<sup>1</sup>, Marek Grygier<sup>1</sup>

wojtek.skorupski@wp.pl

<sup>1</sup> Department of Cardiology, Poznan University of Medical Sciences, Poznań, Poland

<sup>2</sup> Department of Cardiology, Specialist Hospital in Pila, Poland

**Trustee of the paper:** Marek Grygier

**Background:** Paradoxical embolism is defined as the embolic entry of venous thrombosis into the systemic circulation through an intracardiac or pulmonary shunt. Usually such a situation reveals itself in the form of a stroke or an embolism in other peripheral vessels. We present a rare case of the occurrence of paradoxical embolism, which caused a myocardial infarction in a young patient.

**Case:** A young 37-year-old man was admitted to the hospital with severe typical retrosternal pain. He did not have any family history of cardiovascular diseases and risk factors for coronary heart disease. Electrocardiogram revealed sinus rhythm 60 bpm, high T waves in leads V3-V6, with inverted T waves in leads III and V1. Laboratory tests showed significantly elevated troponin level - 417 pg/mL and elevated level of CK-MB – 21.53 ng/mL – an acute myocardial infarction without ST-segment elevation (NSTEMI) was diagnosed. Immediate coronary angiography was performed. It showed critical stenosis (95%) in the first septal branch of left anterior descending artery. Other arteries were normal without any signs of atherosclerosis. Balloon angioplasty of septal artery with balloon Mini TREK 1.5x15mm was performed with good angiographic result. The echocardiographic examination revealed no contraction abnormalities of left ventricle with good ejection fraction, but also the right ventricle enlargement with suspected atrial septal defect was found. Transesophageal echocardiography confirmed the presence of atrial septal defect (ASD) II with dimensions of 11x13mm and left to right shunt. He was discharged from hospital in stable clinical state without angina. He was recommended to use zofenopril and atorvastatin. Due to embolic, non-atherosclerotic cause of myocardial infarction, the decision to start anticoagulant with warfarin instead of antiplatelet therapy was made. Laboratory tests did not show any coagulation abnormalities. Patient was qualified for percutaneous closure of the defect. After one month, the patient was readmitted in order to close the defect - successful ASD closure procedure with 14mm Amplatzer Septal Occluder use was made.

**Conclusions:** In such case percutaneous closure of ASD should be indicated. This procedure is believed to be associated with a reduction in the recurrence of cerebrovascular accidents and peripheral embolism. Suspicion of a paradoxical embolism should be made in young patients with acute myocardial infarction, without cardiovascular risk factors and without current atherosclerotic disease.

[382]

**Successful kidney transplantation, performed due to life saving indications, despite transcending common criteria circumstances**

Alicja Klinke, Michał Marzec

m.marzec510@gmail.com

SKN Graft at the Department of General, Vascular and Transplant Surgery - Medical University of Warsaw, Poland

**Trustee of the paper:** dr Michał Macech

**Background:** Since the first world's successful kidney transplantation performed in 1954, the experience and knowledge gained over the years led to the formation and development of host-qualifying and donor-matching criteria, which highly increased chance for promising treatment. However, in some cases occurring circumstances may be so unfortunate, that the only way to save patient's life is to take a risk and go "off the label".

**Case:** A 57-year-old patient sustained failure of both transplanted kidneys as a result of advanced atherosclerosis of iliac arteries. He was dialyzed with use of catheter located in iliac vein, because arteriovenous fistula on any upper limb was not possible (due to implanted artificial cardiac pacemaker on the left side and right brachiocephalic vein occlusion). Unfortunately, recurrent severe infections of the catheter and blood coagulation in its lumen made further dialysis this way impossible, as well. The patient had figured on the highest priority kidney transplant waiting list for 9 months, but no compatible deceased donor was found. Finally, it was decided to perform transplantation of the kidney from patient's living 78-year-old mother, despite the fact that her age was significantly exceeding donor age standards, followed by the Department.

As a preparation, right aortoiliac bypass was implanted and right nephrectomy of previously transplanted failed kidney was performed. The transplantation was conducted 28 days later. Another complication was the anatomical variation of the chosen for donation (less functional) kidney- it was vascularized by two renal arteries. The arteries became surgically united and implanted in the wall of the aortoiliac graft, what is an extraordinary case in polish history of kidney transplantations. The patient required 3 postoperative dialyses and was discharged 29 days after surgery with the creatinine level of 1,28mg% and GFR 62ml/min. After next 6 months his creatinine level was 1,82mg% and GFR 53ml/min and his mother's levels were: 1,49mg% and 33,8ml/min (0,62mg% and 87,0ml/min before donation), what was claimed as success.

**Conclusions:** This case is a victory over series of difficulties, such as: age of donor, anatomical variation of the graft and recipient's severe atherosclerosis requiring arterial bypass to which the transplant was connected. This is why it shows the need of innovative approach to patients with almost no possibilities of therapy and broadening of commonly used transplantology guidelines.

[383]

**Successful prolonged ventricular dysrhythmias defibrillation during complicated transcatheter aortic valve implantation supported with ECMO – can we always rely on medical equipment?**

Martyna Bajek, Julia Haponiuk

bajek.m@vp.pl

Students' Scientific Association at the Department of Cardiac Surgery, Medical University of Warsaw, Poland

**Trustee of the paper:** Radosław Wilimski

**Background:** Transcatheter aortic valve implantation (TAVI) is an alternative treatment to surgical aortic valve replacement for patients with inoperable high-risk aortic stenosis (AS). Though the periprocedural complications are rare, life-threatening conditions demanding use of extracorporeal membrane oxygenation (ECMO), may occur. In such emergencies the success of transthoracic defibrillation can determine patient's prognosis. Unfortunately, medical appliances, expected to provide support, can sometimes fail.

**Case:** 83-year-old male patient previously diagnosed with severe AS, significant mitral and tricuspid regurgitation was admitted to hospital due to an increasing weakness and dyspnea during mild physical effort. Previous medical history included coronary artery disease treated with angioplasty with stents insertion and implantation of pacemaker due to an atrioventricular block.

Because of reduction in ejection fraction (EF=16%) the patient was scheduled for TAVI preceded by a control coronarography which revealed persisting effect of angioplasty and no progression of atherosclerotic plaques. After the induction of general anesthesia, sudden hemodynamic collapse occurred due to ventricular fibrillation. During resuscitation ECMO was begun via femoral approach. Around 20 transthoracic defibrillation shocks with automated defibrillation pads were used while the external cardiac resuscitation was performed, but unfortunately cardiac dysrhythmia persisted. As most likely it did not provide required energy dose, finally manual cardiac defibrillator paddles were used externally, the sinus rhythm was obtained and the procedure was continued. Balloon aortic valvuloplasty was performed and Evolut R bioprosthesis was successfully implanted. Ending of ECMO was supported by Intra-Aortic Balloon Pump and high doses of catecholamines.

The patient was awakened after 3 days and no neurological deficit was observed. An echocardiography confirmed good Evolut R function, reduced mitral and tricuspid regurgitation, no myocardial contractility disruption with EF about 50%.

**Conclusions:** TAVI assisted by ECMO appears to be an appropriate, but still complex and demanding emergency management in ventricular fibrillation in high-risk patients. Presented case implies the importance of the transthoracic defibrillation success in life-threatening conditions and suggests more profound control over the capacity of emergency medical equipment.

[384]

**Nutrition complication after Whipple procedure**

Justyna Burek

justynaa.burek@gmail.com

Department of General and Translation Surgery, Central Clinical Hospital, Ministry of the Interior in Warsaw, Poland

**Trustee of the paper:** Grzegorz Witkowski, MD

**Background:** Over the past decade, performance of the Whipple procedure to treat both malignant and benign disease has increased. This increase is in large part due to decreasing perioperative mortality rate, which is down from historic highs of 25% to the 1-4%. Although the mortality rates have improved the rate of complication has remained relatively constant 4-19%. One of the most common of these include the development of false channel (fistulas) and leakage from the site of the bowel reconnection.

**Case:** The 73-year-old man who had not been treated so far was admitted to the clinic with tumor of ampulla of Vater. Qualified for surgical treatment. Pancreatoduodenectomy was performed using the Whipple method. 3 weeks after the surgery patient had reported that had not eaten properly due to the vomiting that followed them. The levels of albumin and total protein in serum were tested, which turned out to be low. The albumin level was 1,7 g/dL (3,5 – 5,2) and total protein was 4,9 g/dL (6,4 -8,3). After that intensive, individual parenteral nutrition was started. In the next postoperative period reoperated a total 6 times due to perforation of gastrointestinal anastomosis, perforation of the proximal part of the small intestine at pancreatic-intestinal anastomosis, large hematoma of splenic flexure, incarcerated inguinal hernia on the right and twice due to the perforation of the previously stitched proximal segment of the small intestine. The correct nutritional status was obtained and further postoperative period uncomplicated. In good condition, discharged home.

**Conclusions:** In this case the probable cause of complications in postoperative period was malnutrition. Whipple procedure burdens the whole body and patients who are subjected to it are often cachexy. Proper postoperative nutrition is very important factor in proper healing process and results in fewer complications.

[385]

### **Myxofibrosarcoma - a diagnostic pitfall**

Jakub Kramek

jakub\_kramek@onet.eu

Department of General and Vascular Surgery University Hospital of Lord's Transfiguration Poznań  
University of Medical Sciences

**Trustee of the paper:** Dr n. med. Maciej Zieliński

**Background:** We present the extreme rare case of myxofibrosarcoma (MFS) diagnostic pitfall in the young patient. The result of primary histo-pathological examination revealed no malignancy and led to the misdiagnosis of lymphatic edema. MFS is a rare variant of the malignant fibrous histiocytomas. It is one of the most aggressive types of soft tissue neoplasms. It usually develops in elderly patients predominately in extremities, within the dermis and subcutis. The clinical presentation is not pathognomonic. The histological aspects are highly heterogeneous, frequently delaying the diagnosis or leading to misdiagnosis. Complementary histochemical and immunohistochemical stainings are mandatory to achieve the diagnosis of MFS. MFS can recur locally or metastasize to lungs and bones. Treatment consists of local resection followed by radiotherapy. Chemotherapy may be considered.

**Case:** 52-year-old male who presented in 2016 with left lower extremity edema and tenderness. Due to recent ski shoe pressure trauma, the patient was referred to orthopedic surgeon and physiotherapy. Edema deteriorated even though compression therapy. The ultrasound examination showed cystic space filled with fluid. The preliminary diagnosis was necrosis of subcutaneous tissue; patient underwent surgical debridement. Specimens were sent for histo-pathological examination which did not reveal any malignant lesions (synovitis chronica). Edema gradually enlarged and within four months a painful lemon-sized mass recurred. Lymphatic vessels damage was suspected, and the patient was referred to the vascular surgeon. A lymphography showed a cavity filled with fluid - a surgical revision and drainage were performed. A cyst was filled with blood and some solid debris, which was removed. Compression therapy combined with lymphatic drainage rehabilitation enabled wound healing. Three weeks postoperatively swelling aggravated. The next debridement was performed - lymphatic vessels were transfixed, and the samples were harvested. The result of the histo-pathological examination was myxofibrosarcoma (G2 - high grade). There might also be a correlation between the Adalimumab therapy from 2013 to 2016 (psoriatic arthritis). Due to the large size of the tumor patient receive preoperative chemotherapy - to enable limb salvage resection.

**Conclusions:** MFS is a clinical mimicker and might present histologic difficulties. A large series of histochemical and immunohistochemical stainings are recommended. Extensive surgical excision with adjuvant radiotherapy or chemotherapy presents the optimal therapeutic option.

[386]

### **Can acromegaly be an obstacle to a laparoscopic cholecystectomy? A case report**

Aleksandra Szczęśna

alexandra.szcz@gmail.com

Students' Scientific Group affiliated to 2<sup>nd</sup> Department of General, Vascular and Oncologic Surgery

**Trustee of the paper:** Aneta Obcowska-Hamerska PhD MD

**Background:** Cholelithiasis is a common adverse effect of somatostatin receptor ligands therapy in secreting growth hormone pituitary adenomas. In acromegaly common comorbidities are impaired glucose tolerance, dyslipidemia, atherosclerosis, cardiomyopathy, upper airways obstruction, organomegaly, hypogonadotropic hypogonadism and osteopenia with debilitating osteochondrosis. Due to continuous somatostatin receptor ligands ingestion, gallstones of biliary tract can cause chronic fibrosing inflammation and acute cholecystitis. In the setting of acromegaly in a patient of young age at diagnosis, the musculoskeletal features and organomegaly may be a cause of difficulties during laparoscopic surgery.

**Case:** We report a case of 40-year-old man diagnosed with acromegaly 17 years earlier, who was admitted to the surgical department suffering an acute cholecystitis, which was confirmed during an operation procedure. A characteristic constitutional body type of acromegalic patient requires an adequate approach, because the anatomical topography of organs could have been altered. A minilaparotomy to create a pneumoperitoneum was challenging due to abdominal wall thickness, however it reduced the risk of iatrogenic adverse effects such as liver puncture. The laparoscopic dissection of Calot's triangle was complicated by enlarged gallbladder, considerable inflammatory infiltration and hepatomegaly. The resected gallbladder with a part of cystic duct was 22 cm long and its size demanded a specific approach, such as laparoscopic Endobag of higher capacity in comparison to normal-sized gallbladder. Thickened abdominal wall required a thorough loop-suture closing. In spite of associated difficulties that we have encountered, the patient recovered quickly and was discharged from the hospital two days after in a good condition in keeping with ambulatory surgical unit.

**Conclusions:** Long-lasting acromegaly may provoke intraoperative difficulties, when laparoscopic approach was chosen. A few aspects of surgical management should be altered in order to avoid any complications among acromegalic patients. Customized mode of operation and available access to various surgical instruments may provide a sound, safe, ERAS-abided proceeding.

[387]

### **Arterial thrombosis of both lower limbs associated with the antipsychotic therapy**

Adam Banasiak, Julia Szydlik, Wiktoria Grycuk

adambanasiak06@gmail.com

SKN Graft at the Department of General, Vascular and Transplant Surgery  
Medical University of Warsaw, Poland

**Trustee of the paper:** Grzegorz Szostek, MD, PhD

**Background:** Ischaemia of the lower limbs is caused for instance by arterial thrombosis, which is going to be discussed in this Case Report. Furthermore, many factors may contribute to the development of thrombosis such as elder age, smoking, blood hypercoagulability, primary vessels' lesions and some of the administered medication.

**Case:** 39-year-old male patient was admitted to the department due to the symptoms of bilateral limbs' ischaemia. During the examination the patient complained of aggravating claudication pain with the walking distance shortened to the 200 metres (IIb according to the Fontaine Classification) in the past half year. During a physical examination decreased temperature and cyanic colour of the left foot's fingers were ascertained. Anamnesis revealed that the patient suffered from paranoid schizophrenia and has been treated with amisulpride and quetiapine for 10 years.

Ankle-brachial index totalled 0.66 and 0.42 for the right and left side, respectively. Performed CT angiography unveiled occlusion of the superficial femoral artery, whereas popliteal and crural arteries were supplied by collateral circulation. On the left side, both superficial femoral and popliteal arteries were impatent, but with no sign of obstruction in lower leg's vessels.

Determining the cause of peripheral arterial thrombosis was crucial to adjust treatment. Based on the gathered data, major risk factors such as age or smoking were excluded. Blood coagulation test and laboratory findings did not reveal any hypercoagulable states. Further investigation on the quetiapine and amisulpride side effects confirmed that drugs may predispose patients to the development of arterial thrombosis.

Endovascular recanalization of left superficial femoral and popliteal arteries was conducted by antegrade approach with the assistance of TK-angiograms. During the procedure 5000 units of heparin i.a. were administered. In the occluded segments balloon angioplasty was performed. Subsequently the stent was deployed in the distal superficial femoral artery. The postprocedural angiogram showed satisfactory flow through the arteries and the groin puncture was sealed with a closure device. Due to the popliteal artery dissection the dual anticoagulant therapy was recommended.

**Conclusions:** This particular case highlights that the antipsychotic therapy is associated with the risk of development of peripheral arterial thrombosis.

[388]

#### **Iatrogenic transmural esophageal hematoma after the MitraClip procedure**

Adam Banasiak, Jerzy Pręgowski, MD, PhD, Jarosław Skowroński, MD, Adam Witkowski, MD, PhD  
adambanasiak06@gmail.com

Department of Interventional Cardiology and Angiology, The Institute of Cardiology  
Medical University of Warsaw, Poland

**Trustee of the paper:** Jerzy Pręgowski, MD, PhD, Jarosław Skowroński, MD

**Background:** Transesophageal echocardiography (TEE) is a safe procedure but exceptionally can result in various iatrogenic complications ranging from minor injuries to more serious conditions including life-threatening esophagus' perforation.

**Case:** 61-year-old woman was admitted for scheduled MitraClip procedure due to the severe mitral regurgitation (MR) and symptomatic heart failure with reduced ejection fraction in New York Heart Association class III. Furthermore, her medical history included percutaneous coronary intervention (PCI) as a result of the stable coronary artery disease and a myocardial infarction a year ago.

The MitraClip procedure was conducted under general anesthesia and with TEE guidance. Reduction of MR from severe to mild was achieved. The promising outcome was confirmed by postprocedural TEE. However, during the observation period in postoperative care unit condition the patient developed refractory cough with audible stridor.

The decision of computed tomography (CT) examination was taken, which revealed esophagus enlargement and thickened esophageal wall without signs of bleeding or perforation but with radiological suggestion of intramural hematoma. The esophagogastroduodenoscopy was proceeded and verified the presence of submucosal hematoma of the esophageal lumen, excluding the signs of perforation. Afterwards, the bronchoscopy revealed compression of tracheal wall, narrowed fissure-shaped ostium of the left main bronchus and the right main bronchus narrowed up to 50%, due to the occurrence of hematoma. A mucose-purulent secretion sample was collected from the left main bronchus for microbiological examination, which showed beta lactamase positive *Klebsiella pneumoniae* infection. The diagnosis of pneumonia was made and successful meropenem treatment was implemented. The hematoma was treated conservative according to thoracic surgeon recommendations. The patient remained for two weeks in the intensive care unit conditions. The control CT showed reduction of hematoma dimensions.

**Conclusions:** TEE is considered a relatively non-invasive and safe diagnostic method, morbidity rate has been evaluated from 0.2 to 1.2%. Mostly complications are related to inadequate probe placement or rapid probe removal. The intraoperative TEE, due to the mobility of the operational field and patient being under general anesthesia, possibly may result in more frequent adverse events.

[389]

#### **Macrophage Activation Syndrome in viral infection after surgical treatment of acute aortic dissection – a case report**

Julia Haponiuk, Martyna Bajek  
jula.haponiuk@gmail.com

Students' Scientific Association at the Department of Cardiac Surgery, Medical University of Warsaw, Poland /  
Department of Cardiac Surgery, Medical University of Warsaw, Poland / 2<sup>nd</sup> Faculty of Medicine, Medical  
University of Warsaw, Poland / 1<sup>st</sup> Faculty of Medicine, Medical University of Warsaw, Poland

**Trustee of the paper:** Radosław Wilimski

**Background:** The emergency management of dissected thoraco-abdominal aortic aneurysm increases the risk of postprocedural infections. The Macrophage Activation Syndrome(MAS) is a rare, life-threatening, congenital or acquired condition most commonly caused by viral infections [especially cytomegalovirus(CMV) or Epstein-Barr virus(EBV)], autoimmune diseases or malignancies. The diagnosis of MAS may be difficult to differentiate with bacterial infection of vascular prosthesis due to nonspecific clinical symptoms.

**Case:** A 45-years old male patient was admitted to a cardiac surgery department 1 month after successful surgical treatment of dissected thoraco-abdominal aortic aneurysm (Stanford class A) because of weakness and an episode involving loss of consciousness.

As the patient presented with pyrexia, hypotension, mental confusion and symptoms of heart failure (EF 40%) vancomycin was administered empirically. Due to a Red-Neck syndrome, it was changed to ceftriaxone. Although no pathogenic bacteriological growth was obtained from both blood and urine cultures, the C-reactive protein level elevation and leukocytosis was still observed. Angio-Computed Tomography as well as echocardiography revealed undisturbed postoperative condition. As a nonspecific bacterial infection was a suggested diagnosis, metronidazole and sulfamethoxazole/trimethoprim were applied. Nevertheless, the patient presented with a continuation of elevated temperature and prolonged macular skin eruption. In addition, signs of hemolytic-uremic syndrome, liver insufficiency and disseminated intravascular coagulation syndrome were exacerbating the patient's condition. Neoplastic disease was excluded.

Finally, serological tests confirmed presence of elevated EBV IgM and IgG(EBV DNA and parvovirus B19 DNA tests were negative) as well as mildly elevated CMV IgM and IgG antibodies and a hypothesis of MAS in the course of viral infection was drawn.

The typical treatment of multi-organ failure was applied with dexamethasone and transfusion of 4 units of blood due to anemia. After 5 weeks of hospitalization and normalization of inflammatory markers, the patient was discharged and qualified for a further ambulatory hematological control.

**Conclusions:** Presented case highlights the importance of a profound examination of the patients with nonspecific signs and symptoms. Differentiation between late bacterial and viral infection in patients after surgery performed for life-saving indications is difficult, but not impossible.